PLANNING COMMISSIONERS

BRIAN LOWELL
Chair

JEFFREY BARNES
Vice-Chair

RAY L. BAKER
Commissioner

JEFFREY SIMS
Commissioner

CARLOS RAMIREZ
Commissioner

PATRICIA KORZEC
Commissioner

VACANT
Commissioner

PLANNING COMMISSION
Regular Meeting

Agenda

Thursday, November 10, 2016 at 7:00 PM
City Hall Council Chamber – 14177 Frederick Street

CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

APPROVAL OF AGENDA

Approval of Agenda

CONSENT CALENDAR

All matters listed under Consent Calendar are considered to be routine and all will be enacted by one roll call vote. There will be no discussion of these items unless Members of the Planning Commission request specific items be removed from the Consent Calendar for separate action.

APPROVAL OF MINUTES

Planning Commission - Regular Meeting - Aug 25, 2016 7:00 PM

Approved as submitted.

Planning Commission - Regular Meeting - Sep 8, 2016 7:00 PM

Approved as submitted.

PUBLIC COMMENTS PROCEDURE

Any person wishing to address the Commission on any matter, either under the Public Comments section

Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities, in compliance with the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct such request to Guy Pegan, ADA Coordinator, at 951.413.3120 at least 72 hours before the meeting. The 72-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

of the Agenda or scheduled items or public hearings, must fill out a "Request to Speak" form available at the door. The completed form must be submitted to the Secretary prior to the Agenda item being called by the Chairperson. In speaking to the Commission, member of the public may be limited to three minutes per person, except for the applicant for entitlement. The Commission may establish an overall time limit for comments on a particular Agenda item. Members of the public must direct their questions to the Chairperson of the Commission and not to other members of the Commission, the applicant, the Staff, or the audience.

NON-PUBLIC HEARING ITEMS

None

PUBLIC HEARING ITEMS

1.	Case:	PA16-0039 Plot Plan
	Applicant:	LATCO SC, Inc.
	Owner:	Professors Fund I, LLC and Professors Fund IV, LLC
	Representative:	Pacific Development Solutions Groups
	Location:	Southeasterly of Alessandro Boulevard and Perris Boulevard
	Case Planner:	Gabriel Diaz
	Council District:	1
	Proposal:	PA16-0039 Plot Plan

STAFF RECOMMENDATION

Staff recommends that the Planning Commission:

1. **ADOPT** a Mitigated Negative Declaration for Plot Plan PA16-0039, pursuant to the California Environmental Quality Act (CEQA) Guidelines; and

2. **APPROVE** the Mitigation Monitoring and Reporting Program prepared for Plot Plan PA16-0039 pursuant to the California Environmental Quality Act (CEQA) Guidelines, and included as Exhibit A; and

3. **APPROVE** Resolution No. 2016-23 and thereby **APPROVE** Plot Plan PA16-0039, subject to the attached conditions of approval included as Exhibit B.

OTHER COMMISSION BUSINESS

STAFF COMMENTS

PLANNING COMMISSIONER COMMENTS

ADJOURNMENT

Next Meeting: Planning Commission Regular Meeting, December 8, 2016 at 7:00 P.M., City of Moreno Valley, City Hall Council Chambers, 14177 Frederick Street, Moreno Valley, CA 92552

CITY OF MORENO VALLEY PLANNING COMMISSION
REGULAR MEETING
CITY HALL COUNCIL CHAMBER – 14177 FREDERICK STREET

Thursday, August 25th, 2016 at 7:00 PM

CALL TO ORDER

CHAIR LOWELL – Good evening ladies and gentlemen. I would like to call to order the August 25th, 2016, Regular Meeting of the Planning Commission. The time is 7:05 PM. Could we have rollcall please?

ROLL CALL

Commissioners Present:
Commissioner Ramirez
Commissioner Korzec
Commissioner Gonzalez
Commissioner Nickel
Commissioner Baker
Commissioner Sims
Chair Lowell
Vice Chair Barnes - Excused absent

Staff Present:
Rick Sandzimier, Planning Official
Paul Early, Assistant City Attorney
Erica Tadeo, Administrative Assistant
Claudia Manrique, Associate Planner
Gabriel Diaz, Associate Planner
Michael Lloyd, Land Development Division Manager
Vince Giron, Associate Engineer
Paul Villalobos, Fire Safety Supervisor/Assistant Fire Marshall

Speakers:
Estella Hernandez Patel
Rafael Brugueras
Liz Berry

CHAIR LOWELL – I am also here.

ADMINISTRATIVE ASSISTANT ERICA TADEO– And we have Vice Chair Barnes who is excused absent today.

CHAIR LOWELL – With that said, I would like to move on and could Commissioner Gonzalez lead us in the Pledge of Allegiance please?

PLEDGE OF ALLEGIANCE

APPROVAL OF THE AGENDA

CHAIR LOWELL – Thank you very much. I would like to move onto the approval of tonight's Agenda. Would anybody like to motion to approve tonight's Agenda?

COMMISSIONER BAKER – I'll move to approve the Agenda.

CHAIR LOWELL – We have a motion by Commissioner Baker. Do we have a second?

COMMISSIONER GONZALEZ – I second.

CHAIR LOWELL – We have a second by Commissioner Gonzalez and, just by a show of hands, we will vote. All in favor, say aye.

COMMISSIONER RAMIREZ – Aye.

COMMISSIONER KORZEC – Aye.

COMMISSIONER GONZALEZ– Aye.

COMMISSIONER NICKEL – Aye.

COMMISSIONER BAKER – Aye.

COMMISSIONER SIMS – Aye.

CHAIR LOWELL – Aye.

CHAIR LOWELL – All opposed, say nay. The motion passes 7-0. Tonight's Agenda is approved.

Opposed – 0

Motion carries 7 – 0

CONSENT CALENDAR

All matters listed under Consent Calendar are considered to be routine and all will be enacted by one rollcall vote. There will be no discussion of these items unless Members of the Planning Commission request specific items be removed from the Consent Calendar for separate action.

CHAIR LOWELL – Moving onto the Consent Calendar, and the Consent Calendar items tonight are the approval of the Minutes. Does anybody have any comments on the Regular Planning Commission Meeting from July 28th, 2016?

APPROVAL OF MINUTES

Planning Commission - Regular Meeting - July 28th, 2016, at 7:00 PM

Approve as submitted.

COMMISSIONER NICKEL – I want to go on the record as abstaining from approval of the Minutes as I was not seated.

CHAIR LOWELL – Perfect and Commissioner Van Natta also was there, but she is not here anymore so we have….everybody else can vote.

COMMISSIONER SIMS – I'll be abstaining.

CHAIR LOWELL – Commissioner Sims was also not there, so we have Commissioner Ramirez, Commissioner Korzec, Commissioner Baker, Commissioner Gonzalez, Vice Chair Barnes who is absent and myself, so we have five people that can vote. I think that's right. One, two, three, four, five, yes.

ASSISTANT CITY ATTORNEY PAUL EARLY – If I may, Chair, just to make sure everybody understands and is clear on it. There is no legal requirement that you abstain. You're just choosing to abstain because you want to, but you can always still vote on it, especially if you've listened to the meeting and can approve that the Minutes were accurate. I just want to make sure that nobody thought they had to.

CHAIR LOWELL – Okay. Any other comments or questions? Everybody agrees that the Minutes are accurate? Okay, with that said, I would like to motion to approve……I would like to motion to approve the Minutes for the Regular Planning Commission Meeting of July 28th, 2016. Do we have a second?

COMMISSIONER BAKER – I'll second.

CHAIR LOWELL – Seconded by Commissioner Baker. All in favor, say aye.

CHAIR LOWELL – Aye.

COMMISSIONER RAMIREZ – Aye.

COMMISSIONER KORZEC – Aye.

COMMISSIONER BAKER – Aye.

COMMISSIONER GONZALEZ – Aye.

CHAIR LOWELL – All opposed, say nay. Any abstaining?

COMMISSIONER NICKEL – Yes.

COMMISSIONER SIMS – Abstaining.

CHAIR LOWELL – Two abstains. Perfect. That's 5-0. The motion is approved. Moving onto the Public Comments portion.

Opposed – 0

Motion carries 5 – 0 – 2 with 2 abstentions

PUBLIC COMMENTS PROCEDURE

Any person wishing to address the Commission on any matter, either under Public Comments section of the Agenda or scheduled items or public hearings, must fill out a "Request to Speak" form available at the door. The completed form must be submitted to the Secretary prior to the Agenda item being called by the Chairperson. In speaking to the Commission, member of the public may be limited to three minutes per person, except for the applicant for entitlement. The Commission may establish an overall time limit for comments on a particular Agenda item. Members of the public must direct their questions to the

Chairperson of the Commission and not to other members of the Commission, the applicant, the Staff, or the audience. Additionally, there is an ADA note. Upon request, this Agenda will be made available in appropriate alternative formats to persons with disabilities in compliance with the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct their request to Guy Pagan, our ADA Coordinator, at (951) 413-3120 at least 48 hours prior to the meeting. The 48-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

NON-PUBLIC HEARING ITEMS

None

CHAIR LOWELL – Do we have any Non-Public Hearing Item Speaker Slips tonight?

ADMINISTRATIVE ASSISTANT ERICA TADEO – We do not.

CHAIR LOWELL – Perfect. Let's move onto Public Hearing Item No. 1, which is Case PA14-0027, which is a Plot Plan, and the Case Planner is Claudia Manrique.

PUBLIC HEARING ITEMS

1. Case: PA14-0027 (Plot Plan)

Applicant:	Design Concepts
Owner:	Titak Chopra
Representative:	Design Concepts (Architect Shiv Talwar)
Location:	23778 and 23798 Hemlock Avenue
Case Planner:	Claudia Manrique
Council District:	5
Proposal:	Plot Plan (PA14-0027) for a new 39 unit apartment complex

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2016-19, and thereby:

1. **CERTIFY** that this item is exempt from the provisions of the California Environmental Quality Act (CEQA), as a Class 32 Categorical Exemption, CEQA Guidelines, Section 15332 for In-Fill Development; and

2. **APPROVE** Plot Plan PA14-0027 based on the findings contained in the Resolution and subject to the Conditions of Approval included as Exhibit A of the Resolution.

PLANNING OFFICIAL RICK SANDZIMIER – Yes, Claudia Manrique will be presenting this project. It's a District 5 project. It is a multi-family residential project.

ASSOCIATE PLANNER CLAUDIA MANRIQUE – Good evening. I am Claudia Manrique, the Case Planner, for PA14-0027, which is a proposed 39 unit apartment complex located on a 2.6 acre site along Hemlock Avenue west of Peacock Street and east of Swegles Lane. We have an aerial showing the site. It includes three parcels. The project is located within the Residential 15 Zoning District, which allows up to 15 dwelling units per acre, and this project meets the maximum density of 15. This is the Zoning Map. As you'll see, the project is directly south. East and west are also zoned R15, and to the north is R5, which is single-family residential.

CHAIR LOWELL – Claudia, can you pull the microphone a little closer. Thanks.

ASSOCIATE PLANNER CLAUDIA MANRIQUE – Sorry. Adjacent developments to the project site include single-family homes, as well as multiple family units and other apartment complexes. Access to the proposed site will be from a single driveway off of Hemlock Avenue. Here is the Site Plan. This driveway will direct traffic north through the project with an internal loop, and this loop meets the emergency vehicle turnaround requirements from the Fire Department. The project includes a total of 109 parking spaces including 70 carports and 8 single-car garages for a total of 78 covered spaces. Then, there are 20 non-covered spaces for residents, as well as 10 guest parking spaces. All this meets the Code requirement for the multi-family parking. The proposed project includes a main recreation and office building with an onsite manager apartment, as well as six two-story multi-unit buildings. There a total of 18 two-bedroom units and 21 three-bedroom units for a total of 39 dwelling units. The amenities proposed include a small gym facility and reception space, which are within the recreation/office building, as well as private open space for each residential unit, which is provided by a mix of fenced yards, patios, and balconies. The proposed architecture is contemporary in design with stucco and stone veneer. Then there is various architectural relief provided through stone, foam trim, window shutters, concrete, tile, and decorative metal railings, which will be along the balconies, staircases, and second level walkways. Here we have the elevation for building 1A and 1B, and then you can see that the colors are a neutral brown earth tone palette. This is the office/recreation building with the same color palette. The site includes the 25-foot front yard landscape setback, which will also include street trees. There are two landscaped public open spaces for the residents within the project. There is also a 10-foot landscaped area to the rear of the site, which will help buffer from the neighboring single-family residents to the north. I have color conceptual of the Site Plan, and then this one will show a 3D rendering of the site to get a better idea of all the architectural relief of the project. The project was submitted in May of 2014 as a 22-unit apartment complex with two parcels and, due to the odd shape, it was a challenge to meet the City Code requirements including setbacks, emergency exits, and the parking requirements. Staff suggested to the Applicant, if it was possible, to get one of the adjacent parcels. The one to the east was available, and the Applicant was able to inquire and resubmit the redesigned project in late March of 2015. Since then, we have been working closely with the Applicant on the site design, the elevations, and we have resolved any outstanding issues to date. The project is exempt under CEQA as In-Fill as it is less than five acres. Public notice was sent to all property owners within 300 feet and posted on the site on August 12th and, on August 13th, it was published in the Press Enterprise Newspaper. Staff recommends approval of Resolution No. 2016-19 certifying that the project is exempt under CEQA 15332 as an In-Fill development and approve Plot Plan PA14-0027. Thank you.

CHAIR LOWELL – Thank you very much. Do we have any questions or comments for Staff? No? Okay, perfect. I would like to invite the Applicant up.

APPLICANT SHIV TALWAR – Good evening Chair, Commissioners, and the Staff. My name is Shiv Talwar. I'm the architect for the project, and we really want to thank you, the Staff, for coordinating the project with us. We complied with all the requirements, and we really appreciate all the efforts and recommendations. So we would like to request you to approve the project, and I will be glad to answer any questions you have.

CHAIR LOWELL – Thank you. Do we have any questions for the Applicant? Okay, do you have any questions for them though?

COMMISSIONER NICKEL – I have three questions.

CHAIR LOWELL – Okay.

COMMISSIONER NICKEL – I don't know if you want me to ask them now.

CHAIR LOWELL – If we don't have any questions for the Applicant, then thank you and we'll move on.

APPLICANT SHIV TALWAR – Thank you again.

CHAIR LOWELL – Thank you very much. Commissioner Ramirez.

COMMISSIONER RAMIREZ – I do have a question. Thank you for coming tonight. Are any of these going to be Section 8 apartments?

APPLICANT SHIV TALWAR – It is not planned for that. But, again, Section 8 is welcome.

COMMISSIONER RAMIREZ – Okay, that was my only question. Thank you.

APPLICANT SHIV TALWAR – Thank you very much.

CHAIR LOWELL – If you say it's planned for it, but Section 8 is welcome, what's your anticipated rent then?

APPLICANT SHIV TALWAR – I mean the project is like definitely not planned for that, but Section 8 is, you know, they are welcome.

CHAIR LOWELL – Well what's your anticipated rent?

APPLICANT SHIV TALWAR – They can apply for rentals.

CHAIR LOWELL – What's your anticipated rent?

APPLICANT SHIV TALWAR – We don't know the rent, the anticipated rent, for this one, but I will have……

CHAIR LOWELL – Alright, we can address that later. Thank you very much. Okay, then I would like to open up the Public Comments portion. I'm assuming we have a few speakers waiting. We have Estella Hernandez-Patel followed by Rafael Brugueras.

SPEAKER ESTELLA HERNANDEZ-PATEL – Good evening, Chairman, Planning Commission, Body, and Staff, again my name is Estella Hernandez-Patel, and I reside on Hemlock Avenue. I've been there for 20 some years, and I'm here tonight to oppose the development of the apartments. There are plenty of apartments on Hemlock Avenue if you don't know the area already, and it brings a lot of stress with a lot of transits. We have people walking the streets. It's….I want to say it's high crime. Statistically, I don't know what it is, but it concerns me and my family. It's a working class community. On the side where the apartments are going to be built, there are a lot of single-story family homes

Minutes Acceptance: Minutes of Aug 25, 2016 7:00 PM (APPROVAL OF MINUTES) and a few duplexes, but they are one story. That's on the east side of Hemlock and, on the west side of Hemlock, there are two-story and three-story apartments, and it's a little disturbing for me and my family and some of my neighbors to have more apartments coming into my community, our community. And so I'm here today to speak of my opposition, and I hope that you seriously consider some redevelopment. And it appears that the Staff is recommending approval, but they don't, I don't think they live in the area because I don't see them. And I know, according to the report, it's within guidelines, but I do sincerely hope that something else could be developed. I know it's the R15, but that concerns me too, and I'm thankful to the Chair for asking the questions on Section 8 because there's too many. Like I said, I've lived there. We bought from the original owner a number of years ago and, my family, we're happy there. But it is, it is too much. Too many apartments. It's embedded within single-story homes, and it doesn't fit in my opinion and some of the people that I spoke to. So I hope that you consider, reconsider again, the opposition of this plan. Thank you very much.

CHAIR LOWELL – You said you wish something else would be built there. What would you recommend being built there in its placed?

SPEAKER ESTELLA HERNANDEZ-PATEL – Single-story townhomes, something esthetically pleasing but also that brings value of property but worth to the community. In other words, you know, when something happens in the neighborhood, the police officers are there and we report it. It's almost like it's expected something is going to happen, and I don't want that to continue. I don't know. I mean, perhaps maybe I should've gotten more involved in my community in this sense. I wasn't aware there was, this was being planned in 2014, especially with the apartments down the road on Hemlock. Those were three stories, and I know that's common with the space that's available but I….family residences are good and welcome but more apartments, there's just way too many.

CHAIR LOWELL – I'm assuming you've lived in the neighborhood since before the other apartment complexes built?

SPEAKER ESTELLA HERNANDEZ-PATEL – The one directly across from us is La Pacifica, and that was already preexisting. And, next door to me, they are single story. They are more like duplex homes or apartments, but they look more like homes not apartments. And I live on, it's about an acre maybe almost two acres, because my dad lives next door so we just kind of fenced everything in together. And, you know, people come and go. People come and go all the time and that's my concern, my fear for the kids and my nieces and nephews that also live next door.

COMMISSIONER GONZALEZ – I just have a question. If this type of product was, let's say for sale maybe in the same fashion, is that something that you know you would be for even though they might look like apartments but they are more condos? Is it the "for rent" that is the concern?

SPEAKER ESTELLA HERNANDEZ-PATEL – I think that would bring balance in my opinion to the community because people will take pride in their homes, in their house, of their property versus apartments possibly not.

COMMISSIONER GONZALEZ – Thank you.

CHAIR LOWELL – Thank you very much.

SPEAKER ESTELLA HERNANDEZ-PATEL – Thank you for your time.

CHAIR LOWELL – Mr. Rafael Brugueras.

SPEAKER RAFAEL BRUGUERAS – Good evening, Chair, Commissioner, Staff, guests, and residents. I drove by there yesterday, and I looked at that lot very well. I got out of my car and all that's there is dirt, old trees, branches, garbage bags, stray cats. Now, I understand what she means because I know Hemlock from Heacock to Frederick, and I know that they are all apartments that have been there for a long time, and we have residents that don't care. But, by looking at this display, this model, the new building going up in that particular area will brighten it up because, when you go from Heacock to Frederick at night, it's dark. There is nothing there, nothing but the houses that she mentioned with one light. If you build something what we just saw right here, it will lighten up the whole neighborhood. It won't be dark anymore going into the street. Second of all, there are a lot of three-bedroom apartments. I know there are a lot of people who probably would like to move out of those old neighborhoods or those old apartments into something new. Now, it would be nice if it was not Section 8 and everybody would work. I hope the owner will work on that first before he converts it into Section 8 if he has to, and the only way that happens is if nobody rents because it's too high. Then, that's when Section 8 comes in. But, if you can keep it like the one we have right here around Walmart in Moreno Beach, E Trail, I used to live there in those apartments. If you keep them like that, because that's a nice building, those are nice apartments. They make that corner look good. This project can make this corner look good, and I understand what she is saying. Okay? But I believe that this project can help that neighborhood a lot more than not. Okay, so look at it. They are doing everything they can. They are providing a lot of parking so people can park inside instead of outside. They are going to have a manager on site, so they will be able to control what goes on onsite. Okay? They are going to have recreation, pool, gym; more than probably the other ones have. So we need to consider this project for that neighborhood so it can enhance that part of the street, especially heading towards more Heacock. If you go there at night, it's dark. It gets nicer when you head towards not Jack-In-The-Box but In-N-Out. That's where everybody is at. That's where all the lights are at. On this side of town, there are no lights. By adding this project and looking at it, look at it well, it's well built, well designed. And, if it can be well managed, it can help their community, and hopefully it will bring up their value of their neighborhood. So consider what we want to do, and I do have respect for her for coming up here and mentioning everything that goes on in that neighborhood because I know that neighborhood. Now, can it get better? Yes. If we do our part, then the rest of the neighborhood can probably get better. So I do want that neighborhood, I would love to see that neighborhood enhanced as so, especially in District 5. Okay, District 5 also needs help. It's an old part of town that needs a new face.

CHAIR LOWELL – Thank you Rafael. I have Shiv Talwar, but I'm assuming you already spoke. So, unless you want to come up again, I'm going to skip you up to Liz Berry.

SPEAKER LIZ BERRY – Good evening everyone. My name is Liz.

CHAIR LOWELL – The microphone you can pull down if you want. There you go.

SPEAKER LIZ BERRY – I'm not used to this.

CHAIR LOWELL – No worries.

SPEAKER LIZ BERRY – Thank you. Good evening everyone. My name is Elizabeth Berry, and I have lived in Moreno Valley (Sunnymead) since 1947. And, yes, I've seen a lot of changes. You have brought a lot of good changes and not so good changes to the area. I agree with this young lady on a lot of things that she said. I understand where she wants things more family than apartments and everything, but I'm in favor of these apartments. The only thing I'm not in favor of is the one way in, one way out. That is a disaster waiting to happen. But I may be able to help him with that dilemma. We own property. We own quite a bit of property. Absolutely no Section 8. Absolutely. I'm not against the poor, but no Section 8. And, once you start it, you'll never be out of it. You are locked into it. I agree with the parking on the inside because we have so many problems with parking up and down the street, and that's just ridiculous. And I agree with the gentleman saying that this is just a vacant lot. It is. It's just a plain old dirt lot, and this would be a nice thing to bring to the neighborhood. Like I say, I'm in favor of it. There isn't, oh, I agree with the condos. I think that would be a plus rather than apartments because people are more apt to take better care of something that belongs to them rather than renting something that belongs to someone else. So that is something interesting to think about. Anyway, I met the gentleman tonight and, like I told him, I'm in favor of the apartments. I think it will be nice. And thank you very much for your time.

CHAIR LOWELL – I have a question for you before you step down. One of the first things you said was you didn't like the idea of having a single point of access, and that there was something that you could do to help them because you own a lot of property. What did you mean by that?

SPEAKER LIZ BERRY – Oh, we own property at the back of where he wants to build. We own half that at the back. My nephew does, and he lives in Washington, and I am representing him tonight. And I came to talk to the man that was doing this.

CHAIR LOWELL – Are you talking about you own property facing the knuckle on what is it, Poutous?

COMMISSIONER NICKEL – On that map?

CHAIR LOWELL – I'm just curious.

COMMISSIONER GONZALEZ – That map up front.

CHAIR LOWELL – It's up on the big TV, yeah, correct. So you're proposing that you're going to talk to them about having an additional entrance off to the east?

SPEAKER LIZ BERRY – Yes.

CHAIR LOWELL – Okay. Thank you very much. I appreciate it. Okay.

SPEAKER LIZ BERRY – Swegles Street.

CHAIR LOWELL – Swegles Street.

SPEAKER LIZ BERRY – and Ironwood.

CHAIR LOWELL – Thank you very much. With that, I don't see anymore speakers. Does anybody else want to speak on this before we close the Public Comments? Nope. Okay, Public Comments are now closed. Moving on, let's get out of this. Okay.

PLANNING OFFICIAL RICK SANDZIMIER – Mr. Chairman.

CHAIR LOWELL – Yes.

PLANNING OFFICIAL RICK SANDZIMIER – Typically, it's customary to invite the Applicant back up if they want to rebut any of the Public Comments.

CHAIR LOWELL – I was moving to that. With that said, would you like to come up and rebut anything you heard or?

APPLICANT SHIV TALWAR – No.

CHAIR LOWELL – Okay. Thank you very much. Okay, so we're moving on now to Commissioner Discussion. Does anybody have any questions or comments?

COMMISSIONER SIMS – I think it's a….I think the concept of the project is nice, but I do have concerns about single in, single out. You have 108, it's going to be provided with 109 spaces, and there's going to be que times in the mornings and evenings and whatnot where it's just going to be a cluster and anybody that's trying to get in and out of building C will be stymied to get in and out of their…. you know, it's going to be a parking lot in front of probably all of building C. I also, I couldn't find this section. I'd like to understand what's going on on the east side or the west side of building A and building B in relationship to the access to the three lots that are on adjoining contiguous to the back part of the property. So, anyhow, for my first question I guess I'd like to understand from a transportation standpoint, you know, there is no traffic signal or anything in and out of this. With this single access, it just seems like there would be a significant amount of time with queuing in and out of this, and there is no stacking coming off of Hemlock into the property. So I just was wondering from a transportation standpoint, did they do a Traffic Analysis to understand kind of the morning and afternoon peak traffic?

LAND DEVELOPMENT DIVISION MANAGER MICHAEL LLOYD – Michael Lloyd with Public Works. This project was not required to do a Traffic Study. The number of units did not justify a Traffic Study given the traffic projections.

COMMISSIONER SIMS – Okay so is there other, I mean, is there other like type density with single access? It seems like if any blockage happens in that single access, emergency vehicles, whether cops or ambulatory or whatnot, would be stymied to be able to have access to any of this.

LAND DEVELOPMENT DIVISION MANAGER MICHAEL LLOYD – Generally speaking, the number of access points is driven by emergency response as you're indicating. So we typically rely upon fire department input and so I would defer to Paul, if you would, to indicate the number of units per access point.

FIRE SAFETY SUPERVISOR/ASSISTANT FIRE MARSHALL PAUL VILLALOBOS – Yes this particular project, Paul Villalobos from the Fire Department. This project meets the threshold for a single access point. We have enhanced fire protection features such as fire sprinklers. We have two private hydrants on site. We have good circulation. Our Fire Department operations could also be conducted across the street there. There is a fire hydrant directly across the street from this project on Hemlock. So, unless there was a larger density or a larger number of units, we would not require the developer or the contractor to add another access point for us. So, and then with the fire lanes being clearly marked and enforced by the property management there, that would be something we would rely on to maintain that access.

COMMISSIONER SIMS – Can I, Chairman.

CHAIR LOWELL – Yes Sir.

COMMISSIONER SIMS – While I'm on a roll?

CHAIR LOWELL – Keep going you got the light.

COMMISSIONER SIMS – Alright. Then can somebody explain what is the property boundary treatment on the east side of the property or west side of the property adjacent buildings A and B? Is that masonry wall? Is that solid or is that access where….it looks like there is an attempt to have an access easement going back to the three houses that are on the west side of this property.

ASSOCIATE PLANNER CLAUDIA MANRIQUE – Yes, all three sides are going to have decorative block walls. There is that access easement right there on the west to the three single-family homes that exist in the back. It was decided that it was not in the best interest of this project to have entrance or exit off the easement. Originally, when this project came in as an 18-unit condo project, the entrance and exit were off the easement. But, when the project came in in 2014 with the request for more units, it was found that it would be more….it was better for the site to have the single entry in the center of the site.

COMMISSIONER SIMS – So just to make sure I understand it, there is going to be a block wall all along the west property line?

ASSOCIATE PLANNER CLAUDIA MANRIQUE – Yes.

COMMISSIONER SIMS – And the easement that's back there, is that, what kind of improvement is that going to be? Is that just a dirt road or what would it….what is that?

ASSOCIATE PLANNER CLAUDIA MANRIQUE – It remains the dirt road in the same existing condition as it is now.

COMMISSIONER SIMS – Is there any…..I didn't see any conditions for any improvements along Hemlock. There's no stacking. There's no right turn in or anything. Yeah, I personally have real problems with it. There's a small throat and entrance into this, but anyhow I'm not a transportation engineer. I just, I just get a sense that there is going to be real clusters and angst among the residents that are in there. I could, you know, I think the project is great absent building C. If building C wasn't there or half of building C wasn't there where you could have a stack, a turn lane, or a wider throat to get in and out of this thing. You know, it might be more convenient long-term, but anyhow let's listen to the rest of the Commissioner's concerns.

CHAIR LOWELL – Any other questions? Commissioner Nickels.

COMMISSIONER NICKELS – Yes. One of the things I noticed was your carport, which is wonderful for apartments, but the first thing that stood out was we could have solar panels. Then, when I read through your specs, it says that's for the future. My concern is, if you're relying on it that way, it will never get done. So I don't know why that approach was taken. I also didn't see…..I know there was one parking space over, if I'm correct, and no parking space designated for a charging station for anybody's car. Is that going to be rotated throughout whoever has electric cars their time to charge their car? And then my other concern was, how many of the units are designated for disabled? I didn't see that. So those are my same concerns. I do share the same concern Commissioner Sims has in regards to traffic as well.

CHAIR LOWELL – I have a question. There is a lot of talk here tonight and some other projects going around the city as to whether they've got Section 8 Housing. Could you guys give me a brief description or a better understanding of what exactly Section 8 is and is a project designated Section 8 or can people apply for Section 8 funding for a specific residence?

ASSISTANT CITY ATTORNEY PAUL EARLY – Alright, so the basic overview, Section 8 Housing is a HUD subsidized voucher that people apply for. There are very, very long in the order of years or decades waiting lists to obtain those vouchers. There's a very limited number of them. Once a family obtains such a voucher, they then use that take any housing that they want to that will accept it, and they pay part of the rent and the voucher will pick up a fixed amount as well. In California, currently, landlords have the ability to reject Section 8 Housing. They are allowed to discriminate basically and say we don't take Section 8 Housing. However, there is a bill that is currently in committee in Sacramento that would prohibit that. A number of states do prohibit that and would force landlords to accept it. In many cases, especially with nicer units such as this, jurisdictions will see Section 8 Housing as a benefit because it has a number of other stern requirements with it. Can't have any criminal activity, people with felonies in the house, so it does add a certain element of enforcement also to protect against difficult tenants. But, it is strictly at this point, at the discretion of the property owner whether or not to accept those vouchers or not.

CHAIR LOWELL – In clarifying, the apartment complex itself would not be designated Section 8 Housing.

ASSISTANT CITY ATTORNEY PAUL EARLY – I'm not aware of any such designation. There are designations where properties will come in to get certain tax incentives by setting aside a certain number of their units for certain low-income qualified tenants who may or may not also be Section 8 recipients. So that may be the confusion. That may be what people are thinking of when you're saying Section 8 Housing. From my understanding, this is not a low-income housing project that has certain quotas for low-income qualified tenants.

CHAIR LOWELL – The development company and the management agency don't have to apply for some special approval or license to become Section 8 accepting?

ASSISTANT CITY ATTORNEY PAUL EARLY – No.

CHAIR LOWELL – So anybody can come into any apartment complex, residential rental unit, whatever, and say hey I have a Section 8 Funding Voucher and I want to rent this building? It doesn't matter?

ASSISTANT CITY ATTORNEY PAUL EARLY – Correct. HUD does have to……HUD has their own inspection process and approval to make sure that the property is not substandard.

CHAIR LOWELL – Correct.

ASSISTANT CITY ATTORNEY PAUL EARLY – So a property could be disqualified from accepting Section 8 by HUD or the local Housing Authority, but it's not a prequalifying circumstance as far as I'm aware.

CHAIR LOWELL – Okay, that explains a lot. I was at a community gathering a couple of weeks ago and a lot of people were concerned about Section 8 Housing, and I was uneducated on it and now I know a lot more. I appreciate it. Thank you. One of the other questions I have is LD7, their talking about BMP's and water quality management, that's, I read a lot of the WQMP's, and I don't see any water quality management feature on this property. I see a little open area that is not paved, and I'm assuming that's where some BMP is going to be installed, but how is this project going to address water quality concerns?

ASSOCIATE ENGINEER VINCE GIRON – Good evening, Vince Giron with the Land Development Division. To answer your question Chair Lowell, there are two….there are several BMP's throughout the site. The two major ones are going to be infiltration trenches and the larger, they are both similar in size, but one will be in between building B and D in the landscaped area. The other one will be just north of building C in the landscaped area. And they also have a few other types of fossil filters throughout the site, and I believe a couple more gravel infiltration pits as approved with the PWQMP.

CHAIR LOWELL – Okay and then my final question is, is the driveway easement to the west, I believe that is an easement that's on the neighboring property allowing the neighboring properties access to their property and it's not on this specific property?

<u>ASSOCIATE ENGINEER VINCE GIRON</u> – You know, it looks from the Site Plan that it's actually part of this property that grants it to those homes. I'd have to look at the file in more detail.

<u>CHAIR LOWELL</u> – Well the question I had is, that I was leading towards is, I'm also slightly concerned with only having a single point of access. If the southern portion of the project was mirrored and building C was on the west and building A, B, and D were on the east, it would gain the ability to have secondary access to that driveway easement. And it's not a make or break situation. The Fire Department seems to be okay with it but, in the past, we've turned down projects because they didn't have more than one point of access. It does pose a traffic issue in the morning and, in the evening, people are coming in and out in an unmetered intersection with a lot of cars coming in and out in the morning. Plus, if somebody crashes or breaks down, you're blocking half the road. It's not good.

<u>ASSOCIATE ENGINEER VINCE GIRON</u> – You know, one of the challenges with the site early on, the constraints, was the width and the circulation on site. And, you know, we went round and round internally trying to come up with a good circulation, which is why it was suggested if the additional properties could be purchased. And one of the challenges with access through that easement on the west side is there's that, if you will, that right degree, two rights by building B where it's a 90 degree angle, two of them. So it was posing a challenge to get emergency vehicles through that and negotiate those turns with a viable Site Plan. So it posed a challenge.

<u>PLANNING OFFICIAL RICK SANDZIMIER</u> – If I may add just a little bit. With regard to the site design, you talked about the BMP's already and where the water quality treatment areas would be located. If you flip flop the design, because of the drainage on the site and the topography on the site, they may not be able to achieve the same sort of BMP. So there are a lot of moving parts when it gets to that. We could ask the architect to come up, but that would be one of the obvious challenges that I'm seeing.

<u>CHAIR LOWELL</u> – Alright, and I know I said last question, but this is my last question. We have handicapped parking, and we have a lot of other parking stalls. Do we have electric vehicle charging stations here? Do we have any other designated parking for low emissions/natural gas. I know CALGreen requires a certain amount of those parking stalls be designated as such.

<u>ASSOCIATE PLANNER CLAUDIA MANRIQUE</u> – Currently, the standards are for commercial projects, so as a residential this project wasn't required to have either a charging station or the low emission spots designated.

CHAIR LOWELL – Okay that answers my question. I didn't realize that CALGreen didn't apply to residential. I'm learning a lot tonight. Thank you very much, and we have a couple more speakers. Commissioner Gonzalez.

COMMISSIONER GONZALEZ – Hi. I just want to add to Paul's comment on Section 8. My day job is, I work for the Housing Authority, so I'm fully aware of there's family seniors that are voucher holders right now and right now it's a landlords market. They are being turned away because the economy has improved and people can pay high rent, so it's not easy, and again it's a choice that landlords have. And they do their screening. Our inspectors do housing quality standards inspections, and it's a partnership between the Housing Authority, the family, the tenant, and the landlord. So I would be more than willing to have, you know, maybe a presentation if the Planning Commission would like or even the City Council to do a little bit more education on Section 8 Housing.

COMMISSIONER NICKEL – Yes because the governor has declared an affordable housing shortage, and that we may not have much choice or say at the local level in dealing with the issue. A lot of bills are pushing through the legislature right now, which is separate from Section 8 Housing.

CHAIR LOWELL – Any other comments?

COMMISSIONER GONZALEZ – I just want to add a few things. As far as, you know the single point of access or two points of access, I'm concerned if these type of smaller projects that don't quite meet the threshold don't require two points of access. We just got to make sure that we're not, you know, that we're meeting the standard requirements and not customizing every single project. If not, maybe we need to revisit what is required for two points of access to make it safe or make it make more sense. I just want to make sure that we don't….that our experts, our Fire Department and transportation experts, don't require it. If not, maybe that is something we need to revisit and see if these type of multi-family projects require additional points of access so it makes more sense. So just want to put that out there.

CHAIR LOWELL – Commissioner Sims.

COMMISSIONER SIMS – I mean the analogy for me on this is, and I appreciate the comments from the Fire Department that this meets the threshold, and I don't know the minimum threshold for that. So I don't know if it got just squeaked over, but I would have likened this to having a big truck trying to go up Chiriaco Summit. And, yeah, you can get up the hill. But you went five miles an hour, and you caused aggravation and angst for every other driver on the road. So, you know, yeah it got up to the top of the hill. So, long story short for me is, I like the project. I don't like building C. I think it could be modified for 31 units rather than 39 units, and you could improve the ingress and egress. I still think it would be marginal at that, but I think a person should be able to develop their property and it's the right zoning for this. I just think but not every project should be optimized or maximized for number of units at the expense of safety and convenience and usability, so I personally will be voting no on this as is so.

<u>CHAIR LOWELL</u> – Any other questions or comments? I don't see any hands going up. Would anybody like to make a motion? Everybody jump up at once. Wow, stalemate over here. Let me get my paperwork out. I would like to motion to approve Resolution No. 2016-19 and thereby certify that this item is exempt from the provisions of the California Environmental Quality Act (CEQA) as a Class 32 Categorical Exemption CEQA Guidelines Section 15332 for In-Fill Development and (#2) approve Plot Plan PA14-0027 based on the findings contained in the Resolution and subject to the Conditions of Approval included as Exhibit A of the Resolution. Do we have a second?

<u>COMMISSIONER BAKER</u> – I'll second.

<u>CHAIR LOWELL</u> – I have a motion. Commissioner Baker, could you hit the second button? We have a motion and a second. Please cast your vote.

<u>COMMISSIONER SIMS</u> – Wait is there still an opportunity to talk before we vote?

<u>CHAIR LOWELL</u> – We have a motion and a second. The vote is on the table. I guess, if you really wanted to talk, I could let you. But is it earth shattering?

<u>COMMISSIONER SIMS</u> – I just as is, like I said, my vote will be no, so that's for that. But I do…..I don't know where everybody else is at, but we just heard that there was not a Traffic Study done for this for whatever reason. It didn't meet the minimum threshold for that. Instead of a vote, and I don't know where the vote is. We could certainly proceed on and go with that, but a potential could be is to continue this and allow a transportation study to be done to see what the actual real deal is on this instead of speculating and come back with a little bit more information and see what we have.

<u>CHAIR LOWELL</u> – We have a motion and a second on the table, so if you….let's see how the vote comes out and, if it doesn't pass, then we'll make some other motions. Waiting on Commissioner Nickels. All votes have been cast. The motion passes 5-2. Do we have a Staff wrap-up on this item please?

Opposed – 2

Motion carries 5 – 2

PLANNING OFFICIAL RICK SANDZIMIER – Yes this is an item that is appealable. If there is anybody that is interested in appealing the project, they can file an appeal through the Community Development Director to the City Council within 15 days of this action, and that item would be scheduled for a City Council Hearing within 30 days of the appeal.

CHAIR LOWELL – Thank you very much. That moves us onto the second item tonight, which is PA16-0013 Tentative Parcel Map. The owner is Catherine Kormos, and the Case Planner is Mr. Gabriel Diaz.

2.	Case:	PA16-0013 Tentative Parcel Map
	Applicant:	LGS Engineering, Inc.
	Owner:	Catherine Kormos
	Representative:	Loren Sandberg
	Location:	Northeast corner of Jeranella Court and Alessandro Boulevard
	Case Planner:	Gabriel Diaz
	Council District:	3
	Proposal:	PA16-0013 Tentative Parcel Map 37104

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2016-20, and thereby:

1. **CERTIFY** that PA16-0013 Tentative Parcel Map 37104 qualifies as an exemption in accordance with the California Environmental Quality Act Guidelines, Section 15315 (Minor Land Divisions); and

2. **APPROVE** PA16-0013 Tentative Parcel Map 37104 subject to the Conditions of Approval included as Exhibit A to Resolution No. 2016-20.

PLANNING OFFICIAL RICK SANDZIMIER – We're trying to get our IT folks to put the image up for Item No. 2.

ASSOCIATE PLANNER GABRIEL DIAZ – Thank you Commissioner and Chairman. Gabriel Diaz here, Associate Planner with the City. We're here to review case PA16-0013 (Tentative Parcel Map 37104). The project is located at the northeast corner of Jeranella Court and Alessandro Boulevard. It's within Council District 3. The zone is Residential 3, R3. The Applicant representative is Loren Sandberg, and I believe Loren is here today. He is the project engineer. The owner is Catherine Kormos. LGS Engineering, Inc is providing Tentative Parcel Map 37104, which we see up there. Here is an aerial photo. Back to the map. It's going to subdivide one legal parcel into two parcels on 1.1 gross acres of land. The property does have two separate assessor parcels currently. Parcel one and parcel two were established prior to 1972 prior to the Subdivision Map Act. Sometime thereafter this occurred, the two parcels were transferred by grant deed to the current owner. This essentially established the two parcels into one legal parcel. So you can see that at the northeast corner of Jeranella Court, there are two parcels on our Land Use Map here, and there are two separate assessor parcel numbers, but legally it is one parcel. So the proposed map is intended to formalize the subdivision. The project site has been improved and includes four existing family homes on the aerial there. The areas surrounding the project to the north, east, south, and west are zoned single-family residential (R3). There are existing single-family homes to the west and east. To the north and south are empty lots. Alessandro Boulevard and Jeranella Court are the two main access roads to the Parcel Map. All four of the existing homes have existing onsite parking. No new development is being proposed with this proposal. The lots proposed are consistent with the City Development Standards for lot size, lot depth, lot width within the R3 zone. Public notice was sent to all property owners within 300 feet. The notice was published in the paper, Press Enterprise, on August 13th. The project site was posted onsite on August 12th. Environmentally, this project has been reviewed, and it has been determined that it will not have a significant effect on the environment and qualifies for an exemption under the provisions of CEQA as a Class 15 Categorical Exemption Section 15315 for Minor Land Divisions. It's one parcel becoming two parcels. Staff recommendation is that the Planning Commission certify that PA16-0013 (Tentative Parcel Map 37104) qualifies as an exemption in accordance with the California Environmental Quality Act Guidelines Section 15315 Minor Land Divisions and approve Case No. PA16-0013 Tentative Parcel Map 37104 subject to the Conditions of Approval and attached Resolution. This concludes Staff presentation. Do you have any questions?

CHAIR LOWELL – Thank you very much. Do we have any questions for Staff? Commissioner Gonzalez.

COMMISSIONER GONZALEZ – Mr. Diaz, I just want to make sure that parcel one, based on the existing structures, will still be nonconforming correct?

ASSOCIATE PLANNER GABRIEL DIAZ – Correct.

COMMISSIONER GONZALEZ – I just wanted to put that out there.

CHAIR LOWELL – Any other questions for Staff? Perfect. Let's move onto the Applicant. Would the Applicant like to say anything?

APPLICANT LOREN SANDBERG – Good evening. Loren Sandberg with LGS Engineering. I really don't have anything to say. I'm just here to answer any of your questions that you may have.

CHAIR LOWELL – Thank you. Any questions for the Applicant? Moving right along. Any Public Comment Speaker Slips on this one?

ADMINISTRATIVE ASSISTANT ERICA TADEO – No.

CHAIR LOWELL – Then keeping moving right along. Would the Applicant like to reply to anything they heard from the Public Speakers? Okay, Public Comments is now closed. Let's move onto the Commissioner Discussion. Do we have any questions or concerns? I don't see anybodies hands going up. Is Jeranella Court going to have any improvements included with this subdivision?

ASSOCIATE PLANNER GABRIEL DIAZ – No.

CHAIR LOWELL – I'm looking on the tentative, and it shows corner cutback dedication, future curb and gutter and sidewalk and median on Alessandro.

ASSOCIATE PLANNER GABRIEL DIAZ – Correct.

CHAIR LOWELL – That's not part of this subdivision?

ASSOCIATE PLANNER GABRIEL DIAZ – No. I think it is part of the dedication at a future point.

CHAIR LOWELL – As far as the actual improvements go?

ASSOCIATE PLANNER GABRIEL DIAZ – Yeah, but no actual improvements are being done at this time.

CHAIR LOWELL – Okay and, on parcel one, there are three single-family residences. Are they all the same owner and occupier like mom, kid, grandma that kind of thing or is it separate families, and is that legally allowed on this project?

Minutes Acceptance: Minutes of Aug 25, 2016 7:00 PM (APPROVAL OF MINUTES)

ASSOCIATE PLANNER GABRIEL DIAZ – I'm not sure what the, whose in each building, but I believe they are just grandfathered in. They were built sometime long ago. They each seem to have their own yard. I went out there and took a look as closely as I could to some of these properties, but I didn't walk onsite, and I didn't speak to any of the resident's onsite.

CHAIR LOWELL – Alright.

ASSOCIATE PLANNER GABRIEL DIAZ – But I believe the owner that owns all of them, I'm not too sure if they live onsite but is trying sell off one of the parcels so.

CHAIR LOWELL – That was leading into my next question is who is pursuing this land split, and you said it was the owner so….

ASSOCIATE PLANNER GABRIEL DIAZ – Yes. It was, I'm obviously the planner on here. But, when I took this project in, I was like well what's going on. When you look at the aerial GIS, there's two parcels and why is this in, and it's just I think throughout the years the grant deeds made it one legal parcel with one owner. But the two parcels are on the GIS and assessed by the county as two separate.

CHAIR LOWELL – Well if you look at that and try to hold that for fact, if you look at Mountain View, there is a cul-de-sac in a neighborhood on top of Mountain View.

ASSOCIATE PLANNER GABRIEL DIAZ – Yeah.

CHAIR LOWELL – Which I think is kind of hilarious. Okay, thank you. We have another Commissioner waving, Commissioner Sims.

COMMISSIONER SIMS – Yeah, thank you. What was the zoning, the underlying zoning?

ASSOCIATE PLANNER GABRIEL DIAZ – R3.

COMMISSIONER SIMS – So that would mean three units to the acre?

ASSOCIATE PLANNER GABRIEL DIAZ – Correct, net acre.

COMMISSIONER SIMS – Net acre. And what will the Parcel Map create for each lot, a half acre?

ASSOCIATE PLANNER GABRIEL DIAZ – No. They'll meet the zoning requirements for the R3 zone.

PLANNING OFFICIAL RICK SANDZIMIER – The minimum lot size for an R3 is 10,000 square feet, so we will have two sites that are meeting the acreage requirement or the square footage requirement. The number of units on parcel one would have three units, which would be outside of the requirements, so it would be legal nonconforming. And then the setback on parcel one for the home in the rear will be substandard, which it already is.

COMMISSIONER SIMS – Okay my second question is, are all the units on the property in the before and then in the two parcel condition, are they all on sewer or are they all on septic?

CHAIR LOWELL – I don't believe there is any sewer out there. I think it's all septic. That's just my assumption.

PLANNING OFFICIAL RICK SANDZIMIER – We don't have that information.

COMMISSIONER SIMS – Yeah I'm not even sure that this is even legal that you can create a lot and have, I know you can't have more than one home on a half acre on septic. That is just not allowed. So I don't know what this puts from a State Water Resource Control Board. If you went to the regional board, this would be strictly disallowed. So I think we're creating…..I personally don't have a problem with the split if this is, you know, if it's preexisting but this is perpetuating something that…..

CHAIR LOWELL – Making the problem worse.

COMMISSIONER SIMS – It's just making the problem worse, exactly.

CHAIR LOWELL – The one thing I would like to know is, if they are on septic, do the three buildings on parcel two share the same leach fields or do they all have their own leach fields and septic tanks?

PLANNING OFFICIAL RICK SANDZIMIER – I apologize. I don't have the answer for that tonight. If this is an important issue, my recommendation would be to continue the item until we can get those answers for you, but there is nobody here who can answer that question.

CHAIR LOWELL – My advice….

PLANNING OFFICIAL RICK SANDZIMIER – Unless the Applicant's engineer could.

CHAIR LOWELL – My assumption is that the single-family residence that is to the north end of parcel one, my assumption from an engineering standpoint is that the leach field is off to the east. And, by putting this line in, my assumption would be that the leach field would be disconnected from the property. I think that is something we need to answer before we can make any kind of educated decision.

APPLICANT LOREN SANDBERG – The only reason I know about the leach field is my original intent was to subdivide on the parcel lines without knowing anything else. In talking with the owner, the fence was actually moved five feet easterly, which is where the lot line is now proposed to facilitate the leach field for that back house. So the leach field is within the fence and will be within the property. I just don't know if it's one leach field for those three houses or three.

ASSOCIATE PLANNER GABRIEL DIAZ – Could I add to that? The way the north/south new parcel lines subdivide this, that line does meet the setback requirements for the two homes to the east and west. Maybe it just came out like that by luck, but that is something we did review.

COMMISSIONER SIMS – Well from a septic system and leach fields, the tank, there are certain minimum requirements for the septic tank proper plus the leach field from property lines and from because, you know, you don't want the leach field to fail and it goes into your neighbors yard. And so I would suggest that we at least understand what that situation is because that could be a big deal.

CHAIR LOWELL – Commissioner Gonzalez

COMMISSIONER GONZALEZ – Yeah I just want to add, I did some single-family development in Jurupa Valley with a similar situation. It was new development, though, and my understanding was that for new development a septic system it's half acre minimum so parcel two would be okay. Parcel one, that's where we need more information. If it's just grandfathered in, you know, they might be okay. But I know for new development, if you want to put in a septic system, you need a minimum of a half acre.

CHAIR LOWELL – Any other questions? I have a feeling Commissioner Sims would like to make a different type of motion tonight. I'm okay with continuing the item to get a little bit more information just to be on the safe side out of caution. I know that's not what the Applicant wants to hear tonight, but I'm okay with continuing it just to get that extra little bit of information.

PLANNING OFFICIAL RICK SANDZIMIER – If I may, just for the Applicant's benefit, we do have another Special Meeting that is going to take place on September 8th. We will do everything we can to try and get back by September 8th to answer this question if that's okay with the Commission, but I did want to let you know that so you don't have to wait a whole month.

APPLICANT LOREN SANDBERG – Okay.

CHAIR LOWELL – On its face, I don't think anybody here has a problem with subdividing land. There are just some technical things we want to make sure we dot every I and cross every T.

APPLICANT LOREN SANDBERG – Good. I don't know if we'll be able to find out where the systems are but…..

CHAIR LOWELL – You can't just snap your fingers and make it happen?

PLANNING OFFICIAL RICK SANDZIMIER – And, if that's the case if we don't….if we do need more time, we'll let you know but we'll need to get the answer.

COMMISSIONER SIMS – Well I think for clarity for my sake, is just I think the answer is it's on septic and maybe you could verify if there….I think it would be a simple call to Eastern Municipal Water District to see if there is sewer. And, if there is, if any of the homes are connected, if the units are connected on there. Then, I think Staff should call Santa Ana Regional Water Quality Control Board and/or Riverside County Health Department and find out what the minimum requirements are on this.

CHAIR LOWELL – I'm going to lean on the guy from Eastern Municipal Water District, his opinion.

COMMISSIONER NICKEL – Yeah.

CHAIR LOWELL – Okay, with that said, do you recommend continuing to September 8th?

PLANNING OFFICIAL RICK SANDZIMIER – That would be my recommendation, yes.

CHAIR LOWELL – Then I would like to make a motion to continue this item until the next regular meeting on September 8th, 2016. Do we have a second?

COMMISSIONER BAKER – I'll second that.

COMMISSIONER NICKEL – Second.

CHAIR LOWELL – Go to this item, vote. I made the motion. Who seconded it?

COMMISSIONER BAKER – I did, well…..

COMMISSIONER NICKEL – You can, either one.

COMMISSIONER BAKER – I'll jump in on it.

CHAIR LOWELL – Somebody jump in on it. Perfect, now let's cast your votes.

CHAIR LOWELL – Commissioner Sims, Commissioner Baker, perfect. The motion passes 7-0. This item is continued to the next regular meeting on September 8th, 2016. Do we have a Staff wrap-up on that item for continuation?

PLANNING OFFICIAL RICK SANDZIMIER – It's just continued.

Opposed – 0

Motion carries 7 – 0

OTHER COMMISSION BUSINESS

CHAIR LOWELL – Perfect. One of the things that I forgot to do before the meeting even started, I was going to do this right at the front, but today was the State of the City Address. And I wanted to give tremendous thanks, even though I wasn't part of the State of the City events, I had nothing to do with it. I was just an onlooker. I wanted to give thanks to the media staff. They did a bang-up job. I know moving everything all the equipment from Council Chambers over to the ballroom and then back for tonight's meeting that they had everything set up was unreal. So I'd like to thank Tim Carroll, Rob Roseen, Bob Lorch, Larry Jaime, Steven Morrell, and Chris Devoe. They did a bang-up job, and they are doing a great job every night, and I really appreciate everything they do for us. Thank you guys. Any Commissioner Wrap-ups or Comments?

PLANNING COMMISSIONER COMMENTS

COMMISSIONER NICKEL – Yes. As I told you in the past, I've been participating with the League of California Cities Planning Committee Members. I attended a meeting up in Sacramento to plan the Planning Commissioners Academy for 2017, so it was a really good event. I'll share it with Erlan to see what he likes that we're putting forward in classes. One thing was determined from our academy that we went to that it was geared more too much towards Planning Staff and not Planning Commissioners, so we're rectifying that.

CHAIR LOWELL – One of the things I'd like to see in that meeting, if you do have more time to give input on it, is giving the Planning Commissions themselves a rundown of how the meetings run and how things work.

COMMISSIONER NICKEL – Yep.

CHAIR LOWELL – Because when we went up there, he was telling us about CEQA and the finer points of deciding what is CEQA exempt, what isn't CEQA exempt but really didn't give you any education on how to………

COMMISSIONER NICKEL – Yeah.

CHAIR LOWELL – Academy.

COMMISSIONER NICKEL – We got that covered.

CHAIR LOWELL – The mechanics behind it.

COMMISSIONER NICKEL – We got that covered.

CHAIR LOWELL – Alright. I would like to just give a little mention to Commissioner Jeff Barnes. He is going through some serious family issues lately. I just want him to know that my thoughts and prayers are with him, and I think everybody up here shares those sentiments. I wish him and his family all the best and a speedy recovery.

CHAIR LOWELL – Do we have any other Staff Comments or Commissioner Comments before we adjourn tonight? No I don't see anything.

ADJOURNMENT

CHAIR LOWELL – I would like to adjourn tonight's meeting to the next Regular Meeting of the Planning Commission on September 8th, 2016, at 7:00 PM right here in City Council Chambers. Thank you very much, and have a great night.

NEXT MEETING

Next Meeting: Planning Commission Regular Meeting, September 8th, 2016 at 7:00 PM, City of Moreno Valley, City Hall Council Chamber, 14177 Frederick Street, Moreno Valley, CA 92553.

Richard J. Sandzimier Date
Planning Official
Approved

Brian R. Lowell Date
Chair

CITY OF MORENO VALLEY PLANNING COMMISSION
REGULAR MEETING
CITY HALL COUNCIL CHAMBER – 14177 FREDERICK STREET

Thursday, September 8th, 2016 at 7:00 PM

CALL TO ORDER

CHAIR LOWELL – Good evening ladies and gentlemen. I would like to call to order the Regular Meeting of the Planning Commission. Today is Thursday, September 8th, 2016. The time is 7:02 PM. Could we have rollcall please?

ROLL CALL

Commissioners Present:
Commissioner Nickel
Commissioner Korzec
Commissioner Gonzalez
Commissioner Baker
Commissioner Sims
Vice Chair Barnes
Chair Lowell

Commissioner Ramirez - Excused Absent

Staff Present:
Rick Sandzimier, Planning Official
Summer Looy, Permit Technician
Chris Ormsby, Senior Planner
Jeff Bradshaw, Case Planner
Jennifer Mizrahi, Deputy City Attorney
Erica Tadeo, Administrative Assistant

Speakers:
Rafael Brugueras

Representatives:
Stacy Williamson
Dusty Barbee
Mike McPhee

PLEDGE OF ALLEGIANCE

CHAIR LOWELL – At this time, I would like to invite everybody to stand up and follow me in the Pledge of Allegiance. Place your hand over your heart, ready, begin. Thank you and please be seated.

APPROVAL OF THE AGENDA

Approval of Agenda

CHAIR LOWELL – I would like to ask someone to motion to approve tonight's Agenda.

VICE CHAIR BARNES – I so move.

CHAIR LOWELL – Motioned by Commissioner Barnes. Do we have a second?

COMMISSIONER BAKER – Second.

COMMISSIONER NICKEL – Second.

CHAIR LOWELL – We have dual seconds seconded by Commissioner Baker. All in favor say aye.

COMMISSIONER NICKEL – Aye.

COMMISSIONER KORZEC – Aye.

COMMISSIONER GONZALEZ – Aye.

COMMISSIONER BAKER – Aye.

COMMISSIONER SIMS – Aye.

VICE CHAIR BARNES – Aye.

CHAIR LOWELL – Aye.

CHAIR LOWELL – All opposed, say nay.

Opposed – 0

Motion carries 7 – 0

CHAIR LOWELL – The motion passes 7-0. Tonight's Agenda is approved. That moves us onto the Consent Calendar. I don't believe we have any Consent Calender Items tonight.

CONSENT CALENDAR

All matters listed under Consent Calendar are considered to be routine and all will be enacted by one rollcall vote. There will be no discussion of these items unless Members of the Planning Commission request specific items be removed from the Consent Calendar for separate action.

PLANNING OFFICIAL RICK SANDZIMIER – There are no items.

CHAIR LOWELL – Perfect. That moves us onto approval of Minutes, which again we don't have any Minutes tonight to approve.

APPROVAL OF MINUTES

None

PUBLIC COMMENTS PROCEDURE

Any person wishing to address the Commission on any matter, either under Public Comments section of the Agenda or scheduled items or public hearings, must fill out a "Request to Speak" form available at the door. The completed form must be submitted to the Secretary prior to the Agenda item being called by the Chairperson. In speaking to the Commission, member of the public may be limited to three minutes per person, except for the applicant for entitlement. The Commission may establish an overall time limit for comments on a particular Agenda item. Members of the public must direct their questions to the Chairperson of the Commission and not to other members of the Commission, the applicant, the Staff, or the audience. Additionally, there is an ADA note. Upon request, this Agenda will be made available in appropriate alternative formats to persons with disabilities in compliance with the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct their request to Guy Pagan, our ADA Coordinator, at (951) 413-3120 at least 48 hours prior to the meeting. The 48-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

NON-PUBLIC HEARING ITEMS

None

CHAIR LOWELL – I don't believe we have any Non-Public Hearing Items tonight. That moves us onto Public Hearing Items. Do we have any Speaker Slips on anything that's not on the Agenda items?

ADMINISTRATIVE ASSISTANT ERICA TADEO – Yes we do, one.

CHAIR LOWELL – Okay who?

ADMINISTRATIVE ASSISTANT ERICA TADEO – Rafael Brugueras.

CHAIR LOWELL – Okay, Mr. Rafael Brugueras if you would like to come up.

SPEAKER RAFAEL BRUGUERAS – Good evening Chair, Commissioners, Staff, residents, and guests: I wasn't going to say anything on the Non-Agenda, but when I looked up and I saw Ms. Nichols on the far end, I needed to say something and Gonzalez because that was the issue that we had on Tuesday; a big issue. And, at the same time, I'm also glad to see the five Commissioners that always come. This is one of the nicest meetings that I enjoy coming to because I know that I will always see seven people here. Seven Moreno Valley Residents that are faithful to the community and that's what makes it enjoyable to come here to see what they are going to do, what you're going to do, for the City of Moreno Valley. And I know the Staff has a few things that they are going to propose to you, and I recommend…..I looked at some of them, but I just want to say I'm really deeply grateful for you seven. I don't……however it turns out, I'm real happy here, and I thank you very much for serving our city. Thank you.

CHAIR LOWELL – Thank you very much, Rafael. Any other Comment Slips, Speaker Slips? Perfect, that moves us onto the Public Hearing Items. The first item tonight is Case No. PA16-003, the Tentative Parcel Map that was continued from the last meeting.

PUBLIC HEARING ITEMS

1. Case: PA16-0013 Tentative Parcel Map

   Applicant: LGS Engineering, Inc.

   Owner: Catherine Kormos

   Representative: Loren Sandberg

Location:	Northeast corner of Jeranella Court and Alessandro Boulevard
Case Planner:	Gabriel Diaz
Council District:	3
Proposal:	PA16-0013 Tentative Parcel Map 37104

STAFF RECOMMENDATION

Staff recommends that the Planning Commission take the following action:

1. **APPROVE** a continuance of the Public Hearing to the Planning Commission meeting of October 27th, 2016.

PLANNING OFFICIAL RICK SANDZIMIER – Yes, this is an item that was before you on August 25th. If you recall, this is a small Parcel Map, but there was some discussion, some questions, regarding the septic system and the leach fields. And we thought that, if we could resolve that issue in a short order, we would be back here tonight with that continued item. Unfortunately, we were not able to resolve those issues within two weeks. The Applicant is working with our Staff, and our Staff has been working with our City Attorney's office and everybody else to get the answers. We believe we will be prepared for this on October 27th, so we're asking this evening that you continue it to that date certain October 27th. What that does is it eliminates the need for us to Public Notice again if you just continue it to the date certain. Thank you.

CHAIR LOWELL – Perfect and, with that said, I would like to motion to approve a continuance of the Public Hearing to the Planning Commission Meeting of October 27th, 2016.

COMMISSIONER GONZALEZ – I'll second that.

PLANNING OFFICIAL RICK SANDZIMIER – Hold on one second.

COMMISSIONER GONZALEZ – Oh.

DEPUTY CITY ATTORNEY JENNIFER MIZRAHI – Mr. Chair and Members of the Commission, just for the record, can you please open up the Public Hearing just incase there is anybody here to speak on that item and then go ahead and continue just so that we have it on record. Thank you.

CHAIR LOWELL – Sure. With that, I will abstain on the vote, and I would like to open up Public Comments. Do we have any Comment Slips tonight on this agenda item? Okay, going once, going twice, sold. Public Comments are now closed. Now, I would like to make the motion to approve the continuance of the Public Hearing to the Planning Commission Meeting of October 27th, 2016.

COMMISSIONER GONZALEZ – I'll second.

CHAIR LOWELL – We have a motion and a second. Erica, can you get the….can you put the vote up on here, or should we just do a rollcall vote? There we go. We have a motion and a second. Please cast your votes. You have to abstain because you weren't here.

VICE CHAIR BARNES – Okay.

CHAIR LOWELL – Awesome. Perfect. The results are 6 yes, 0 no, 1 abstain. The motion passes. The item is continued to October 27th.

Opposed – 0

Motion carries 6 – 0 – 1 with one abstention

2. Case:	PA16-0010 Conditional Use Permit
Applicant:	Options For Youth - San Bernardino, Inc.
Owner:	23080 Alessandro Boulevard Partners, LLC
Representative:	Dusty Barbee
Location:	Northeast corner of Frederick Street and Alessandro Boulevard at 23080 Alessandro Boulevard, Suites 214-218
Case Planner:	Summer Looy
Council District:	5
Proposal:	CUP Options For Youth

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2016-17, and thereby:

1. **CERTIFY** that this item is exempt from the provisions of the California Environmental Quality Act (CEQA) as a Class I Categorical Exemption CEQA Guidelines Section 15301 for Existing Facilities; and

2. **APPROVE** Conditional Use Permit PA16-0010 based on the findings contained in the Resolution and with the Conditions of Approval include as Exhibit A.

CHAIR LOWELL – Moving us onto Item No. 2, which is case PA16-0010, Conditional Use Permit. The Applicant is Options For Youth - San Bernardino, Inc. The representative is Dusty Barbee. The Case Planner is Ms. Summer Looy. Do we have a Staff Report?

PLANNING OFFICIAL RICK SANDZIMIER – Yes, I just want to take a quick moment. Summer is our Permit Technician with the City. She has been with the City a long time. She is a very valuable Staff member, but she is not normally here, so I would just like to introduce Summer who is going to be making this presentation this evening. With that, I will turn it over to Summer.

PERMIT TECHNICIAN SUMMER LOOY – Thank you, Rick. Thank you Chairman and Commissioners. Today we have a Conditional Use Permit applied for by Options For Youth. Options For Youth is an independent study public charter school proposed to be located at 23080 Alessandro Boulevard, Suites 214-218 within an existing commercial center. The center is located at the northeast corner of Alessandro and Frederick. The school will occupy approximately 6200 square feet of the existing multi-tenant building. The school will serve students from surrounding areas not just the City of Moreno Valley. San Bernardino as well as Riverside County are allowed to enroll in their program. Students are required to attend sessions twice a week for one-and-a-half hours a day at those sessions. They will receive their assignments, take tests, and occasionally attend some group sessions. The students also are responsible as an independent study program to do four to six hours of independent study on their own at home to stay in track with the program. The students are also required to enter into contracts complying with and committing to the program, maintaining their attendance, production of their schoolwork, test performance, as well as all the site rules and regulations. The intent of the school is to either bring these students to a graduation, to a diploma, or to catch them up on their studies to be able to return to their traditional home school. The school will enroll approximately 50 students and, as I mentioned, the students are only there twice a week for one-and-a-half hours a day so the site will not typically have all 50 students there at any one time. The school will be…..it's standard. It's more office hours Monday through Friday 8:00-5:00, and then they will also be open four Saturday's a year to assist the students in SAT tests and other college preparation tests that they need to prepare for. And, if you have any questions on the operations of the school or whatnot, there are representatives from the school here tonight. The surrounding area to the north, east, and west of the commercial center is existing multi-family residential developments. To the south is undeveloped community commercial property. At this time, there are no proposed changes and no need for changes or circulation to the existing commercial center parking lot. The parking analysis prepared does not indicate any impacts to available parking to this tenant or existing or future tenants of the center. The majority of the students, according to my applicant's, are dropped off and picked up for their sessions. They don't drive their own vehicles there, therefore, also not creating any impacts for available parking to the center and/or taking public transportation to the site. The project, as Rick had mentioned, was previously approved through a Director's Hearing. And, through review of the Municipal Code, it was determined that because of its relation to the residential development a decision needed to be made by the Planning Commission so that is why we are here tonight. As stated, the school is within an existing commercial shopping center. Therefore, Staff has determined the project to be exempt from CEQA under Guidelines Section 15301C (Existing Facilities). The Public Hearing Notice was mailed to the property owners within a 300 foot radius of the property on August 26th, as well as also posted at the westerly driveway entrance of the commercial center on the 26th of August. I have received no calls, no written comments on behalf of this project. At this time, Staff recommends approval of the Conditional Use Permit PA16-0010 based on the findings in the resolution unless you have questions of myself or the Applicant.

PLANNING OFFICIAL RICK SANDZIMIER – Mr. Chairman. I do want to add a little bit on the Public Comments. While we didn't receive any comments from any of the residents within 300 feet of the site, we did actually receive a letter from the Airport Land Use Commission, which is a body of the County of Riverside. We received that letter. It is dated September 7th, which was yesterday, and it was very short notice. They are raising a question about wanting to see these sorts of applications brought to them because our General Plan has not yet been found to be consistent or in compliance with the recently adopted Airport Land Use Compatibility Plan in March. The letter is specific to requiring their review whenever there is a General Plan Amendment, a zone change, a change in building regulations. In this case, we have a Conditional Use Permit, which is kind of a grey area I will call it. And we tried to work with their Staff. Chris Ormsby may be able to provide some additional insight and our City Attorney here this evening has also reached out to the Airport Land Use Staff to try and work through this because one of the issues is, if we hold this up and go to the Airport Land Use Staff, they won't be able to hear it for two months. And we don't believe that is a reasonable request for something that we believe is in compliance with all of the interests that are identified in the Airport Land Use

Compatibility Plan itself anyways. So we are here tonight still recommending that the project move forward through the Planning Commission. We wanted to make sure that the record reflected that we are aware of the Airport Land Use Commission Staff's letter. I would like to ask Chris Ormsby to just go into a little bit of detail of the discussion we had with their Staff because we believe that their Staff does understand our position but, one of the other complications is, this week a couple of the Management Staff that would be necessary to help them make the decision to overturn the Staff decision was not available. So I just want Chris to highlight a little bit of that.

SENIOR PLANNER CHRIS ORMSBY – I did speak with Paul Rull of the ALUC office. His position was that they generally would review this type of project. However, it would be an administrative review. He thought that they would just have standard conditions of approval. That was his expectation. It's in Zone D of the Airport Land Use Compatibility Use Plan, which is a zone that doesn't have any restrictions really in terms of density in terms of the number of people you could have in a given building. The only use that's discouraged is spectator-oriented sports stadiums, and those are only discouraged. So here we have a tenant's space, which would basically be very similar in terms of the intensity of use to a retail building so there shouldn't be any issues there. The only item in this particular zone that could be a concern would be hazards to flight. This concerns outdoor uses such as you have some use outside that would attract birds. You have something that, you know, is somewhat reflective material being placed outside. In this case, everything is done indoors. There are no issues there. So, in that regard clearly under that particular zone, there shouldn't be any concerns on the part of the Airport Land Use Commission.

PLANNING OFFICIAL RICK SANDZIMIER – With that, we'll conclude our Staff presentation, and we're prepared to answer any questions the Commission may have.

CHAIR LOWELL – So, in light of what was just said, what is the anticipated plan of action as far as the Airport Land Use Commission is concerned? Are they going to weigh in on the project and vote on it or?

PLANNING OFFICIAL RICK SANDZIMIER – We believe that our discussions with their Staff today, our disclosure on the record this evening to make you aware that we have had that discussion in receipt of their letter, is sufficient for you to take your action and move forward. I will as a courtesy, a professional courtesy to Ed Cooper who is the manager and John Guerin who is their Principal Planner, I will extend a call to them next week and let them know what your deliberations were this evening. And if they have any concerns with the project, this is a project as I'll tell you in the wrap-up, is appealable within15 days. If they feel strongly about it, there is that option to them, so we think that they still reserve some rights. And so we don't expect them to do that, but that's what I will be doing next week.

CHAIR LOWELL – Okay. Do we have any questions for Staff before we move onto the Applicant?

COMMISSIONER SIMS – Yeah just one. Typically, I mean I appreciate Chris your explanation on the type of Class C, whatever the levels are for ALUC. But so typically, if there was going to be a concern and there was going to be an administrative review and there was going to be conditions out, it would've been because there would've been conditions consistent with don't put shiny stuff out that's going to be reflective. Don't do whatever. Don't have 38,000 people inside this 6000 square foot place. It could get wiped out. But we would have an expectation that the conditions would be correspondent to whatever their concerns were. And, through your conversation, those would've been….should be expected to be, would've been negligible, correct?

SENIOR PLANNER CHRIS ORMSBY – That's correct, right. Their Staff's understanding would be that it would only be reviewed at their Staff level. It wouldn't be something that would require Commission review.

CHAIR LOWELL – Generally when we look at schools or when we look at liquor stores and smoke shops, we look at them in proximity to sensitive areas, which is one thing we're going to be talking about tonight. And this same shopping center on this exact parcel, there is a liquor store, a food mart that I believe sells liquor. And then caddy-corner on the adjacent parcel, which is next to the carwash, there is a smoke shop. How does this new use of a school correlate with the smoke shop and the liquor license and the Caliente restaurant that also sells liquor?

PLANNING OFFICIAL RICK SANDZIMIER – We do not have any restrictions in our Code that preclude a school from being located next to those sorts of uses. So that's really the short answer.

CHAIR LOWELL – When Caliente came in front of us, they had to go to the Alcohol Board and get a permit to sell alcohol. Would this school jeopardize their permit?

PLANNING OFFICIAL RICK SANDZIMIER – I don't believe so. Hold on. I'm hearing concurrence here that we don't, neither one of us believe that that would be an issue.

CHAIR LOWELL – Alright. I have no problem with the project. I just want to make sure that the existing businesses don't have a negative effect when somebody new comes in that's a sensitive use. Okay, any other questions for Staff before we move onto the Applicant? Vice Chair Barnes.

VICE CHAIR BARNES – I have a question on the Conditions of Approval. It's kind of just a technical matter but my understanding of CUP's is that the conditions are what they operate under and, if they violate those conditions, theoretically their Conditional Use Permit can be revoked. Is that correct?

PLANNING OFFICIAL RICK SANDZIMIER – Yes.

VICE CHAIR BARNES – So if you read Condition P3 where it says they have a maximum of 50 students with six teachers and three support staff. If they enroll a 51st student, are they in violation?

PLANNING OFFICIAL RICK SANDZIMIER – Yes, they would be.

VICE CHAIR BARNES – Or if they hire a 7th teacher or a 4th support staff?

PLANNING OFFICIAL RICK SANDZIMIER – Technically yes. Somebody could raise an objection to that, yes.

VICE CHAIR BARNES – And then that's the level of detail that we manage the operation of somebody's business?

PLANNING OFFICIAL RICK SANDZIMIER – I believe that is reflecting what the application was that they as the Applicant described as their use. We can ask them when they come up if they want to clarify if there are any plans for them to expand the use. Within your discretion, if you feel that that condition is a little too tight and doesn't meet their future interest, we can work with them. As far as triggering any environmental issues, that's the only thing I'd be sensitive to. We don't want to say that they can have 38,000 people there because then all of a sudden we'd have to maybe go to the Airport Land Use Commission. But, on a serious note, we also want to make sure that it won't trigger any traffic impacts by having too large of a staff, and we don't want it to be too many people within the 6000 square foot space or I can't remember the exact…..

VICE CHAIR BARNES – Well, over and above this, there's occupancy requirements that would kick in I would assume over and above or separate from these conditions, right?

PLANNING OFFICIAL RICK SANDZIMIER – Our Building Code Regulations would…..

VICE CHAIR BARNES – Yeah

PLANNING OFFICIAL RICK SANDZIMIER – Dictate that.

VICE CHAIR BARNES – Yeah. Okay, it just seems extremely detailed for something as simple as this. And then, on P6, students will not be allowed to loiter before or after school. Loitering is already illegal, right? And how do we enforce that?

PLANNING OFFICIAL RICK SANDZIMIER – Loitering would be a response type of a complaint. Somebody would have to identify that loitering is taking place. We'd either send out somebody from our Code Staff possibly, if it's happening during normal working hours. Or, if it's something of a criminal nature or something that would be causing some concerns, obviously we could send out the police department if we got that sort of a complaint.

VICE CHAIR BARNES – Okay. Alright I was just curious about the source of those conditions. Thank you.

CHAIR LOWELL – Any other questions for Staff before we move on? Okay, I'd like to invite the Applicant up.

APPLICANT DUSTY BARBEE – Good evening, my name is Dusty Barbee. I'm the Assistant Project Manager.

CHAIR LOWELL – Do you have anything to say or were you……

APPLICANT DUSTY BARBEE – Ah nothing. We just wanted to say thank you for taking the time tonight. We're here to answer any questions you might have about the project.

CHAIR LOWELL – That is my favorite type of response from an Applicant. We like the project, we accept the conditions, we're good to go. Do we have any questions for the Applicant before we move on? Commissioner Gonzalez.

COMMISSIONER GONZALEZ – I was just curious. What made you decide this location here in the City of Moreno Valley?

APPLICANT DUSTY BARBEE – From our, we have a marketing and demographic…..

CHAIR LOWELL – Could you speak into the microphone?

APPLICANT DUSTY BARBEE – Department that finds locations based on kids that are at risk. We are a nonprofit so the kids don't have to pay any money to go to the charter schools, so a lot of time it has to do with the needs of the children in the specific area. So we have parameters by which we look for locations.

CHAIR LOWELL – Commissioner Barnes.

VICE CHAIR BARNES – Go ahead.

CHAIR LOWELL – One of the questions I had was it says that you can use or hire a maximum of six teachers and they plan to have classes of seven to eight students per teacher, which if you multiply those together, you get 48 total. But it says you're planning on enlisting or enrolling 50 students max.

APPLICANT DUSTY BARBEE – Well no I do think we have a little bit of difference, maybe we misread it, but it wasn't for us enrollment. We thought that it was maximum occupancy, that 50 was the maximum that we would ever have based on the square footage in an E occupancy that the 50 would be the most that would ever be in the school at one time. So, in an hour-and-a-half period, there would never be more than those 50 students.

CHAIR LOWELL – Okay, that makes sense. So does that add or help or hurt with the conditional use where it says the maximum enrollment of 50 students, but they are saying that there just wouldn't be more than 50 students at any one time. Do you have the anticipation of enrolling 70, 80 students but only 50 could be in the building at one time when technically it would be 48 because you have six teachers with eight students max?

PLANNING OFFICIAL RICK SANDZIMIER – You're saying maximum enrollment, and we're not reading that in the conditions so…..

CHAIR LOWELL – Well no, under the first paragraph on page 8, it says….it's not a condition. It says, the school proposes to enroll a maximum of 50 students with six teachers and three support staff. That was in the project summary.

PLANNING OFFICIAL RICK SANDZIMIER – Okay, in terms of the enforcement, the Staff Report isn't the enforceable item. It would be the Resolution or the Conditions of Approval so.

CHAIR LOWELL – But then Item P3, it says the school provides an independent study program for a maximum of 50 students.

DEPUTY CITY ATTORNEY JENNIFER MIZRAHI – Mr. Chair and Members of the Commission, what we can do if you'd like, we could clarify it. But how I read P3 is that is kind of how the Applicant thought about it, which is the school will provide an independent study program for a maximum of 50 students. They can have up to 50 students. That's how I read it, but should the Commission like to clarify that condition a little bit that would be fine as well.

CHAIR LOWELL – Well that's what I'm hearing from the Applicant is that they are saying that they are going to have 50 students at a time maximum, but they have envisioned having more than 50 students per quarter or enrolled in their facility. So, the way I read the report on the conditions tonight, it says the can only have 50 kids. That's it. But they envision having more.

PLANNING OFFICIAL RICK SANDZIMIER – We understand. We'll take a shot at giving you revised language.

CHAIR LOWELL – Okay. And one other, just for clarity, was I kind of caught wind of it what you were saying is that this is an assistance program for underperforming children not an advanced placement for high-achieving children.

APPLICANT DUSTY BARBEE – There are some students who come to us to go faster than traditional school or if their parents are opting for a school where they can kind of keep them at home. We have a lot of very religious parents. We have a lot of at-risk students. I would say the majority of the students are students who need that extra assistance, but we also do service students who want to go faster than traditional school.

CHAIR LOWELL – So it's open to all aspects of the spectrum?

APPLICANT DUSTY BARBEE – Yes.

CHAIR LOWELL – Perfect. And is there an age limit? Can you go, is it kindergarten and up? Is it specifically high school?

APPLICANT DUSTY BARBEE – They are seventh through twelfth grade.

CHAIR LOWELL – Perfect. We have Commissioner Sims ready to go to.

COMMISSIONER SIMS – Thank you. I just, out of curiosity, do you operate as options, what is it called, Options For Youth. Do you operate other facilities or schools in the area or nationwide?

APPLICANT DUSTY BARBEE – All of them are located in Southern California, and I would say the count is approximately 30.

COMMISSIONER SIMS – And how long are they, how long has this been going on?

APPLICANT DUSTY BARBEE – Oh my goodness, I can't give you the exact year, but I would say it's more than 25 years. And they are located, the headquarters is in Pasadena.

COMMISSIONER SIMS – And the sustainability of the school is, how long is the tenure of a school stay in a location typically?

APPLICANT DUSTY BARBEE – It depends. I mean, if there is big growth, then they sometimes have to relocate due to size. But I would say the leases that I've seen so far are approximately five years, but I think they've been in some locations considerably longer than that. I think 15.

COMMISSIONER SIMS – That's great. And then the other question I had is you said the students don't necessarily have to pay. So where's the funding generated from for this program?

APPLICANT STACY WILLIAMSON – We're a Public Charter School. We're charted through San Bernardino City Unified.

COMMISSIONER SIMS – Okay, thank you.

APPLICANT STACY WILLIAMSON – We don't have to pay, and we're nonprofit.

COMMISSIONER SIMS – Thank you.

CHAIR LOWELL – So you're chartered through San Bernardino City Unified, but you'd be servicing children in Moreno Valley and Val Verde Unified? So San Bernardino City Unified pays or do you get?

APPLICANT STACY WILLIAMSON – Well how charter schools work, to my understanding, is that a district will sponsor a chart school and have oversight over that charter school. The funding will come through the State and a portion of it will go to the chartering district that oversight over the charter school and the other portion will go to running the charter school.

CHAIR LOWELL – And at the completion of the senior year, where does the diploma come from? From the underlying school district, from San Bernardino City School District?

APPLICANT STACY WILLIAMSON – They earn their diploma from us. We're fully WASC accredited, so their credits and their diploma from us is valid in any other place in the country.

CHAIR LOWELL – Okay, awesome. Thank you. Commissioner Gonzalez.

COMMISSIONER GONZALEZ – One final question. What's the closest similar school in the region?

APPLICANT STACY WILLIAMSON – Similar school as in Options For Youth?

COMMISSIONER GONZALEZ – Yes.

APPLICANT STACY WILLIAMSON – Or charter school?

COMMISSIONER GONZALEZ – Options For Youth.

APPLICANT STACY WILLIAMSON – Probably the closest one to us is the one that's in San Bernardino. We have two in San Bernardino City. Possibly Fontana might be close as well just in another direction.

COMMISSIONER GONZALEZ – Thank you.

CHAIR LOWELL – Commissioner Barnes.

VICE CHAIR BARNES – Yeah I just wanted to suggest that, if you guys have any concerns about the numeric restrictions in P3, that now is your time to bring it up because you'll be living with it for the duration of the period so.

APPLICANT DUSTY BARBEE – With the occupancy level, we're comfortable with that. This is the same stipulation that we've gotten in several other cities. I would just say it's the enrollment, which is….

VICE CHAIR BARNES – Yeah.

APPLICANT DUSTY BARBEE – Which is, you know, just the definition between the enrollment and the occupancy would be clarified, that would be great.

VICE CHAIR BARNES – Okay. Thank you.

CHAIR LOWELL – Mr. Ormsby.

SENIOR PLANNER CHRIS ORMSBY – We have some language for that if you'd like us to go over that now. Okay, Summer will…..

PERMIT TECHNICIAN SUMMER LOOY – So, with regards to Condition P3, we will change the wording to add a maximum occupancy of 50 students so occupancy being the number of students in the space at any one time, and this will be pursuant to the California Building Code based on the E-type occupancy and the maximum occupant loads. And then we'll add to that condition that this limitation has no bearing on the maximum enrollment of the students at the school. So, if they choose to enroll 80 students, again the maximum they will be able to have at the site at any one time would be 50 students.

CHAIR LOWELL – And we're certain that the maximum occupancy of that building for the Fire Code is 50? That's a fair number?

PLANNING OFFICIAL RICK SANDZIMIER – That's out understanding at this point, but by putting the language in the way we reference it, then that will be confirmed…..

CHAIR LOWELL – It's a failsafe.

PLANNING OFFICIAL RICK SANDZIMIER – Exactly.

CHAIR LOWELL – Perfect.

PLANNING OFFICIAL RICK SANDZIMIER – We can read the specific language if you want just so it's on the record. If I can take a crack at that just so it's recorded real quick. The school will provide an Independent Study Program for a maximum occupancy of students with six teachers and three support staff members pursuant to the California Building Code. That would be the first sentence. The second would say each teacher will serve seven to eight students for one-and-a-half hour sessions twice a week. That's the end of the second sentence. Then the additional sentence would read this limitation has no bearing on the maximum enrollment of the school. So we take out the reference to 50 and then it'll be tied to the Building Code. So, if it says 51 or 52, we're not ______ things. And, if they have 49 students at a time in any session, that's fine also. So that gives them the flexibility you're looking for.

CHAIR LOWELL – Just to kind of pad this a little bit more, the one-and-a-half hour sessions twice a week, if they wanted to come in and they were there for an hour and 45 minutes or two hours, is that going to be an issue with the CUP?

PLANNING OFFICIAL RICK SANDZIMIER – It would be. But, on that one, we would like to go with what they have requested because that does affect the turnover in the parking, the potential for in loitering and the other stuff. I mean, it's something we can manage by defining this closely. If they wanted to come in at a later date and decide that their program needs some refinements, there's a process for them to do so.

CHAIR LOWELL – I'm perfectly okay with the self-regulating restrictions. I just wanted to make sure that they weren't shooting themselves in the foot.

APPLICANT DUSTY BARBEE – That's how the business operates, so we're good with that.

CHAIR LOWELL – I like it, so I appreciate it. Any other questions for Staff before we move onto Public Comments? Nope? Thank you very much. We have two speakers waiting to speak, so I'm going to open the Public Comments portion. We have Stacy Williamson and we have Dusty Barbee. Well you can come up and speak again if you'd like. Do we have any other Speaker Slips tonight for this item?

ADMINISTRATIVE ASSISTANT ERICA TADEO – No we do not.

CHAIR LOWELL – There we go. Okay, last call for Speaker Slips. Going once, going twice, Public Comments are now closed. Moving onto Commissioner Discussion. Does anybody have any questions or comments, discussion or deliberation before we move to a motion?

COMMISSIONER SIMS – I'll make a motion.

CHAIR LOWELL – Moving right along. Go for it. I got to activate it first. You ready? Last call for comments. Nope? I'll entertain a motion.

COMMISSIONER SIMS – I'll recommend that the Planning Commission approve Resolution No. 2016-17 and certify that this is an item exempt from CEQA as a Class I Categorical Exemption and approve the Conditional Use Permit 16-0010 based on the findings contained in the Resolution with Conditions of Approval as Exhibit A and as modified by the Planning Official as he previously read into the record.

CHAIR LOWELL – Is that an okay motion?

PLANNING OFFICIAL RICK SANDZIMIER – Yes.

CHAIR LOWELL – Perfect. We have a motion. We have a second by Commissioner Baker. He beat you to it. Cast your votes. Waiting on City Attorney and Planning Official. I've never seen that before. Do you guys get to vote too? Perfect, all votes are cast. The motion is approved 7-0. Do we have a Staff wrap-up on this item?

Opposed – 0

Motion carries 7 – 0

PERMIT TECHNICIAN SUMMER LOOY – Thank you Chair and Commissioners and thank you Dusty and Stacy for attending the meeting. This will conclude the Staff Report. I appreciate the comments and the clarification on P3. That will allow them some more flexibility, so in the event their program here in the City of Moreno Valley is successful and they can bring more students into a better educational program, that's an excellent idea. Thank you again.

CHAIR LOWELL – Thank you, Summer. I've worked with you in the past at the counter on a couple different projects. This is my first time on the Planning Commission with you, and you did a great job. Thank you, Summer.

PERMIT TECHNICIAN SUMMER LOOY – Thank you.

CHAIR LOWELL – Turn your microphone on.

COMMISSIONER SIMS – Can I just ask a question?

CHAIR LOWELL – Yeah go ahead.

COMMISSIONER SIMS – This is just a technical question. When the mover makes a move to move an item, is it presumptuous of the computer to say that I approve of it?

CHAIR LOWELL – Yes because you motioned it, but you can change your vote after you make a motion.

COMMISSIONER SIMS – That's unfair.

CHAIR LOWELL – You can change your mind all day long until I hit end vote.

COMMISSIONER SIMS – How do you do that?

CHAIR LOWELL – Just click the button you want. You can motion to approve something and vote no against it and even abstain.

COMMISSIONER SIMS – Sometimes somebody needs to move it so we can vote.

CHAIR LOWELL – I'll just let you tap randomly, and then I'll just hit end at a random time.

COMMISSIONER NICKEL – Right.

COMMISSIONER SIMS – Okay, thank you.

CHAIR LOWELL – Ai-yai-yai. That's right.

PLANNING OFFICIAL RICK SANDZIMIER – Mr. Chairman, just a quick wrap-up.

CHAIR LOWELL – Yes, Sir.

PLANNING OFFICIAL RICK SANDZIMIER – I know you asked….

CHAIR LOWELL – Oh, yeah, okay go ahead.

PLANNING OFFICIAL RICK SANDZIMIER – Just a quick wrap-up. This item is an appealable action. The Planning Commission decision can be appealed to the City Council. Any interested party that feels that the application should be appealed can file their appeal within 30 days of this action. They may file it through the Community Development Director and, if we do receive that appeal, we would take it to the City Council within 30 days.

CHAIR LOWELL – Thank you, Sir. That moves us onto Item No. 3, PA15-0046 a Plot Plan and P16-083, a Variance. The owner is Granite Capital, LLC and the Case Planner is Mr. Jeff Bradshaw.

3. Case:	PA15-0046 Plot Plan P16-083 Variance
Applicant:	Rocas Grandes, LLC c/o La Jolla Development Group, Inc.
Owner:	Granite Capital, LLC and 26th Corporation, tenants in common
Representative:	Pasco, Laret, Suiter & Associates
Location:	Southwest corner of Alessandro Boulevard and Darwin Drive
Case Planner:	Jeff Bradshaw
Council District:	3
Proposal:	The project proposes to develop 426 multi-family residential units (Rocas Grandes Apartments) on 18 acres of a 27.41 acre site in the R30 and Open Space Zones. A Variance application is also proposed to make findings for a reduced landscape setback along the sites Brodiaea Avenue frontage due to site constraints.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission:

Minutes Acceptance: Minutes of Sep 8, 2016 7:00 PM (APPROVAL OF MINUTES)

1. **ADOPT** a Mitigated Negative Declaration for Plot Plan PA15-0046 and Variance P16-083 pursuant to the California Environmental Quality Act (CEQA) Guidelines; and

2. **APPROVE** the Mitigation Monitoring and Reporting Program prepared for Plot Plan PA15-0046 pursuant to the California Environmental Quality Act (CEQA) Guidelines included as Exhibit A; and

3. **APPROVE** Resolution No. 2016-22 and thereby **APPROVE** Variance application P16-083

4. **APPROVE** Resolution No. 2016-21 and thereby **APPROVE** Plot Plan PA15-0046 subject to the attached Conditions of Approval included as Exhibit B to Resolution No. 2016-21.

PLANNING OFFICIAL RICK SANDZIMIER – You've seen Jeff a lot of times, so I'll just let him go ahead and…..

ASSOCIATE PLANNER JEFF BRADSHAW – Thanks Rick. Good evening Chair Lowell and Members of the Planning Commission. This application includes, or I'm sorry, this project includes two applications as described in the title of the report, a Plot Plan for a 426 unit apartment project, as well as a Variance. And I want to provide some background about the project site and then provide some information about each of those applications. The proposal by the Applicant is to develop a 27 acre site located near the southeast corner of Lasselle and Alessandro. The project site is zoned both R30, which is a multi-family residential zone and open space. The project, when developed, would actually be located on the south side of Alessandro. Darwin Avenue would be constructed along the projects eastern boundary, and Brodiaea Avenue would be constructed along the projects south boundary. The project includes kind of some transitioning topography. It is leveled to rolling within the portions of the site that are zoned R30 and deeply sloping with boulders and rock outcroppings in the portion that runs kind of diagonally through the site that is zoned Open Space. There is no sensitive habitat or riparian areas within the project site, but there are mapped or known cultural resources on the project site. Staff worked with the consultants on some technical studies to adjust that, and I will provide some more information on that when we get to the environmental section of the report. Development, as proposed, would occur within the R30 portion of the site. We worked with the developer to respect the open space and to avoid any types of impacts within the open space portion of the property with the exception of the construction of Brodiaea Avenue. If you look at the alignment of Brodiaea, it would require that near the intersection of Lasselle and Brodiaea that there would be some construction that would occur within the hillside area. They would also disturb some cultural resources that are located there. The project site is bisected by two gas lines. One crosses the site east to west at about the midpoint and the other is a natural gas line owned by Southern California Gas Company within the Brodiaea Avenue alignment. There are some challenges with construction of Brodiaea Avenue, which will require some coordination in the future with Southern California Gas when they get to that stage to satisfy their requirements for relocation. Other than the construction of Brodiaea Avenue, there are no other structures or development that would occur within the open space portion of the site. The proposal for this multi-family project is consistent compatible with this area. There is both established single-family residential to the west and southwest and, to the northeast, there is also vacant land zoned for both single-family development and multi-family development in the vicinity. And in review of the project, it is clear that this use is compatible with the area and also consistent with the goals and objectives for the General Plan for this area of the city. Under the Plot Plan, the proposal would be to develop a 426 unit apartment project on 18 acres of the total 27. The project would include a mix of one, two, and three bedroom units and three different building types; 13 buildings that are two stories and then two four-story buildings, which is a little different for the City of Moreno Valley. Here is the Site Plan for this project. The two-story buildings are arranged so that they are in the portions of the site that are most visible from Alessandro and Darwin. The four-story buildings are located the furthest south. A Variance application has been submitted. To address a challenge that we ran into with this project in regards to the required landscape setback along the Brodiaea frontage, the request would be to reduce that setback area to seven feet frontage. The standard frontage setback would typically be 20. This setback does allow for a 7-foot planter area when in combination with the right-of-way that's there would allow for a 12-foot parkway and that area would be available to be planted with kind of our standard landscape, as well as some additional landscaping treatment that we have conditioned the project to provide. Staff had a chance to evaluate the request and found that because of the unique features of the property and the constraints associated with the site, protection of the sensitive open space land, the regular size and shape of the portion of the site available for development and _______. Sorry. Is that better? Sorry. Given the reasoning that we've stated in the Staff Report, Planning felt very comfortable supporting this request for the Variance and in making the findings that are needed to support that. There is a Resolution attached to the Staff Report that goes into detail with the various findings that need to be made to support the Variance. From the beginning, the developer was very motivated to see an apartment project take place on this site. They seem very committed to a quality development. As we worked with them through review, there was very little that Staff had to ask from them in terms of architecture or the quality of the design of the project. That was something they brought to us from the beginning. We did work with them through a series of reviews to adjust the Site Plan so that we could come up with a circulation concept, a parking concept, the siting of the buildings; all things that would ensure that they were able to satisfy our Code and provide a site layout that allows for fire access and other requirements of our Code. And so we feel very comfortable with what we're presenting to you this evening that it satisfies all the requirements of our Municipal Code. In terms of the environmental, the initial study was prepared for this project in compliance with the California Environmental Quality Act Guidelines that examine the potential for this project to result in impacts on the environment. The initial study, as prepared, does support findings for a Mitigated Negative Declaration. It was through mitigation that it has been suggested for this project. We determined that the project will not have a significant effect on the environment. Studies prepared for this project included a Traffic Study, Air Quality Study, Greenhouse Gas Analysis, a Cultural Resources Assessment, a preliminary Hydrology Study, a Geotechnical General Bio Analysis, and a preliminary Water Quality Management Plan. Out of the review of those technical studies, there were three categories within the initial study where mitigation was required, and those categories were cultural resources, paleontological resources, and traffic. And, with the adoption of those Mitigation Measures and a Mitigation Monitoring Program, the project would not result in any direct impacts to the environment. Standard notice was provided for this project in the newspaper. A 20-day notice was published for tonight's hearing. Mailing notices were provided to all neighboring property owners, and the site was posted as well. As of this evening, I have received two phone calls about the project. I believe both those residents are here tonight, and I assume they are not going to speak. In conversing with them, they didn't state any opposition to the project. They had some questions about the conditions of the project but didn't state any opposition to that. We did receive a letter this evening from the Pechanga Cultural Resources Department, the Native American Tribal Group, and I believe a copy of that has been provided to you. I had a chance to review the letter, and we provided a response to Pechanga this evening. Their two concerns were one the presentation of the Mitigated Negative Declaration and the obligation the City has to protect information regarding the specific location of cultural resources. And that is something that the City is committed to doing so, as the final copy of the Mitigated Negative Declaration is filed, we will make sure that information is kept separate in a confidential file and not available to the public. Their other concern was, if Brodiaea Avenue is not constructed, what assurances would they have that the cultural resources that would be disturbed through that construction if the road is not built, would those resources be protected? And the answer to that is, if this project proceeds and the road is not built and there is a change proposed, that would be reviewed on its own merits through a separate application and any impacts that might occur would be analyzed at a future date and under a separate application. In talking to them this afternoon, they seemed satisfied with that response. Additionally, we reviewed the Conditions of Approval after the Staff Report was circulated, and I believe there is a memo provided to you this evening. We found a number of instances where there is a reference to a map or map recordation, which doesn't apply in this project because there is no subdivision application, and so what we're proposing is a cleanup to the half dozen conditions that are referenced in that memo. With that, Staff would recommend approval of the project as recommended in the Staff Report with the Conditions of Approval amended as suggested. With that, that concludes my report, and I would be happy to answer any questions that you might have.

CHAIR LOWELL – Thank you very much, Jeff. Do we have any questions for Staff before we move on? I have a couple. Specifically, as far as the cultural resources, where are they located? You said they are down by Brodiaea and Lasselle?

ASSOCIATE PLANNER JEFF BRADSHAW – There are three locations within the project site. We're not supposed to disclose the particular locations.

CHAIR LOWELL – Correct.

ASSOCIATE PLANNER JEFF BRADSHAW – But, in general, in this instance when and if Brodiaea is constructed as required for the project, the construction of that road would impact map resources that are in the near vicinity of Brodiaea Avenue. The other resources that are mapped on the site are all located well outside of the envelope of where development would occur.

CHAIR LOWELL – Does the City have any means of keeping these artifacts for a City Historical or Cultural Center or Museum in the future?

ASSOCIATE PLANNER JEFF BRADSHAW – I'm not aware that the City does. What would need to happen, and this is in the Mitigation Measures, is a level of coordination with Pechanga and the other tribal groups that have expressed interest in the fate, if you will, of those cultural resources. What the mitigation identifies is, before site disturbance, before site construction begins but when they get to that point, there would be a meeting between the developer and the affected tribal groups. And they would come up with a plan of what would happen, and the preference is avoidance. And that can't happen in this case, so the next step is, what is the next best option?

CHAIR LOWELL – Location.

ASSOCIATE PLANNER JEFF BRADSHAW – They might discuss relocation. They might discuss documentation of what's there. They might suggest some testing of what's there for additional documentation. All that would be the belt I guess of this plan that they would come up with.

CHAIR LOWELL – Alright. I read the Mitigation Measures, and I do like them. I was just curious if the City moving forward, if and when we ever get a museum or historical or cultural center, it would be nice to keep some of our local artifacts local.

PLANNING OFFICIAL RICK SANDZIMIER – If I may. I think your comment this evening and, if other Commissioners feel the same way if we make that known just through deliberations, the developer is here. And, if they are in coordination with the Pechanga Tribe, we can also extend to the Pechanga Tribe or other interested tribes that we've had some expressed interest of, if we have to relocate any of the resources and they can be preserved, that maybe some consideration could be given to put them here in Moreno Valley. But, right now, we don't have any program that I'm aware of to actually take them and then take responsibility for them as well. So I don't want to overcommit and say sure we'll do that.

CHAIR LOWELL – Correct. I'd just like to have the option to maybe work with Pechanga in the future that, 20 years down the line if we ever get a museum, we could put their artifacts on display.

PLANNING OFFICIAL RICK SANDZIMIER – Correct. I think that's a good comment, and we can share that with the tribes as we work with them on this project and other projects in the future.

CHAIR LOWELL – Now, one other comment I have is, a couple years back we approved another apartment complex on the northwest corner of this same parcel. Is that project associated with this project? Are they two separate apartment complexes, two independent projects?

ASSOCIATE PLANNER JEFF BRADSHAW – They are separate and distinct from each other. The entitlements are separate. The applicants are different.

CHAIR LOWELL – So they are just completely two totally different projects?

ASSOCIATE PLANNER JEFF BRADSHAW – Two different projects.

CHAIR LOWELL – Thank you. Any other questions for Staff?

COMMISSIONER NICKELS – I have one.

CHAIR LOWELL – Commissioner Nickels.

COMMISSIONER NICKELS – There used to be a multiuse recreational trail out there, has that been abandoned or does anybody know?

ASSOCIATE PLANNER JEFF BRADSHAW – I'm not aware of any segments of a multiuse trail in this vicinity. I know there are segments along the Cactus Avenue frontage to the south, but I'm not aware of any on the Master Plan of Trails that would have been located along any of the frontages for this project site.

CHAIR LOWELL – Commissioner Gonzalez.

COMMISSIONER GONZALEZ – Did Pechanga also have concerns or comments on the project on the northwest, on the other side of the ridge there, or is it kind of isolate to the Brodiaea?

ASSOCIATE PLANNER JEFF BRADSHAW – The other apartment project that Commissioner Lowell was referring to, Chair Lowell, they did. We coordinated with them through a similar consultation process. The mitigation for that project was a little bit different. It was similar in that they were interested in ensuring that there would be tribal monitors that would participate during the grading process to ensure that any unmapped or unknown resources could be protected if something was discovered through the grading process. In that instance, there were no map resources that would've been disturbed by the construction of that other project, so there was no mitigation for that. But we did consult with them, and they did ask for monitors to participate.

COMMISSIONER GONZALEZ – Thank you.

CHAIR LOWELL – Any other questions or comments? Thank you. I'd like to invite the Applicant up.

APPLICANT MICHAEL MCPHEE – I'm Michael McPhee. I'm one of the principals of the Applicant Rocas Grandes in San Diego at 3555 5th Avenue. I'd be happy to answer any questions you might have.

CHAIR LOWELL – Do we have any questions for the Applicant? No? Thank you very much. That was quick and easy.

APPLICANT MICHAEL MCPHEE – I want to, you know, extend my appreciation publicly for working with your Staff. Most of the other work I have done has been in San Diego County and San Diego City mostly, and it's really a breath of fresh air to be able to come up here and be treated like something other than an invader. So it was a great experience. Thank you.

CHAIR LOWELL – Thank you very much. Do we have any Public Speaker Slips tonight, which we do. We have two Speaker Slips tonight. We have Rafael Brugueras and Mike McPhee. Rafael, you're up.

SPEAKER RAFAEL BRUGUERAS – Good evening again Chair, Commissioners, Staff, residents, and guests. This project is in my neighborhood. I go down Alessandro just to come here, so I've seen this dirt for a lot of years. And, Tuesday morning, I parked the car exactly where the project is going to be on Alessandro and Darwin. I got out, stepped on the dirt, and looked at it. And I took pictures, and I took pictures of the Public Hearing Board. And I looked at it because, again, the packet doesn't give me any justice. You actually got to go and see what's being proposed so people can understand what's being built there. You know, that's important for them to know that they are not going to have 426 cars out parked in the street. They are building 774 parking spaces on the facility. Okay, and in all areas, garage, carport, and all that stuff. And I got a chance to call Jeff because I saw two things that we always talk about when we're now building from this point on. One was the mailboxes to make sure they are in the right place, they are lit, and people can see them so we don't have that trouble come back. And the other one was charging stations. I saw 774 parking spaces, but I didn't see any charging stations that we can put while we're building it there. That was one of my concerns. The other one was, in the middle of the entrance of the where people are going to go in, people are dumping their mattresses. Here's a picture of it. This is why I support this project so we can stop that from people dumping stuff on the dirt so we can have something there where management can take care of. The other thing is I'm grateful for the fence that's there because, if that fence wasn't there, all the dirt and all the trash would be in the houses because it blows that way. And the other thing is the rain because it's like little mini mountains, all the rain, all the dirt, so I'm looking forward to seeing a sidewalk built there. I mean, there's a lot of good things. I'm hoping on the side of Darwin that he will have a wall. If there is a sidewalk, there will be a wall, so dirt don't go over to the other side. It will look neat because I looked at it, so I support this project because it's going to enhance the entire corner and probably make people glad they have new neighbors.

CHAIR LOWELL – Thank you, Rafael. Mr. McPhee, did you want to speak again?

APPLICANT MICHAEL MCPHEE – No.

CHAIR LOWELL – Perfect. Thank you. Any other Speaker Slips? Going once, going twice. Public Comments are now closed. Moving onto……Mr. McPhee, did you want to reply to anything Mr. Brugueras said?

APPLICANT MICHAEL MCPHEE – With respect to the charging stations, as a matter of fact, you have to have charging stations today. We are doing a project in San Diego with only 41 units and we've got five charging stations. Unfortunately, at the level of detail for this part of the entitlement work, you can't really show all of this. So we'll probably wind up with probably on the order of maybe one per 20 spaces with the prewiring so that we can add stations as demand requires it.

CHAIR LOWELL – And that's, I think that's in conformance with the CalGreen Code?

ASSOCIATE PLANNER JEFF BRADSHAW – Yes, that's correct.

CHAIR LOWELL – Stay up there. I have a question for you, Mike. Well the charging stations is one of them. I couldn't tell on the Site Plan, is this a gated apartment complex or is it not gated?

APPLICANT MICHAEL MCPHEE – It probably will be.

CHAIR LOWELL – Okay.

APPLICANT MICHAEL MCPHEE – Yeah. I think inline with most contemporary projects you typically want to have a gate.

CHAIR LOWELL – And the primary entrance will be off of Darwin?

APPLICANT MICHAEL MCPHEE – Off of Darwin.

CHAIR LOWELL – And the other entrance is along Brodiaea and Alessandro? Those would be exit only exits or emergency?

APPLICANT MICHAEL MCPHEE – No. There won't be any access off of Alessandro.

CHAIR LOWELL – So the only other entrances would be off Brodiaea?

APPLICANT MICHAEL MCPHEE – Right.

CHAIR LOWELL – And those would be entrances or exit only?

APPLICANT MICHAEL MCPHEE – Both.

CHAIR LOWELL – Well I was just trying to figure out how, if you had that gated on there, how you would have staging areas for more than one car?

ASSOCIATE PLANNER JEFF BRADSHAW – What we're presenting to you this evening is not a design that would anticipate gates unfortunately because what you're pointing out is accurate. There is no queueing distance off of Brodiaea.

CHAIR LOWELL – Correct.

ASSOCIATE PLANNER JEFF BRADSHAW – Or the secondary driveway off of Darwin. The primary entrance might allow for that.

CHAIR LOWELL – The primary entrance looks gorgeous. That would be a great place to have a gate, but so I guess what I'm hearing is that the design tonight is not gated. But you're saying that it might be gated?

APPLICANT MICHAEL MCPHEE – We'll probably gate it.

CHAIR LOWELL – So, if that's the case, is that a game changer for tonight?

ASSOCIATE PLANNER JEFF BRADSHAW – I don't believe so.

PLANNING OFFICIAL RICK SANDZIMIER – No. Simple answer, no.

APPLICANT MICHAEL MCPHEE – The reason we haven't made a final decision is we've run into opposition in other communities to projects being gated. So we prefer to gate the project as long as it is, you know, acceptable to the community.

CHAIR LOWELL – And, if the project is gated, the Site Plan would have to be modified slightly to allow queueing distances wouldn't it?

PLANNING OFFICIAL RICK SANDZIMIER – There would be a slight modification to the entrance off of Brodiaea. We believe that could be accommodated during the plan review process, the grading, plan check. Those would not be what we consider substantial changes.

CHAIR LOWELL – It would be an administrative review.

PLANNING OFFICIAL RICK SANDZIMIER – At the discretion of the Staff, we could elevate it to the Planning Commission if we felt that it became substantial, but those sorts of things are slight nuances that we've accommodated on lots of projects.

CHAIR LOWELL – Right. I didn't notice it in the planning, but I have another question. In the Conditions of Approval, on the adjacent property for the previous or the neighboring apartment complex that's not apart, one of the conditions was that along the southeast portion of the property they had to construct some sort of defensive structure to prevent boulders from rolling into the apartments. And I noticed building 10 is fairly close to the hillside. Is there any consideration for protecting the buildings from boulders should an earthquake hit?

ASSOCIATE PLANNER JEFF BRADSHAW – The results from the geotechnical in the slope stability analysis didn't suggest that any type of mitigation or protection was required. What you're stating about the other project is accurate, and those conditions were a direct result of the studies that were done for the project on the corner. We didn't have anything like that identified to us through the analysis that was done for this site.

CHAIR LOWELL – But it seems like we're building the same style product on both sides of the same mountain that the same situation should be apparent or…..

VICE CHAIR BARNES – This is the other side.

CHAIR LOWELL – Correct. But, if you look, the hillside their building right up here next to the hillside and there's……if you're looking at building 10, it's right up against the hillside. There is a little bit of a buffer but, if there's a boulder or anything that breaks loose in an earthquake, those things I'm sure would have a tendency to gain a lot of momentum and do a lot of damage to a building. The other buildings seem to be fairly well setback, and it wouldn't be an issue. But, building 10 that corner, it's right up against the site.

APPLICANT MICHAEL MCPHEE – I think the slope is really not that great at that location.

CHAIR LOWELL – Maybe it's just deceiving on the plans. That was just a comment that I had. Any other questions for the Applicant or in general? Alright. Thanks Mike.

APPLICANT MICHAEL MCPHEE – Thank you.

CHAIR LOWELL – I'll open up the discussion. Does anybody have questions or comments or discussion? I don't see anybody raising their hand. Does anybody want to make a motion tonight? Commissioner Gonzalez.

COMMISSIONER GONZALEZ – I make the motion to approve Staff recommendation to adopt a Mitigated Negative Declaration for Plot Plan PA15-0046 and Variance P16-083 pursuant to CEQA Guidelines, approve the Mitigation Monitoring Reporting Program prepared for Plot Plan PA15-0046 pursuant to CEQA included as Exhibit A, approve Resolution No. 2016-22 and thereby approve Variance application P16-083, and approve Resolution No. 2016-21 and thereby approve Plot Plan PA15-0046 subject to the attached Conditions of Approval included as Exhibit B to Resolution 2016-21.

ASSOCIATE PLANNER JEFF BRADSHAW – The conditions as amended.

CHAIR LOWELL – As amended.

COMMISSIONER GONZALEZ – As amended.

CHAIR LOWELL – We have a motion by Commissioner Gonzalez. We have a second by Commissioner Korzec. Please cast your votes and, even though motioned, you can change your vote. All votes have been cast. Three, two, one. The motion passes 7-0. Do we have a Staff wrap-up on this item?

Opposed – 0

Motion carries 7 – 0

PLANNING OFFICIAL RICK SANDZIMIER – This item is an appealable action of the Planning Commission. It can be appealed to the City Council. Any interested party interested in appealing the project would file a letter directed to the Director of Community Development, which would then go to the City Council. And, if such a letter is actually filed, we would place it on the City Council Agenda within 30 days for a hearing.

CHAIR LOWELL – Thank you very much. That moves us onto the final item tonight, which is Item No. 4. Let me get to my paperwork. Item No. 4 is Case PA16-0025, the Smoke Shop Ordinance. The Applicant is the City of Moreno Valley, which really isn't the Applicant, and the Case Planner is Mr. Mark Gross, which I do not see. And since this is a continued item, I don't know how we work on that.

PLANNING OFFICIAL RICK SANDZIMIER – I will cover for Mark.

CHAIR LOWELL – Awesome Mr. Sandzimier.

4. Case:	PA16-0025 (Smoke Shop Ordinance)
Applicant:	City of Moreno Valley
Owner:	N/A
Representative:	N/A
Location:	City-wide
Case Planner:	Mark Gross
Council District:	All Districts
Proposal:	Continued item - Ordinance regulating Smoke Shop uses city-wide

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2016-18 and thereby:

1. **CERTIFY** that the proposed Ordinance (amendment to Municipal Code PA16-0025) qualifies as an exemption in accordance with Section 15061 of the California Environmental Quality Act (CEQA) Guidelines, and

2. **RECOMMEND APPROVAL** of PA16-0025 to the City Council for the amendment of the City of Moreno Valley Municipal Code to modify Titles 5 and 9 including modification in the Permitted Uses Table attached as Exhibit A related to the city-wide regulation of Smoke Shop uses.

<u>PLANNING OFFICIAL RICK SANDZIMIER</u> – Good evening Mr. Chairman and Members of the Planning Commission. This is a continued item from the August 25th meeting. With me this evening also is Claudia Manrique in the back row. She also has been supporting Mark Gross on the project, so she will be available to help me answer any questions that you might have. This item is an item that has come before the Planning Commission at the direction of a subcommittee of the City Council. It was the Public Safety Subcommittee who is interested in exploring opportunities to regulate our smoke shops. I won't go into the background since we did already have a lot of that discussion, but I'm here to answer any questions you might have. What I would want to address is that the Planning Commission had a number of observations and a number of comments that were brought up at the last meeting. What we've tried to do, in the written Staff Report, is to address each of those specifically. Some of the items that were addressed had to do with just overall the overall consensus of the Commission was that the Ordinance as proposed may be too restrictive. It had possible implications on existing smoke shops that they may not be able to reestablish themselves if there was a change of ownership. There were concerns about first in rules so, if a school was to come in, would it affect the smoke shop? Those sorts of things are the things that we tried to address. Going through them one by one and starting on page 3 of your Staff Report, page 202 of the overall packet, there was some consideration of addressing the definition of smoke shops where we had previously identified that a smoke shop would be dictated in some part based on the percentage of floor space that's directed towards the smoke shop component. We have eliminated the 30% requirement from the definition. The actual definition has been rewritten on page 4 on your report. I'd be happy to read it into the record if that was necessary, but it is there for you to review, so I'll assume that it is already pretty clear. Allowing businesses to sell and reestablish at the same site through an ownership change, which I mentioned you felt might be too restrictive, Staff has eliminated that proposed language. Therefore, Section 9.02180, which is regulating nonconforming uses, will apply the same equally to smoke shops as it does to any other legal nonconforming use. The Smoke Shop Regulations that were considered to be possibly overly restrictive because we were going to require a Conditional Use Permit for all of those items within the Community Commercial Zone only. We opened it up, and we are actually allowing it to be in some of the other areas in the city not just the Community Commercial Zone. It would be allowed in the Neighborhood Commercial Zones as well. And the other thing that we did with regard to requiring a CUP is we looked at it, and we based the location similar to what we do on other uses in the city that have alcohol-related uses and so we reduce the buffer dimension to 300 feet. We also looked at the ABC Regulations and with regard to things like public schools on nonprofit youth facilities, childcare centers where the ABC Licensing requirement addresses those and requires a 600 foot dimension, we applied the 600 foot dimension so that we're consistent in that regard. With regard to establishing the first in time rights, we added paragraph H, which is identified on page 5 of your Staff Report, basically saying that should any of the land uses mentioned above in Subsection B within the Resolution, these draw the potentially sensitive uses. If any of those sorts of uses were to come in after the fact, after the smoke shop had already been established, they wouldn't jeopardize the establishment. So the smoke shop, as long as they are in compliance with all current regulations and not basically in violation and they are in good standing, they should not be jeopardized by those other uses. There was a question with regard to the existing smoke shops. We identified that there are 28 of them operating in the city, and there was a question regarding the status of their license. We did a check on all of the smoke shops, and we found out that all 28 do have legitimate business licenses. With regard to the distance requirements, this is one that took a little bit more time. In the previous report, we had identified that there was buffers of 500 feet, 750 feet, and 1000 feet based on different uses, and I won't go into all those details. But I'm here to answer any questions if you do want me to. We reduced those distance criteria's down to 200, 400, and 600 for a variety of reasons that are identified in the Staff Report. We believe that those restrictions are still consistent with what the Public Safety Committee was looking for to provide some regulations that would help us control this use, but we also think that it's sensitive to what the Commission brought up in your observations. We'll take any comments or questions you might have on that, but we believe what we're recommending tonight does also help with the previous requirement. With the 500, 750, and 1000 foot requirements, all 28 of the existing smoke shops were going to become legal nonconforming uses. By adjusting it to the 200, 400, and 600 foot requirements, particularly by reducing the proximity in residential to 200, we actually end up with 14 of the existing smoke shops would remain as legal land uses. So not all 28 would be legal nonconforming, half would be, half would not. With regard to the environmental determination that was discussed at the last hearing, we have found that this proposed project is exempt under 15061 of the CEQA Guidelines. Tonight we're asking that the Planning Commission certify that that environmental determination is correct. Public notification for the meeting, there was no additional public notice put out for this meeting because it was continued to this date certain. But we did notify the public through a one-eighth page ad in the Press Enterprise, and that satisfies a project of this magnitude, which has city-wide impacts. With that, Staff is recommending that you approve Resolution 2016-18 and thereby certify that the Ordinance qualifies for the exemption under Section 15061 of the California

Environmental Quality Act and that secondly you recommend approval of PA16-0025, which is the project number we've assigned to this project to the City Council for the amendment to the City Council's Municipal Code. Title 5 I didn't talk about, but we are looking at amending Title 5 and Title 9 in that recommended action. I'd be happy to go through those changes to Title 5, but that didn't seem to be the crux of any of the Commission's concerns so we're here to answer questions if yu have any on that still. And, with that, I will conclude my Staff Report.

CHAIR LOWELL – Is there a quick refreshment on Title 9 and Title 5 just to make sure we're all up to speed?

PLANNING OFFICIAL RICK SANDZIMIER – Sure. Title 9 is our Development Code, Land Use Regulations/Planning Regulations. Title 5 is…..

DEPUTY CITY ATTORNEY JENNIFER MIZRAHI – Title 5 is more of the business regulations and, as you may recall from the last meeting with respect to business licenses and tobacco retailer licenses, if somebody were to sell drug paraphernalia, we could actually have that as a grounds for revocation of the business license and tobacco license.

CHAIR LOWELL – Thank you very much. Since there's no applicant and we heard the City's comments, I would like to move to open the Public Comments portion and then I'll open up the floor to Commissioner Debate. Does anybody have any pressing issues before we move onto….

PLANNING OFFICIAL RICK SANDZIMIER – I'm sorry, Mr. Chairman, I do have….my apology on this one. The Airport Land Use Commission discussion that we had earlier on the other item, we actually received a similar letter from the Airport Land Use Commission on this one. What the Airport Land Use Commission has done is they've been reviewing the various agendas throughout all the cities in the area, and so we only got that by letter also two days ago, but this particular project is an amendment to our Development Code. And this one, we do believe, does need to go back to the Airport Land Use Commission Staff for their review and possibly, if they want to recommend to go to the Airport Land Use Commission for a recommendation, then we would want to follow through that process. But that can happen after the Planning Commission takes their action tonight. What we would be doing is be taking forward the Staff recommendation, the Planning Commission's recommendation, and then if there is an Airport Land Use Staff or an Airport Land Use Staff and Commission recommendation, we would take all of that to the City Council since the City Council is the final approval body in this, so I apologize for not including that in my report.

CHAIR LOWELL – Thank you. Does anybody have any opposition to opening up the Public Comments first? Perfect, I'd like to open the Public Comments. It looks like we have one Public Comment person. So we have Mr. Rafael Brugueras ready to go. I think we should just put a seat up there for you, Rafael. Save you the trip.

SPEAKER RAFAEL BRUGUERAS – Once again, good evening Chair, Planning Commissioner's, Staff, and residents. Think about what we just approved for 50 students and, before that was approved, there was a liquor store on the corner and a smoke shop on the other end. Is there a buffer there for like 100 feet between the schools? I mean, what he means by buffer space? Yes, okay, alright so that just hit me while I was listening to this. The other thing is since now we know that we're going to have students there and that's good because we want everybody to have a fair chance to be well educated, and I don't have a problem with that. But I need Staff to commit themselves by informing these two structures of what they are being part of in that community in that shopping center. In other words, are we going to have signs because remember all young people have change. They can always get a couple of bucks from their parents to buy a soda, a cake, and they are going to walk into these liquor stores or I don't know about the smoke shop and see things. You know, and I no we can't take no liquor store and make them put all the liquor in the back. You know what I'm saying or some of the stuff that people buy to use illegally to enhance their high, you know, because they are in there. I mean, they are there. So I'm just concerned about that part. I know the new entrepreneurs we have a better idea where we can put them away from schools and things like that and that's a good thing. I just came up with the one that we just did maybe half an hour ago, so I'm just hoping that the Staff makes them aware what's coming into that plaza so they can be aware what goes into their shop because these are young people that are still fresh. And they are absorbing what we teach them as adults. Anyway, we welcome all entrepreneurs into our City. We just want to make sure that we protect our students, our young people, and those that are like myself can't walk into some stores and be triggered because I was taught. You know, I just can't be in all areas because I have to concern myself about my past. You know what I'm saying? And just like movies, it's not like I like going to Las Vegas. You know what I'm saying? I mean just some places I can't go. That's why I like to go and see a dinner and a show and go home. So, anyway, think about that and let the Staff know that they got to make those two places aware of the kids that are coming.

CHAIR LOWELL – Thank you, Rafael. Any other comments, Public Speaker Slips? Going once, going twice. Public Comments are now closed. Moving onto our Commissioner Discussion.

COMMISSIONER NICKEL – Ah Chairman Lowell, I just want to go on the record, I won't be participating in the discussion or voting since I…….

CHAIR LOWELL – I was actually going to ask that once we got in with the Staff Comment. We have a unique situation here where we have alternates sitting and one of the alternates is now sitting for a Commissioner who has left that was sitting on it originally. So could we go through and just verify who was here and who wasn't here just to make sure that we have enough quorum because we have two alternates that can't count for quorum. We have one that has resigned, and then we have another that I think who was missing for illness. So I just want to make sure that we have the proper body that's able to vote.

PLANNING OFFICIAL RICK SANDZIMIER – From my understanding of our Rules and Procedures with respect to the alternates, the alternates were present in the room that night.

CHAIR LOWELL – They weren't sitting.

PLANNING OFFICIAL RICK SANDZIMIER – But even if they weren't sitting, when we developed the Rules and Procedures, the ways that we discussed the alternates would be able to come up to speed on a project and have to sit in and maybe continue the discussion was that, if they are present at the meeting, they participated. If they want to listen to the tapes or they want to read the Minutes afterwards, there are ways for them to educate….

CHAIR LOWELL – If I'm not mistaken, I believe that was a big point of contention and the final decision was that whoever was sitting on the item to begin with is the body that will be voting on the item throughout. And, if that person if a Commissioner missed, that's how they would get caught back up to speed was reading the Minutes and watching the video, but there would be no new people sitting on the item.

PLANNING OFFICIAL RICK SANDZIMIER – I recall it just slightly different, and I may be wrong. I can go back and look at this, but I thought that the situation was we didn't want Commissioners to be going in and out. So, if the Commission started with somebody on the Commission and the meeting was continued and the other Commissioner was not going to be present and we were talking about the World Logistics Center at that time, the item was that…..the one person that was going to be out of town couldn't miss the second meeting and then come back and resume on the third meeting. So, if somebody replaced the first Commissioner at the second meeting, they would be the one that continues for the rest of the debate and discussion so long as they brought themselves up to speed…….

CHAIR LOWELL – I don't think that's the way the rules are.

PLANNING OFFICIAL RICK SANDZIMIER – On the first…..

CHAIR LOWELL – I think that was what the original idea was, but we didn't like it for lack of continuity. So Ms. Korzec was the one that missed the second meeting. She watched the video and got back up to speed for the third meeting.

So the body that was sitting, from my recollection, was the body that is sitting throughout with no substitutions on the item just for continuity.

PLANNING OFFICIAL RICK SANDZIMIER – Okay, so I have to, just let me look at the Rules and Procedures to make sure I understand it correctly. In the case of…….

CHAIR LOWELL – Well, while you're doing that, why don't we figure out who was here just to clarify that?

COMMISSIONER SIMS – I wasn't.

CHAIR LOWELL – So, Commissioner Sims, you weren't here.

COMMISSIONER SIMS – I was not here.

CHAIR LOWELL – Commissioner Baker.

COMMISSIONER BAKER – I was here.

CHAIR LOWELL – Were you sitting or were you not sitting?

COMMISSIONER BAKER – I was sitting.

CHAIR LOWELL – Okay, I was here.

VICE CHAIR BARNES – I was here.

COMMISSIONER KORZEC – I was here.

CHAIR LOWELL – And Commissioner Nickel.

COMMISSIONER NICKEL – I was up there.

CHAIR LOWELL – So we have one, two, three, four. So we have four sitting Commissioners and one alternate, so we have a quorum. So we have five people that can vote.

DEPUTY CITY ATTORNEY JENNIFER MIZRAHI – Mr. Chair and Members of the Commission, did either Commissioner Sims or Commissioner Nickel actually have a chance to actually look or listen to the Minutes from last time?

COMMISSIONER NICKEL – I sat through the entire.

DEPUTY CITY ATTORNEY JENNIFER MIZRAHI – You were actually in the audience, correct?

COMMISSIONER NICKEL – Yes.

DEPUTY CITY ATTORNEY JENNIFER MIZRAHI – And did you have a chance?

COMMISSIONER SIMS – No.

DEPUTY CITY ATTORNEY JENNIFER MIZRAHI – You have not. Okay, so you're, okay.

CHAIR LOWELL – Want to take a quick two minute recess?

PLANNING OFFICIAL RICK SANDZIMIER – If you want to take a recess while I read through the rules, but we do have a quorum to have the meeting.

CHAIR LOWELL – We do have a quorum. Does anybody care? Okay we'll just keep going then. It's official. We're going to keep going.

COMMISSIONER NICKEL – We went through this on Tuesday night.

CHAIR LOWELL – So I guess we can look up for that answer later, Rick. One of the questions that I did have that I brought up during the Conditional Use Permit for the charter school was another comment that was echoed by Mr. Rafael Brugueras is that we have a charter school that has come into a shopping center after a liquor store, a liquor selling restaurant, and a smoke shop. And now, because of the new amendments, those existing facilities that sell cigarettes and tobacco products are going to be legal conforming and not legal nonconforming based on the proximity to sensitive areas. But should there be some minimum setback from this charter school to the other installations of alcohol and tobacco? I know the family market, it's one shop down, which is 80 feet away. We have the Cantina Restaurant, which is a couple hundred feet away and a smoke shop, which is 300 feet away. And per this form right here or per our amendments it says, for example, the proposed buffer this is for a smoke shop to another smoke shop has been changed from 750 to 600 feet. The smoke shop to a college university and vocational training facility are reduced from 700 for 400 feet. So that new reduction is now that existing smoke shop is closer than the minimum requirement, which the original comment was it would make it legal nonconforming, but should the vocational school or charter school have some sort of mandatory setback from the existing facilities?

PLANNING OFFICIAL RICK SANDZIMIER – What you're asking for would be for us to go in and do a Code Amendment specific to charter schools, for example, and say……

<u>CHAIR LOWELL</u> – I'm just curious if there some existing setback or minimum buffer?

<u>PLANNING OFFICIAL RICK SANDZIMIER</u> – There is not.

<u>CHAIR LOWELL</u> – There is not.

<u>COMMISSIONER SIMS</u> – I think that's what the deal is. First in time, first in place or you know what I mean.

<u>CHAIR LOWELL</u> – Yeah.

<u>COMMISSIONER SIMS</u> – It wouldn't be right just, if a guy has a legitimate business, then to say well……

<u>CHAIR LOWELL</u> – And that's what the first in time rule that we did…..

<u>COMMISSIONER SIMS</u> – We like the new business better than your business so you're out. That doesn't quite work.

<u>CHAIR LOWELL</u> – I really like what Staff has done with the amendments and the updates, and I think they are spot on.

<u>COMMISSIONER GONZALEZ</u> – Yeah they are.

<u>CHAIR LOWELL</u> – I was just looking for some clarity as far as this new school coming in if they had some requirements, but I guess they don't. There's no setback requirements or buffer zones. Do we have any other questions or comments? Commissioner Barnes. Sorry, Vice Chair Barnes.

<u>VICE CHAIR BARNES</u> – Commissioner is fine. I guess I just want to make the observation that I applaud the effort of the action to fill the loophole or plug the loophole in the Municipal Code as it relates to the drug paraphernalia offense. I know that's one of the prime goals of this. Unfortunately, I feel that the rest of it is mostly regulation for regulation sake. And since no problems have been identified per our last meeting as far as the 28 existing shops, I think I'm probably tilting the windmills here, but I'm going to vote against it because of the other components of it, which seem excessive and over the top as it relates to 28 businesses that as far as everybody is saying has operated totally legitimately and not caused any problems. So, although I applaud Staff's efforts, they are stuck between a rock and a hard place getting direction from above and comments from us, and they've done an admirable job at walking the line between them. My position is that it's overly regulatory, and I'm opposed to it for that reason,

<u>CHAIR LOWELL</u> – Commissioner Gonzalez.

COMMISSIONER GONZALEZ – Again, I want to commend Staff for doing all this research and especially reaching out to the 28 existing smoke shops. I was just wondering if you had any comments from them?

PLANNING OFFICIAL RICK SANDZIMIER – We have not.

COMMISSIONER GONZALEZ – Also, you know…..

PLANNING OFFICIAL RICK SANDZIMIER – I do want to correct that. At the last meeting, we actually did comment that we had a call from two I believe.

COMMISSIONER GONZALEZ – But no new comments?

PLANNING OFFICIAL RICK SANDZIMIER – But no new comments since that time.

COMMISSIONER GONZALEZ – And I also I like that the effort was made to coincide with alcohol and tobacco establishments, so I think it's a good medium where we're not targeting a certain sector or a certain group of businesses but yet trying to conform with alcohol and tobacco based establishments and their respected buffers and sensitive schools in their sector. So I am in favor of this modification.

CHAIR LOWELL – Can you refresh my memory as to what brought this specific action item to light? What was the initial desire to bring this to us?

DEPUTY CITY ATTORNEY JENNIFER MIZRAHI – Mr. Chair and Members of the Commission, it was pretty much….this is pretty much seen as kind of a prophylactic measure. It was kind of brought forward through the Public Safety Commission. I think there was some kind of sense of this could be a sensitive land use and so therefore we would like to see some of the land use aspects, some of the development standards, etc. kind of be more conducive to this possible sensitive land use. But, again, it was really prophylactic in nature.

CHAIR LOWELL – Okay. Do we have any other questions or comments before I move to a motion? I don't see anybody's hands going up.

COMMISSIONER BAKER – The only thing I would like to say is that I was glad to see that all the business license applications are up to date, right? That's what it says, and I think that's good.

PLANNING OFFICIAL RICK SANDZIMIER – Yes they are.

COMMISSIONER BAKER – Thank you.

PLANNING OFFICIAL RICK SANDZIMIER – I did find the section in the Code before you do take a motion.

CHAIR LOWELL – Go ahead.

PLANNING OFFICIAL RICK SANDZIMIER – Commissioner Nickel was absolutely right. We did write in there specifically that, in the event of an absence on any subsequent meeting, no new Commissioner shall be seated in the vacant seat so.

CHAIR LOWELL – That's how I remembered it too. It was a major sticking point. I think we had three or four meetings, hours on end, trying to clarify that and obviously I don't think we all agreed on it.

COMMISSIONER NICKEL – Don't remind us.

CHAIR LOWELL – I do want to commend the City for the use of the comport. I actually had to bust out my dictionary and figure out what that was, so I do appreciate it. That was a learning experience for me. I would like to make a motion if nobody else wants to. I would like to make a motion or I'd like to motion to approve Resolution No. 2016-18 and certify that the proposed Ordinance Amendment to the Municipal Code PA16-0025 qualifies as an exemption in accordance with Section 15061 of the California Environmental Quality Act (CEQA) Guidelines; and (2) recommend approval of PA16-0025 to the City Council for the Amendment of the City of Moreno Valley Municipal Code to modify Titles 5 and 9 including modification in the Permitted Uses Table attached as Exhibit A related to the city-wide regulation of Smoke Shop Uses. We have a motion. We have a second by Commissioner Gonzalez. Please cast your votes and, if you're going to abstain, please click abstain. Perfect. The motion passes 4-1 with two abstains. Do we have a Staff wrap-up on this item?

Opposed – 1

Motion carries 4 – 1 – 2 with two abstentions

PLANNING OFFICIAL RICK SANDZIMIER – Yes, since the ultimate decision-making body on this is the City Council, there is….somebody could appeal the decision of the Planning Commission, but ultimately it's going to get to the City Council. I do want to say that we will follow up with the Airport Land Use Commission before we go to the City Council, so we will probably be taking this to the City Council towards the end of November, maybe early December, at this point. Thank you.

OTHER COMMISSION BUSINESS

CHAIR LOWELL – Thank you very much. That moves us onto Other Commission Business. Do we have a Staff Summary of what happened on last Tuesday and three Tuesday's ago at City Council regarding Alternate Planning Commissioners our appointment versus non-appointment?

PLANNING OFFICIAL RICK SANDZIMIER – Real briefly. The City Council has been deliberating on the replacement of Commissioner Van Natta's now vacant seat. A couple meetings ago, it was August 16th I think was the date. We took a list of potential recommended actions to the City Council. The City Council from that deliberation elected for us to come back with an item to appoint one of the alternate commissioners to the vacant seat. We took that item back to them Tuesday night and the City Council, during their deliberations, elected to begin with another alternate, which was to just stick with the rotation of the alternate commissioners to fill the vacant seat until the regular Commissioner seat is filled in a normal course, which would happen after the first of the year anyways because that seat was going to be termed out on March 31st.

CHAIR LOWELL – Correct.

PLANNING OFFICIAL RICK SANDZIMIER – So each of the Commissioners will continue to be expected to show up at each of the meetings, and we will continue to rotate you in on the same basis that we have been like we did tonight.

PLANNING COMMISSIONER COMMENTS

CHAIR LOWELL – Thanks. I appreciate it. I was just trying to get some clarification because they voted one way one night, and they voted against it another night, and it was just a mess so I appreciate the clarification. Any Planning Commissioner Comments before we adjourn? No?

COMMISSIONER NICKEL – No.

ADJOURNMENT

CHAIR LOWELL – Perfect. I would like to adjourn our meeting to the next meeting of the Planning Commission, which is a regular meeting, September 22nd, 2016, at 7:00 PM right here in the City Council Chambers. Thank you very much, and have a great night.

NEXT MEETING

Next Meeting: Planning Commission Regular Meeting, September 22nd, 2016 at 7:00 PM, City of Moreno Valley, City Hall Council Chamber, 14177 Frederick Street, Moreno Valley, CA 92553.

______________________________ ______________________________

Richard J. Sandzimier Date
Planning Official
Approved

______________________________ ______________________________

Brian R. Lowell Date
Chair

PLANNING COMMISSION

STAFF REPORT

Meeting Date: November 10, 2016

PA16-0039 PLOT PLAN

Case:	PA16-0039 Plot Plan
Applicant:	LATCO SC, Inc.
Owner:	Professors Fund I, LLC and Professors Fund IV, LLC
Representative:	Pacific Development Solutions Groups
Location:	Southeasterly of Alessandro Boulevard and Perris Boulevard
Case Planner:	Gabriel Diaz
Council District:	1

SUMMARY

The proposal is to develop a 272-unit multifamily apartment project on 19.82 acres of land located southeasterly of Alessandro Boulevard and Perris Boulevard. The site is zoned Residential 15 (R15) which allows for up to 15 dwelling units per acre.

The project, as designed and conditioned, conforms to all development standards of the R15 zone and the design guidelines for multifamily residential uses as prescribed within the City's Municipal Code and Landscape Standards.

PROJECT DESCRIPTION

Project

The project is a Plot Plan application for a new 272-unit multifamily apartment project on vacant 19.82 acres of land southeasterly of Alessandro Boulevard and Perris Boulevard. The project includes a mix of both one and two story buildings. There are four building types that will consist of one, two and three bedroom floor plans. A common area community building is also proposed with the development. Parking for the development will include a combination of detached garages, carports, and surface spaces. Floor Plan 1 consists of one bedroom and one bath and a total living area of 769 square feet. Floor Plan 2 consists of two bedrooms and two baths with a total living area of 1,098 square feet. Floor Plan 3 consists of two bedrooms and two baths and a total living area of 1,135 square feet. Floor Plan 4 is a one-story unit and consists of three bedrooms and two baths and a total living area of 1,294 square feet. Floor Plan 4 is the only option within the one story buildings and these units are located adjacent to the existing single family homes that are located along the southeasterly border of the project.

The proposed project includes twelve one-story two-unit apartment buildings, and thirty one two-story 8-unit buildings for a total of 272 apartment units. The apartments will include a mix of 1-bedroom, 2-bedroom and 3-bedroom units.

The project provides numerous amenities including a community building with the leasing office, a lounge area with a kitchen, fitness room, game room, theater room, and a computer room. Other amenities include a pool and spa, a tot lot and open space for activities. The project achieves required private space through the patio and entry design features. Required public common open space is achieved throughout the project in courtyards and other gathering areas.

The project is consistent with the existing R15 zoning which allows for up to 15 dwelling units per acre.

Site

The project site is zoned Residential 15 (R15) and is located south-easterly of Alessandro Boulevard and Perris Boulevard. The project site is relatively flat. The project site is vacant and is comprised of three rectangular shaped parcels. (Assessor Parcels Nos. 484-020-006, 484-020-018 & 484-020-025). The total project site is 19.82 acres.

The site is bisected by a Questar gas line easement. The gas line crosses the project site mid-way between Alessandro Boulevard and Brodiaea Avenue. No structures will be placed within the gas line easement.

The site has been routinely disked for weed abatement over the years. There are no existing trees on the site, and there is no evidence of sensitive habitat or riparian areas within the project site.

Surrounding Area

The project site is bounded to the north by Alessandro Boulevard. On the north side of Alessandro Boulevard there are existing commercial and single-family residential uses consistent with the respective Neighborhood Commercial (NC) and Residential 5 (R5) zoning. To the south across Brodiaea, the project site is bordered by existing single-family residences consistent with the Residential 5 (R5) zoning. Existing commercial development and vacant commercial property is located to the west across Perris

Boulevard. The project site is bordered to the east by Apple Blossom Lane. On the east side of Apple Blossom Lane there are some existing single-family residences in area zoned Residential 5 (R5), as well as the Ridgeview Apartments on property zoned Residential 20 (R20).

Overall, the proposed multifamily residential development has been found to be consistent with the objectives, goals and policies outlined in the City's General Plan, as well as being compatible with the existing and planned land uses in the project area.

Access/Parking

Primary vehicular access to the proposed development will be provided from two gated driveways located on the south side of Alessandro Boulevard and on the east side of Perris Boulevard. The proposed project would construct medians on Alessandro Boulevard and Perris Boulevard and these would limit the Alessandro Boulevard and Perris Boulevard driveways as right-in and right-out only. From the Alessandro Boulevard driveway, there is direct access to 11 surface parking spaces available for visitors to park and use the kiosk to contact the office and/or residents. It is noted that the colored site plans included as an attachment to this report do not show the correct medians in Alessandro and Perris Boulevard; they have been provided for artistic benefit to show the expected quality/character of the site.

Internal circulation within the project site includes driveway aisles that measure 24 feet wide and which will be meet all City's design standards. The proposed project site design includes an emergency access driveway to Apple Blossom Lane. This emergency access to Apple Blossom Lane would be secured by a Knox Box. The driveways and interior drive aisles within the site have been reviewed and approved by the Fire Prevention Bureau for fire truck access. The site design has been evaluated to ensure adequate truck maneuvering and turnaround for delivery trucks and trash pick-up.

The project as designed provides a total of 534 parking spaces including 160 garages, 141 carports, and 233 open parking spaces for residents and guests. Based on Municipal Code Section 9.11, a project of this size and unit make up requires a total of 512 parking spaces, of which 296 must be covered. The project as designed satisfies all parking requirements of the City's Municipal Code including ADA accessible parking. Applicable building code/Cal Green requirements shall be addressed through building plan check which is typical prior to issuance of building permits. If required to be designed to the 2016 building code standards, installation of electric vehicle supply equipment (EVSE) will be addressed prior to building permit issuance.

Design/Landscaping

This project, as designed and conditioned, conforms to all development standards of the R15 zone and the design guidelines for multifamily residential developments prescribed in the City's Municipal Code and City Landscape Standards.

The design guidelines for multifamily projects call for buildings to include a variety of colors and architectural features to break up the massing of buildings and provide visual interest. This variation has been demonstrated in the project design. The architectural design of the apartments includes stucco exteriors with some horizontal and vertical features to break up massing of the buildings. These detailed features include foam trim, concrete tile roofs, towers, foam window sills, prefabricated metal stairs, wrought iron guard rails, covered private patios and entrances, and exterior wall mounted lights. Variation among the buildings is created with the mixture of one and two story buildings, roof lines, detached garages and carports, stairs, porches, balconies, and a proposed color palette of earth tones.

The recreation building design is consistent with the overall project architecture theme incorporating the color palette, varied materials and level of detail provided throughout the project. The architectural design of the garages includes stucco exteriors walls, foam trim and accent colors to break up the massing and to add character to the garage buildings. The garage building will be constructed with concrete tile roofs. The carports will be constructed of tubular steel columns and standard seemed metal roofs.

Consistent with the design guidelines, the placement of parking areas and related carports and garages have been staggered to allow for added visual interest, and to provide opportunities for landscaping. The garages and carports as designed will avoid the monotony of alley-like parking corridors.

The proposed project includes seven double-bin trash enclosures, which exceeds the design standard of one trash enclosure for every 48 residential units. The trash enclosures are evenly distributed throughout the site to ensure ease of access to all residential units. The enclosures will be designed to the City’s standards, which will include solid roofs compatible with the overall project architecture.

The project has been designed to meet the needs of residents as set forth in the design guidelines. The project entry off of Alessandro Boulevard includes a centralized access with an interactive kiosk to accommodate communication between arriving guests and residents. The project includes both outdoor open space and gathering areas, and balconies and patios to provide the required private open space area for each residential unit. The project includes common area amenities such as a community building with the leasing office, a lounge area with a kitchen, fitness room, game room, theater room, computer room, pool, spa, and a tot lot for children.

All walls and fences on the site will be constructed with decorative block and wrought iron. The walls and trash enclosures for this project are conditioned to be consistent with the City’s Municipal Code standards for placement, height and materials.

The project site is bisected by a Questar gas line easement, and no structures will be placed within the gas line easement. To the east of this gas line easement there is a long rectangular parcel owned by Questar that borders the proposed project. The applicant will work with the adjacent Questar gas line property owner to landscape it consistent with the current Questar gas line property to the east. In addition, the applicant proposes a decorative wrought iron fence around the gas line property owned by Questar.

REVIEW PROCESS

The Plot Plan application was submitted on June 29, 2016. The plans were routed to internal City Departments and several outside agencies including, but not limited to, March JPA, Airport Land Use Commission, Moreno Valley Unified School District, Eastern Municipal Water District, Riverside Transit Agency, gas and electric utilities, and various Indian Tribes (as required by AB52), for typical review.

Upon completion of the initial plan review, the project was reviewed at a Pre-Project Review Staff Committee (Pre-PRSC) in July 2016. Modifications were requested to the project to address building setbacks and building separations, private open space requirements, parking landscape standards, and a variety of site design considerations.

Various site design options were submitted between June and October 2016. During this process staff met with the applicant. Upon resolution of all outstanding project comments, final conditions of approval were drafted in October 2016, and the project was scheduled for the Planning Commission Public Hearing meeting on November 10, 2016.

ENVIRONMENTAL

An Initial Study was prepared by Vista Community Planners, Inc. in compliance with the California Environmental Quality Act (CEQA) Guidelines. The Initial Study examined the potential of the proposed project to have any significant impact on the environment. The Initial Study provides information in support of the finding that a Mitigated Negative Declaration is an appropriate CEQA documents for the project, in that the proposed project, with the implementation of mitigation measures identified, will not have a significant effect on the environment. Studies prepared for this project included a traffic impact study, an air quality and greenhouse gas emissions impact analysis, a cultural resource assessment, a hydrology report, a geotechnical investigation, a focused Western Burrowing Owl study, Phase I environmental site assessment, noise impact analysis, and a water quality management plan. The electronic files for the IS/MND and appendices are included with this report, however, due to size hard copies will not be included with the printed packet. Anyone wishing to view the documents can also do so at City Hall.

Public notice of the availability of the Initial Study / Mitigated Negative Declaration was published in the newspaper on October 21, 2016, which satisfies the required 20 day review period in advance of the Planning Commission Public Hearing.

Mitigation measures are recommended for the project in the following areas: cultural resources and air quality. The measures for cultural resources have been included to address input from the tribal agencies. The measures are intended to ensure that potential resources that might be discovered are protected. However, these measures are not required to address a known significant impact.

Mitigation Monitoring

A mitigation monitoring program has been prepared and is incorporated with the recommended project environmental documents to ensure implementation of the mitigation measures (see Attachment 4).

NOTIFICATION

The public hearing notice for this project was published in the local newspaper on October 21, 2016. Public notice was sent to all property owners of record within 300 feet of the project site on October 24, 2016. The public hearing notice for this project was also posted on the project site on October 21, 2016.

As of the date of report preparation, staff had received no phone calls or other correspondence in response to the noticing for this project.

REVIEW AGENCY COMMENTS

Staff received the following responses to the Project Review Staff Committee transmittal; which was sent to all potentially affected reviewing agencies.

Agency	Response Date
Eastern Municipal Water District	July 21, 2016
Riverside County Flood Control	July 19, 2016
Airport Land Use Commission	July 7, 2016

The City complied with the requirements of State Assembly Bill 52 requiring notice and consultation to Native American tribal groups. The City coordinated with all participating Native American tribal groups requesting consultation for this project, and incorporated conditions of approval and mitigation measures. A copy of the Mitigated Negative Declaration was provided to the Pechanga Band of Luiseno Mission Indians, Soboba Band of Luiseño Indians and Agua Caliente Band of Cahuilla Indians.

The Airport Land Use Commission provided a written response with no required conditions of approval.

Where applicable, conditions of approval have been included in the recommended Resolution to address concerns from the responding agencies.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission:

1. **ADOPT** a Mitigated Negative Declaration for Plot Plan PA16-0039, pursuant to the California Environmental Quality Act (CEQA) Guidelines; and

2. **APPROVE** the Mitigation Monitoring and Reporting Program prepared for Plot Plan PA16-0039 pursuant to the California Environmental Quality Act (CEQA) Guidelines, and included as Exhibit A; and

3. **APPROVE** Resolution No. 2016-23 and thereby **APPROVE** Plot Plan PA16-0039, subject to the attached conditions of approval included as Exhibit B.

Prepared by:
Gabriel Diaz
Associate Planner

Approved by:
Allen Brock
Community Development Director

ATTACHMENTS

1. Public Hearing Notice
2. Planning Commission Resolution 2016-23
3. COAs
4. Mitigation Monitoring Program
5. Initial Study MND
6. Appendix A - Air Quality and Greenhouse Gas
7. Appendix B - Focused Western Burrowing Owl Survey
8. Appendix C - Hydrology Report
9. Appendix E - Noise Report
10. Appendix F - Geotechnical Investigation
11. Appendix G - Traffic Impact Study
12. Appendix G.1 - Traffic Impact Study (revisions)
13. Appendix H - WQMP Report
14. Appendix I - Cultural Resources
15. Appendix D - Phase I Report
16. Aerial Photograph
17. Zoning Map
18. Preliminary Grading
19. Villa Annette Apartments Plans
20. Color Renderings

This may affect your property

Notice of
PUBLIC HEARING

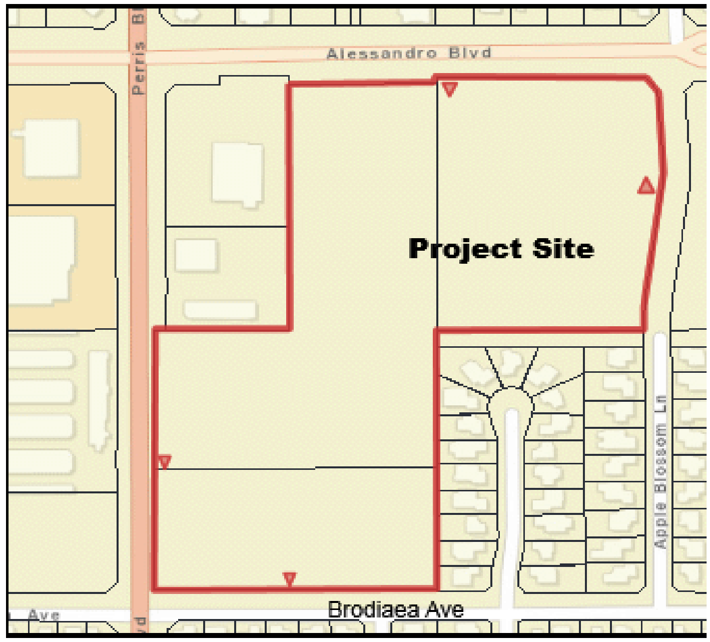
Notice is hereby given that a Public Hearing will be held by the Planning Commission of the City of Moreno Valley on the following item(s):

Project: PA16-0039 (Plot Plan)
Applicant: Latco SC, Inc
Owner: Professors Fund I, LLC and Professors Fund IV, LLC
Representative: Pacific Development Solutions Groups
A.P. No(s): 484-020-006, 484-020-018 & 484-020-025
Location: Southeasterly of Alessandro Blvd. and Perris Blvd.
Proposal: Plot Plan application for 272 multi-family apartments (1 and 2 story buildings). There will be four building types with a range of one to three bedrooms, a community building, and detached garages and carports on 19.82 acres of land. The project is consistent with the current R15 zoning which allows for up to 15 dwelling units per acre.
Council District: 1

The project has been evaluated against criteria set forth in the California Environmental Quality Act (CEQA) Guidelines and it was determined that the project will not have a significant effect on the environment with the incorporation of mitigation measures. A Mitigated Negative Declaration is recommended. Mitigation measures have been required of the project that will reduce potential impacts to a less than significant level.

A public hearing before the Planning Commission has been scheduled for the proposed project. Any person interested in commenting on the proposal and recommended environmental determination may speak at the hearing or provide written testimony at or prior to the hearing. The project application, supporting plans and environmental documents may be inspected at the Community Development Department at 14177 Frederick Street, Moreno Valley, California during normal business hours (7:30 a.m. to 5:30 p.m., Monday through Thursday and 7:30 a.m. to 4:30 p.m., Friday), or you may telephone (951) 413-3206 for further information.

The Planning Commission, at the Hearing or during deliberations, could approve changes or alternatives to the proposal. If you challenge any of these items in court, you may be limited to raising only those items you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the Planning Commission at, or prior to, the Public Hearing.



LOCATION N ↑

PLANNING COMMISSION HEARING

City Council Chamber, City Hall
14177 Frederick Street
Moreno Valley, Calif. 92553

DATE AND TIME: November 10, 2016
CONTACT PLANNER: Gabriel Diaz
PHONE: (951) 413-3226

Upon request and in compliance with the Americans with Disabilities Ac of 1990, any person with a disability who requires a modification o accommodation in order to participate in a meeting should direct suc request to Guy Pegan, ADA Coordinator, at 951.413.3120 at least 4 hours before the meeting. The 48-hour notification will enable the City t make reasonable arrangements to ensure accessibility to this meeting.

PLANNING COMMISSION RESOLUTION NO. 2016-23

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY APPROVING PLOT PLAN APPLICATION PA16-0039 FOR DEVELOPMENT OF A 272 UNIT APARTMENT PROJECT ON APPROXIMATELY 19.82 ACRE SITE LOCATED SOUTH-EASTERLY OF ALESSANDRO BOULEVARD AND PERRIS BOULEVARD (ASSESSOR'S PARCEL NUMBERS 484-020-006, 484-020-018, & 484-020-025).

Section 1:

WHEREAS, Latco SC, Inc., has filed an application for the approval of Plot Plan PA16-0039 for development of a 272 unit apartment project located southeasterly of Alessandro Boulevard and Perris Boulevard as described in the title above; and

WHEREAS, the application has been evaluated in accordance with established City of Moreno Valley (City) procedures, and with consideration of the General Plan and other applicable regulations; and

WHEREAS, Vista Community Planners prepared an Initial Study and Mitigated Negative Declaration consistent with the California Environmental Quality Act (CEQA) based on a thorough analysis of potential environmental impacts; and

WHEREAS, planning staff completed a comprehensive and independent review of the Initial Study and Mitigated Negative Declaration to ensure consistency with the California Environmental Quality Act; and

WHEREAS, upon completion of a thorough development review process the project was appropriately agendized and noticed for a public hearing before the Planning Commission of the City of Moreno Valley Planning Commission; and

WHEREAS, the public hearing notice for this project was published in the local newspaper on October 21, 2016. Public notice was sent to all property owners of record within 300 feet of the project site on October 24, 2016. The public hearing notice for this project was also posted on the project site on October 21, 2016;

WHEREAS, on November 10, 2016, the Planning Commission held a public hearing to consider the application; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred; and

WHEREAS, pursuant to Government Code Section 66020(d)(1), **NOTICE IS HEREBY GIVEN** that this project is subject to certain fees, dedications, reservations and other exactions as provided herein.

NOW, THEREFORE, BE IT RESOLVED, it is hereby found, determined and resolved by the Planning Commission as follows:

A. This Planning Commission hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this Planning Commission during the above-referenced meeting on November 10, 2016, including written and oral staff reports, public testimony and the record from the public hearing, this Planning Commission hereby specifically finds as follows:

1. **Conformance with General Plan Policies –** The proposed use is consistent with the General Plan, and its goals, objectives, policies and programs.

   FACT: The project proposes development of a 272 unit apartment project on approximately 19.82 acre site. The General Plan land use designations for the project site are Residential 15 (R15).

   The project is consistent with General Plan policies and objectives. Chapter 9 General Plan Policy 2.2.9 states that the primary purpose of areas designated Residential 15 is to provide a range of multi-family housing types with amenities such as common open space and recreational facilities for those not desiring dwellings on individual lots. The maximum allowable density shall be 15 dwelling units per acre.

   The project as designed and conditioned meets the stated General Plan policies for R15 development.

   The project as proposed is consistent with General Plan Goal 2.4 which identifies the need for a supply of housing in sufficient numbers suitable to meet the diverse needs of future residents and to support healthy economic development without creating an oversupply of any particular type of housing. The project is also consistent with General Plan Objective 2.2 which states that the City will provide a wide range of residential opportunities and dwelling types to meet the demands of present and future residents of all socioeconomic groups.

   The project as designed and conditioned will achieve the objectives of the City of Moreno Valley's General Plan. The proposed project is consistent with the General Plan and does not conflict with the goals, objectives, policies, and programs established within the Plan.

2. **Conformance with Zoning Regulations –** The proposed use complies with all applicable zoning and other regulations.

   FACT: The project site is currently zoned R15. The proposed project is within the range of density allowed under the R15 zoning. The project provides a residential density of 13.7 dwelling units to the acre. The range for density permitted within the R15 zone is 12 to 15 dwelling units per acre.

The project is designed in accordance with the provisions of Section 9.03 Residential Districts and Section 9.16 Design Guidelines of the City's Municipal Code. The project as designed and conditioned would comply with all applicable zoning and other regulations.

3. **Health, Safety and Welfare –** The proposed use will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity.

FACT: The proposed multi-family project as designed and conditioned will provide acceptable levels of protection from natural and man-made hazards to life, health, and property consistent with General Goal 9.6.1. The project site is located within approximately one and one half miles from Fire Station No. 65. Therefore, adequate emergency services can be provided to the site consistent with General Plan Goal 9.6.2.

An Initial Study and Mitigated Negative Declaration with a Mitigation Monitoring Program were prepared in accordance with the provisions of the California Environmental Quality Act (CEQA) based on a thorough analysis of potential environmental impacts. Planning staff reviewed the document and worked with the consultant to ensure a comprehensive environmental document consistent with CEQA requirements. The Mitigated Negative Declaration represents the City's independent judgment and analysis.

The proposed project as designed and conditioned will result in a development that will minimize the potential for loss of life and protect residents and visitors to the City from physical injury and property damage due to seismic ground shaking and flooding as provided for in General Plan Objective 6.1 and General Plan Objective 6.2. The project as designed and conditioned will be consistent with the City's Municipal Code Section 9.03 Residential Districts.

4. **Location, Design and Operation –** The location, design and operation of the proposed project will be compatible with existing and planned land uses in the vicinity.

FACT: The project site is consistent with the R15 General Plan and zoning designations. Most of the surrounding area has already been developed consistent with the existing General Plan and zoning designations. This includes existing single-family home south of Brodiaea Avenue, a multi-family development and single-family residences east of Apple Blossom, and existing commercial uses to the west.

The proposed project includes twelve one-story 2-unit apartment buildings, thirty-one two-story 8-unit buildings for a total of 272 apartment units. The one-story apartment buildings are located adjacent to the single family homes. The apartments will include a mix of 1-bedroom, 2-bedroom and 3-bedroom units. Amenities include a community building with leasing office, lounge area with a kitchen, fitness room, game room, theater room and, a computer room. Other amenities include a pool and spa, a tot lot and open space for activities. The project achieves required private space through the patio and entry design features. Required public common open space is achieved throughout the project in courtyards and other gathering areas.

The architectural design of the apartments includes stucco exteriors with some horizontal and vertical features to break up massing of the buildings. These detail features include foam trim, concrete tile roofs, tower, foam window sills, prefabricated metal stairs, wrought iron guard rails, covered private patios and entrance, and exterior wall mounted lights. Variation among the buildings is created with the four building types and with their proposed color palate which is earth tone.

The project has been designed to minimize the impact on the residential collector street. There are no proposed driveways onto Brodiaea Avenue to the south. The primary vehicular access to the proposed development will be provided from two gated driveways located on the south side of Alessandro Boulevard and on the east side of Perris Boulevard. The proposed project would construct a median on Alessandro Boulevard and Perris Boulevard and this would limit the Alessandro Boulevard and Perris Boulevard driveways into the project as right-in and right-out only. The proposed project would include an emergency access only driveway to Apple Blossom Lane. The Apple Blossom Lane configuration is to stay the same.

As designed and conditioned and with the implementation of required mitigation measures, the proposed apartment project is compatible with existing and proposed land uses in the vicinity.

Section 2:

FEES, DEDICATIONS, RESERVATIONS, AND OTHER EXACTIONS

1. FEES

Impact, mitigation and other fees are due and payable under currently applicable ordinances and resolutions. These fees may include but are not limited to: Development Impact Fee, Transportation Uniform Mitigation Fee (TUMF), Multi-species Habitat Conservation Plan (MSHCP) Mitigation Fee, Stephens Kangaroo Habitat Conservation fee, Underground Utilities in lieu Fee, Area Drainage Plan fee, Bridge and Thoroughfare Mitigation fee (Future) and Traffic Signal Mitigation fee. The final amount of fees payable is dependent upon information provided by the applicant and will be determined at the time the fees become due and payable.

Unless otherwise provided for by this Resolution, all impact fees shall be calculated and collected at the time and in the manner provided in Chapter 3.32 of the City of Moreno Valley Municipal Code or as so provided in the applicable ordinances and resolutions. The City expressly reserves the right to amend the fees and the fee calculations consistent with applicable law.

2. DEDICATIONS, RESERVATIONS, AND OTHER EXACTIONS

The adopted Conditions of Approval for PA16-0039, incorporated herein by reference, may include dedications, reservations, and exactions pursuant to Government Code Section 66020 (d) (1).

3. CITY RIGHT TO MODIFY/ADJUST; PROTEST LIMITATIONS

The City expressly reserves the right to establish, modify or adjust any fee, dedication, reservation or other exaction to the extent permitted and as authorized by law.

Pursuant to Government Code Section 66020(d)(1), NOTICE IS FURTHER GIVEN that the 90 day period to protest the imposition of any impact fee, dedication, reservation, or other exaction described in this Resolution begins on the effective date of this Resolution and any such protest must be in a manner that complies with Section 66020(a) and failure to timely follow this procedure will bar any subsequent legal action to attack, review, set aside, void or annul imposition.

The right to protest the fees, dedications, reservations, or other exactions does not apply to planning, zoning, grading, or other similar application processing fees or service fees in connection with this project and it does not apply to any fees, dedication, reservations, or other exactions of which a notice has been given similar to this, nor does it revive challenges to any fees for which the applicable statute of limitations has previously expired.

Section 3:

BE IT FURTHER RESOLVED that the Planning Commission **HEREBY APPROVES** Resolution No. 2016-23, and thereby:

1. **ADOPT** a Mitigated Negative Declaration for Plot Plan PA16-0039, pursuant to the California Environmental Quality Act (CEQA) Guidelines; and

2. **APPROVE** the Mitigation Monitoring and Reporting Program prepared for Plot Plan PA16-0039 pursuant to the California Environmental Quality Act (CEQA) Guidelines, included as Exhibit A; and

3. **APPROVE** Plot Plan PA16-0039 based on the findings contained in this resolution, and subject to the attached conditions of approval included as Exhibit B.

APPROVED this 10th day of November, 2016.

Brian Lowell
Chair, Planning Commission

ATTEST:

Richard J. Sandzimier, Planning Official
Secretary to the Planning Commission

APPROVED AS TO FORM:

City Attorney

Attachments:
Exhibit A - Mitigation Monitoring and Reporting Program
Exhibit B - Conditions of Approval

EXHIBIT B

CITY OF MORENO VALLEY
CONDITIONS OF APPROVAL
PLOT PLAN PA16-0039
272 UNIT APARTMENT PROJECT
ASSESSOR'S PARCEL NUMBERS: 484-020-006, 484-020-018 & 484-020-025

Effective Approval Date:
Effective Expiration Date:

COMMUNITY DEVELOPMENT DEPARTMENT

Planning Division

P1. Plot Plan PA16-0039 has been approved for the development of an apartment project to include twelve one-story two-unit apartment buildings, thirty one two-story 8-unit buildings for a total of 272 apartment units. The apartments will include a mix of 1-bedroom, 2-bedroom and 3-bedroom units. Amenities include a community building with leasing office, lounge area with a kitchen, fitness room, game room, theater room and, a computer room. Other amenities include a pool and spa, a tot lot and open space for activities.

The project as designed provides a total of 534 parking spaces including 160 garages, 141 carports, and 233 open parking spaces for residents and guests. Based on Municipal Code Section 9.11 a project of this size and unit make up requires a total of 512 parking spaces of which 296 must be covered.

P2. This approval shall comply with all applicable requirements of the City of Moreno Valley Municipal Code.

P3. This plot plan shall expire three years after the approval date unless extended as provided by the City of Moreno Valley Municipal Code; otherwise it shall become null and void and of no effect whatsoever. (MC 9.02.230)

P4. The site shall be developed in accordance with the approved plot plan on file in the Community Development Department - Planning Division, the General Plan, the Municipal Code regulations, and the conditions contained herein. (MC 9.14.020)

P5. All undeveloped portions of the site shall be maintained in a manner that provides for the control of weeds, erosion and dust. (MC 9.02.030)

P6. All landscaped areas shall be maintained in a healthy and thriving condition, free from weeds, trash and debris. (MC 9.02.030)

P7. Any signs indicated on the submitted plans are not included with this approval. Any signs, whether permanent (e.g. wall, monument) or temporary (e.g. banner, flag), proposed for this development shall be designed in conformance with the sign provisions of the Municipal Code or an approved sign program, if applicable, and shall require separate application and approval by the Planning Division. No signs are permitted in the public right of way. (MC 9.12)

P8. All site plans, grading plans, landscape and irrigation plans, and street improvement plans shall be coordinated for consistency with this approval.

P9. The design of all swales and basins that are visible from the public right-of-way shall be integrated with the surrounding landscape areas.

P10. If the proposed project requires blasting, it shall be used only as a last resort. In such cases, it shall be approved by the Fire Marshall, and the developer shall comply with the current City ordinance governing blasting. (Ord)

PRIOR TO GRADING

P11. (GP) Prior to issuance of grading permits, the developer shall pay the applicable Stephen's' Kangaroo Rat (SKR) Habitat Conservation Plan mitigation fee. (Ord)

P12. (GP) Prior to the issuance of grading permits, final erosion control landscape and irrigation plans for all cut or fill slopes over 3 feet in height shall be submitted to the Planning Division for review and approval for the phase in process. The plans shall be designed in accordance with the slope erosion plan as required by the City Engineer for that phase. Man-made slopes greater than 10 feet in height shall be "land formed" to conform to the natural terrain and shall be landscaped and stabilized to minimize visual scarring. (GP Objective 1.5, MC 9.08.080, DG)

P13. (GP) Prior to approval of any grading permits, final median enhancement/landscape/irrigation plans shall be submitted to the Planning Division, and Public Works Department – Special Districts Division for review and approval by each division. (GP - Circulation Master Plan) Timing of installation shall be determined by Special Districts.

P14. (GP) Prior to the issuance of grading permits, the grading plan shall show decorative concrete paving for all driveway ingress/egress locations of the project and across drive aisles throughout the development to connect required paths of travel with the public right-of-way.

P15. (GP) Prior to issuance of grading permits, the developer shall submit wall/fence plans to the Planning Division for review and approval and of any proposed retaining walls. The wall and fence materials shall be decorative in nature, while the combination of retaining and other walls on top shall not exceed the City's height requirement.

P16. (GP) Within thirty (30) days prior to any grading or other land disturbance, a pre-construction survey for Burrowing Owls shall be conducted pursuant to the established guidelines of the Multiple Species Habitat Conservation Plan.

P17. (GP) Prior to the issuance of grading permits, building permits or building final, mitigation measures contained in the Mitigation Monitoring Program approved with this project and as referenced in the conditions of approval for Plot Plan PA16-0039 shall be implemented as provided therein. A mitigation monitoring fee, as provided by City ordinance, shall be paid by the applicant within 30 days of project approval. No City permit or approval shall be issued until such fee is paid. (CEQA)

PRIOR TO BUILDING PERMITS

P18. (BP) Prior to issuance of building permits, the Planning Division shall review and approve the location and method of enclosure or screening of transformer cabinets, commercial gas meters and back flow preventers as shown on the final working drawings. Location and screening shall comply with the following criteria: transformer cabinets and commercial gas meters shall not be located within required setbacks and shall be screened from public view either by architectural treatment or landscaping; multiple electrical meters shall be fully enclosed and incorporated into the overall architectural design of the building(s); back-flow preventers shall be screened by landscaping. (GP Objective 43.30, DG)

P19. (BP) Prior to issuance of building permits, screening details shall be addressed on plans for roof top equipment and trash enclosures submitted for Planning Division review and approval. All equipment shall be completely screened so as not to be visible from public view, and the screening shall be an integral part of the building. For trash enclosures, landscaping shall be included on at least three sides. The trash enclosure, including any roofing, shall be compatible with the architecture for the building(s). (GP Objective 43.6, DG)

P20. (BP) Prior to issuance of building permits, two copies of a detailed, on-site, computer generated, point-by-point comparison lighting plan, including exterior building, parking lot, and landscaping lighting, shall be submitted to the Planning Division for review and approval. The lighting plan shall be generated on the plot plan and shall be integrated with the final landscape plan. The plan shall indicate the manufacturer's specifications for light fixtures used and shall include style, illumination, location, height and method of shielding. The lighting shall be designed in such a manner so that it does not exceed one-quarter foot-candle minimum maintained lighting measured from within five feet of any property line.

The lighting level for all parking lots or structures shall be a minimum coverage of one foot-candle of light with a maximum of eight foot-candles. After the third plan check review for lighting plans, an additional plan check fee will apply. (MC 9.08.100, DG)

P21. (BP) Prior to issuance of building permits, for multi-family projects that propose phased occupancy, a phasing plan application shall be submitted to the Planning Division for approval.

P22. (BP) Prior to issuance of building permits, the developer or developer's successor-in-interest shall pay all applicable impact fees, including but not limited to Transportation Uniform Mitigation fees (TUMF), Multi-species Habitat Conservation Plan (MSHCP) mitigation fees, and the City's adopted Development Impact Fees. (Ord)

P23. (BP) Prior to the issuance of building permits, the site plan shall include landscape for trash enclosures to include landscape on three sides, while elevation plans for trash enclosures shall be provided that include decorative enhancements such as an enclosed roof and other decorative features that are consistent with the architecture of the proposed buildings on the site, subject to the approval of the Planning Division.

P24. (BP) Prior to issuance of any building permits, final landscaping and irrigation plans shall be submitted for review and approved by the Planning Division. After the third plan check review for landscape plans, an additional plan check fee shall apply. The plans shall be prepared in accordance with the City's Landscape Standards and shall include:

A. A three (3) foot high decorative wall, solid hedge or berm shall be placed in any setback areas between a public right of way and a parking lot for screening.
B. Finger and end planters with required step outs and curbing shall be provided every 12 parking stalls as well as at the terminus of each aisle.
C. Drought tolerant landscape shall be used. Sod shall be limited to gathering and recreation areas
D. Street trees shall be provided every 40 feet on center in the parkway along the Alessandro Boulevard, Perris Boulevard, Apple Blossom Lane and Brodiaea Avenue frontages.
E. On-site trees shall be planted at an equivalent of one (1) tree per thirty (30) linear feet of the perimeter of a parking lot and per thirty linear feet of a building dimension for the portions of the building visible from a parking lot or right of way. Trees may be massed for pleasing aesthetic effects.
F. Enhanced landscaping shall be provided at all driveway entries and street corner locations and along the Alessandro Boulevard, Perris Boulevard, Apple Blossom Lane and Brodiaea Avenue frontages.
G. The review of all utility boxes, transformers etc. shall be coordinated to provide adequate screening from public view.

H. Landscaping on three sides of any trash enclosure.
I. All site perimeter and parking lot landscape and irrigation shall be installed prior to the release of certificate of any occupancy permits for the site.
J. Bio-retention or other water quality or storm water infrastructure placed in a required landscape planter shall be landscaped per Municipal Code Section 9.17 and the City's Landscape Standards.

P25. (BP) Prior to the issuance of building permits, mitigation measures contained in the Mitigation Monitoring Program approved with this project and as referenced in the conditions of approval for Plot Plan PA16-0039 shall be implemented as provided therein.

PRIOR TO BUILDING FINAL

P26. (BF) Prior to building final, the required landscaping and irrigation shall be installed. (MC 9.03.040)

P27. (BF) Prior to building final all required and proposed fences and walls shall be constructed according to the approved plans on file in the Planning Division. (MC 9.080.070).

P28. (BF) Prior to building final, installed landscaping and irrigation shall be inspected by the Planning Division. All on-site and common area landscaping shall be installed in accordance with the City's Landscape Standards and the approved project landscape plans and all site clean-up shall be completed. All site perimeter and parking lot landscape and irrigation shall be installed prior building final for the site or pad in question.

P29. (BF) Prior to building final, Planning approved/stamped landscape plans shall be provided to the Community Development Department – Planning Division on a CD disk.

Mitigation Measures

P30. **AIR PDF 1:** The project applicant shall require that the grading contractor limit the daily disturbed area to 5 acres or less.

P31. **AIR PDF 2:** The site plan shall detail sidewalks that are accessible to the public will be constructed on the project site adjacent to Perris Boulevard and Alessandro Boulevard.

P32. **AIR PDF 3:** The project applicant will provide separate onsite bins to dispose of recyclables and trash.

P33. **AIR PDF 4:** The project applicant shall require all contractors to adhere to SCAQMD's Rule 402 requirements that do not allow the discharge of any source of air contaminants or odors that may create a nuisance at the nearby homes.

Specific actions to reduce air contaminant and odor impacts include the following:

- Place all stockpiles of material that may emit odors and/or air contaminants (e.g. asphalt concrete, trash, vegetation, etc…) as far as away as practical from the nearby homes.
- Place the equipment storage and maintenance area as far away as practical from the nearby homes and require that all refueling activities occur within the equipment storage and maintenance area.
- Restrict the outdoor spraying of architectural coatings and other solvents, when the wind is blowing directly at the nearby homes.

P34. **CR-1:** Archaeologist Retained/CRMP Prepared: Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a professional archaeological monitor has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and that the monitor has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project archaeologist, with input from the appropriate Tribe, shall prepare a Cultural Resources Monitoring Plan (CRMP) to document protocols for inadvertent finds, to determine potential protection measures from further damage and destruction for any identified archaeological resource(s)/ tribal cultural resources (TCRs), outline the process for monitoring and for completion of the final Phase IV Monitoring Report. If any archaeological and/or TCRs are identified during monitoring, these will also be documented and addressed per standard archaeological protocols in the Phase IV report, with the exception of human remains which will be addressed per MM CUL-5. The Project Archaeologist shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.

P35. **CR-2:** Tribal Monitor Retained: At least 30 days prior to the issuance of a grading permit the Applicant shall contact the appropriate Luiseño tribe to develop a Cultural Resources Treatment Agreement and shall provide evidence to the City of Moreno Valley that the professionally qualified Luiseño Native American monitor(s) has been secured from the interested tribe(s), and that the shall be allowed to monitor all mass grading and trenching activities. The Tribal representative(s) shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.

P36. **CR-3:** Inadvertent Finds: If, during mass grading and trenching activities, the Archaeologist or Tribal representatives suspect that an archaeological resource and/or TCR may have been unearthed, the monitor identifying the potential resources, in consultation with the other monitor as appropriate, shall immediately halt and redirect grading operations in a 50-foot radius around the find to allow identification and evaluation of the suspected resource. The Native American monitor(s) or appropriate representative(s) and the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2. The archaeological monitor and tribal monitor(s) or appropriate representative(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). All sacred sites, should they be encountered within the project area, shall be avoided and preserved as the preferred mitigation, if feasible.

P37. **CR-4:** Grading Plans: Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan: “If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 50-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."

P38. **CR-5:** Human Remains State Law: If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the “most likely descendant(s)” of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.

P39. **CR-6:** Final Phase IV Report: Prior to building permit issuance, the Project archaeologist shall prepare a final Phase IV Monitoring Report as outlined in the CRMP, which shall be submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. The report shall document project impacts to archaeological and tribal resources, if any. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility, or the Western Science Center in Hemet, at the landowners discretion.

P40. **NOI-1**: The project applicant shall construct the following sound walls: (1) A minimum 4.5-foot high wall around all private west facing ground floor patios on Buildings B33, B34, B35, and B36; (2) A minimum 3.5-foot high wall around all private west facing second floor balconies on Buildings B33, B34, B35, and B36;

and (3) A minimum 4.0-foot high wall around all private north facing ground floor patios on Buildings B01, B02, B03, B15, B16, and B17. The sound walls shall be required to be constructed of a solid material (e.g., glass, wood or plaster) that are free of any cutouts or openings.

P41. **NOI-2**: The Project Applicant shall provide a “windows closed” condition for each proposed residential apartment unit. A “windows closed” condition requires a means of mechanical ventilation per Chapter 12, Section 1205 of the Uniform Building Code. This shall be achieved with a standard forced air conditioning and heating system with a filtered outside air intake vent for each residential unit.

MORENO VALLEY UNIFIED SCHOOL DISTRICT

S1. (BP) Prior to issuance of building permits, the developer shall provide to the Community Development Director a written certification by the affected school district that either: (1) the project has complied with the fee or other exaction levied on the project by the governing board of the district, pursuant to Government Code Section 65996; or (2) the fee or other requirement does not apply to the project.

UNITED STATES POSTAL SERVICE

PO1. (BP) Prior to the issuance of building permits, the developer shall contact the U.S. Postal Service to determine the appropriate type and location of mailboxes.

BUILDING AND SAFETY DIVISION

GENERAL CONDITIONS OF APPROVAL

The following conditions have been generated based on the information provided with your application. Please note that future revisions or changes in scope to the project may require additional items. Fee estimates for plan review and permits can be obtained by contacting the Building Safety Division at 951.413.3350.

1. All new structures shall be designed in conformance to the latest design standards adopted by the State of California in the California Building Code, (CBC) Part 2, Title 24, California Code of Regulations including requirements for allowable area, occupancy separations, fire suppression systems, accessibility, etc. The current code edition is the 2013 CBC.

2. All new buildings 10,000 square feet and over, shall include building commissioning in the design and construction processes of the building project to verify that the building systems and components meet the owner’s or owner representative’s project requirements (OPR). All requirements in The 2013

California Green Building Standards Code, sections 5.410.2 - 5.410.2.6 must be met.

3. Prior to submittal, all new development, including residential second units, are required to obtain a valid property address prior to permit application. Addresses can be obtained by contacting the Building Safety Division at 951.413.3350.

4. The proposed project's occupancy shall be classified by the Building Official and must comply with exiting, occupancy separation(s) and minimum plumbing fixture requirements of the 2013 California Plumbing Code Table 4-1.

5. Building plans submitted shall be signed and sealed by a California licensed design professional as required by the State Business and Professions Code.

6. The proposed residential project (3 or more dwelling units) shall comply with the latest Federal Law, Americans with Disabilities Act, and State Law, California Code of Regulations, Title 24, Chapter 11A for accessibility standards for the disabled including access to the site, exits, kitchens, bathrooms, common spaces, pools/spas, etc.

7. The proposed development is subject to the payment of required development fees as required by the City's current Fee Ordinance at the time a building application is submitted or prior to the issuance of permits as determined by the City.

8. The proposed project is subject to approval by the Eastern Municipal Water District and all applicable fees and charges shall be paid prior to permit issuance. Contact the water district at 951.928.3777 for specific details.

9. Prior to permit issuance, every applicant shall submit a properly completed Waste Management Plan (WMP), as a portion of the building or demolition permit process. (MC 8.80.030)

10. Any construction within the city shall only be as follows: Monday through Friday (except for holidays) seven a.m. to ~~sevent~~seven p.m.; weekends and holidays, eight a.m. to four p.m., unless written approval is first obtained from the Building Official or City Engineer per City of Moreno Valley Municipal Code (MC 8.14.040E).

11. Contact the Building Safety Division for permit application submittal requirements.

FIRE PREVENTION BUREAU

With respect to the conditions of approval, the following fire protection measures shall be provided in accordance with Moreno Valley City Ordinances and/or recognized fire protection standards:

F1. Final fire and life safety conditions will be addressed when the Fire Prevention Bureau reviews building plans. These conditions will be based on occupancy, use, California Building Code (CBC), California Fire Code (CFC), and related codes, which are in force at the time of building plan submittal.

F2. The Fire Prevention Bureau is required to set a minimum fire flow for the remodel or construction of all commercial buildings per CFC Appendix B and Table B105.1. The applicant/developer shall provide documentation to show there exists a water system capable of delivering 1500 gallons per minute for 2 hour(s) duration at 20-PSI residual operating pressure. The required fire flow may be adjusted during the approval process to reflect changes in design. (CFC 507.3, Appendix B)

F3. Prior to issuance of Building Permits, the applicant/developer shall provide the Fire Prevention Bureau with an approved site plan for Fire Lanes and signage. (CFC 501.3)

F4. Multi-family residences shall display the address in accordance with the Riverside County Fire Department Premises Identification standard 07-01. (CFC 505.1)

F5. Prior to issuance of a Certificate of Occupancy or Building Final, "Knox Boxes" shall be provided on the buildings. The Knox-Box shall be installed in an accessible location approved by the Fire Code Official. (CFC 506.1)

F6. Electric powered gates shall be provided with Knox key switches for access by emergency personnel. Where manual operated gates are permitted, they shall be provided with a Knox box or Knox padlock. (CFC 506.1)

F9. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire sprinkler system. Fire sprinkler plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9, MVMC 8.36.100[D])

F10. Plans for private water mains supplying fire sprinkler systems and/or private fire hydrants shall be submitted to the Fire Prevention Bureau for approval. (CFC 105 and CFC 3312.1)

F11. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire alarm system monitored by an approved Underwriters Laboratory listed central station based on a requirement for monitoring the sprinkler system, occupancy or use. Fire alarm panel shall be accessible from exterior of building in an approved location. Plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9 and MVMC 8.36.100)

F12. Fire lanes and fire apparatus access roads shall have an unobstructed width of not less than twenty–four (24) feet and an unobstructed vertical clearance of not less the thirteen (13) feet six (6) inches. (CFC 503.2.1 and MVMC 8.36.060[E])

F13. All Fire Department access roads or driveways shall not exceed 12 percent grade. (CFC 503.2.7 and MVMC 8.36.060[G])

F14. The angle of approach and departure for any means of Fire Department access shall not exceed 1 ~~ft~~ft. drop in 20 ~~ft~~ft. (0.3 m drop in 6 m), and the design limitations of the fire apparatus of the Fire Department shall be subject to approval by the AHJ. (CFC 503 and MVMC 8.36.060)

F15. The Fire Department emergency vehicular access road shall be (all weather surface) capable of sustaining an imposed load of 80,000 lbs. GVW, based on street standards approved by the Public Works Director and the Fire Prevention Bureau. The approved fire access road shall be in place during the time of construction. Temporary fire access roads shall be approved by the Fire Prevention Bureau. (CFC 501.4, and MV City Standard Engineering Plan 108d)

F16. During phased construction, dead end roadways and streets which have not been completed shall have a turn-around capable of accommodating fire apparatus. (CFC 503.1 and 503.2.5)

F17. If construction is phased, each phase shall provide an approved emergency vehicular access way for fire protection prior to any building construction. (CFC 501.4)

F18. The minimum number of fire hydrants required, as well as the location and spacing of fire hydrants, shall comply with the C.F.C., MVMC, and NFPA 24. Fire hydrants shall be located no closer than 40 feet to a building. A fire hydrant shall be located within 50 feet of the fire department connection for buildings protected with a fire sprinkler system. The size and number of outlets required for the approved fire hydrants are (6” x 4” x 2 ½” x 2 ½”) (CFC 507.5.1, 507.5.7, Appendix C, NFPA 24-7.2.3, MVMC 912.2.1)

F19. Prior to issuance of Certificate of Occupancy or Building Final, “Blue Reflective Markers” shall be installed to identify fire hydrant locations in accordance with City specifications. (CFC 509.1 and MVLT 440A-0 through MVLT 440C-0)

F20. Prior to issuance of Building Permits, the applicant/developer shall furnish one copy of the water system plans to the Fire Prevention Bureau for review. Plans shall:

a. Be signed by a registered civil engineer or a certified fire protection engineer;
b. Contain a Fire Prevention Bureau approval signature block; and
c. Conform to hydrant type, location, spacing of new and existing hydrants and minimum fire flow required as determined by the Fire Prevention Bureau.

The required water system, including fire hydrants, shall be installed, made serviceable, and be accepted by the Moreno Valley Fire Department prior to beginning construction. They shall be maintained accessible.

F21. The Fire Code Official is authorized to enforce the fire safety during construction requirements of Chapter 33. (CFC Chapter 33 & CBC Chapter 33)

F22. Prior to construction, all traffic calming designs/devices must be approved by the Fire Marshal and City Engineer.

PUBLIC WORKS DEPARTMENT – SPECIAL DISTRICTS DIVISION

Conditions are standard to all or most development projects. Some special conditions, modified conditions or clarification of conditions may be included. Please review conditions as listed and contact the Division at 951.413.3480 for any questions.

Acknowledgement of Conditions

The following are the Special Districts Division's Conditions of Approval for PA16-0039; this project shall be completed at no cost to any Government Agency. All questions regarding the following Conditions including but not limited to intent, requests for change/modification, variance and/or request for extension of time shall be sought from the Special Districts Division of the Public Works Department 951.413.3480 or by emailing specialdistricts@moval.org.

General Conditions

SD-1 The parcel(s) associated with this project have been incorporated into the Moreno Valley Community Services District Zone A (Parks & Community Services) and Zone C (Arterial Street Lighting). All assessable parcels therein shall be subject to annual parcel taxes for Zone A and Zone C for operations and capital improvements.

SD-2 The Moreno Valley Community Services District Zone A (Parks & Community Services) tax is assessed per parcel or per dwelling unit for parcels with more than one dwelling unit. Upon the issuance of building permits, the Zone A tax will be assessed based on 272 dwelling units.

SD-3 Plans for median landscape areas designated in the project's Conditions of Approval for incorporation into a City coordinated landscape maintenance program, shall be prepared and submitted in accordance with the City of Moreno Valley Public Works Department Landscape Design Guidelines. The guidelines are available on the City's website at www.moval.org/sd or from the Special Districts Division (951.413.3480 or specialdistricts@moval.org).

SD-4 The Developer, or the Developer's successors or assignees shall be responsible for median landscape maintenance for a period of one (1) year commencing from the time all items of work have been completed to the satisfaction of Special Districts staff as per the City of Moreno Valley Public Works Department Landscape Design Guidelines, or until such time as the District accepts maintenance responsibilities.

SD-5 Any damage to existing landscape areas maintained by the City of Moreno Valley due to project construction shall be repaired/replaced by the Developer, or Developer's successors in interest, at no cost to the City of Moreno Valley.

SD-6 The ongoing maintenance of any parkway landscaping required to be installed behind the curb on Apple Blossom Ln., Brodiaea Ave., Perris Blvd., and Alessandro Blvd. shall be the responsibility of the property owner.

SD-7 Plan check fees for review of median landscape plans for improvements that shall be maintained by the City of Moreno Valley are due upon the first plan submittal. (MC 3.32.040)

SD-8 Inspection fees for the monitoring of median landscape installation associated with the City of Moreno Valley maintained medians are due prior to the required pre-construction meeting. (MC 3.32.040)

SD-9 Street Light Authorization forms for all street lights that are conditioned to be installed as part of this project must be submitted to the Special Districts Division for approval, prior to street light installation. The Street Light Authorization form can be obtained from the utility company providing electric service to the project, either Moreno Valley Utility or Southern California Edison. For questions, contact the Special Districts Division at 951.413.3480 or specialdistricts@moval.org.

Prior to Building Permit Issuance

SD-10 (BP) This project has been identified to potentially be included in the formation of a Map Act Area of Benefit Special District for the construction of major thoroughfares and/or freeway improvements. The property owner(s) shall participate in such District and pay any special tax, assessment, or fee levied upon the project property for such District. At the time of the public hearing to consider formation of the district, the property owner(s) will not protest the formation, but will retain the right to object any eventual assessment that is not equitable should the financial burden of the assessment not be reasonably proportionate to the benefit the affected property obtains from the improvements to be installed. The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org of its selected financial option when submitting an application for the first building permit to determine whether the development will be subjected to this condition. If subject to the condition, the special election requires a 90 day process in compliance with the provisions of Article 13C of the California Constitution. (Street & Highway Code, GP Objective 2.14.2, MC 9.14.100).

SD-11 (BP) This project has been conditioned to provide a funding source for the continued maintenance, enhancement, and or retrofit of neighborhood parks, open spaces, linear parks, and/or trails systems. The Developer shall satisfy this condition with one of the options below.

a. Participate in a special election for annexation into Community Facilities District No. 1 and pay all associated costs with the special election process and formation, if any; or

b. Establish an endowment fund to cover future maintenance costs for new neighborhood parks.

The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org when submitting the application for building permit issuance of its selected financial option. If option a. is selected, the special election will require a 90 day process prior to building permit issuance. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution.

Annexation to CFD No. 1 shall be completed or proof of payment to establish the endowment fund shall be provided prior to the issuance of the first certificate of occupancy for the project.

SD-12 (BP) This project has been identified to be included in the formation of a Community Facilities District (Mello-Roos) for Public Safety services, including but not limited to Police, Fire Protection, Paramedic Services, Park Rangers, and Animal Control services. The property owner(s) shall not protest the formation; however, they retain the right to object to the rate and method of maximum special tax. In compliance with Proposition 218, the property owner shall agree to approve the mail ballot proceeding (special election) for either formation of the CFD or annexation into an existing district. The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org when submitting the application for building permit issuance to determine the requirement for participation. If the first building permit is pulled prior to formation of the district, this condition will not apply. If the condition applies, the special election will require a minimum of 90 days prior to issuance of the first building permit. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution. (California Government Code Section 53313 et. seq.)

SD-13 (BP) This project is conditioned to provide a funding source for the following special financing program(s):

a. Street Lighting Services for capital improvements, energy charges, and maintenance.
b. Landscape Maintenance Services for median landscaping on Perris Blvd. and Alessandro Blvd.

The Developer's responsibility is to provide a funding source for the capital improvements and the continued maintenance. The Developer shall satisfy this condition with one of the options below.

i. Participate in a special election (mail ballot proceeding) and pay all associated costs of the special election and formation, if any. Financing may be structured through a Community Services District zone, Community Facilities District, Landscape and Lighting Maintenance District, or other financing structure as determined by the City; or
ii. Establish a Property Owner's Association (POA) or Home Owner's Association (HOA) which will be responsible for any and all operation and maintenance costs

The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org of its selected financial option when submitting the application for building permit issuance. The option for participating in a special election requires approximately 90 days to complete the special election process. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution.

The financial option selected shall be in place prior to the issuance of the first certificate of occupancy for the project.

SD-14 (BP) This project is conditioned for a proposed district to provide a funding source for the operation and maintenance of public improvements and/or services associated with new development in that territory. The Developer shall satisfy this condition with one of the options outlined below.

a. Participate in a special election for maintenance/services and pay all associated costs of the election process and formation, if any. Financing may be structured through a Community Facilities District, Landscape and Lighting Maintenance District, or other financing structure as determined by the City; or

b. Establish an endowment fund to cover the future maintenance and/or service costs.

The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org when submitting the application for building permit issuance. If the first building permit is pulled prior to formation of the district, this condition will not apply. If the district has been or is in the process of being formed the Developer must inform the Special Districts Division of its selected financing option (a. or b. above). The option for participating in a special election requires 90 days to complete the special election process. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution.

The financial option selected shall be in place prior to the issuance of the first certificate of occupancy for the project.

SD-15 *Commercial* (BP) If Land Development, a Division of the Public Works Department, requires this project to supply a funding source necessary to provide for, but not limited to, stormwater utilities services for the continuous operation, remediation and/or replacement, monitoring, systems evaluations and enhancement of on-site facilities and performing annual inspections of the affected areas to ensure compliance with state mandated stormwater regulations, a funding source needs to be established. The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org of its selected financial option for the National Pollution Discharge Elimination System (NPDES) program when submitting the application for the first building permit issuance (see Land Development's related condition). Participating in a special election the process requires a 90 day period prior to the City's issuance of a building permit. This allows adequate time to be in compliance with the provisions of Article 13D of the California Constitution. (California Health and Safety Code Sections 5473 through 5473.8 (Ord. 708 Section 3.1, 2006) & City of Moreno Valley Municipal Code Title 3, Section 3.50.050.)

SD-16 (BP) Prior to the issuance of the first building permit for this project, the Developer shall pay Advanced Energy fees for all applicable Residential and Arterial Street Lights required for this development. Payment shall be made to the City of Moreno Valley and collected by the Land Development Division. Fees are based upon the Advanced Energy fee rate in place at the time of payment, as set forth in the current Listing of City Fees, Charges, and Rates adopted by City Council. The Developer shall provide a copy of the receipt to the Special Districts Division *(specialdistricts@moval.org).* Any change in the project which may increase the number of street lights to be installed will require payment of additional Advanced Energy fees at the then current fee. Questions may be directed to the Special Districts Division at 951.413.3480 or specialdistricts@moval.org.

SD-17 (BP) For those areas to be maintained by the City and prior to the issuance of the first Building Permit, Planning Division (Community Development Department), Special Districts Division (the Public Works Department) and Transportation Division (the Public Works Department) shall review and approve the final median, landscape/irrigation plans as designated on the tentative map or in these Conditions of Approval prior to the issuance of the first Building Permit.

Prior to Certificate of Occupancy

SD-18 (CO) Median landscaping specified in the project's Conditions of Approval shall be constructed in compliance with the City of Moreno Valley Public Works Design Guidelines and completed prior to the issuance of the first Certificate of Occupancy/Building Final for this project.

SD-19 (CO) Landscape and irrigation plans for median landscaping areas designated to be maintained by the City shall be placed on compact disk (CD) in pdf format. The CD shall include "As Built" plans, revisions, and changes. The CD will become the property of the City of Moreno Valley and the Moreno Valley Community Services District.

MORENO VALLEY UTILITY

Acknowledgement of Conditions

The following items are Moreno Valley Utility's Conditions of Approval for project PA16-0039; this project shall be completed at no cost to any Government Agency. All questions regarding Moreno Valley Utility's Conditions including but not limited to, intent, requests for change/modification, variance and/or request for extension of time shall be sought from Moreno Valley Utility (the Electric Utility Division) of the Finance and Management Services Department 951.413.3500, mvuengineering@moval.org. The applicant is fully responsible for communicating with Moreno Valley Utility staff regarding their conditions.

PRIOR TO ENERGIZING MVU ELECTRIC UTILITY SYSTEM AND CERTIFICATE OF OCCUPANCY

MVU-1 (R) This project requires the installation of electric distribution facilities. A non-exclusive easement shall be provided to Moreno Valley Utility and shall include the rights of ingress and egress for the purpose of operation, maintenance, facility repair, and meter reading.

MVU-2 (BP) City of Moreno Valley Municipal Utility Service – Electrical Distribution: Prior to constructing the MVU Electric Utility System, the developer shall submit a detailed engineering plan showing design, location and schematics for the utility system to be approved by the City Engineer. In accordance with Government Code Section 66462, the Developer **shall** execute an agreement with the City providing for the installation, construction, improvement and dedication of the utility system following recordation of final map and concurrent with trenching operations and other subdivision improvements so long as said agreement incorporates the approved engineering plan and provides financial security to guarantee completion and dedication of the utility system.

The Developer shall coordinate and receive approval from the City Engineer to install, construct, improve, and dedicate to the City, or the City's designee, all utility infrastructure (including but not limited to conduit, equipment, vaults, ducts, wires, switches, conductors, transformers, and "bring-up" facilities including electrical capacity to serve the identified development and other adjoining/abutting/ or benefiting projects as determined by Moreno Valley Utility) – collectively referred to as "utility system" (to and through the development), along with any appurtenant real property easements, as determined by the City Engineer to be necessary for the distribution and /or delivery of any and all "utility services" to each lot and unit within the Tentative Map. For purposes of this condition, "utility services" shall mean electric, cable television, telecommunication (including video, voice, and data) and other similar services designated by the City Engineer. "Utility services" shall not include sewer, water, and natural gas services, which are addressed by other conditions of approval.

The City, or the City's designee, shall utilize dedicated utility facilities to ensure safe, reliable, sustainable and cost effective delivery of utility services and maintain the integrity of streets and other public infrastructure. Developer shall, at developer's sole expense, install or cause the installation of such interconnection facilities as may be necessary to connect the electrical distribution infrastructure within the project to the Moreno Valley Utility owned and controlled electric distribution system.

MVU-3 This project is subject to a Reimbursement Agreement and is responsible for a proportionate share of costs associated with electrical distribution infrastructure previously installed that directly benefits the project.
Payment shall be required prior to issuance of building permits.

MVU-4 For all new projects, existing Moreno Valley Utility electrical infrastructure shall be preserved in place. The developer will be responsible, at developer expense, for any and all costs associated with the relocation of any of Moreno Valley Utility's underground electrical distribution facilities, as determined by Moreno Valley Utility, which may be in conflict with any developer planned construction on the project site.

PUBLIC WORKS DEPARTMENT – LAND DEVELOPMENT DIVISION

The following are the Public Works Department – Land Development Division Conditions of Approval for this project and shall be completed at no cost to any government agency. All questions regarding the intent of the following conditions shall be referred to the Land Development Division.

General Conditions

LD1. (G) The developer shall comply with all applicable City ordinances and resolutions including the City's Municipal Code (MC) and if subdividing land, the Government Code (GC) of the State of California, specifically Sections 66410 through 66499.58, said sections also referred to as the Subdivision Map Act (SMA). [MC 9.14.010]

LD2. (G) The plot plan shall correctly show all existing easements, traveled ways, and drainage courses. Any omission may require the map or plans associated with this application to be resubmitted for further consideration. [MC 9.14.040(A)]

LD3. (G) In the event right of way or offsite easements are required to construct offsite improvements necessary for the orderly development of the surrounding area to meet the public health and safety needs, the developer shall make a good faith effort to acquire the needed right of way in accordance with the Land Development Division's administrative policy. If unsuccessful, the Developer shall enter into an agreement with the City to acquire the necessary right of way or offsite easements and complete the improvements at such time the City acquires the right of way or offsite easements which will permit the improvements to be made. The developer shall be responsible for all costs associated with the right of way or easement acquisition. [GC 66462.5]

LD4. (G) If improvements associated with this project are not initiated within two (2) years of the date of approval of the Public Improvement Agreement (PIA), the City Engineer may require that the engineer's estimate for improvements associated with the project be modified to reflect current City construction costs in effect at the time of request for an extension of time for the PIA or issuance of a permit.

LD5. (G) The developer shall monitor, supervise and control all construction and construction supportive activities, so as to prevent these activities from causing a public nuisance, including but not limited to, insuring strict adherence to the following:

a. Removal of dirt, debris, or other construction material deposited on any public street no later than the end of each working day.

b. Observance of working hours as stipulated on permits issued by the Land Development Division.

c. The construction site shall accommodate the parking of all motor vehicles used by persons working at or providing deliveries to the site.

d. All dust control measures per South Coast Air Quality Management District (SCAQMD) requirements during the grading operations.

Violation of any condition, restriction or prohibition set forth in these conditions shall subject the owner, applicant, developer or contractor(s) to remedy as noted in City Municipal Code 8.14.090. In addition, the City Engineer or Building Official may suspend all construction related activities for violation of any condition, restriction or prohibition set forth in these conditions until such time as it has been determined that all operations and activities are in conformance with these conditions.

LD6. (G) The developer shall protect downstream properties from damage caused by alteration of drainage patterns (i.e. concentration or diversion of flow, etc.). Protection shall be provided by constructing adequate drainage facilities, including, but not limited to, modifying existing facilities or by securing a drainage easement. [MC 9.14.110]

LD7. (G) Public drainage easements, when required, shall be a minimum of 25 feet wide and shall be shown on the map and plan, and noted as follows: *"Drainage Easement – no structures, obstructions, or encroachments by landfills are allowed."* In addition, the grade within the easement area shall not exceed a 3:1 (H:V) slope, unless approved by the City Engineer.

LD8. (G) Prior to any plan approval, a final detailed drainage study (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer. The study shall include existing and proposed hydrologic conditions as well as hydraulic calculations for all drainage control devices and storm drain lines. [MC 9.14.110(A.1)]. A digital (pdf) copy of the approved drainage study shall be submitted to the Land Development Division.

LD9. (G) The final approved conditions of approval (COAs) and any applicable Mitigation Measures issued by the Planning Division shall be photographically or electronically placed on Mylar sheets and included in the Grading and Street Improvement plans.

LD10. (G) Aggregate slurry, as defined in Section 203-5 of Standard Specifications for Public Works Construction, may be required just prior to the end of the one-year warranty period of the public streets at the discretion of the City Engineer. If slurry is required, a slurry mix design shall be submitted for review and approved by the City Engineer. The latex additive shall be Ultra Pave 70 (for anionic) or Ultra Pave 65 K (for cationic) or an approved equal per the geotechnical report. The latex shall be added at the emulsion plant after weighing the asphalt and before the addition of mixing water. The latex shall be added at a rate of two to two-and-one-half (2 to 2½) parts to one-hundred (100) parts of emulsion by volume. Any existing striping shall be removed prior to slurry application and replaced per City standards.

Prior to Grading Plan Approval

LD13. (GPA) Grading plans (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

LD14. (GPA) Landscape & Irrigation plans (prepared by a registered/licensed landscape architect) for water quality BMPs shall be submitted for review and approved by the City Engineer per the current submittal requirements, if applicable.

LD15. (GPA) The developer shall ensure compliance with the City Grading ordinance, these Conditions of Approval and the following criteria:

a. The project street and lot grading shall be designed in a manner that perpetuates the existing natural drainage patterns with respect to tributary drainage area and outlet points. Unless otherwise approved by the City Engineer, lot lines shall be located at the top of slopes.

b. Any grading that creates cut or fill slopes adjacent to the street shall provide erosion control, sight distance control, and slope easements as approved by the City Engineer.

c. All improvement plans are substantially complete and appropriate clearance letters are provided to the City.

d. A soils/geotechnical report (addressing the soil's stability and geological conditions of the site) shall be submitted to the Land Development Division for review. A digital (pdf) copy of the soils/geotechnical report shall be submitted to the Land Development Division.

LD16. (GPA) The developer shall select Low Impact Development (LID) Best Management Practices (BMPs) designed per the latest version of the Water Quality Management Plan (WQMP) - a guidance document for the Santa Ana region of Riverside County.

LD17. (GPA) For projects that will result in discharges of storm water associated with construction with a soil disturbance of one or more acres of land, the developer shall submit a Notice of Intent (NOI) and obtain a Waste Discharger's Identification number (WDID#) from the State Water Quality Control Board (SWQCB) which shall be noted on the grading plans.

LD18. (GPA) Two (2) copies of the final project-specific Water Quality Management Plan (WQMP) shall be submitted for review and approved by the City Engineer, which:

a. Addresses Site Design Best Management Practices (BMPs) such as minimizing impervious areas, maximizing permeability, minimizes directly connected impervious areas to the City's street and storm drain systems, and conserves natural areas;

b. Incorporates Source Control BMPs and provides a detailed description of their implementation;

c. Describes the long-term operation and maintenance requirements for BMPs requiring maintenance; and

d. Describes the mechanism for funding the long-term operation and maintenance of the BMPs.

A copy of the final WQMP template can be obtained on the City's Website or by contacting the Land Development Division. A digital (pdf) copy of the approved final project-specific Water Quality Management Plan (WQMP) shall be submitted to the Land Development Division.

LD19. (GPA) A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared in conformance with the State's current Construction Activities Storm Water General Permit. A copy of the current SWPPP shall be kept at the project site and be available for review upon request.

LD20. (GPA) The developer shall pay all remaining plan check fees.

LD21. (GPA) Resolution of all drainage issues shall be as approved by the City Engineer.

<u>Prior to Grading Permit</u>

LD22. (GP) A receipt showing payment of the Area Drainage Plan (ADP) fee to Riverside County Flood Control and Water Conservation District shall be submitted. [MC 9.14.100(O)]

LD23. (GP) Security, in the form of a cash deposit (preferable), or letter of credit shall be submitted as a guarantee of the completion of the grading operations for the project. [MC 8.21.070]

LD24. (GP) Security, in the form of a cash deposit (preferable), or letter of credit shall be submitted as a guarantee of the implementation and maintenance of erosion control measures. At least twenty-five (25) percent of the required security shall be in the form of a cash deposit with the City. [MC 8.21.160(H)]

LD25. (GP) The developer shall pay all applicable inspection fees.

LD26. (GP) A digital (pdf) copy of the approved grading plans shall be submitted to the Land Development Division.

LD27. (GP) Prior to the payment of the Development Impact Fee (DIF), the developer may enter into a DIF Improvement Credit Agreement to secure credit for the construction of applicable improvements, if applicable. If the developer fails to complete this agreement prior to the timing specified above, no credits will be given. The developer shall pay current DIF fees adopted by the City Council. [Ord. 695 § 1.1 (part), 2005] [MC 3.38.030, 040, 050]

LD28. (BP) Prior to the payment of the Transportation Uniform Mitigation Fee (TUMF), the developer may enter into a TUMF Improvement Credit Agreement to secure credit for the construction of applicable improvements, if applicable. If the developer fails to complete this agreement by the timing specified above, no credits will be given. The developer shall pay current TUMF fees adopted by the City Council. [Ord. 835 § 2.1, 2012] [MC 3.44.060]

Prior to Improvement Plan Approval

LD29. (IPA) All public improvement plans (prepared by a licensed/registered civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

LD30. (IPA) The developer shall submit clearances from all applicable agencies, and pay all applicable plan check fees.

LD31. (IPA) The street improvement plans shall comply with current City policies, plans and applicable City standards (i.e. MVSI-160 series, etc.) throughout this project.

LD32. (IPA) The design plan and profile shall be based upon a centerline, extending beyond the project boundaries a minimum distance of 300 feet at a grade and alignment approved by the City Engineer.

LD33. (IPA) The plans shall indicate any restrictions on trench repair pavement cuts to reflect the City's moratorium on disturbing newly-constructed pavement less than three (3) years old and recently slurry sealed streets less than one (1) year old. Pavement cuts for trench repairs may be allowed for emergency repairs or as specifically approved by the City Engineer.

LD34. (IPA) The developer shall pothole to determine the exact location and elevation of existing underground utilities and incorporate the results into the design of the plans. The developer shall coordinate with all affected utility companies and bear all costs of utility relocations.

LD35. (IPA) The developer is required to bring any existing access ramps adjacent to and fronting the project to current ADA (Americans with Disabilities Act) requirements. However, when work is required in an intersection that involves or impacts existing access ramps, all access ramps in that intersection shall be retrofitted to comply with current ADA requirements, unless approved otherwise by the City Engineer.

LD36. (IPA) Drainage facilities (i.e. catch basins, etc.) with sump conditions shall be designed to convey the tributary 100-year storm flows. Secondary emergency escape shall also be provided.

LD37. (IPA) The hydrology study shall be designed to accept and properly convey all off-site drainage flowing onto or through the site. All storm drain design and improvements shall be submitted for review and approved of the City Engineer. In the event that the City Engineer permits the use of streets for drainage purposes, the provisions of current City standards shall apply. Should the quantities exceed the street capacity or the use of streets be prohibited for drainage purposes, as in the case where one travel lane in each direction shall not be used for drainage conveyance for emergency vehicle access on streets classified as minor arterials and greater, the developer shall provide adequate facilities as approved by the City Engineer. [MC 9.14.110 A.2]

LD38. (IPA) For non-subdivision projects, all street dedications shall be free of encumbrances, irrevocably offered to the public and shall continue in force until the City accepts or abandons such offers, unless otherwise approved by the City Engineer.

Prior to Encroachment Permit

LD39. (EP) All work performed within public right of way requires an encroachment permit. Security (in the form of a cash deposit or other approved means) may be required as determined by the City Engineer. For non-subdivision projects, the City Engineer may require the execution of a Public Improvement Agreement (PIA) as a condition of the issuance of a construction or encroachment permit. All inspection fees shall be paid prior to issuance of construction permit. [MC 9.14.100(C.4)]

LD40. (EP) A digital (pdf) copy of all approved improvement plans shall be submitted to the Land Development Division.

LD41. (EP) All applicable inspection fees shall be paid.

Prior to Building Permit

LD42. (BP) For non-subdivision projects, the developer shall guarantee the completion of all related public improvements required for this project by executing a Public Improvement Agreement (PIA) with the City and posting the required security. [MC 9.14.220]

LD43. (BP) For non-subdivision projects, the developer shall comply with the requirements of the City Engineer based on recommendations of the Riverside County Flood Control District regarding the construction of County Master Plan Facilities.

LD44. (BP) For non-subdivision projects, the developer shall enter into a Cooperative Agreement with the City and Riverside County Flood Control and Water Conservation District establishing the terms and conditions covering the inspection, operation and maintenance of Master Drainage Plan facilities required to be constructed as part of the project, if applicable.

LD45. (BP) Certification to the line, grade, flow test, and system invert elevations for the water quality control BMPs shall be submitted or review and approved by the City Engineer (excluding models homes).

LD46. (BP) An engineered-fill certification, rough grade certification and compaction report shall be submitted for review and approved by the City Engineer. A digital (pdf) copy of the approved compaction report shall be submitted to the Land Development Division. All pads shall meet pad elevations per approved grading plans as noted by the setting of “blue-top” markers installed by a registered land surveyor or licensed civil engineer.

Prior to Occupancy

LD47. (CO) All required as-built plans (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

LD48. (CO) The engineered final/precise grade certification shall be submitted for review and approved by the City Engineer.

LD49. (CO) All outstanding fees shall be paid.

LD50. (CO) For non-subdivision projects, in compliance with Proposition 218, the developer shall agree to approve the City of Moreno Valley NPDES Regulatory Rate Schedule that is in place at the time of certificate of occupancy issuance. Under the current permit for storm water activities required as part of the National Pollutant Discharge Elimination System (NPDES) as mandated by the Federal Clean Water Act, this project is subject to the following requirements:

a. Select one of the following options to meet the financial responsibility to provide storm water utilities services for the required continuous operation, maintenance, monitoring system evaluations and enhancements, remediation and/or replacement, all in accordance with Resolution No. 2002-46.

   i. Participate in the mail ballot proceeding in compliance with Proposition 218, for the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule and pay all associated costs with the ballot process; or

   ii. Establish an endowment to cover future City costs as specified in the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule.

b. Notify the Special Districts Division of the intent to request building permits 90 days prior to their issuance and the financial option selected. The financial option selected shall be in place prior to the issuance of certificate of occupancy. [California Government Code & Municipal Code]

LD51. (CO) The developer shall complete all public improvements in conformance with current City standards, except as noted in the Special Conditions, including but not limited to the following:

a. Street improvements including, but not limited to: pavement, base, curb and/or gutter, cross gutters, spandrel, sidewalks, drive approaches, pedestrian ramps, street lights, signing, striping, under sidewalk drains, landscaping and irrigation, medians, redwood header boards, pavement tapers/transitions and traffic control devices as appropriate.

b. Storm drain facilities including, but not limited to: storm drain pipe, storm drain laterals, open channels, catch basins and local depressions.

c. City-owned utilities.

d. Sewer and water systems including, but not limited to: sanitary sewer, potable water and recycled water.

e. Under grounding of all existing and proposed utilities adjacent to and on-site. [MC 9.14.130]

f. Relocation of overhead electrical utility lines including, but not limited to: electrical, cable and telephone.

LD52. (CO) For commercial and multi-family projects, a “Stormwater Treatment Device and Control Measure Access and Maintenance Covenant” shall be recorded to provide public notice of the maintenance requirements to be implemented per the approved final project-specific WQMP. A boilerplate copy of the “Stormwater Treatment Device and Control Measure Access and Maintenance Covenant” can be obtained by contacting the Land Development Division.

LD53. (CO) The Developer shall comply with the following water quality related items:

a. Notify the Land Development Division prior to construction and installation of all structural BMPs so that an inspection can be performed.

b. Demonstrate that all structural BMPs described in the approved final project-specific WQMP have been constructed and installed in conformance with the approved plans and specifications;

c. Demonstrate that Developer is prepared to implement all non-structural BMPs described in the approved final project-specific WQMP; and

d. Demonstrate that an adequate number of copies of the approved final project-specific WQMP are available for future owners/occupants.

e. Clean and repair the water quality BMP's, including re-grading to approved civil drawings if necessary.

f. Provide City with updated Engineer’s Line and Grade Certification.

g. Obtain approval and complete installation of the irrigation and landscaping.

LD54. (CO) The applicant shall ensure the following, pursuant to Section XII. I. of the 2010 NPDES Permit:

a. Field verification that structural Site Design, Source Control and Treatment Control BMPs are designed, constructed and functional in accordance with the approved Final Water Quality Management Plan (WQMP).

b. Certification of best management practices (BMPs) from a state licensed civil engineer. An original WQMP BMP Certification shall be submitted for review and approved by the City Engineer.

<u>Special Conditions</u>

LD55. Prior to precise grading plan approval, the grading plans shall clearly show that the parking lot conforms to City standards. The parking lot shall be 5% maximum, 1% minimum, 2% maximum at or near any disabled parking stall and travel way. Ramps, curb openings and travel paths shall all conform to current ADA standards as outlined in Department of Justice’s “ADA Standards for Accessible Design”, Excerpt from 28 CFR Part 36. (www.usdoj.gov) and as approved by the City’s Building and Safety Division.

LD56. Prior to precise grading plan approval, the grading plans shall show any proposed trash enclosure as dual bin; one bin for trash and one bin for recyclables. The trash enclosure shall be per City Standard Plans MVSI-660A-0 thru 660F-0.

LD57. Prior to Building Permit Issuance, the existing lot line shall be removed so that the site shall not consist of more than a single lot.

LD58. Dedicate/vacate right-of-way as applicable so that the right-of-way width on Perris Blvd is per City Std. MVSI-103C-0. Dedicate/vacate right-of-way as applicable so that the right-of-way width on Alessandro Blvd. is per City Std. MVSI-101A-0. Dedicate/vacate right-of-way as applicable so that the right-of-way width on Brodiaea Ave. is per City Std. MVSI-106B-0. Dedicate/vacate right-of-way as applicable on Apple Blossom Lane so that the right-of-way width is per City Std. MVSI-107A-0.

LD58. The Applicant shall prepare and submit for approval a final, project-specific water quality management plan (F-WQMP) for PA16-0039 Villa Annette. The F-WQMP shall be consistent with the approved P-WQMP and the Special Project Conditions listed above, as well as in full conformance with the document; "*Water Quality Management Plan - A Guidance Document for the Santa Ana Region of Riverside County" dated October 22, 2012*. The F-WQMP shall be submitted and approved prior to application for and issuance of grading permits or building permits. At a minimum, the F-WQMP shall include the following: stormwater BMPs; LID principles; Source control BMPs; Operation and Maintenance requirements for BMPs; and sources of funding for BMP implementation.

LD59. The Applicant <u>has proposed to incorporate the use of infiltration basin/trenches.</u> Final design and sizing details of all BMPs must be provided in the first submittal of the F-WQMP, per the Special Project Conditions listed above. The Applicant acknowledges that more area than currently shown on the plans may be required to treat site runoff as required by the WQMP guidance document. All Water Quality Best Management Practices shall be located outside of the public right-of-way.

LD60. The Applicant shall substantiate all applicable Hydrologic Condition of Concern (HCOC) issues in the first submittal of the F-WQMP, if applicable.

LD61. The Applicant shall, prior to building or grading permit closeout or the issuance of a certificate of occupancy, demonstrate:

a. That all structural BMPs have been constructed and installed in conformance with the approved plans and specifications;
b. That all structural BMPs described in the F-WQMP have been implemented in accordance with approved plans and specifications;
c. That the applicant is prepared to implement all non-structural BMPs included in the F-WQMP, conditions of approval, and building/grading permit conditions; and

d. That an adequate number of copies of the approved F-WQMP are available for the future owners/occupants of the project.

LD62. Prior to occupancy, the following improvements shall be completed:

I. Perris Blvd., 6-Lane Divided Arterial, City Standard MVSI-103C-0 shall be constructed to half-width plus 19' with median as necessary, along the entire project's westerly frontage. Improvements shall consist of, but not be limited to, pavement, base, street lights, driveway approaches, pedestrian ramps, curb & gutter, sidewalk. In addition, replace or install any damaged, substandard or missing improvements.

II. Alessandro Blvd., Divided Major Arterial, City Standard MVSI-101A-0 shall be constructed to half-width plus 23' with median as necessary, along the entire project's northerly frontage. Improvements shall consist of, but not be limited to, pavement, base, street lights, driveway approaches, pedestrian ramps, curb & gutter, sidewalk. In addition, replace or install any damaged, substandard or missing improvements.

III. Brodiaea Avenue, Collector, City Standard MVSI-106B-0 shall be constructed to half-width plus 12' along the entire project's southerly frontage. Improvements shall consist of, but not be limited to, pavement, base, street lights, driveway approaches, pedestrian ramps, curb & gutter, sidewalk. In addition, replace or install any damaged, substandard or missing improvements.

IV. Apple Blossom Lane, Local Street, City Standard MVSI-107A-0 shall be constructed to half-width plus 12' along the entire project's easterly frontage. Improvements shall consist of, but not be limited to, pavement, base, street lights, driveway approaches, pedestrian ramps, curb & gutter, sidewalk. In addition, replace or install any damaged, substandard or missing improvements.

V. Pavement core samples of existing pavement on Perris Blvd, Alessandro Blvd., Brodiaea Ave. and Apple Blossom Ln. may be taken and findings submitted to the City for review and consideration of pavement improvements. The City will determine the adequacy of the existing pavement structural section. If the existing pavement structural section is found to be adequate, the developer may still be required to perform a one-tenth inch grind and overlay or slurry seal depending on the severity of existing pavement cracking, as required by the City Engineer. If the existing pavement section is found to be inadequate, the Developer shall replace the pavement to meet or exceed the City's pavement structural section standard.

PUBLIC WORKS DEPARTMENT – TRANSPORTATION ENGINEERING DIVISION

GENERAL CONDITIONS

TE1. Alessandro Boulevard is classified as a Divided Major Arterial at this location (134’ RW/110’CC) per City Standard Plan No. MVSI-101A-0. A raised median is planned on Alessandro Boulevard and this project will be required to construct the median along the project frontage. The median design will provide for 200’ of left turn vehicle storage for eastbound Alessandro Boulevard at Apple Blossom Lane. Citywide Communications Conduit along project frontage shall be required per City Standard Plan No. MVSI-186-0. All improvements undertaken by this project shall be consistent with the City’s standards for this facility.

TE2. Perris Boulevard is classified as a 6-lane Divided Arterial at this location (110’ RW/86’CC) per City Standard Plan No. MVSI-103C-0. A raised median is planned on Perris Boulevard and this project will be required to construct the median along the project frontage. The median design will provide for 200’ of left turn vehicle storage for southbound Perris Boulevard at Brodiaea Avenue. All improvements undertaken by this project shall be consistent with the City’s standards for this facility.

TE3. Brodiaea Avenue is classified as a Collector (66’RW/44’CC) per City Standard Plan No. MVSI-106B-0. Any improvements undertaken by this project shall be consistent with the City’s standards for this facility.

TE4. Apple Blossom Lane is classified as a local street (56’RW/36’CC) per City Standard Plan No. MVSI-107A-0. Any improvements undertaken by this project shall be consistent with the City’s standards for this facility.

TE5. Sight distance at the proposed roadways and driveways shall conform to City of Moreno Valley Standard No. MVSI-164A,B,C-0 at the time of preparation of final grading, landscape, and street improvement plans.

TE6. The driveways shall conform to City of Moreno Valley Standard No. MVSI-112C-0 for Commercial Driveway Approaches. Access at the driveways shall be as follows:

- Alessandro Boulevard driveway: right-in/right-out only.
- Perris Boulevard driveway: right-in/right-out only.
- Apple Blossom Lane driveway: Emergency Vehicle access only.

TE7. All proposed on-site traffic signing and striping shall be accordance with the latest edition of the California Manual on Uniform Traffic Control Devices (CAMUTCD).

TE8. Prior to the final approval of the street improvement plans, a signing and striping plan shall be prepared per the latest edition of the California Manual on Uniform Traffic Control Devices (CAMUTCD) and City of Moreno Valley Standard Plans for all street frontages.

TE9. A traffic signal modification plan will be required for the intersection of Alessandro Boulevard and Apple Blossom Lane.

TE10. Prior to the commencement of construction activity, construction traffic control plans prepared by a Registered Civil or Traffic Engineer may be required to be submitted to the City for plan approval.

TE11. Conditions of approval may be modified if project is phased or altered from any approved plans.

PRIOR TO IMPROVEMENT PLAN APPROVAL OR CONSTRUCTION PERMIT

TE12. Prior to the final approval of the street improvement plans, traffic signal modification plans will be required for the traffic signal located at Alessandro Boulevard and Apple Blossom Lane. Modifications may include but not limited to new signal poles, new pull boxes, new traffic detector loops, etc.

TE13. The street improvement plans shall include a bus bay on Perris Boulevard, just north of Brodiaea Avenue for northbound traffic, per City Standard Plan No. MVSI-161-0.

TE14. Prior to issuance of a construction permit, construction traffic control plans prepared by a qualified, registered Civil or Traffic Engineer may be required for plan approval or as required by the City Traffic Engineer.

TE15. Prior to final approval of the street improvement plans, the project plans shall demonstrate that sight distance at proposed streets and driveways conforms to City Standard Plan No. MVSI-164A-0 through MVSI-164C-0.

PRIOR TO CERTIFICATE OF OCCUPANCY OR BUILDING FINAL

TE16. (CO) Prior to issuance of Certificate of Occupancy, improvements identified in TE1, TE2, TE12, and TE13 shall be completed per the approved plans to the satisfaction of the City Engineer.

PARKS AND COMMUNITY SERVICES DEPARTMENT

GENERAL CONDITIONS:

PCS-GC-1 Residential Projects Only: This project is required to supply a funding source for the continued maintenance, enhancement, and or retrofit of neighborhood parks, open spaces, linear parks, and/or trails systems. This can be achieved through annexing into Community Facilities District No. 1 (Park Maintenance). Please contact the Special Districts Division at 951.413.3480 or specialdistricts@moval.org to complete the annexation process.

PCS-GC-2 The parcel(s) associated with this project have been incorporated into the Moreno Valley Community Services District Zone A (Parks and Community Services). All assessable parcels therein shall be subject to the annual Zone 'A' charge for operations and capital improvements. Proof of such shall be supplied to Parks and Community Services upon Final Map and at Building Permits.

PCS-GC-3 This project is subject to current Development Impact Fees at time of building permit issuance.

PCS-GC-4 This project is subject to current Quimby Fees at time of building permit issuance.

EXHIBIT A

Mitigation Monitoring and Reporting Program

Introduction

This Mitigation Monitoring and Reporting Program has been prepared for the use in implementing mitigation for the Villa Annette Apartments MND (Case P-16-0039). The program has been prepared in compliance with State law and the Mitigation Negative Declaration (MND) prepared for the project.

The California Environmental Quality Act (CEQA) requires adoption of a reporting or monitoring program for those measures places on a project to mitigated or avoid adverse effects on the environment (Public Resources Code Section 21081.6). The law states that the reporting or monitoring program shall be designed to ensure compliance during project implementation.

The monitoring program contains the following elements:

1. The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.
2. A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when, and to whom and when compliance will be reported.
3. The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon recommendations by those responsible for the program. As changes are made, new monitoring compliance procedures are records will be developed and incorporated into the program.

Mitigation Monitoring and Responsibilities

As the Lead Agency, the City of Moreno Valley is responsible for ensuring full compliance with the mitigation measures adopted for the proposed project. The City will monitor and report on all mitigation activities. Mitigation measures will be implemented at different stages of development throughout the project. In this regard, the responsibilities for implementation have been assigned to the Applicant, Contractor, or a combination thereof. If during the course of project implementation, any of the mitigation measures identified herein cannot be successfully implemented, the City shall be immediately informed, and the City will then inform any affected responsible agencies. The City, in conjunction with any affected responsible agencies, will then determine if modification to the project is required and/or whether alternative mitigation is appropriate.

Mitigation Monitoring and Reporting Program Checklist

Project: Edgemont Apartments

Applicant: LATCO

Date: March 6, 2015

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Air Quality						
AIR PDF 1: The project applicant shall require that the grading contractor limit the daily disturbed area to 5 acres or less.	City of Moreno Valley Community Development Department	Ongoing during grading	Throughout grading	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy
AIR PDF 2: The site plan shall detail sidewalks that are accessible to the public will be constructed on the project site adjacent to Perris Boulevard and Alessandro Boulevard.	City of Moreno Valley Community Development Department	During construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy
AIR PDF 3: The project applicant will provide separate onsite bins to dispose of recyclables and trash.	City of Moreno Valley Community Development Department	During construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy
AIR PDF 4: The project applicant shall require all contractors to adhere to SCAQMD's Rule 402 requirements that do not allow the discharge of any source of air contaminants or odors that may create a nuisance at the nearby homes. Specific actions to reduce air contaminant and odor impacts include the following: • Place all stockpiles of material that may emit odors and/or air contaminants (e.g. asphalt concrete, trash, vegetation, etc…) as far as away as practical from the nearby	City of Moreno Valley Community Development Department	Ongoing during grading	Prior to issuing final building permits	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
homes. • Place the equipment storage and maintenance area as far away as practical from the nearby homes and require that all refueling activities occur within the equipment storage and maintenance area. • Restrict the outdoor spraying of architectural coatings and other solvents, when the wind is blowing directly at the nearby homes.						
Cultural Resources						
CR-1: Archaeologist Retained/CRMP Prepared: Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a professional archaeological monitor has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and that the monitor has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project archaeologist, with input from the appropriate Tribe, shall prepare a Cultural Resources Monitoring Plan (CRMP) to document protocols for inadvertent finds, to determine potential protection measures from further damage and destruction for any identified archaeological resource(s)/ tribal cultural resources (TCRs), outline the process for monitoring and for completion of the final Phase IV Monitoring Report. If any archaeological and/or TCRs are identified during monitoring, these will also be documented and addressed per standard	City of Moreno Valley Community Development Department	Ongoing during grading	Prior to Certificate of Occupancy	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
archaeological protocols in the Phase IV report, with the exception of human remains which will be addressed per MM CUL-5. The Project Archaeologist shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.						
CR-2: Tribal Monitor Retained: At least 30 days prior to the issuance of a grading permit the Applicant shall contact the appropriate Luiseño tribe to develop a Cultural Resources Treatment Agreement and shall provide evidence to the City of Moreno Valley that the professionally qualified Luiseño Native American monitor(s) has been secured from the interested tribe(s), and that the shall be allowed to monitor all mass grading and trenching activities. The Tribal representative(s) shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.	City of Moreno Valley Community Development Department	Ongoing during grading	Prior to Certificate of Occupancy	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy
CR-3: Inadvertent Finds: If, during mass grading and trenching activities, the Archaeologist or Tribal representatives suspect that an archaeological resource and/or TCR may have been unearthed, the monitor identifying the potential resources, in consultation with the other monitor as appropriate, shall immediately halt and redirect grading operations in a 50-foot radius around the find to allow identification and evaluation of the suspected resource. The Native American monitor(s) or appropriate representative(s) and the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to	City of Moreno Valley Community Development Department	Ongoing during grading	Prior to Certificate of Occupancy	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
California Public Resources Code Section 21083.2. The archaeological monitor and tribal monitor(s) or appropriate representative(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). All sacred sites, should they be encountered within the project area, shall be avoided and preserved as the preferred mitigation, if feasible.						
CR-4: Grading Plans: Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 50-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."	City of Moreno Valley Community Development Department	Ongoing during grading	Prior to Certificate of Occupancy	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy
CR-5: Human Remains State Law: If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must	City of Moreno Valley Community Development Department	Ongoing during grading	Prior to Certificate of Occupancy	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.						
CR-6: Final Phase IV Report: Prior to building permit issuance, the Project archaeologist shall prepare a final Phase IV Monitoring Report as outlined in the CRMP, which shall be submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. The report shall document project impacts to archaeological and tribal resources, if any. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility, or the Western Science Center in Hemet, at the landowners discretion.	City of Moreno Valley Community Development Department	Ongoing during grading	Prior to Certificate of Occupancy	Review of construction documents and on-site inspections		Withhold Certificate of Occupancy
Noise						
NOI-1: The project applicant shall construct the following sound walls: (1) A minimum 4.5-foot high wall around all private west facing ground floor patios on Buildings B33, B34, B35, and B36; (2) A minimum 3.5-foot high wall around all private west facing second	City of Moreno Valley Building and Safety, Engineering, Planning	Ongoing during construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order

Mitigation Measure No./ Implementation Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
floor balconies on Buildings B33, B34, B35, and B36; and (3) A minimum 4.0-foot high wall around all private north facing ground floor patios on Buildings B01, B02, B03, B15, B16, and B17. The sound walls shall be required to be constructed of a solid material (e.g., glass, wood or plaster) that are free of any cutouts or openings.	Division					
NOI-2: The Project Applicant shall provide a “windows closed” condition for each proposed residential apartment unit. A “windows closed” condition requires a means of mechanical ventilation per Chapter 12, Section 1205 of the Uniform Building Code. This shall be achieved with a standard forced air conditioning and heating system with a filtered outside air intake vent for each residential unit.	City of Moreno Valley Building and Safety, Engineering, Planning Division	Ongoing during construction	Prior to Certificate of Occupancy	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order

City of Moreno Valley

California Environmental Quality Act (CEQA)

Initial Study (IS) / Mitigated Negative Declaration (MND)

Villa Annette Apartments

(Case Number PA16-0039)

Lead Agency:
City of Moreno Valley
Community Development Department
Planning Division
14177 Frederick Street
Moreno Valley, California 92552

Project Applicant:
LACTO SC, INC.
940 Calle Negocio, Suite 200
San Clemente, California 92673
(949) 276-4402

CEQA Consultant:
Vista Community Planners, Inc. (VISTA)
1278 Glenneyre Street, Suite 110
Laguna Beach, California 92651

October 2016

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Appendices

1.0 INTRODUCTION

1.1. Document Purpose and Scope

The California Environmental Quality Act (CEQA) is a statewide environmental law contained in Public Resources Code §§21000-21177. CEQA applies to most public agency decisions to carry out, authorize, or approve actions that have the potential to affect the environment. CEQA requires that public agencies analyze and acknowledge the environmental consequences of their discretionary actions and consider alternatives and mitigation measures that could avoid or reduce significant adverse impacts to the environment when avoidance or reduction is feasible. The CEQA compliance process provides public agencies and the general public an opportunity to comment on a proposed project's environmental effects.

This Initial Study (IS) / Mitigated Negative Declaration (MND) assesses the potential of the proposed Villa Annette Apartments project (proposed project) to impact the environment. The proposed project includes the development of the project site with a 272 unit apartment complex on approximately 19.82 acres (863,359.2 square feet). The project site is located in the City of Moreno Valley (City), County of Riverside (County) and State of California (State). The project site is bound to the north by Alessandro Boulevard and commercial development; to the south by Brodiaea Avenue and single-family residences; to the west by Perris Blvd and commercial development; and, to the east by Apple Blossom Lane and single-family residences.

The proposed project is not exempt from CEQA. The City prepared this Initial Study (IS) to determine whether the proposed project may have a significant effect on the environment. This IS provides the documentation of the factual basis for the finding in a Mitigated Negative Declaration (MND) that the proposed project will not have a significant effect on the environment. This IS has determined that there is no substantial evidence that the proposed project may have a significant effect. Therefore, the City as the Lead Agency has prepared a Mitigated Negative Declaration (MND) pursuant to Sections 15070 et seq. of the State CEQA Guidelines.

This IS/MND is an informational document that provides the City, other public agencies, and the public at-large with an objective assessment of the potential environmental impacts that could result from implementation of the proposed project.

1.2 Document Organization

This IS/MND includes the following sections:

Section 1.0 Introduction

Provides information about CEQA and its requirements for environmental review and explains that an MND was prepared by the City to evaluate the proposed project's potential to impact the physical environment.

Section 2.0 Project Description and Setting

Provides information about the proposed project's location and planning objectives and includes a description of the proposed project's physical features and construction and operational characteristics.

Section 3.0 Environmental Checklist

Includes the Environmental Checklist and evaluates the proposed project's potential to result in significant adverse effects to the physical environment.

Section 4.0 References

Provides reference information for all information sources consulted during the preparation of this IS.

2.0 PROJECT DESCRIPTION AND SETTING

2.1. Project Overview

The proposed project includes the development of the project site with a 272 unit apartment complex on approximately 19.82 acres (863,359.2 square feet). There are no structures on the project site. The proposed project would include three phases. The first would be the removal of all on-site vegetative materials and grading. The second would be construction of 272 apartments, off-street parking, on-site circulation, community building, pool and deck, tot-lot, and outdoor space area. The third would be occupation of the apartment complex. Access to the proposed project would be provided via two (2) gated entrances for vehicles and separate pedestrian gates.

2.2 Project Background

According to the Hillmann Consulting LLC Phase I report, historic land use prior to 1901 is not readily available. The project site was utilized as agricultural rangeland from approximately 1938 through the 1970's. Subsequent to the 1970's the project site was not used for any discernable purpose. The project site is presently vacant and does not appear to ever have been developed with structures. Adjacent properties were utilized for agricultural and residential land use until approximately 1953. Subsequent to this date, they were converted to commercial and residential uses. The project site is General Planned and Zoned Residential R-15.

2.3 Project Location

The project site is currently vacant and comprised of three (3) rectangular-shaped assessor parcels. The project site topography is relatively flat sloping downward to the southeast corner. The project site is approximately 19.82 acres. The project site has over the past several years been routinely disked for weed abatement in accordance with the requirements of the City.

The project site is located in the City of Moreno Valley (City), County of Riverside (County) and State of California (State). The project site is located in close proximity to the southeast corner of the intersection of Alessandro and Perris Boulevard. Figure 1: *Regional Location Map* provides the regional context. Figure 2: *Local Vicinity Map* and Figure 3: *Aerial View* provides a more precise location and boundaries of the proposed project.

Assessor's Parcel Number(s)

The project site is comprised of the following assessor's parcel numbers:

- 484-020-006
- 484-020-025
- 484-020-018

2.4 Environmental Setting and Surrounding Land Uses

The topography of the project site is relatively flat with elevations ranging from approximately 1,540 to 1,550 feet above sea level. The project site is located in a suburban developed area characterized by a mix of commercial properties, single- and multi-family homes, and warehouses.

The project site is located in the City of Moreno Valley (City), County of Riverside (County) and State of California (State). The project site is bounded to the north by Alessandro Boulevard. Across Alessandro Boulevard are commercial and single-family residential uses. The project site is bounded to the south by Brodiaea Avenue and single-family residences. Across Brodiaea Avenue are single-family residential uses. The project site is bounded to the west by Perris Boulevard and commercial development. Across Perris Boulevard are commercial, public storage, and vacant properties. The project site is bounded to the east by Apple Blossom Lane and single-family residences. Across Apple Blossom Lane are the Ridgeview Apartment Homes. These uses are shown on Figure 3: *Aerial View* and Figure 4: *Surrounding Land Uses.* Existing on-site and adjacent land uses and land use designations are shown in Table 1: *Existing On-Site and Adjacent Land Uses and Land Use Designations*.

Table 1: Existing On-site and Adjacent Land Uses and Land Use Designations

Location	Current Land Use	General Plan Land Use Designation
On site	Vacant undeveloped.	Residential-15
North	Alessandro Boulevard and commercial development. Across Alessandro Boulevard are commercial and single-family residential uses.	Commercial and Residential-5
South	Brodiaea Avenue and single-family residences. Across Brodiaea Avenue are single-family residential uses.	Residential-5
East	Apple Blossom Lane and single-family residences. Across Apple Blossom Lane are the Ridgeview Apartment Homes.	Residential-5 and Residential-20
West	Perris Boulevard and commercial development. Across Perris Boulevard are commercial, public storage, and vacant properties.	Commercial

2.5 Description of the Proposed Project

The proposed project would include the construction of 272 residential apartments. The proposed site plan is depicted on Figure 1, *Site Plan*. The apartments would include the construction of four (4) building types including eight (8) units in each building. As indicated on Figure 5: *Site Plan,* four (4) building types are proposed. The proposed Building 1 floor plan and elevations are provided on Figure 6: *Building 1 Floor Plans,* and Figure 7: *Building 1 Elevations*. Building 1 would include one (1) bedroom and one (1) bath apartments as noted in Table 2: *Project Statistics*. Each apartment would include either 975 or 928 square feet including living area, patio, and entry. Each building would be two (2) stories in height. A total of 88 of these one (1) bedroom and one (1) bath apartments would be constructed.

As indicated on Figure 5: *Site Plan* Building 2, would include two (2) bedroom and two (2) bath apartments also as noted in Table 2: *Project Statistics*. The proposed Building 2 floor plan and elevations are provided on Figure 8: *Building 2 Floor Plans* and Figure 9: *Building 2 Elevations*. Each apartment would be approximately 1,229 and 1,219 square feet including living area, patio, and entry. Each building would be two (2) stories in height. A total of 72 of these two (2) bedroom and two (2) bath apartments would be constructed.

As indicated on Figure 5: *Site Plan* Building 3 would include two (2) bedroom and two (2) bath apartments also as noted in Table 2: *Project Statistics*. The proposed Building 2 floor plan and elevations are provided on Figure 10: *Building 3 Floor Plans* and Figure 11: *Building 3 Elevations*. Each apartment would be approximately 1,337 and 1,281 square feet including living area, patio, and entry. Each building would be two (2) stories in height. A total of 88 of these two (2) bedroom and two (2) bath apartments would be constructed.

As indicated on Figure 5: *Site Plan* Building 3 would include three (3) bedroom and two (2) bath apartments also as noted in Table 2: *Project Statistics*. The proposed Building 2 floor plan and elevations are provided on Figure 12: *Building 4 Floor Plans* and Figure 13: *Building 4 Elevations*. Each apartment would be approximately 1,503 square feet including living area, patio, and entry. Each building would be one (1) story in height. A total of 24 of these three (3) bedroom and two (2) bath apartments would be constructed.

The proposed project includes development of 272 residential apartments on 1986 acres. The overall density of the proposed project would be approximately 13.97 dwelling units per acre.

Parking

The proposed project would provide a total of 530 parking spaces. Table 3: *Proposed Parking Statistics* indicates the proposed parking to be provided and spaces required by the City Municipal Code. Table 2: *Proposed Parking Statistics* indicates the proposed project parking. Additionally, Table 3: *Proposed Parking Statistics* indicates the City Municipal Code required off-street parking. The proposed project total parking requirement equals 272 covered spaces and 240 other spaces for a total of 512 spaces. The proposed project would provide 315 covered spaces and 215 other spaces for a total of 530 spaces. Therefore, the proposed project meets City standards for parking.

Table 2: Project Statistics

Residential Units	No. Units (%)	Unit Type	Living Area[1]	Patio[1]	Entry[1]	Wh/Sto[1]	Total[1]	No. Units	Buildings Total[1]
Building 1(8 plex)	88 (32%)	1br/1ba							
First Floor			796	122	47	17	982	4	3,928
Second Floor			796	75	47	17	935	4	3,740
Sub-Total Area Building 1									7,668
Building 2(8 plex)	72 (27%)	2br/2ba							
First Floor			1,098	118	36	17	1,269	4	5,076
Second Floor			1,098	68	36	17	1,219	4	4,876
Sub-Total Area Building 2									9,952
Building 3(8 plex)	88 (32%)	2br/2ba							
First Floor			1,135	110	46	18	1,309	4	5,236
Second Floor			1,135	72	46	18	1,271	4	5,084
Sub-Total Area Building 3									10,320
Building 4(2 plex)	24 (9%)	3br/2ba							
First Floor			1,294	110	57	18	1,477	2	2,954
Sub-Total Area Building 4									2,954
Total									**272 (100%)**

Notes:

1 Square feet

Source: The Vernal Group

Table 3: Proposed Parking Statistics

Attachment: Initial Study MND (2340 : PA16-0039 Plot Plan)

City Requirements						
Unit Type	**Number Units**	**% Total Units**	**Parking Required**	**Covered**	**Other**	**Total**
1br/1ba	88	32%	1.50	88	44	132
2br/2ba	160	59%	2.00	160	160	320
3br/2ba	24	9%	2.50	24	36	60
Total	*272*	*100%*		*272*	*240*	*512*
Proposed Project						
Parking Site Plan				**Covered**	**Open**	**Total**
Open Stalls					234	
Carports				141		
Garages				160		
Total				*301*	*234*	*535*

Source: City of Moreno Valley Municipal Code and The Vernal Group.

Access

Public (resident, guest, and deliveries) driveway access to the proposed project would be provided from two gated driveways located on the south side of Alessandro Boulevard and on the east side of Perris Boulevard. The proposed project would construct a median on Alessandro Boulevard that would restrict northbound left turns out of the proposed project, but would allow for westbound left turns into the project. Outbound movements from the proposed project would be limited to right-turns only. At the end of this driveway, there are 11 spaces that would allow for visitors to park and use the kiosk to contact the office and/or residents. The Alessandro Boulevard driveway measures 62 feet wide and would allow for 140 feet of stacking. The site plan illustrates two inbound lanes and one outbound lane at this driveway.

The proposed project would also construct a median on Perris Boulevard that would restrict westbound left turns out of the project site and eastbound left turns out of the self-storage facility. Only outbound right-turn movements would be allowed. This median would also allow northbound left turns into the self-storage facility, and southbound left turns into the project. There is a gate on the east edge of this driveway. The Perris Boulevard driveway measures 40 feet wide and would allow for 105 feet of stacking. The site plan illustrates two inbound lanes and one outbound lane at this driveway.

Attachment: Initial Study MND (2340 : PA16-0039 Plot Plan)

Internal circulation within the project site is based on driveway aisles that measure 24 feet wide and have been designed to meet the City's design standards. The proposed project would also construct an emergency access only driveway to Apple Blossom Lane. This access will to Apple Blossom Land would be for emergency access only and secured by a Knox Box for emergency use.

Drainage

The proposed project is an apartment complex with minimal areas for landscape, vegetated swales and other natural drainages that serve slow runoff velocity and reduce runoff volume. The existing drainage pattern for the project site shows two drainage areas. The northern drainage area sheet flows northwest to southeast onto Apple Blossom Lane. The southern drainage area sheet flows northwest to the southeast onto Brodiaea Avenue. Stormwater flows into an existing curb inlet to the east of the property on Brodiaea Avenue. The proposed development creates several small drainage areas. Consequently the runoffs from some of the proposed drainage areas are captured and treated using Low Impact Development Best Management Practices (LID BMP). The project site will capture these runoffs using catch basins and inlets and discharge into proposed storm drain system. The proposed storm drain pipes, in each respective drainage areas, are designed to flow southeast where the proposed infiltration basins are located. The infiltration basins will be designed to provide the same runoff flow and volume reducing benefits as natural drainages.

The project site proposes capturing all site stormwater runoff via yard inlets and catch basins, then routed to the infiltration basins with natural infiltrating capacity. As a pre-treatment for the proposed project, catch basins will be installed with filter inserts. The infiltration basins will provide the infiltration properties in order to reduce the quantity and velocity of the project site.

The project site will be fully developed and will be re-vegetated with native and/or drought-tolerant species. There is little vegetation in the existing condition. The existing site has no natural areas to conserve. Runoff from the parking areas will be diverted to LID areas via curb openings. LID areas will contain catch basins to convey stormwater toward the infiltration basins. Runoff from the site will be infiltrated so as to treat the first flush. The roof runoff is proposed to drain into landscaped areas before entering the area drain system. Several landscaped areas are designed to be 2 to 3 inches below the finish grade to help in treating and retaining some of the runoff before it continues to flow into the proposed infiltration basin. Some drainage areas will disperse the runoff flow to the proposed filter catch basins. Both conditions mentioned above will show that the project proposes to disperse runoff to adjacent pervious areas to the maximum extent practicable.

Landscape and Fencing

There are no existing significant trees or vegetation on the project site. The proposed project would include a community building, pool and deck, open space, and outdoor space area located to the south of the Alessandro Blvd entrance within the apartment complex. Additionally, the proposed project includes a tot lot and open space area to the east of the Perris Blvd entrance to the apartment complex. Pedestrian access would be provided from each of the apartment buildings to these areas. The project site will be fenced. Access to the proposed project would be provided via two (2) gated entrances for vehicles and separate pedestrian gates.

Grading and Construction

The project applicant has stated that grading and construction would start immediately after City approvals and would be expected to occur by Spring 2017. Grading is anticipated to include 1,860 cubic yards of cut, 16,643 cubic yards of fill and 14,783 cubic yards of import. For the purposes of providing a "worst case" analysis, this Initial Study/Mitigated Negative Declaration (IS/MND) will assume that all improvements are completed by 2016. Occupancy will commence in 2016 with full occupancy to occur in a timely manner thereafter.

2.6 Existing General Plan Designation and Zoning

The project site is designated Residential 15 (Max 15 du/ac) by the City of Moreno Valley General Plan. The project site is presently zoned Community Residential 15 (Max 15 du/ac) by the City of Moreno Valley Zoning Map. The project is consistent with this zoning. Figure 14: *General Plan* and Figure 15: *Zoning* illustrates the General Plan and Zoning.

2.7 Discretionary Actions

This IS/MND addresses the potential environmental effects of the proposed Villa Annette Apartments project, including all of the associated discretionary actions and approvals required to implement the proposed project, as well as all subsequent construction and operational activities. As part of the proposed project, the will IS/MND consider approval:

The City will need to approve Case Number PA 16-0039, which includes:

- Certification of the Environmental Documentation;
- Approval of the Plot Plan, Floor Plans, and Elevations.

Figure 1: Regional Location Map

Figure 2: Local Vicinity Map

Figure 3: Aerial View

Figure 4: Surrounding Land Uses

Figure 5: Site Plan

Figure 6: Building 1 Floor Plans

Figure 7: Building 1 Elevations

Figure 8: Building 2 Floor Plans

Figure 9: Building 2 Elevations

Figure 9: Building 2 Elevations

Figure 10: Building 3 Floor Plans

Figure 11: Building 3 Elevations

Figure 12: Building 4 Floor Plans

Figure 13: Building 4 Elevations

Figure 14: General Plan

Figure 16: Zoning

3.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS

INITIAL STUDY/

ENVIRONMENTAL CHECKLIST FORM

CITY OF MORENO VALLEY

1. **Project Title:** Villa Annette Apartments (Case #PA16-0039)

2. **Lead Agency Name and Address:** City of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 926553

3. **Contact Person and Phone Number:** Gabriel Diaz
(951) 413-3226

4. **Project Location:** Alessandro Blvd and Perris Blvd

5. **Project Sponsor's Name and Address:** LACTO SC, INC.
940 Calle Negocio, Suite 200
San Clemente, California 92673
(949) 276-4402

6. **General Plan Designation:**

Existing	Residential 15 (Max 15 du/ac)
Proposed	Residential 15 (Max 15 du/ac)

7. **Zoning:**

Existing	Residential 15 (Max 15 du/ac)
Proposed	Residential 15 (Max 15 du/ac)

8. Description of the Project:

Refer to Section 2.0 of this Initial Study.

9. Surrounding Land Uses and Setting:

The project site is located in the City of Moreno Valley (City), County of Riverside (County) and State of California (State). The project site is bounded to the north by Alessandro Boulevard. Across Alessandro Boulevard are commercial and single-family residential uses. The project site is bounded to the south by Brodiaea Avenue and single-family residences. Across Brodiaea Avenue are single-family residential uses. The project site is bounded to the west by Perris Boulevard and commercial development. Across Perris Boulevard are commercial, public storage, and vacant properties. The project site is bounded to the east by Apple Blossom Lane and single-family residences. Across Apple Blossom Lane are the Ridgeview Apartment Homes.

10. Other public agencies whose approval is required (e.g. permits, financing approval, or participation agreement).

None at this time.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below(■) would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Greenhouse Gas Emissions		Population/Housing
	Agricultural Resources		Hazards & Hazardous Materials		Public Services
	Air Quality		Hydrology/Water Quality		Recreation
	Biological Resources		Land Use/Planning		Transportation/Traffic
	Cultural Resources		Mineral Resources		Utilities/Service Systems
	Geology/Soils		Noise		Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	X
I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	
I find that the proposed project MAY have a "potential significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	

Signature　　　　　　　　　　　　　　　　　　Date

Printed Name　　　　　　　　　　　　　　　　For

EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analysis," as described in (5) below, may be cross-referenced).

5) Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c) (3) (d). In this case, a brief discussion should identify the following:

   (a) Earlier Analysis Used. Identify and state where they are available for review.

   (b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   (c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The analysis of each issue should identify: (a) the significance criteria or threshold used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

I. AESTHETICS. Would the project:

a) Have a substantial adverse effect on a scenic vista?			X	

The project site is not located in an area identified in the City's General Plan as an aesthetic resource or a significant visual resource. The project site is bounded to the north by Alessandro Boulevard and commercial development. Across Alessandro Boulevard are commercial and single-family residential uses. The project site is bounded to the south by Brodiaea Avenue and single-family residences. Across Brodiaea Avenue are single-family residential uses. The project site is bounded to the west by Perris Boulevard and commercial development. Across Perris Boulevard are commercial, public storage, and vacant properties. The project site is bounded to the east by Apple Blossom Lane and single-family residences. Across Apple Blossom Lane are the Ridgeview Apartment Homes.

Since the proposed project is proposed in an area where development has taken place over the years, the proposed project should be a less than significant effect on existing scenery in the area. The proposed project as designed and conditioned would ensure a design standard that would not have a substantial adverse effect on the scenic vista of the area. Therefore, related to scenic vistas, less than significant impacts would occur and no mitigation would be required.

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?			X	

There are no rock outcroppings or historic buildings on the project site. There are no state scenic highways in the vicinity of the project site. The project site has been disked over the years for weed abatement. The proposed project will not substantially damage scenic resources as designed and conditioned. Therefore, related to damage to scenic resources including trees, rock outcroppings, and historic buildings within a state scenic highway less than significant impacts would occur and no mitigation would be required.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	

The project site is currently vacant. The project site is bounded to the north by Alessandro Boulevard and commercial development. Across Alessandro Boulevard are commercial and single-family residential uses. The project site is bounded to the south by Brodiaea Avenue and single-family residences. Across Brodiaea Avenue are single-family residential uses. The project site is bounded to the west by Perris Boulevard and commercial development. Across Perris Boulevard are commercial, public storage, and vacant properties. The project site is bounded to the east by Apple Blossom Lane and single-family residences. Across Apple Blossom Lane are the Ridgeview Apartment Homes. The proposed project is consistent with existing land uses (General Plan and Zoning) as designed and conditioned.

The proposed project would not substantially degrade the existing visual character or quality of the project site and its surroundings. The proposed project residential character is compatible with existing adjacent residential uses. The closest single-family residential uses to the proposed project are located immediately to the east of the project site (on

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

the southern portion of the site). The closest multi-family residential uses to the proposed project are located immediately to the east of the project site (on the northern portion of the site). These existing single-family homes would be buffered by proposed project design features. These design features include: a new six-foot (6”) block wall, landscape area; and the setback of proposed residential structures. These factors would provide buffer to the adjacent single family residences to the east of the proposed project.

No conflicts would be anticipated with the adjacent land uses. Therefore, related to substantially degrade the existing visual character or quality of the site and its surroundings, less than significant impacts would occur and no mitigation would be required.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

The proposed project would create additional light or glare as the project site is currently vacant. Complying with City Municipal Code requirements, including the shielding of lighting and restrictions on the intensity of exterior lighting, would reduce light and glare impacts to City accepted levels on surrounding properties. The project site is located outside of the Palomar Lighting District. Therefore, the project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area, less than significant impacts would occur and no mitigation would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

II. AGRICULTURE & FORESTRY RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project?**

a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use?				X

The project site is not designated as prime farmland on the State Important Farmland Map. Implementation of the proposed project does not have the potential to result in impacts to Farmland because the project site does not contain designated anticipated Farmland. Therefore, related to farmland, no impacts would occur and no mitigation measures would be required.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X

The project site is not currently in agricultural use. There are no existing agricultural uses adjacent to the project site. The project site and surrounding properties are not under Williamson Act contract. The City Municipal Code allows for agricultural uses such as crops in all zoning districts. Therefore, related to existing agricultural use, existing zoning for agricultural use, or sites under Williamson Act contract, no impacts would occur and no mitigation measures would be required.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X

The project site is not zoned or designated on the City's General Plan for forest land, timberland, or timberland zoned Timberland Production. Therefore, related to forest land, timberland, or timberland zoned timberland production, no impacts would occur and no mitigation measures would be required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?				X

The project site is not forest land as defined by Public Resources Code section 1220(g). The project site does not involve the loss of forest land or the conversion of forest land to non-forest use. Therefore, related loss of forest land or the conversion of forest land to non-forest use, no impacts would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

The project site is currently vacant. The project site is bounded to the north by Alessandro Boulevard and commercial development. Across Alessandro Boulevard are commercial and single-family residential uses. The project site is bounded to the south by Brodiaea Avenue and single-family residences. Across Brodiaea Avenue are single-family residential uses. The project site is bounded to the west by Perris Boulevard and commercial development. Across Perris Boulevard are commercial, public storage, and vacant properties. The project site is bounded to the east by Apple Blossom Lane and single-family residences. Across Apple Blossom Lane are the Ridgeview Apartment Homes. Additionally, no agricultural uses are proposed in the vicinity of the project site based on the City's General Plan. The proposed project would not involve changes to the existing environment, which would result in the conversion of farmland to non-agricultural use. The project site is not forest land as defined by Public Resources Code section 1220(g). Therefore, related to other changes in the existing environment which, due to their location of nature, could result in conversion of farmland, to non-agricultural uses of conversion of forest land to non-forest uses, no impacts would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?			X	

The following section discusses the proposed project's consistency with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP).

SCAQMD Air Quality Management Plan

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans (GP) and regional plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one (1) or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two (2) key indicators of consistency:

1. Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

2. Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in the *Air Quality and Greenhouse Gas Emissions Impact Analysis, Alessandro Apartments Project*, VISTA Environmental, June 2016 (Air Quality & GHG Study), short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance or local thresholds of significance. The long-term operation of the proposed project would not result in significant

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

impacts based on SCAQMD thresholds of significance. The ongoing operation of the proposed project would generate air pollutant emissions that are inconsequential on a regional basis. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Based on the information provided above, the proposed project would be consistent with the first criterion. Therefore, related to an increase in the frequency or severity of violation, no long-term impact would occur and no mitigation measures would be required.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to insure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2012-2035 Regional Transportation/Sustainable Communities Strategy consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this propose project, the City Land Use Plan defines the assumptions that are represented in the AQMP.

The project site is currently designated as Residential (Max 15 dwelling units per acre) in the General Plan and zoned Multi-Family (R15). The proposed project would consist of the development of 272 apartment units on 19.86 acres, which would result in a density of 13.97 dwelling units per acre and would be consistent with the General Plan land use designation and zoning. As such, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. A less than significant impact will occur in relation to implementation of the AQMP. Therefore, related to conflict with or obstruct implementation of the applicable air quality plan, less than significant impacts would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.			X	

The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the SCAQMD standards.

Construction Emissions

The proposed project would consist of construction of a residential apartment complex with 272 apartment dwelling units, a community building with a pool and spa, open space with a tot lot, onsite roadways and parking areas, and two retention basins. The construction emissions have been analyzed for both regional and local air quality impacts as well as potential toxic air impacts.

Construction-Related Regional Impacts

The construction-related criteria pollutant emissions for each phase are shown below in Table 4: *Construction-Related Regional Criteria Pollutant Emissions*. Table 4: *Construction-Related Regional Criteria Pollutant Emissions* shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, related to construction-related regional air quality, less than significant impacts would occur and no mitigation measures would be required.

Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The local air quality emissions from construction were analyzed through utilizing the methodology described in Localized Significance Threshold Methodology (LST Methodology), prepared by SCAQMD, revised October 2009. The LST Methodology found the primary criteria pollutant emissions of concern are NOx, CO, PM10, and PM2.5. In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-up Tables. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily onsite emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. Table 5, *Construction-Related Local Criteria Pollutant Emission* shows the onsite emissions from the CalEEMod model for the different construction phases and the calculated emissions thresholds. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently, Table 5, *Construction-Related Local Criteria Pollutant Emission* also shows the combined local criteria pollutant emissions from building construction, paving and architectural coating phases of construction. The data provided in Table 5, *Construction-Related Local Criteria Pollutant Emission* shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds for any phase of construction. Therefore, a less than significant local air quality impact would occur from construction of the proposed project and no mitigation measures would be required.

Table 4: Construction-Related Regional Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Grading[1]						
Onsite	6.10	65.59	46.81	0.06	6.70	4.45
Offsite	0.11	0.55	1.51	0.00	0.27	0.08
Total	**6.21**	**66.14**	**48.32**	**0.06**	**6.97**	**4.53**
Building Construction						
Onsite	3.10	26.41	18.13	0.03	1.78	1.67
Offsite	0.90	3.28	12.73	0.03	2.49	0.70
Total	**4.00**	**29.69**	**30.86**	**0.06**	**4.27**	**2.37**
Paving						
Onsite	2.14	17.16	14.49	0.02	0.94	0.86
Offsite	0.05	0.06	0.69	0.00	0.17	0.05
Total	**2.19**	**17.22**	**15.18**	**0.02**	**1.11**	**0.91**
Architectural Coatings						
Onsite	59.28	2.01	1.85	0.00	0.15	0.15
Offsite	0.12	0.16	1.84	0.01	0.45	0.12
Total	**59.40**	**2.17**	**3.69**	**0.01**	**0.60**	**0.27**
Combined Building Construction, Paving, and Architectural Coatings	**65.59**	**49.08**	**49.73**	**0.09**	**5.98**	**3.55**
SCQAMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[2] Onsite emissions from equipment not operated on public roads.
[3] Offsite emissions from vehicles operating on public roads.
Source: Appendix A

Table 5: Construction-Related Local Criteria Pollutant Emissions

Phase	Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Grading	65.59	46.81	6.70	4.45
Building Construction	26.41	18.13	1.78	1.67
Paving	17.16	14.49	0.94	0.86
Architectural Coatings	2.01	1.85	0.15	0.15
Combined Building Construction, Paving, and Architectural Coatings	**45.58**	**34.47**	**2.87**	**2.68**
SCAQMD Thresholds for 25 meters (82 feet) or less[2]	**270**	**1,577**	**13**	**8**
Exceeds Threshold?	No	No	No	No

Attachment: Initial Study MND (2340 : PA16-0039 Plot Plan)

Notes:
[1] Demolition and Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[2] The nearest sensitive receptors are single-family homes located as near as 25 feet east of the south section of the project site. According to LST methodology any receptor closer than 25 meters should be based on the 25-meter threshold.
Source: Appendix A

Operational Emissions

The on-going operation of the proposed project potential to result in a long-term increase in air quality emissions was evaluated. An increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality and local air quality impacts with the on-going operations of the proposed project. The potential operations-related air emissions have been analyzed below for the regional and local criteria pollutant emissions and cumulative impacts.

Operations-Related Criteria Pollutant Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model. The data provided in Table 6, *Regional Criteria Pollutant Emissions* below shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project and no mitigation measures would be required.

Table 6: Regional Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Area Sources[1]	6.93	0.26	22.60	0.00	0.12	0.12
Energy Usage[2]	0.09	0.75	0.32	0.00	0.06	0.06
Mobile Sources[3]	6.52	21.26	72.42	0.21	14.42	4.06
Total Emissions	**13.54**	**22.27**	**95.34**	**0.21**	**14.60**	**4.24**
SCQAMD Operational Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Area sources consist of emissions from hearths, consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consist of emissions from natural gas usage (excluding hearths).
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: Appendix A

Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analysis analyzes

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

the vehicular CO emissions and local impacts from on-site operations.

Local CO Hotspot Impacts From Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards of 20 ppm over one hour or 9 ppm over eight hours.

At the time of the 1993 Handbook, the Air Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Air Basin and in the state have steadily declined. In 2007, the Air Basin was designated in attainment for CO under both the CAAQS and NAAQS. SCAQMD conducted a CO hot spot analysis for attainment at the busiest intersections in Los Angeles during the peak morning and afternoon periods and did not predict a violation of CO standards[1]. Since the nearby intersections to the proposed project are much smaller with less traffic than what was analyzed by the SCAQMD, no local CO Hotspot are anticipated to be created from the proposed project and no CO Hotspot modeling was performed. Therefore, a less than significant long-term air quality impact is anticipated to local air quality with the on-going operation of the proposed project and no mitigation measures would be required.

Local Air Quality Impacts from Onsite Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances were evaluated related to the potential to create emissions areas that exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

The local air quality emissions from on-site operations were analyzed using the SCAQMD's Mass Rate LST Look-up Tables and the methodology described in LST Methodology. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. Table 7, *Operations-Related Local Criteria Pollutant Emissions* shows the on-site emissions from the CalEEMod model that includes area sources, energy usage, and vehicles operating on-site and the calculated emissions thresholds. The data provided in Table 7, *Operations-Related Local Criteria Pollutant*

[1] The four intersections analyzed by the SCAQMD were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning and LOS F in the evening peak hour.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Emission shows that the on-going operations of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Table 7: Operations-Related Local Criteria Pollutant Emissions

On-Site Emission Source	Pollutant Emissions (pounds/day)			
	NOx	**CO**	**PM10**	**PM2.5**
Area Sources	0.26	22.60	0.12	0.12
Energy Usage	0.75	0.32	0.06	0.06
Onsite Vehicle Emissions[a]	2.66	9.05	1.80	0.51
Total Emissions	**3.67**	**31.97**	**1.98**	**0.69**
SCAQMD Thresholds for 25 meters (82 feet) or less[b]	**270**	**1,577**	**4**	**2**
Exceeds Threshold?	No	No	No	No

Notes:
[a] Onsite vehicle emissions based on 1/8 of the gross vehicular emissions, which is the estimated portion of vehicle emissions occurring within a quarter mile of the project site.
[b] The nearest sensitive receptors are single-family homes located as near as 1025 feet east of the south section of the project site. According to LST methodology any receptor closer than 25 meters should be based on the 25-meter threshold.
Source: Appendix A

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	

The proposed project was evaluated related to potential cumulatively considerable net increases of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel throughout the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. Accordingly, the cumulative analysis for the project's air quality must be generic by nature. The project area is out of attainment for ozone and PM10 and PM2.5 particulate matter. In accordance with CEQA Guidelines Section 15130(b), this analysis of cumulative impacts incorporates a three-tiered approach to assess cumulative air quality impacts.

- Consistency with the SCAQMD project specific thresholds for construction and operations;
- Project consistency with existing air quality plans; and

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

- Assessment of the cumulative health effects of the pollutants.

Consistency with Project Specific Thresholds

Construction- Related Impacts

The project site is located in the South Coast Air Basin, which is currently designated by the EPA for federal standards as a non-attainment area for ozone and PM2.5 and by CARB for the state standards as a non-attainment area for ozone, PM10, and PM2.5. The regional ozone, PM10, and PM2.5 emissions associated with construction of the proposed project have been calculated above (Threshold C). The above analysis found that development of the proposed project would result in less than significant regional emissions of VOC and NOx (ozone precursors), PM10, and PM2.5 during construction of the proposed project. Therefore, related to construction-related air quality, a less than significant cumulative impact would occur and no mitigation measures would be required.

Operational- Related Impacts

The greatest cumulative operational impact on the air quality to the Air Basin will be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development. In accordance with SCAQMD methodology, projects that do not exceed SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. The regional ozone, PM10, and PM2.5 emissions created from the on-going operations of the proposed project have been calculated above in Section 7.3. The above analysis found that development of the proposed project would result in less than significant regional emissions of VOC and NOx (ozone precursors), PM10, and PM2.5 during operation of the proposed project. With respect to long-term emissions, the proposed project would create a less than significant cumulative impact and no mitigation measures would be required.

Consistency with Air Quality Plans

The project site is currently designated as Residential (Max 15 dwelling units per acre) in the General Plan and zoned Multi-Family (R15). The proposed project would consist of the development of 272 apartment units on 19.86 acres, which would result in a density of 13.97 dwelling units per acre and would be consistent with the General Plan land use designation and zoning. The proposed project would not result in an inconsistency with the current land use designations with respect to the regional forecasts utilized by the AQMPs. Therefore, the proposed project would result in a less than significant impact related to consistency with Air Quality Plans and no mitigation measures would be required.

Cumulative Health Impacts

The Air Basin is designated as nonattainment for ozone, PM10, and PM2.5, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

protect public health, including the health of sensitive individuals (elderly, children, and the sick). When the concentrations of those pollutants exceed the standard, it is likely that some sensitive individuals in the population would experience health effects. The regional analysis found that the proposed project would not exceed the SCAQMD regional significance thresholds for VOC and NOx (ozone precursors), PM10 and PM2.5. Therefore, the proposed project would result in a less than significant cumulative health impact and no mitigation measures would be required.

d) Expose sensitive receptors to substantial pollutant concentrations?			X	

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the proposed project, which may expose sensitive receptors to substantial concentrations have been calculated above in Threshold C for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from toxic air contaminant emissions. The nearest offsite sensitive receptors to the project site consist of single-family homes located as near as 10 feet south of the project site.

Construction-Related Sensitive Receptor Impacts

Construction of the proposed project may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant emissions created from onsite construction equipment, which are described below.

<u>Local Criteria Pollutant Impacts from Construction</u>

The local air quality impacts from construction of the proposed project has been analyzed above in Section 7.3 and found that the construction of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance. Therefore, construction of the proposed project would create a less than significant construction-related impact to local air quality and no mitigation would be required.

<u>Toxic Air Contaminants Impacts from Construction</u>

The greatest potential for toxic air contaminant emissions would be related to diesel particulate matter (DPM) emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of “individual cancer risk”. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes, requires equipment operators to label each piece of equipment and provide annual reports to CARB of their

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

fleet's usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet, and currently no commercial operator is allowed to purchase Tier 0 or Tier 1 equipment and by January 2023 no commercial operator is allowed to purchase Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023.

In order to ensure that construction-related TAC emission impacts are minimized at the nearby homes, the project applicant will implement a project design feature that requires all contractors to adhere to SCAQMD's Rule 402 requirements that do not allow the discharge of any source of air contaminants that may create a nuisance at the nearby homes. The project design feature also provides specific actions to reduce air contaminants at the nearby homes that include: (1) Placement of stockpiles of material as far away as practical from the nearby homes; (2) Placement of equipment storage and maintenance area as far away as practical from the nearby homes; and (3) Restriction on the outdoor spraying of architectural coatings and other solvents, when the wind is blowing directly at the nearby homes. Therefore, through implementation of State regulations that limit TAC emissions from off-road equipment as well as from implementation of the project design feature, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project. Therefore, construction of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations and no mitigation measures would be required.

Operations-Related Sensitive Receptor Impacts

The on-going operations of the proposed project were evaluated related to the exposure of sensitive receptors to substantial pollutant concentrations of local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from onsite operations. The following analyzes the vehicular CO emissions. Local criteria pollutant impacts from onsite operations, and toxic air contaminant impacts.

<u>Local CO Hotspot Impacts from Project-Generated Vehicle Trips</u>

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential impacts to sensitive receptors. No local CO Hotspots are anticipated to be created at any nearby intersections from the vehicle traffic generated by the proposed project. Therefore, operation of the proposed project would result in a less than significant impact relative to the exposure of offsite sensitive receptors to substantial pollutant concentrations and no mitigation measures would be required.

<u>Local Criteria Pollutant Impacts from Onsite Operations</u>

The local air quality impacts from the operation of the proposed project would occur from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances. The operation of the

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Operations-Related Toxic Air Contaminants Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas and according to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. The proposed project would generate a nominal number of diesel truck trips.

Therefore, operation of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations and no mitigation measures would be required.

e) Create objectionable odors affecting a substantial number of people?			X	

The proposed project's potential to create objectionable odors affecting a substantial number of people was analyzed separately for construction and operations below.

Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people that live and work in the immediate vicinity of the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality, this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement, paints and solvents and from emissions from diesel equipment. The objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. In order to ensure that construction-related odor impacts are minimized at the nearby homes, the project applicant will implement a project design feature that requires all contractors to adhere to SCAQMD's Rule 402 requirements that do not allow the discharge of any source of odors that may create a nuisance at the nearby homes. The project design feature also provides specific actions to reduce odor impacts that include: (1) Placement of stockpiles of material that may emit odors as far away as practical from the nearby homes; (2) Placement of equipment storage and maintenance area as far away as practical from the nearby homes; and (3) Restriction on the outdoor spraying of architectural coatings and other solvents, when the wind is blowing directly at the nearby homes.

Due to the transitory nature of construction odors and through the odor reductions that would occur from implementation of the project design feature a less than significant impact would occur and no mitigation would be required.

Potential Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would primarily occur from odor emissions from the trash storage areas. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402, no significant impact related to odors would occur during the on-going operations of the proposed project. Therefore, related to operation-related odor impacts a less than significant impact would occur and no mitigation would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?			X	

The project site potentially provides habitat that the proposed project could impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDF&W) or U. S. Fish and Wildlife Service (USF&WS).

The project site has topography that varies from level to rolling. The project site over the past several years routinely has been disked for weed abatement in accordance with the requirements of the City. There are no existing significant trees or vegetation on the project site. The project site is bounded by existing commercial to the west and north, multifamily and single-family residences to the east, and signal-family residential to the south.

Ecological Sciences, Inc. indicates that the project site is has been primarily colonized by ruderal (weedy) herbs and grasses. Invasive species such as Russian thistle (Salsola tragus), pigweed (Chenopodium album), cheeseweed (Malva parviflora), brome grasses (Bromus spp.), oat (Avena sp.), barley (Hordeum murinum), jimsonweed (Datura stramonium), mustard (Brassica sp.), filaree (Erodium cicutarium), and puncture vine (Tribulus terrestris) were recorded.

In order to determine the significance of the proposed project biological resource impacts, Ecological Sciences, Inc. conducted focused burrowing owl (BUOW) surveys on June 18-22, 2016. Surveys for BUOW were conducted in accordance with current Multiple Species Habitat Conservation Plan (MSHCP) guidelines. Accordingly, a series of four morning (one hour before sunrise to two hours after sunrise) surveys were conducted over a four-day period per current protocol. Pursuant to survey protocol, surveyors initially used binoculars to scan all suitable habitat/potential refugia prior to the start of pedestrian surveys. Following the initial project site scan, a systematic survey for burrows, burrowing owls, and owl sign was conducted by walking through suitable habitat over the entire survey area (i.e. the project site and within 150 meters where possible). To the extent possible, pedestrian survey transects were spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 30 meters (±100 feet) and were reduced to account for differences in terrain, vegetation density, and ground surface visibility (where necessary). Potentially suitable burrows were examined for sign of BUOW use such as the presence of owl pellets, prey remains, or feathers at potential burrow entrances. Burrows were inspected with the aid of a mirror to better view burrow interiors. Any owls using habitat areas adjacent to the project site were also noted (if present). Weather conditions were characterized as clear (0 percent cloud cover). Ambient air temperatures were 72-88 °F with generally calm conditions (0-5 mph breezes).

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

No direct burrowing owl observations or sign (pellets, fecal material, or prey remains) were recorded during the July 2016 focused surveys. Birds observed generally included those species that are accustomed to nearby human presence such as common raven (Corvus corax), American crow (Corvus brachyrhynchos), northern mockingbird (Mimus polyglottos), black phoebe (Sayornis nigricans), European starling (Sturnus vulgaris), rock dove (Columba livia), mourning dove (Zenaida macroura), house finch (Carpodacus mexicanus), and house sparrow (Passer domesticus).

Only a few scattered potentially suitable BUOW burrows/refugia were recorded on the project site likely because of disking activities and other long-standing anthropogenic disturbances that may reduce potential small mammal colonies (e.g., ground squirrel). Although the BUOW is well known to occur in certain disturbed situations, the BUOW generally prefers moderately to heavily grazed grasslands for nesting and roosting and generally avoids recently disced fields that occlude/collapse ground squirrel burrows or other refugia. None of the burrows/refugia inspected during the July 2016 focused surveys were determined to be currently occupied or recently used by BUOW based on the lack of owl observations and absence of sign around burrow entrances. Surveys of the project site and scanning adjacent areas during peak BUOW activity times did not reveal any indication that this species was currently present or utilizing adjacent sites for foraging purposes.

Therefore, related to potential substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDF&W) or U. S. Fish and Wildlife Service (USF&WS), less than significant impacts would occur and no mitigation measures would be required.

b) Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Wildlife Service?				X

The project site has topography that varies from level to rolling. The project site has been routinely disked over the past several years for weed abatement in accordance with the requirements of the City. There are no existing significant trees or vegetation on the project site. The project site is located in a suburban developed area characterized by a mix of commercial properties, and single- and multi-family homes.

Ecological Sciences, Inc. indicates that the project site is has been primarily colonized by ruderal (weedy) herbs and grasses. Invasive species such as Russian thistle (Salsola tragus), pigweed (Chenopodium album), cheeseweed (Malva parviflora), brome grasses (Bromus spp.), oat (Avena sp.), mustard (Brassica sp.), Bermuda grass (Cynodon dactylon), filaree (Erodium cicutarium), spotted spurge (Euphorbia maculata), and puncture vine (Tribulus terrestris) were recorded. Ornamental trees present included gum tree (Eucalyptus sp.), Peruvian pepper (Schinus molle), and China berry (Melia azedarach).

Therefore, related to riparian habitat or other sensitive natural community identified in local or regional plans, policies,

Attachment: Initial Study MND (2340 : PA16-0039 Plot Plan)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

regulations or by the California Department of Fish and Game (CDF&W) or U. S. Wildlife Service (USF&WS), no impacts would occur and no mitigation measures would be required.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X

The project site has topography that varies from level to rolling. The project site has been routinely disked over the past several years for weed abatement in accordance with the requirements of the City. There are no existing trees or vegetation on the project site. The project site is bounded by existing commercial to the west and north, multifamily and single-family residences to the east, and signal-family residential to the south.

Ecological Sciences, Inc. indicates that the project site is has been primarily colonized by ruderal (weedy) herbs and grasses. Invasive species such as Russian thistle (Salsola tragus), pigweed (Chenopodium album), cheeseweed (Malva parviflora), brome grasses (Bromus spp.), oat (Avena sp.), barley (Hordeum murinum), jimsonweed (Datura stramonium), mustard (Brassica sp.), filaree (Erodium cicutarium), and puncture vine (Tribulus terrestris) were recorded.

Therefore, related to federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means, no impacts would occur and no mitigation measures would be required.

d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X

The project site has topography that varies from level to rolling. The project site has been routinely disked over the past several years for weed abatement in accordance with the requirements of the City. There are no existing trees or vegetation on the project site. The project site is bounded by existing commercial to the west and north, multifamily and single-family residences to the east, and signal-family residential to the south.

Ecological Sciences, Inc. indicates that the project site is has been primarily colonized by ruderal (weedy) herbs and grasses. Invasive species such as Russian thistle (Salsola tragus), pigweed (Chenopodium album), cheeseweed (Malva parviflora), brome grasses (Bromus spp.), oat (Avena sp.), barley (Hordeum murinum), jimsonweed (Datura stramonium), mustard (Brassica sp.), filaree (Erodium cicutarium), and puncture vine (Tribulus terrestris) were recorded.

Therefore, related to the movement of any resident or migratory fish or wildlife species or with established native

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

resident migratory wildlife corridors, or impede the use of native wildlife nursery sites, no impacts would occur and no mitigation measures would be required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X

The project site has topography that varies from level to rolling. The project site has been routinely disked over the past several years for weed abatement in accordance with the requirements of the City. There are no existing trees or vegetation on the project site. The project site is bounded by existing commercial to the west and north, multifamily and single-family residences to the east, and signal-family residential to the south.

Ecological Sciences, Inc. indicates that the project site is has been primarily colonized by ruderal (weedy) herbs and grasses. Invasive species such as Russian thistle (Salsola tragus), pigweed (Chenopodium album), cheeseweed (Malva parviflora), brome grasses (Bromus spp.), oat (Avena sp.), barley (Hordeum murinum), jimsonweed (Datura stramonium), mustard (Brassica sp.), filaree (Erodium cicutarium), and puncture vine (Tribulus terrestris) were recorded. Therefore, related to any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, no impacts would occur and no mitigation measures would be required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?				X

The project site has topography that varies from level to rolling. The project site has been routinely disked over the past several years for weed abatement in accordance with the requirements of the City. There are no existing trees or vegetation on the project site. The project site is bounded by existing commercial to the west and north, multifamily and single-family residences to the east, and signal-family residential to the south.

Ecological Sciences, Inc. indicates that the project site is has been primarily colonized by ruderal (weedy) herbs and grasses. Invasive species such as Russian thistle (Salsola tragus), pigweed (Chenopodium album), cheeseweed (Malva parviflora), brome grasses (Bromus spp.), oat (Avena sp.), barley (Hordeum murinum), jimsonweed (Datura stramonium), mustard (Brassica sp.), filaree (Erodium cicutarium), and puncture vine (Tribulus terrestris) were recorded.

The project site is not located within one of the Multiple Species Habitat Conservation Plan (MSHCP) criteria areas, which are potential habitat preservation areas. The proposed project will not conflict with the Stephen's Kangaroo Rat Habitat Conservation Plan (SKR HCP) or MSHCP or any other known local, regional or state habitat conservation plans. The project will be conditioned to pay required SKR mitigation fees. Also, the City participates in the MSHCP, a comprehensive habitat conservation-planning program addressing multiple species' needs, including preservation of habitat and native vegetation in Western Riverside County. This project will also be subject to impact fees to support the implementation of the Multiple Species Habitat Conservation Plan as provided for by City ordinance.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Therefore, related to an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan, no impacts would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resources pursuant to Section 15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

Based upon inspection of the project site and review of the cultural resources databases (Cultural Resources Assessment, BRC Consulting, June 2016), there are no known archaeological resources on the project site. There are no historical structures existing on the project site. There are no known paleontological or unique geological features on the project site.

Research completed through the Eastern Information Center (EIC) revealed that five cultural resource studies have taken place resulting in one cultural resource (a historic building complex) recorded within one mile of the project site. Of the five previous studies, none have previously assessed the project site and no cultural resources have been previously recorded within its boundaries. The research results are summarized in Table 8, *Cultural Resources and Studies within One Mile of the Project Site*.

Table 8: Cultural Resources and Studies within One Mile of the Project Site

USGS 7.5 Minute Quadrangle	Cultural Resources Within One Mile of Project Site	Reports Within One Mile of Project Site
Sunnymead, California (1980)	33-15454	RI-130, 182, 5795, 6269, 7645
Source: Cultural Resources Appendix I		

During the field survey, BCR Consulting archaeologists did not record any cultural resources within the project site boundaries. The project site has been subject to mechanical disking for weed abatement. Sediments include silty sand with some gravel present. Disking has removed native vegetation, although some seasonal grasses and shrubs remain affording approximately 80 percent surface visibility. The records search failed to indicate significant cultural resources in the vicinity of the project site. During the field survey, BCR Consulting archaeologists did not discover any cultural resources (including prehistoric or historic-period archaeological sites or historic-period buildings) within the project site. Furthermore, the sediments, rocks, and topography of the project site did not exhibit any potential for significant cultural utility or sensitivity. As a result, BCR Consulting recommended a finding of no impacts to historical resources under CEQA for the proposed project. BCR Consulting also recommended that no additional cultural resources work or monitoring would be necessary during proposed activities associated with the development of the project site.

Additionally, Native American tribal groups contacted by City Staff in accordance with the requirements AB52. During the survey work BRC did not discover cultural resources (including prehistoric or historic-period archaeological sites or

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

historic period buildings) or evidence for cultural resources sensitivity within the project site.

Although not required as reduce a potentially significant impact to acceptable levels, the following mitigation measures, have been introduced to ensure compliance with City General Plan Policies and the State Public Resources Code. Based on the proceeding information, development of the project will not result in substantial adverse change in the significance of a historical or archaeological resource or result directly or indirectly in the destruction of a unique paleontological resource or site or unique geologic feature. Therefore, related to historical resources, archaeological resources, and paleontological resource pursuant to Section 15064.5, less than significant with mitigation impact would occur.

d) Disturb any human remains, including those interred outside of formal cemeteries?		**X**		

There are no know human remains, including those interred outside of formal cemeteries on the project site (Cultural Resources Assessment, BRC Consulting, June 2016). The City General Plan Final EIR found that:

> "*There are no known human remains in the project area. However, grading activities could uncover previously unknown human remains especially in areas that have not been surveyed. Grading activities will result in a significant impact to this issue throughout development of the project area. Implementation of the existing regulations and practices described in the Existing Setting subsection as well as Mitigation Measure C1 will reduce this impact to a level less than significant*." (Moreno Valley GP FEIR, Page 5.10-15)

However, should human remains be encountered on the project site, State Health and Safety Code Section 7050.5, and CR-4 reduce this impact to less than significant levels with mitigation.

Mitigation Measures

CR-1 Archaeologist Retained/CRMP Prepared: Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a professional archaeological monitor has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and that the monitor has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project archaeologist, with input from the appropriate Tribe, shall prepare a Cultural Resources Monitoring Plan (CRMP) to document protocols for inadvertent finds, to determine potential protection measures from further damage and destruction for any identified archaeological resource(s)/ tribal cultural resources (TCRs), outline the process for monitoring and for completion of the final Phase IV Monitoring Report. If any archaeological and/or TCRs are identified during monitoring, these will also be documented and addressed per standard archaeological protocols in the Phase IV report, with the exception of human

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

remains which will be addressed per MM CUL-5. The Project Archaeologist shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.

CR-2 Tribal Monitor Retained: At least 30 days prior to the issuance of a grading permit the Applicant shall contact the appropriate Luiseño tribe to develop a Cultural Resources Treatment Agreement and shall provide evidence to the City of Moreno Valley that the professionally qualified Luiseño Native American monitor(s) has been secured from the interested tribe(s), and that the shall be allowed to monitor all mass grading and trenching activities. The Tribal representative(s) shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.

CR-3 Inadvertent Finds: If, during mass grading and trenching activities, the Archaeologist or Tribal representatives suspect that an archaeological resource and/or TCR may have been unearthed, the monitor identifying the potential resources, in consultation with the other monitor as appropriate, shall immediately halt and redirect grading operations in a 50-foot radius around the find to allow identification and evaluation of the suspected resource. The Native American monitor(s) or appropriate representative(s) and the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2. The archaeological monitor and tribal monitor(s) or appropriate representative(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). All sacred sites, should they be encountered within the project area, shall be avoided and preserved as the preferred mitigation, if feasible.

CR-4 Grading Plans: Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

"If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 50-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."

CR-5 Human Remains State Law: If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

"most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.

CR-6 Final Phase IV Report: Prior to building permit issuance, the Project archaeologist shall prepare a final Phase IV Monitoring Report as outlined in the CRMP, which shall be submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. The report shall document project impacts to archaeological and tribal resources, if any. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility, or the Western Science Center in Hemet, at the landowners discretion.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

VI. GEOLOGY AND SOILS. Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	

The closest mapped active faults to the project site are the San Jacinto Fault, located 4.7 miles from the project site to the northeast. This fault has been identified as a Fault Rupture Hazard Zone by the State of California (Hart, 2007). The project site is not located within an Alquist-Priolo Earthquake Hazard Zone or within a fault zone designated by the Riverside County Land Information System. A review of aerial photos and literature research conducted by Alta California Geochemical, Inc. indicated that faulting is absent from the project site. Therefore, related to rupture of a known earthquake fault, the proposed project would have less than significant impacts and no mitigation measures would be required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(ii) Strong seismic ground shaking?			X	

The closest mapped active faults to the project site are the San Jacinto Fault, located 4.7 miles from the project site to the northeast. This faulting is not considered a significant constraint to development on the project site with the use of current development codes. Additionally, according to Alta California Geochemical, Inc. ground shaking hazards caused by earthquakes along the San Jacinto fault and other active regional faults do exist. The 2016 California Building Code requires use-modified spectral accelerations and velocities for most structural designs. These designs have been developed in the grading and site plan. Therefore, related to strong seismic ground shaking, the proposed project would have less than significant impacts and no mitigation measures would be required.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
(iii) Seismic-related ground failure, including liquefaction?			X	

Seismic agitation of relatively loose saturated sands, silty sands, and some silts could potentially result in a buildup of pore pressure. If the pore pressure exceeds the overburden stresses, a temporary quick condition known as liquefaction can occur. Liquefaction effects can manifest in several ways including: 1) loss of bearing; 2) lateral spread; 3) dynamic settlement; and 4) flow failure. Later spreading has typically been the most damaging mode of failure. In general, the more recent that sediment has been deposited, the more likely it will be susceptible to liquefaction. Other factors that must be considered are: groundwater, confining stresses, relative density, and the intensity and duration of seismically-induced ground shaking. Groundwater was encountered 26 to 28 feet below existing ground surface in the hollow-stem auger borings. The proposed project includes grading project design features that include the recommendations related to height of the design fills based on geotechnical investigations. Additional given the flat and relatively confined nature of the project site, lack of nearby "free-faces", and the depth to groundwater, the potential lateral movement that could occur is expected to be less than significant. Due to the relatively flat nature of the site, and the relatively horizontal deposition of the underlying deposits, the potential for flow failure onsite is

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
considered less than significant. Therefore, related to seismic-related ground failure, including liquefaction, the proposed project would have less than significant impacts and no mitigation measures would be required.				
(iv) Landslides?				X
The project site is not near or adjacent to the mountainside areas. Due to a lack of slopes within or nearby the project site seismically induced landsliding is not anticipated to pose a danger to the project site. Therefore, related to landslides, the proposed project would have no impact and no mitigation measures would be required.				
(b) Result in substantial soil erosion or the loss of topsoil?			X	
Although the proposed project has the potential to result in erosion of soils during construction activities, erosion would be addressed through the implementation of existing erosion control standards and policies imposed by the City grading permit requirements. In addition, prior to the issuance of the grading permits for the proposed project, the project applicant shall apply for a General Construction National Pollutant Discharge Elimination System (NPDES) Stormwater Permit from the Regional Water Quality Control Board. Once completed, the buildings, paving, and landscaping that will occupy the project site will establish a condition presenting negligible potential for soil erosion. Therefore, related to substantial soil erosion or the loss of topsoil, upon compliance with standard regulatory requirements less than significant impacts would occur and no mitigation measures would be required.				
(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
Dry sand settlement is the process of non-uniform settlement of the ground surface during a seismic event. Based on the relatively fine-grained nature and/or in-situ density of the on-site soils, the potential for dry sand settlement to occur on project site is considered minimal. Therefore, related to unstable soil, less than significant impacts would occur and no mitigation measures would be required.				
(d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
Expansion index testing was performed on samples taken during the previous investigation. Based on the results, it is anticipated that the majority of materials onsite will vary in expansion potential from "very low" to "low" in general conformance with ASTM Test Method 4829 (Appendix F). Therefore, related to expansive soil, less than significant impacts would occur and no mitigation measures would be required.				
(e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
The proposed project will operate on a sewer system that will be reviewed, approved, and installed according to				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Eastern Municipal Water District (EMWD requirements. The proposed project will not be introducing septic tanks or alterative water disposal systems. Therefore, related to septic tanks and soils, no impact would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

VII. GREENHOUSE GAS EMISSIONS. Would this project?				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	

The proposed project would result in the development of a residential apartment complex with 272 apartment dwelling units, a community building with a pool and spa, open space with a tot lot, onsite roadways and parking areas, and two retention basins. The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste disposal, water usage, and construction equipment.

The City has adopted the City of Moreno Valley Greenhouse Gas Analysis that requires a 15 percent reduction in GHG emissions between years 2007 and 2020. In order to determine if the proposed project would comply with the Plan's Standards, the GHG emissions from the proposed project were analyzed for both year 2018, (opening year of the proposed project) and year 2020. Using year 2018 versus 2007 provides a worst-case analysis, since the State has enacted several laws that took effect after 2007 that reduce GHG emissions and using the latter date means that less GHG reductions can be accounted for from the State measures.

The data provided in Table 9, *Project Related Greenhouse Gas Annual Emissions* shows that the proposed project would create 3,094.38 $MTCO_2e$ per year based on the default year 2018 GHG emissions rates and in year 2020 would produce 2,625.95 $MTCO_2e$ per year that is based on approved Statewide GHG reduction regulations that would be fully implemented by year 2020 as well as from GHG emission reduction design features that have been incorporated into the proposed site plan. Table 9, *Project Related Greenhouse Gas Annual Emissions* shows that through implementation of EO S-1-07, that establishes performance standards for the carbon intensity of transportation fuels, AB 149, which limits GHG emissions from new vehicles sold in California, AB 341 that reduces solid waste transferred to landfills, implementation of the CCR Title 24, Part 6 2013 Building Energy Efficiency Standards and CCR Title 24 Part 11 2013 CalGreen Standards that improves the energy efficiency of the proposed project, and project design features such as providing sidewalks and providing recycling bins on the project site, the proposed project's GHG emissions would be reduced by 15.1 percent and would meet the City of Moreno Valley's minimum 15 percent GHG reduction standard. In addition, the proposed project would be below the SCAQMD draft residential significance threshold of 3,500 $MTCO_2e$ per year for both the year 2018 and year 2020 GHG emissions. Therefore, a less than significant generation of GHG emissions would occur from development and operation of the proposed project and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Table 9: Project Related Greenhouse Gas Annual Emissions

Category	Greenhouse Gas Emissions (Metric Tons per Year)			
	CO_2	CH_4	N_2O	CO_2e
Year 2018 BAU Emissions				
Area Sources[1]	4.82	0.00	0.00	4.92
Energy Usage[2]	463.47	0.02	0.01	465.62
Mobile Sources[3]	2,461.78	0.08	0.00	2,463.40
Solid Waste[4]	12.70	0.75	0.00	28.46
Water and Wastewater[5]	90.68	0.47	0.01	104.09
Construction[6]	27.79	0.00	0.00	27.89
Total 2018 Emissions	**3,061.24**	**1.32**	**0.02**	**3,094.38**
Year 2020 Emissions				
Area Sources[1]	4.82	0.00	0.00	4.92
Energy Usage[2]	410.35	0.02	0.00	412.21
Mobile Sources[3]	2,061.32	0.06	0.00	2,062.61
Solid Waste[4]	6.35	0.38	0.00	14.23
Water and Wastewater[5]	90.68	0.47	0.01	104.09
Construction[6]	27.79	0.00	0.00	27.89
Total 2020 Emissions	**2,601.31**	**0.93**	**0.01**	**2,625.95**
Percent Reduction between 2018 and 2020				**15.1%**
City of Moreno Valley Reduction Threshold				**15.0%**
SCAQMD Draft Threshold of Significance for Residential Uses				**3,500**

Notes:
[1] Area sources consist of GHG emissions from hearths, consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consist of GHG emissions from electricity and natural gas usage (not including hearths).
[3] Mobile sources consist of GHG emissions from vehicles.
[4] Waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[5] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[6] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.
Source: Appendix A

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

The applicable plans for the proposed project are the City of Moreno Valley Greenhouse Gas Analysis, adopted February 2012 and the City of Moreno Valley Energy Efficiency and Climate Action Strategy, adopted October 2012. The City of Moreno Valley has adopted these plans in order to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. Both Plans provide the same reduction measures to be implemented in new developments to reduce GHG emissions as well as a GHG emissions reduction target of 15 percent below 2007 GHG emissions levels by 2020. Consistent with the CARB Scoping Plan, the City of Moreno Valley has chosen a reduction target of 15 percent below 2007 GHG emissions levels by 2020. Therefore, the proposed project would be considered

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

to be inconsistent with the City's Plans if the proposed project did not implement all applicable measures identified in the Plans and if the proposed project's GHG emissions are not 15 percent less than GHG emissions from business-as-usual conditions for a similar size project in year 2007.

The applicable measures provided in the City's GHG Plans were incorporated into the project design of the proposed project and include providing housing along a high quality transit corridor, promotion of alternative transportation methods through the providing of sidewalks throughout the proposed project, utilization of shade trees and covered parking to reduce heat island impacts, utilization of low-flow water fixtures and smart irrigation controls to reduce water use, and through providing recycling bins to reduce waste sent to landfills. Section 7.6 above found that with implementation of various state requirements as well as from GHG emission reduction design features that have been incorporated into the proposed site plan, the proposed project's GHG emissions would be reduced by 15.1 percent by year 2020. Therefore, the proposed project would not conflict with the City's GHG reduction plans and no mitigation measures would be required.

In addition to the City's GHG reduction plans, the SCAQMD initiated a Working Group to develop a GHG emissions policy and provided detailed methodology for evaluating significance under CEQA. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual threshold of 3,500 MTCO2e for residential uses. Although the SCAQMD provided substantial evidence supporting the use of the above threshold, they have not been formally adopted because the SCAQMD was awaiting the outcome of the State Supreme Court decision of the California Building Industry Association v. Bay Area Air Quality Management District (BAAQMD), which was filed on December 17, 2015 and the SCAQMD Board has not yet approved these thresholds. Table 9, *Project Related Greenhouse Gas Annual Emissions* shows that both the year 2018 business-as-usual GHG emissions and the year 2020 GHG emissions would be below the SCAQMD draft residential significance threshold of 3,500 MTCO2e per year. Therefore, the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project?				
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	

During construction-related activities, the proposed project may involve the use and transport of hazardous materials. These materials may include fuels, oil, mechanical fluids, and other chemicals. Compliance with all applicable federal, State, and local stature regulations will be required in order to transport, store, use, and dispose of hazardous materials during construction. By abiding by all applicable regulations, the impacts related to routine hazardous material activities will be less than significant. In addition, prior to commencement of construction, the construction manager must submit a Spill Prevention Control Plan (SPCP) as described in the BMP for Stormwater Pollution Prevention Plan requirements, which will explain how to manage any spill that may occur while construction is in progress. There is no Underground Storage Tanks (UST) presently on the project site or part of the proposed project. Therefore, related to routine transportation or disposal of hazardous materials, less than significant impacts would occur and no mitigation measures would be required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	

The proposed project would not create a significant hazard to the public related to hazardous materials. The closest school to the project site is Ramona Elenentary School approximately ½ mile to the north of the site off Bay Ave. Although the grading and construction activities would require the use and transport of potentially toxic construction materials, potential hazards related to this would be minimized through the compliance with existing Federal and State Occupation Safety and Health (OSHA) regulatory requirements. In addition, although the construction activities and the on-going maintenance of the landscaping and structures would include the use of hazardous materials such as gasoline, diesel fuel, herbicides, and solvents, the use of these materials would be typical of landscaping and building maintenance and would pose a low risk of hazard. Development of the proposed project would not create a hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment. Therefore, related to hazardous emissions or materials within one-quarter mile of a school, the proposed project would have less than significant impacts and no mitigation measures would be required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result would it create a significant hazard to the public or the environment?				X

The Phase I Report (Hillman Consulting) conducted a database search for the project site. Local, state, and federal

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
regulatory databases were reviewed for the site. The project site was not listed on any of the regulatory databases reviewed. Therefore, the development of the proposed project would not result in an impact due to the creation of a significant hazard to the public or the environment. Therefore, related to database list, no impacts would occur and no mitigation measures would be required.				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			X	
The March Air Reserve Base is located approximately 2.6 miles to the north of the project site. The project site is located outside the March Air Reserve Base Influence Area. According the City of Moreno Valley General Plan FEIR Figure 5.5-3, The project site is not located winthin an Accident Potential Zone or "Clear Zone" (i.e. high rish areas 3,000 feet from each end of the runway). Thus, because the project site is not located in an area identified as an Accident Potential Zone or Clear Zone, implementation of the proposed project would not result in a safety hazard for people living or working in the project ar. The development of the proposed project would not introduce people into an area where there is a safety hazard as a result of a public airport, public use airport, and private airport. Therefore, related to airport land use plans, less than significant impacts would occur and no mitigation measures would be required.				
g) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
The Project Applicant would prepare for City Staff review and approval emergency response and evacuation plans for the project site and vicinity. The proposed project would provide public (resident, guest, and deliveries) driveway access from gated, un-signalized driveways on Alessandro Boulevard and Perris Boulevard. In addition, an emergency access only driveway will be provided on Apple Blossom Lane. This access will to Apple Blossom Lane would be for emergency access only. Although the development of the proposed project would result in development of an undeveloped site, no significant changes in the overall circulation patterns in the project vicinity would occur. The development of the proposed project would not impair the ability of the City to implement its emergency response plan or utilize emergency evacuation routes. Therefore, related to emergency response plans, no impact would occur and no mitigation measures would be required.				
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X
The project site is not located within or adjacent to an area subject to wildland fires. The development of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Therefore, related to wildland fires, no impact would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?			X	

The proposed project consists of an apartment complex with private roads, utilities, and landscaping. The project site presently has two drainage areas. The northern drainage area sheet flows northwest to southeast onto Apple Blossom Lane. The southern drainage area sheet flows northwest to the southeast onto Brodiaea Avenue. Stormwater flows into an existing curb inlet to the east of the project site on Brodiaea Avenue.

The proposed project would create several small drainage areas. Consequently, the runoff from some of the proposed drainage areas would be captured and treated using LID BMP's. The proposed project will capture these runoffs using catch basins and inlets and discharge into the proposed storm drain system. The proposed project would provide storm drain pipes, in each respective drainage areas. Each drainage age would flow southeast to proposed infiltration basins. The infiltration basins will be design so that there is no increase in runoff flow or volume.

The proposed project site would capture all project site stormwater runoff via yard inlets and catch basins, then routed to the infiltration basins with natural infiltrating capacity. As a pre-treatment for the proposed project, catch basins will be installed with filter inserts. The infiltration basins will reduce the quantity and velocity of stormwater runoff.

The project site will be fully developed and will be re-vegetated with native and/or drought-tolerant species. There is little vegetation in the existing condition. The existing project site has no natural areas to conserve.

Runoff from parking areas will be diverted to Low Impact Development (LID) areas via curb openings. LID areas will contain catch basins to convey stormwater toward the infiltration basins. Runoff from the project site parking areas will be infiltrated so as to treat the first flush.

The roof runoff from the proposed project would drain into landscaped areas before entering the proposed drainage system. Several landscaped areas are designed to be 2 to 3 inches below the finish grade to help in treating and retaining some of the runoff before it continues to flow into the proposed infiltration basin. Some drainage areas will disperse the runoff flow to the proposed filter catch basins.

The proposed project would not exceed pre-project conditions for stormwater discharge. The proposed project includes infrastructure to detain and treat stormwater on-site and discharge it to the storm drain system at rates that would not exceed the capacity of the receiving flood control channel. Therefore, related to waste discharge requirements, the proposed project would have less than significant impacts and no mitigation would be required.

Construction

The proposed project's grading and construction would expose ground surfaces and increase the potential for erosion and the off-site transport of sediment in stormwater runoff. Additionally, the use of construction equipment and other materials could result in water quality impacts, if spills come into contact with stormwater and polluted runoff enters

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

downstream receiving waters. The construction-related stormwater pollutant discharges from the project site would be temporary and would be controlled through compliance with the applicable National Pollution Discharge Elimination System (NPDES) permitting process.

Development of the project site would be in excess of one (1) acre; therefore, the proposed project would be required to obtain coverage under the NPDES General Construction permit. The NPDES permit ensures that the State's mandatory standards for clean water and the Federal minimums are met. Compliance with the permit would prevent sedimentation and soil erosion through preparation and implementation of a Water Quality Management Plan (WQMP) and a Storm Water Pollution Prevention Plan (SWPPP). This would include preparation of annual compliance reports and periodic inspections by the State Regional Water Quality Control Board (SRWQCB) staff.

The proposed project SWPPP will describe the construction operator's activities to comply with the requirements in the NPDES permit. Required elements of the SWPPP will include:

1. Site description addressing the elements and characteristics specific to the project site;
2. Descriptions of Best Management Practices (BMPs) for erosion and sediment controls;
3. (3) BMPs for construction waste handling and disposal;
4. Implementation of approved local plans; and,
5. Proposed post-construction controls, including a description of local post-construction erosion and sediment control requirements.

The proposed project SWPPP will facilitate a process whereby the operator evaluates potential pollutant sources at the project site and selects and implements Best Management Practices (BMPs) to prevent or control the discharge of pollutants in stormwater runoff. The SWPPP will be approved by the (State Water Quality Control Board (SWQCB) prior to issuance of a grading or building permit. Therefore, related to construction water quality standards, the proposed project would have less than significant impacts and no mitigation measures would be required.

Post Construction

The proposed project would create a Hydrologic Condition of Concern (HCOC), a potentially significant off-site impact to water quality standards or waste discharge requirements. The post construction-related stormwater pollutant discharges from the project site would be controlled through compliance with the applicable National Pollution Discharge Elimination System (NPDES) permitting process.

The WQMP will describe the responsibilities of the post-construction project owner(s) to comply with the requirements

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in the NPDES for post-construction urban runoff management. The WQMP will include:

1. Routine Non-Structural and Source Control BMPs;

2. Site Design and Treatment Control BMPs;

3. Operation and Maintenance implementation responsibilities and funding sources;

4. Pollutants of Concern;

5. Hydrologic Conditions of Concern; and,

6. Outdoor Activities.

Therefore, related to post-construction water quality standards, the proposed project would have less than significant impacts and no mitigation measures would be required.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	

The availability of groundwater and issues involving the adequacy of recharge capability are regional in nature. The Groundwater Management Act (AB 3030) (CWC 2011) provides a systematic procedure for an existing local agency to develop a groundwater management plan. AB 3030 allows a local agency whose service includes a groundwater basin that is not already subject to groundwater management pursuant to law or court order to adopt and implement a groundwater management plan and includes plans to mitigate overdraft conditions, control brackish water, and to monitor and replenish groundwater.

It is anticipated that potable water for the proposed project would continue to be supplied by the Eastern Municipal Water District (EMWD). Development of the project site would significantly increase the amount of impervious surfaces such as building roofs, paving, etc. However, as a part of the WQMP for the project and as a result of the HCOC, the proposed project will collect and retain and percolate the difference between pre-development and post-development flows for a 24-hour, 10-year storm frequency event. In addition, all dry weather flows will be collected and retained. The stormwaters and dry weather flows will be retained and percolated in an underground chamber and rock leach field. Therefore, related to potential interfere with groundwater recharge activities, less than significant impacts would occur with no mitigation measures would be required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a			X	

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
manner which would result in substantial erosion or siltation on- or off-site?				
The drainage patterns through the project site would be slightly modified by the proposed project (see "a" above). However, the potential for adverse erosion and sedimentation effects would be reduced to a less than significant level with the preparation and implementation of project-specific drainage improvements, and an SWPPP, as discussed above. Therefore, related to substantially altering the existing drainage pattern of the project site, less than significant impacts would occur and no mitigation measures would be required.				
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or surface runoff in a manner which would result in flooding on- or off site?			X	
The development of the proposed project would increase impervious surfaces on the project site. However, due to the retention and percolation of stormwaters on-site (see "b" above), there would be no significant change in the amount of water that percolates into the ground and no increase of the amount of water that is discharged to the storm drain system would be anticipated to occur. Therefore, related to a potential increase in the rate of surface runoff in a manner that would result in flooding on- or off-site, less than significant impacts would occur and no mitigation measures would be required.				
e) Create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
The proposed project would not exceed the capacity of storm drain facilities that serve the project site and surrounding areas. There would be no significant increase of the amount of water that would be anticipated to be discharged to the storm drain system. The proposed project provides for the retention and percolation of stormwaters on-site (see "b" above). Therefore, related to the capacity of storm drain facilities that serve the project site and surrounding areas, less than significant impacts would occur and no mitigation measures would be required.				
f) Otherwise substantially degrade water quality?			X	
The proposed project would comply with requirements of the project's SWPPP, WQMP, and project site improvements. Therefore, related to otherwise substantially degrading of water quality, less than significant impacts would occur and no mitigation measures would be required.				
g) Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			X	
The proposed project lies within the Flood Insurance Rate Map Community Panel No. 06065C0761G, dated August 28, 2008 and is partially located in Zone X (Other Flood Areas). Zone X is defined as "Areas of 0.2% annual chance flood; areas of 1% annual change flood with average depths of less than 1 foot or with drainage areas less than 1 square mile;				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
and areas protected by levees from 1% annual chance flood." Project design features provide that all finish floor elevations for habitable structures in the Zone X portions of the proposed project are a minimum of one (1) foot above the fronting curb elevation on the low side of the drives. The project is outside of the delineated dam inundation area for Perris Dam at Lake Perris Reservoir and will not place housing or structures within a 100-year flood hazard area. There are no mountains or steep slopes in proximity to the project site, therefore, there is no chance of mudflows from local mountains. The project as designed and conditioned will not place structures which would impede or redirect flood flows. Therefore, less than significant impacts would occur and no mitigation measures would be required.				
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			X	
See paragraph "g" above. While the proposed project would place structures within the Zone X area, the structures and drives are oriented such that any floodwaters would exit the propose project at the same location (southeast corner of the project) that they exit in the pre-development condition. In addition, any project storm flows exiting the project at the southeast corner of the site would be contained within an underground storm drain pipe that connects to the Edgemont Channel, negating any possibility of surface erosion of the adjacent parcel. Therefore, related to 100-year flood hazard area structures which would impede or redirect flood flows, less than significant impacts would occur and no mitigation measures would be required.				
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
The project site is not within a dam failure inundation area. The proposed project, as designed, would not create hazards in this regard. Therefore, related to expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, no impact would occur and no mitigation measures would be required.				
j) Inundation by seiche, tsunami, or mudflow?				X
Seiches are oscillations of the surface of inland bodies of water that vary in period from a few minutes to several hours. Seismic excitation can induce such oscillations. Tsunamis are large sea waves produced by submarine earthquakes or volcanic eruptions. The proposed project is not near a large body of water, or the Pacific Ocean, and the project site is relatively flat without any hills (which can produce mudflows). Therefore, relate to a seiche, tsunami, or mudflow, no impact would occur and no mitigation measures would be required.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?			**X**	

The proposed project would establish a gated apartment complex. Gating the apartment complex would establish a physical barrier across the project site. The project site has topography that varies from level to rolling. The project site over the past several years routinely has been disked for weed abatement in accordance with the requirements of the City. There are no existing significant trees or vegetation on the project site. The project site is located in a suburban developed area characterized by a mix of commercial properties, single- and multi-family homes, and warehouses. The proposed project would include the construction of 272 residential apartments. The proposed site plan is depicted on Figure 5: *Site Plan*. Public (resident, guest, and deliveries) driveway access to the proposed project would be provided from two gated driveways one the south side of Alessandro Boulevard and one east side of Perris Boulevard. The proposed project would construct a median on Alessandro Boulevard that would restrict northbound left turns out of the project, however would allow for westbound left turns into the project. The proposed project would be landscaped. The proposed project would include a community building, pool and deck, open space, tot-lot, and outdoor space area central located within the apartment complex. Pedestrian access would be provided from each of the apartment buildings to these areas.

As noted above, the proposed project would provide sidewalks along Alessandro Boulevard, and Perris Boulevard, Brodiaea Avenue, and Apple Blossom Lane. These sidewalks would provide access to the adjacent properties. The proposed project would not establish a physical barrier that would divide the community. Therefore, related to physically divide an established community, less than significant impacts would occur and no mitigation measures would be required.

b) Conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			**X**	

The proposed development of the proposed project is governed by land use plans, policies, or regulations of agencies with jurisdiction over the project site, including the City General Plan and other land use plans and policies for the project area. In addition, the project site is located within the six-county region which comprises the Southern California Association of Governments (SCAG) planning area. Further, the proposed project is located within the South Coast Air Basin (SCAB) and is, therefore, within the jurisdiction of the SCAQMD. The Air Quality Management Plan (AQMP), which was adopted by SCAG and the SCAQMD, establishes an air pollutant control program to achieve the attainment of State and Federal air quality standards in the Basin.

The proposed project is consistent with the City's General Plan and zoning for the project site. The nature and intensity of the proposed uses for the overall project are not inconsistent or incompatible with existing or proposed uses and do not present the potential for conflict with the City's General Plan or other City land use policies directed at avoiding or

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

mitigating environmental effects. Therefore, related to applicable land use plans, less than significant impacts would occur and no mitigation measures would be required. Section III., *Air Quality*, above discusses the consistency with the proposed project with the SCAQMD AQMP.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

The proposed project is not within one of the Multiple Species Habitat Conservation Plan (MSHCP) criteria areas, which are potential habitat preservation areas. The proposed project will not conflict with the Stephen's Kangaroo Rat Habitat Conservation Plan (SKR HCP) or MSHCP or any other known local, regional or state habitat conservation plans. The project will be conditioned to pay the required SKR mitigation fees. Also, the City participates in the MSHCP, a comprehensive habitat conservation-planning program addressing multiple species' needs, including preservation of habitat and native vegetation in Western Riverside County. This project will also be subject to fees per City ordinance to support the implementation of the Multiple Species Habitat Conservation Plan. Therefore, related to applicable habitat conservation plan or natural community conservation plan, no impact would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

XI. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

The project site is located in an urbanized area with additional development occurring in the vicinity. No active mines or mineral recovery programs are currently active on the project site or in the vicinity of the project site. No mineral deposits have been identified in the City's General Plan on the project site. Therefore, related to loss of availability of a known mineral resource that would be of value to the region and the residents of the state, no impact would occur and no mitigation measures would be required. Additionally, therefore, related to loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan, no impact would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

XII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		

. The following section calculates the potential noise emissions associated with the construction and operations of the proposed project and compares the noise levels to standards established in the City General Plan or Noise Ordinance or applicable standards of other agencies.

Construction-Related Noise

The construction activities for the proposed project are anticipated to include grading of the 19.86 acre project site, building construction of a residential apartment complex with 272 residential apartment units, paving of the on-site roads and parking spaces, and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest offsite sensitive receptors to the south section of the project site are single-family homes located as near as 25 feet to the east and the nearest sensitive receptors to the north section of the project site are single-family homes, located as near as 50 feet south.

Section 11.80.030(B) of the City's Municipal Code limits all noise sources in the City to the noise levels where a high probability hearing loss would occur as determined by the Center for Disease Control and Prevention and OSHA. Section 11.80.030(D)(7) of the City's Municipal Code provides additional prohibitions on construction activities by restricting construction activities from occurring between the hours of 8:00 p.m. and 7:00 a.m.

According to the project applicant, the grading activities that would occur near the homes would consist of the use of dozers, graders and scrappers that would make several passes over each portion of the project site, which will limit grading activities near any particular sensitive receptor to less than one hour intervals. However the building construction, paving and painting activities would have the potential to occur in the proximity of the same sensitive receptor for 8 continuous hours. Therefore, the one hour standard of 105 dB has been utilized as the threshold for grading activities and the eight hour standard of 90 dB has been utilized as the threshold for building construction, paving, and painting activities. The results are shown in Table 10, *Worst-Case Construction Noise Levels at Nearest Sensitive Receptor.*

Table 10, *Worst-Case Construction Noise Levels at Nearest Sensitive Receptor* shows that the greatest noise impacts of the proposed project would occur during the grading phase of construction, with a noise level as high as 84 dBA Leq at the nearest off-site home. Table 10, *Worst-Case Construction Noise Levels at Nearest Sensitive Receptor* also shows that none of the construction phases would exceed the City's noise standards for each particular use, which is based on the anticipated duration of each potential impact. Through adherence to the limitation of allowable construction times provided in Section 11.80.030(D)(7) of the City's Municipal Code, the construction-related noise levels would not exceed any standards. Therefore, potential construction related noise impact would be less than significant and no mitigation measures would be required.

Table 10: Worst-Case Construction Noise Levels at Nearest Sensitive Receptor

Construction Phase	Distance to Nearest Sensitive Receptor (feet)	Construction Noise Level (dBA Leq)	Threshold[1] (dBA Leq)
Grading	25	84	105
Building Construction	45	79	90
Paving	60	75	90
Painting	45	75	90

Notes:
[1] Threshold for grading activities based on Section 11.80.030(B) of the Municipal Code's one hour standard of 105 dB and threshold for building construction, paving, and painting activities based on OSHA eight hour standard of 90 dB.
Source: Appendix E

Operational-Related Noise

The proposed project would consist of the development of a residential apartment complex with 272 residential apartment units. The proposed development would be adjacent to Perris Boulevard and Alessandro Boulevard, which may create noise levels in excess of City standards at the proposed residential uses.

The City's General Plan Policy 6.3.1 requires that sound mitigation be provided for new multiple-family residential buildings that are exposed to future exterior noise levels that exceed 20 dBA CNEL above the 45 dBA CNEL interior noise standard, or exceed 65 dBA CNEL at the exterior of the proposed residential apartment units.

Exterior Noise Impacts

In order to quantify the traffic noise impacts at the locations of the proposed homes, the exterior noise levels were calculated through use of the FHWA RD-77-108 traffic noise prediction model. The model was based on the nearest location that a home may be placed to Perris Boulevard and Alessandro Boulevard for the year 2021 with project traffic conditions provided in the Traffic Impact Analysis. A summary of the results are shown in Table 11, *Proposed Exterior Patio and Balcony Noise Levels.*

Table 11, *Proposed Exterior Patio and Balcony Noise Levels* shows that the proposed ground floor exterior patios that face Perris Boulevard and Alessandro Boulevard would exceed the City's 65 dBA CNEL noise standard. Table 11, *Proposed Exterior Patio and Balcony Noise Levels* also shows that the second floor balconies that face Perris Boulevard would exceed the City's 65 dBA CNEL noise standard.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Table 11: Proposed Exterior Patio and Balcony Noise Levels

Roadway	Distance to Nearest Patio/Balcony[1] (Feet)	Exterior Area[2]	Exterior Patio and Balcony Noise Levels (dBA CNEL)		Sound Wall Height (feet)
			Without Sound Wall	With Sound Wall	
Perris Boulevard	90	Patio	**66**	63	4.5
		Balcony	**66**	65	3.5
Alessandro Boulevard	105	Patio	**66**	65	4.0
		Balcony	65	--	--

Notes:
[1] Measured from centerline of road.
[2] Patio located on ground floor and balcony located on second floor.
Exceedance of City's 65 dBA CNEL noise standard shown in bold.
Source: Appendix E

NOI-1 is provided that would require the applicant to construct the following sound walls: (1) A minimum 4.5-foot high wall around all private west facing ground floor patios on Buildings B33, B34, B35, and B36; (2) A minimum 3.5-foot high wall around all private west facing second floor balconies on Buildings B33, B34, B35, and B36; and (3) A minimum 4.0-foot high wall around all private north facing ground floor patios on Buildings B01, B02, B03, B15, B16, and B17. The sound walls shall be required to be constructed of a solid material (e.g., glass, wood or plaster) that are free of any cutouts or openings. This mitigation measure has been incorporated in the wall and fence plan for the project site.

The exterior balcony and patio noise levels have been recalculated based on construction of the wall locations and heights detailed in NOI-1 and the results are shown above in Table 11, *Proposed Exterior Patio and Balcony Noise Levels.* Table 11, *Proposed Exterior Patio and Balcony Noise Levels* shows that with application of the sound walls specified in NOI-1, the noise levels at the proposed patios and second floor balconies would be reduced to within the City's exterior residential noise standard. Impacts would be less than significant after implementation of the recommended mitigation.

Exterior Noise Impacts

To assess the interior noise levels related to the compliance with the City's 45 dBA CNEL interior noise standard, the same units analyzed for the exterior patio analysis were also analyzed for their interior noise levels. According to *Highway Traffic Noise: Analysis and Abatement Guidance,* prepared by U.S. Department of Transportation, December, 2011, a new residential building provides a minimum of 10 dB of noise attenuation with windows open and a minimum of 25 dB of noise attenuation with windows closed and dual-paned windows. The proposed residential structures will be required to be designed to meet the CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings 2013 Building Standards, that require the installation of dual paned windows in the climate zone where the proposed project is located. The exterior noise level at the façade of the first floor and possible second floors were calculated for each analyzed unit and are shown in Table 12, *Proposed Residential Interior Noise Levels*.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Table 12, *Proposed Residential Interior Noise Levels* shows that the apartments facing Perris Boulevard and Alessandro Boulevard would exceed the City's 45 dBA CNEL interior noise standard for the windows open condition. This would be considered a significant impact.

Table 12: Proposed Residential Interior Noise Levels

Roadway	Distance to Nearest Home[1] (Feet)	Floor	Exterior Noise Level at Façade (dBA CNEL)	Interior Noise Levels (dBA CNEL)	
				Windows Open	Windows Closed
Perris Boulevard	88	1	63	**51**	38
		2	67	**55**	42
Alessandro Boulevard	105	1	65	**53**	40
		2	66	**54**	41

Notes:
[1] Measured from centerline of road.
Exceedance of City's residential interior noise standard shown in **bold**.
Source: Appendix E

NOI-2 is provided that would require all proposed apartments to be designed for a "windows closed" condition. A "windows closed" condition requires a means of mechanical ventilation per Chapter 12, Section 1205 of the Uniform Building Code. This shall be achieved with a standard forced air conditioning and heating system for each residential unit. Table 12, *Proposed Residential Interior Noise Levels* shows that with implementation of NOI-2 the interior areas of the proposed homes would meet City standards. Therefore, related to interior noise levels with implementation of NOI-2 potential impacts would be mitigated to less than significant levels.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		X		

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

The construction activities for the proposed project are anticipated to include grading of the 19.86 acre project site, building construction of a residential apartment complex with 272 residential apartment units, paving of the onsite roads and parking spaces, and application of architectural coatings. The nearest offsite sensitive receptors to the south section of the project site are single-family homes located as near as 25 feet to the east and the nearest sensitive receptors to the north section of the project site are single-family homes, located as near as 50 feet south.

Section 9.10.170 of the City's Municipal Code limits vibration levels created on the project site from being felt at or beyond the property line. Since the City's Municipal does not provide a quantifiable vibration level, Caltrans guidance

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

that is detailed above in Section 4.2 has been utilized, which defines the threshold of perception from transient sources at 0.25 inch per second PPV.

The primary source of vibration during construction would be from the operation of a bulldozer. From Table 13, *Vibration Source Levels from Construction Equipment* a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet, which is the approximate distance to the nearest offsite home. The vibration level at the nearest offsite home is within the 0.25 inch per second PPV threshold detailed above. Therefore, a less than significant vibration impact is anticipated from construction of the proposed project and no mitigation measure would be required.

Table 13: Vibration Source Levels from Construction Equipment

Equipment		Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v)at 25 feet
Pile driver (impact)	Upper range typical	1.518 0.644	112 104
Pile driver (sonic)	Upper range typical	0.734 0.170	105 93
Clam shovel drop (slurry wall)		0.202	94
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Appendix E

Operations-Related Vibration Impacts

The on-going operation of the proposed project would not include the operation of any known vibration sources. Therefore, relate to vibration during operation of the proposed project, a less than significant impact would occur and no mitigation measures would be required.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

Potential noise impacts associated with the operations of the proposed project would be from project-generated vehicular traffic on the project vicinity roadways.

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed project does not propose any uses that would require a substantial number of truck trips and the proposed project would not alter the speed limit on any existing roadway so the proposed project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the proposed project.

Objective 6.5 of the City's General Plan Noise Element, requires the City to minimize noise impacts from significant noise generators including roadway noise impacts. However, neither the General Plan nor the CEQA Guidelines define what constitutes a "substantial permanent increase to ambient noise levels", this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact.

The potential offsite traffic noise impacts created by the on-going operations of the proposed project have been analyzed through utilization of the FHWA model and parameters and the FHWA model noise calculation spreadsheets are provided in Appendix E. The proposed project's offsite traffic noise impacts have been analyzed for the existing and near-term year 2021 conditions and are discussed below.

Existing Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison of the Existing scenario to the Existing With Project scenario. The results of this comparison are shown in Table 14, *Existing Project Traffic Noise Contributions*.

Table 14: Existing Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor[1]			Increase Threshold[2]
		Existing	Existing Plus Project	Project Contribution	
Perris Boulevard	North of Cottonwood Avenue	60.7	60.8	0.1	+2 dBA
Perris Boulevard	North of Bay Avenue	67.2	67.3	0.1	+1 dBA
Perris Boulevard	North of Alessandro Boulevard	67.2	67.2	0.0	+1 dBA
Perris Boulevard	South of Alessandro Boulevard	67.4	67.5	0.1	+1 dBA
Apple Blossom Lane	South of Alessandro Boulevard	46.0	46.0	0.0	+7 dBA
Alessandro Boulevard	West of Indian Street	67.2	67.2	0.0	+1 dBA
Alessandro Boulevard	West of Perris Boulevard	67.2	67.3	0.1	+1 dBA
Alessandro Boulevard	East of Perris Boulevard	65.8	66.0	0.2	+1 dBA

Notes:
[1] Distance to nearest residential or school use shown in **Error! Reference source not found.**, does not take into account existing noise barriers.
[2] Increase threshold based on the significance thresholds defined in *Transit Noise and Vibration Impact Assessment,* prepared by Federal Transit Administration, 2006, for a moderate impact.
Source: Appendix E

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Table 14, *Existing Project Traffic Noise Contributions* shows that for the Existing conditions, the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the increase thresholds detailed above. Therefore, related to substantial permanent increase in ambient noise levels for the existing conditions, a less than significant impact would occur and no mitigation measures would be required.

Near-Term 2021 Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison of the year 2021 without project scenario to the year 2021 with project scenario. The results of this comparison are shown in Table 15, *Near-Term Year 2021 Project Traffic Noise Contributions*.

Table 15: Near-Term Year 2021 Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor[1]			Increase Threshold[2]
		2021 No Project	2021 Plus Project	Project Contribution	
Perris Boulevard	North of Cottonwood Avenue	61.3	61.4	0.1	+2 dBA
Perris Boulevard	North of Bay Avenue	67.9	67.9	0.0	+1 dBA
Perris Boulevard	North of Alessandro Boulevard	67.8	67.9	0.1	+1 dBA
Perris Boulevard	South of Alessandro Boulevard	68.1	68.2	0.1	+1 dBA
Apple Blossom Lane	South of Alessandro Boulevard	46.4	46.4	0.0	+7 dBA
Alessandro Boulevard	West of Indian Street	67.8	67.9	0.1	+1 dBA
Alessandro Boulevard	West of Perris Boulevard	67.8	67.9	0.1	+1 dBA
Alessandro Boulevard	East of Perris Boulevard	66.5	66.7	0.2	+1 dBA

Notes:
[1] Does not take into account existing noise barriers.
[2] Increase threshold based on the significance thresholds defined in *Transit Noise and Vibration Impact Assessment,* prepared by Federal Transit Administration, 2006, for a moderate impact.
Source: Appendix E

Table 15, *Near-Term Year 2021 Project Traffic Noise Contributions* shows that for the near-term year 2021 conditions, the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the increase thresholds detailed above. Therefore, related to potential substantial permanent increase in ambient noise levels for the near-term year 2021 conditions, a less than significant impact would occur and no mitigation measures would be required.

d) A substantially temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

The construction activities for the proposed project are anticipated to include grading of the 19.86 acre project site, building construction of a residential apartment complex with 272 residential apartment units, paving of the onsite

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

roads and parking spaces, and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest offsite sensitive receptors to the south section of the project site are single-family homes located as near as 25 feet to the east and the nearest sensitive receptors to the north section of the project site are single-family homes, located as near as 50 feet south.

The construction noise impacts to the nearby sensitive receptors has been previously analyzed, which found that that greatest noise impacts would occur during the grading phase of construction, with a noise level as high as 84 dBA Leq at the nearest offsite home. The analysis in Section 7.2 also found that none of the construction phases would exceed the City's noise standards for each particular use, which is based on the anticipated duration of each impact. The City noise standards were developed based on a standard where a high probability hearing loss would occur as determined by the Center for Disease Control and Prevention and OSHA and represent the City's standard for determining what constitutes a substantial temporary increase in ambient noise levels. The proposed project would adhere to the limitation of construction activities to between 7:00 a.m. and 7:00 p.m. as detailed in Section 8.21.050(O) of the City's Municipal Code. Therefore, related to substantial temporary or periodic increase in ambient noise levels a less than significant impact would occur and no mitigation measures would be required.

e) For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				**X**
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				**X**

The nearest airport is March Air Reserve Base that is located as near as two miles southwest of the project site. The runways for March Air Reserve Base are oriented in northwest to southeast and run perpendicular to the project site, and no aircraft would fly over the project site during typical take-off and landing patterns. The project site is located outside of the 65 dBA CNEL noise contours of March Air Reserve Base and site observations during the noise measurements did not observe any aircraft flights over the project site. The proposed project would not expose people to excessive noise levels from aircraft. Therefore, related to aircraft noise a no impact would occur and no mitigation measures would be required.

Mitigation Measures

NOI-1 The project applicant shall construct the following sound walls: (1) A minimum 4.5-foot high wall around all private west facing ground floor patios on Buildings B33, B34, B35, and B36; (2) A minimum 3.5-foot

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

high wall around all private west facing second floor balconies on Buildings B33, B34, B35, and B36; and (3) A minimum 4.0-foot high wall around all private north facing ground floor patios on Buildings B01, B02, B03, B15, B16, and B17. The sound walls shall be required to be constructed of a solid material (e.g., glass, wood or plaster) that are free of any cutouts or openings.

NOI-2 The Project Applicant shall provide a "windows closed" condition for each proposed residential apartment unit. A "windows closed" condition requires a means of mechanical ventilation per Chapter 12, Section 1205 of the Uniform Building Code. This shall be achieved with a standard forced air conditioning and heating system with a filtered outside air intake vent for each residential unit.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

XIII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				**X**
The proposed project is consistent with the population growth and projected development in the City's General Plan. Growth in population as a result of the proposed project is within the City's projections. Therefore, related to substantial population growth, less than significant impacts would occur and no mitigation measures would be required.				
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				**X**
There are no existing residential dwelling units on the project site. The development of the proposed project would not displace existing housing, necessitating the construction of replacement housing elsewhere. Therefore, related to displacement of substantial numbers of existing housing necessitating the construction of replacement housing elsewhere, no impact would occur and no mitigation measures would be required.				
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				**X**
There are no existing residential dwelling units on the project site. The development of the proposed project would not displace existing housing, necessitating the construction of replacement housing elsewhere. Therefore, related to the displacement of substantial numbers of people necessitating the construction of replacement housing elsewhere, no impact would occur and no mitigation measures would be required.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

XIV. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection?			X	

Fire and emergency medical services to the project vicinity are provided by the City Fire Department. The proposed residential development would result in the addition of an approximately 19.86 acre apartment complex with 272 dwelling units. The addition of these structures and residents would increase the number of responses for fire protection services and emergency medical services to the project site and vicinity.

Consistent with the City's standard requirements, the Project Applicant will pay development impact fees to address the proposed project's incremental need for fire protection services and facilities. Therefore, related to fire protection, with the payment of development fees, less than significant impacts would occur and no mitigation measures would be required.

b) Police protection?			X	

The development of the proposed project would result in an incremental increase in the number of residential units and residents in the area served by the City Police Department. According to the Police Department, the proposed project would not adversely impact the level of service provided. Therefore, related to police protection with the payment of development fees, less than significant impacts would occur and no mitigation measures would be required.

c) Schools?			X	

The development of the proposed project would result in an incremental increase in the number of residential units and school age residents in the Moreno Valley Unified School District.

As permitted by State law, school districts assess school impact fees to help finance needed facilities and services. Prior to the issuance of building permits, the project applicant would be required to pay school fees to the Moreno Valley Unified School District. Therefore, related to the incremental increase in the number of residential units with school age residents in the Moreno Valley Unified School District with the payment of the required school fees in accordance with the provisions of the State law, less than significant impacts would occur and no mitigation measure would be required.

d) Parks?			X	

With the addition of 272 dwelling units, the development of the proposed project is not anticipated to result in a significant increase in demand for parks or governmental services related to parks. The proposed project includes a private community and pool area for the future residents. Additionally, the proposed project includes a tot lot and open space area. The proposed project would pay fees in accordance with adopted City polices related to park fees.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Therefore, related to parks less than significant impacts would occur and no mitigation measures would be required.

e) Other public facilities?			X	

The development of the proposed project would result in an incremental increase in the Moreno Valley Library District service area. The proposed residential development would result in the addition of 272 dwelling units.

According to the Moreno Valley Library District, the property tax resource associated with the proposed residential development would support the additional need for staff and materials. Therefore, related to other public facilities including library services less than significant, impacts would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

XV. RECREATION.				
a) Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	

The proposed project would include the development of an approximately 19.86 acre apartment complex with 272 dwelling units. The proposed project includes a private clubhouse, pool area, open space area, and tot lot that would serve as a resident recreational facility. The proposed project would not significantly increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Therefore, related to increase in existing recreational uses, less than significant impacts would occur and no mitigation measures would be required.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

The proposed project would include the development of an approximately 19.86 acre apartment complex with 272 dwelling units. The proposed project includes the building of a private clubhouse and pool area that would serve as a resident recreational facility. It is not anticipated that a recreational facility would need to be expanded. Therefore, related to expansion of recreational facilities no impact would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

XVI. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			X	
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			X	

The following section provides the conclusions for the traffic analysis of the proposed project based on Transpo Group Consulting Traffic Impact Analysis July 2016.

Project Trip Generation

The proposed project is the development of 272 low-rise apartments on a vacant 19.86 acre parcel on the northeast corner of Perris Boulevard/Brodiaea. Per Institute of Traffic Engineers (ITE) trip rates, the proposed project would generate approximately 1,792 daily trips, 125 a.m. peak hour trips (26 inbound and 99 outbound), and 158 p.m. peak hour trips (103 inbound and 55 outbound).

Existing plus Project

Based on the Existing plus Project LOS analysis, all study area intersections and roadway segments would continue to operate with satisfactory LOS (LOS D or better) with addition of traffic from the proposed project. No mitigation measures are required as all study area intersections and roadway segments would continue to operate with satisfactory LOS (LOS D or better) with the addition of project traffic. The project’s impact would be less than significant and no mitigation measures would be required.

Near-Term Year 2021 plus Project

Based on the Near-Term Year 2021 plus Project LOS analysis, the intersection of Perris Boulevard/Cactus Avenue is forecast to continue to operate at LOS E with the addition of traffic from the proposed project. Per the City’s significance criteria, this would not be a significant impact as the proposed project would not add 50 or more peak hour trips to this intersection. Therefore, a less than significant impact would occur and no mitigation measure would be required.

Based on the Near-Term Year 2021 plus Project LOS analysis, all roadway segments are expected to operate at LOS D or better. Per the City’s significance criteria no significant impact would occur. Therefore, a less than significant impact would occur and no mitigation measure would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			X	
The development of the proposed project would not result in a change in air traffic patterns, including any change in traffic levels or location. Therefore, related to air traffic patterns, no impact would occur and no mitigation measures would be required.				
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?				X
The development of the proposed project would not substantially increase hazards to a design feature or incompatible use. Based on the peak hour intersection LOS analysis (Transpo Group Consulting Traffic Impact Analysis July 2016), the driveway on Alessandro Boulevard is expected to operate at LOS B during both peak hours. The driveway on Perris Boulevard is expected to operate at LOS C during both peak hours. A review of the site plan shows no visual obstructions along the roadway to prohibit drivers to maneuver in, and out of, the driveway area. Parking is also restricted on both Alessandro Boulevard and Perris Boulevard near the driveways so vehicles exiting out of the project will not have any obstructions. Internal circulation within the project site is based on driveway aisles that measure 24 feet wide and have been designed to meet the City's design standards. According to the Driveway Queuing Analysis, the Alessandro Boulevard driveway is not expected to experience any significant queues. The westbound left turn queue into the proposed project is expected to be 26 feet (approximately one passenger car) and the northbound right turn is expected to be 55 feet (two passenger cars) in the Near-Term Year 2021 plus project scenarios. Both movements have adequate stacking distance for both movements (approximately 80 feet for the westbound left and 140 feet for the northbound right turn). The Perris Boulevard driveway would not experience any significant queues. The northbound left turn, is expected to be 14 feet (approximately one passenger car), the southbound left turn is expected to be 17 feet (approximately one passenger car), the eastbound right is expected to be 41 feet (approximately two passenger cars), and the westbound right is expected to be 52 feet (approximately two passenger cars) in the Near-Term Year 2021 plus project scenarios. All movements would have adequate stacking distance. Therefore, a less than significant impact related to increase hazards to design features would occur and no mitigation measures would be required.				
e) Result in inadequate emergency access?				X
The project as designed and conditioned would be consistent with City standards. The project site will be readily accessible for emergency access. Public (resident, guest, and deliveries) driveway access to the proposed project would be provided from two gated driveways on the south side of Alessandro Boulevard and on east side of Perris Boulevard. The project would construct a median on Alessandro Boulevard that would restrict northbound left turns out of the project, but would allow for westbound left turns into the project. Outbound movements from the proposed project would be limited to right-turns only. At the end of this driveway, there are 11 spaces that would allow for visitors to				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

park and use the kiosk to contact the office and/or residents. The Alessandro Boulevard driveway measures 62 feet wide and would allow for 140 feet of stacking. The site plan illustrates two inbound lanes and one outbound lane at this driveway.

The proposed project would also construct a median on Perris Boulevard that would restrict westbound left turns out of the project site and eastbound left turns out of the self-storage facility located across Perris Boulevard to the west. Only outbound right-turn movements would be allowed. This median would also allow northbound left turns into the self-storage facility, and southbound left turns into the proposed project. There would be a gate on the east edge of this driveway. The Perris Boulevard driveway measures 40 feet wide and would allow for 105 feet of stacking. The site plan illustrates two inbound lanes and one outbound lane at this driveway.

In addition, based on the peak hour intersection LOS analysis, the driveway on Alessandro Boulevard is forecast to operate at LOS B during both peak hours. The driveway on Perris Boulevard is forecast to operate at LOS C during both peak hours. A review of the site plan shows no visual obstructions along the roadway to prohibit drivers to maneuver in, and out of, the driveway area. Parking is also restricted on both Alessandro Boulevard and Perris Boulevard near the driveways so vehicles exiting out of the project would not have any obstructions. Therefore, related to emergency access, no impact would occur and no mitigation measures would be required.

f) Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X

The proposed project would not conflict with adopted policies or programs supporting alternative transportation, including bicycle use and transit facilities. The proposed project will construct frontage along Alessandro Boulevard and Perris Boulevard to the City's standards and will be consistent with existing facilities. Therefore, with the proposed project designed to City standards, there would be no impacts to pedestrian and bicycle circulation with the proposed project. Therefore, related to conflicts with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, onf other decrease the performance or safety of such facilities, no impact would occur and no mitigation measures would be required.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

XVII. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
The proposed project will not exceed wastewater treatment requirements of the Regional Water Quality Control Board as designed and would be conditioned. Therefore, related to exceeding wastewater treatment, less than significant impacts would occur and no mitigation measures would be required.				
b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
The proposed project will not exceed the existing or planned capacity of the Eastern Municipal Water District and/or Edgemont Community Services District. Therefore, related to water and wastewater treatment facilities or expansion, less than significant impacts would occur and no mitigation measures would be required.				
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
The proposed project would not result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. The development of the proposed project would result in the provision of an on-site storm drainage system that would convey runoff from the project site into the existing off-site facilities nearest to the project site. Therefore, related to construction of new storm water drainage facilities, less than significant impacts would occur and no mitigation measures would be required.				
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
The project site is within an area with existing water infrastructure and supplies. The development of the proposed project would not result in a significant increase in the demand for local water supplies. Therefore, related to sufficient water supplies available from existing entitlements to serve the project site, less than significant impacts would occur and no mitigation measures would be required.				
e) Result in a determination by the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
The project site is within an area with existing water infrastructure and supplies. The development of the proposed project would result in an increase in the demand for local water supplies. The water provider, Eastern Municipal Water District, has been advised of the proposed project and has not provided any indication of inadequate wastewater				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
treatment capacity. The wastewater treatment provider, EMWD, has been advised of the proposed project and has not provided any indication of inadequate wastewater treatment capacity. Therefore, related to wastewater treatment, less than significant impacts would occur and no mitigation measures would be required.				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
The needs of the project for solid waste capacity would be negligible. The project will be served by a landfill in the Badlands with sufficient permitted capacity to accommodate the project's solid waste disposal needs. Therefore, related to landfill capacity, less than significant impacts would occur and no mitigation measures would be required. Source: Draft EIR for the General Plan Update.				
g) Comply with federal, state, and local statues and regulations related to solid waste?				X
The project does not conflict with federal, state, and local statues and regulations related to solid waste. Waste collection services in the City incorporates waste reduction provisions directed at compliance with State waste stream diversion regulations. Therefore, related to federal, state, and local statues and regulations related to solid waste, no impacts would occur and no mitigation measures would be required.				

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?		X		

As discussed in previous Sections 1 through 16 above, the proposed project will not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal. As discussed in previous Sections 1 through 16 above, the proposed project will have the potential to degrade the quality of the environmental associated with cultural resources. Mitigation measures have been incorporated to reduce impacts to less than significant levels. The proposed project will obtain a grading permit from the Lead Agency. The proposed project will require final grading and excavation activities for the individual building pads, detention basin, roads, and the placement of infrastructure and utility lines on the project site.

The proposed project would not result in the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.

Therefore, related to the potential to substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of a rare or endangered plant or animal; or, eliminate important examples of the major periods of California history or prehistory, less than significant impacts with mitigation measures would occur.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				X

The proposed project would have impacts that are individually less than significant limited, they would not be cumulatively considerable with respect to aesthetics, air quality, biological resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, recreation, transportation and traffic, and utilities and services. Therefore, related to impacts that could be considered cumulatively considerable, no cumulative considerable impacts would occur and no cumulative mitigation measures

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

would be required.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

The proposed project would not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly. The construction activities and on-going operation of the proposed project would not generate significant environmental effects which would cause an adverse effect on human beings, either directly or indirectly. Therefore, related to substantial adverse effects on human beings, either directly or indirectly, no impacts would occur or no mitigation measures would be required.

4.0 REFERENCES

4.0 References

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5. City of Moreno Valley, Zoning Ordinance, as updated on May 2016

6. Focused Western Burrowing Owl Survey, Assessor's Parcel Numbers 494-020-25, 484-020-18 * 484-020-006, Ecological Sciences, Inc., July 3, 2016

7. Hydrology Report, Alessandro Apartments, Civil Landworks, June 28, 2017

8. March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, Mead & Hunt, June 2013

9. Noise Impact Analysis, Alessandro Apartments Project, VISTA Environmental, September 13, 2016

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11. Preliminary Geotechnical Investigation, Project No. 1-0192, Alta California Geotechnical Inc., June27, 2016

12. Summary of Infiltration Testing, Project No. 1-0192, Alta California Geotechnical Inc., June 28, 2016

13. Traffic Impact Study, Alessandro Apartments, Transpo Group, August 10 2016

14. WQMP Report, Alessandro Apartments, MDS Consulting, June 22, 2016

APPENDIX

(PROVIDED IS SEPARATE PDF)

Appendix A: Air Quality and Greenhouse Gas Emissions Impact Analysis

Appendix B: Focused Western Burrowing Owl Survey

Appendix C: Hydrology Report

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Appendix D: Phase I Report

Appendix E: Noise Impact Analysis

Appendix F: Preliminary Geotechnical Investigation

Appendix G: Traffic Impact Study

Appendix H: WQMP Report

Appendix I: Cultural Resources

Appendix A: Air Quality and Greenhouse Gas Emissions Impact Analysis

Air Quality and Greenhouse Gas Emissions Impact Analysis

Alessandro Apartments Project

City of Moreno Valley

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City of Moreno Valley

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Project No. 16038

October 10, 2016

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ACRONYMS AND ABBREVIATIONS

Air Basin	South Coast Air Basin
AQMP	Air Quality Management Plan
CAAQS	California Ambient Air Quality Standards
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
ºF	Fahrenheit
GHG	Greenhouse gas
GWP	Global warming potential
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LST	Localized Significant Thresholds
MSAT	Mobile Source Air Toxics
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
O_3	Ozone
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion

PPT	Parts per trillion
RTIP	Regional Transportation Improvement Plan
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO_x	Sulfur oxides
TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Air Quality and Greenhouse Gas Emissions Impact Analysis has been completed to determine the air quality and greenhouse gas (GHG) emissions impacts associated with the proposed Alessandro Apartments Project (proposed project). The following is provided in this report:

- A description of the proposed project;
- A description of the atmospheric setting;
- A description of the criteria pollutants and GHGs;
- A description of the air quality regulatory framework;
- A description of the air quality and GHG emissions thresholds including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the short-term construction related and long-term operational air quality and GHG emissions impacts;
- An analysis of the conformity of the proposed project with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP); and
- An analysis of the conformity of the proposed project with all applicable GHG emissions reduction plans and policies.

1.2 Site Location and Study Area

The approximately 19.47-acre project site is located in the central portion of the City of Moreno Valley (City) on a vacant parcel located behind a commercial retail center on the southeast corner of the intersection of Alessandro Boulevard and Perris Boulevard. The north section of the project site is bounded by Alessandro Boulevard, commercial retail and single-family residential uses to the north, Apple Blossom Lane, single-family homes and multi-family homes to the east, a 40-foot wide pipeline property and easement and single-family homes to the south, and, commercial retail uses to the west. The south section of the project site is bounded by a 40-foot wide pipeline easement, commercial retail uses and the north section of the project site to the north, single-family homes to the east, Brodiaea Avenue and single-family homes to the south, and Perris Boulevard, self-storage and vacant land to the west. The project local study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest offsite sensitive receptors to the north section of the project site consist of single-family homes, located as near as 50 feet south of the project site, multi-family homes located on the east side of Apple Blossom Lane and as near as 110 feet east of the project site, and single-family homes located on the north side of Alessandro Boulevard and as near as 140 feet north of the project site.

The nearest offsite sensitive receptors to the south section of the project site consist of single-family homes located as near as 25 feet to the east and single-family homes located on the south side of Brodiaea Avenue and as near as 60 feet south of the project site.

The nearest schools to the project site are Hendrick Ranch Elementary School, that is located as near as 1,600 feet east of the project site and Moreno Valley Community Learning Center that is located as near as 1,200 feet north of the project site.

1.3 Proposed Project Description

The proposed project would consist of development of a residential apartment complex with 272 apartment dwelling units, a community building with a pool and spa, open space with a tot lot, onsite roadways and parking areas, and two retention basins. Construction of the proposed project is anticipated to begin around February 2017 and project buildout is expected to be completed by mid-2018. The proposed site plan is shown in Figure 2.

1.4 Standard Air Quality and GHG Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the SCAQMD and State of California (State).

South Coast Air Quality Management District Rules

The following lists the SCAQMD rules that are applicable to all residential projects in the South Coast Air Basin (Air Basin).

<u>Rule 402 - Nuisance</u>

Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Compliance with Rule 402 will reduce local air quality and odor impacts to nearby sensitive receptors.

<u>Rule 403- Fugitive Dust</u>

Rule 403 governs emissions of fugitive dust during construction activities and requires that no person shall cause or allow the emissions of fugitive dust such that dust remains visible in the atmosphere beyond the property line or the dust emission exceeds 20 percent opacity, if the dust is from the operation of a motorized vehicle. Compliance with this rule is achieved through application of standard Best Available Control Measures, which include but are not limited to the measures below. Compliance with these rules would reduce local air quality impacts to nearby sensitive receptors.

- Utilize either a pad of washed gravel 50 feet long, 100 feet of paved surface, a wheel shaker, or a wheel washing device to remove material from vehicle tires and undercarriages before leaving project site.
- Do not allow any track out of material to extend more than 25 feet onto a public roadway and remove all track out at the end of each workday.
- Water all exposed areas on active sites at least three times per day and pre-water all areas prior to clearing and soil moving activities.
- Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas that will remain inactive for 10 days or longer.
- Pre-water all material to be exported prior to loading, and either cover all loads or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114.
- Replant all disturbed area as soon as practical.
- Suspend all grading activities when wind speeds (including wind gusts) exceed 25 miles per hour.

- Restrict traffic speeds on all unpaved roads to 15 miles per hour or less.

Rule 1113 – Architectural Coatings

Rule 1113 governs the sale, use, and manufacturing of architectural coatings and limits the VOC content in sealers, coatings, paints and solvents. This rule regulates the VOC contents of paints available during construction. Therefore, all paints and solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1113.

Rule 1143 – Paint Thinners

Rule 1143 governs the sale, use, and manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations. This rule regulates the VOC content of solvents used during construction. Solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1143.

State of California Rules

The following lists the State of California rules that are applicable to all residential projects in the State.

CARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the California Air Resources Board (CARB) adopted California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 to reduce diesel particulate matter (DPM) and NOx emissions from in-use off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. Performance requirements of the rule are based on a fleet's average NOx emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirement making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less). Currently, no commercial operation in California may add any equipment to their fleet that has a Tier 0 or Tier 1 engine. By January 1, 2018 medium and large fleets will be restricted from adding Tier 2 engines to their fleets and by January 2023, no commercial operation will be allowed to add Tier 2 engines to their fleets. It should be noted that commercial fleets may continue to use their existing Tier 0 and 1 equipment, if they can demonstrate that the average emissions from their entire fleet emissions meet the NOx emissions targets.

CARB Resolution 08-43 for On-Road Diesel Truck Fleets

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. By January 1, 2014, 50 percent of a truck fleet is required to have installed Best Available Control Technology (BACT) for NOx emissions and 100 percent of a truck fleet installed BACT for PM10 emissions. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California. All on-road diesel trucks utilized during construction of the proposed project will be required to comply with Resolution 08-43.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24) 2013 Building Standards that became effective on July 1, 2014 now require all hot water pipes to be insulated, the use of higher performance windows, installation of whole house fans, increased wall insulation, mandatory duct sealing, and require all roofs to be solar-ready to facilitate future solar systems, as well as several other energy efficiency requirements that are summarized at: (http://www.energy.ca.gov/releases/2014_releases/2014-07-01_new_title24_standards_nr.html).

California Code of Regulations (CCR) Title 24, Part 11

CCR Title 24, Part 11: *California Green Building Standards* (Title 24) requires that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for residential buildings include a 20 percent reduction of potable water use within buildings through use of low-flow fixtures, a 50 percent construction waste diversion from landfills, use of building finish materials and carpets that emit low levels of volatile organic compounds, and bathroom ventilation fans are required to be Energy Star compliant and controlled by a humidity sensor switch.

1.5 Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines air quality and GHG emissions checklist questions.

Conflict with or obstruct implementation of the applicable air quality plan?
Less than significant impact.

Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
Less than significant impact.

Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?
Less than significant impact.

Expose sensitive receptors to substantial pollutant concentrations?
Less than significant impact.

Create objectionable odors affecting a substantial number of people?
Less than significant impact.

Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
Less than significant impact.

Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Less than significant impact.

1.6 Project Design Features Incorporated into the Proposed Project

This analysis was based on implementation of the following project design features.

Project Design Feature 1:

The project applicant shall require that the grading contractor limit the daily disturbed area to 5 acres or less.

Project Design Feature 2

The site plan shall detail sidewalks that are accessible to the public will be constructed on the project site adjacent to Perris Boulevard and Alessandro Boulevard.

Project Design Feature 3

The project applicant will provide separate onsite bins to dispose of recyclables and trash.

Project Design Feature 4

The project applicant shall require all contractors to adhere to SCAQMD's Rule 402 requirements that do not allow the discharge of any source of air contaminants or odors that may create a nuisance at the nearby homes. Specific actions to reduce air contaminant and odor impacts include the following:

- Place all stockpiles of material that may emit odors and/or air contaminants (e.g. asphalt concrete, trash, vegetation, etc…) as far as away as practical from the nearby homes.
- Place the equipment storage and maintenance area as far away as practical from the nearby homes and require that all refueling activities occur within the equipment storage and maintenance area.
- Restrict the outdoor spraying of architectural coatings and other solvents, when the wind is blowing directly at the nearby homes.

1.7 Mitigation Measures Required for the Proposed Project

This analysis found that implementation of the State and SCAQMD air quality and GHG emissions reductions regulations were adequate to limit criteria pollutants, toxic air contaminants, odors, and GHG emissions from the proposed project to less than significant levels. No mitigation measures are required for the proposed project with respect to air quality and GHG emissions.

SOURCE: Google Earth.

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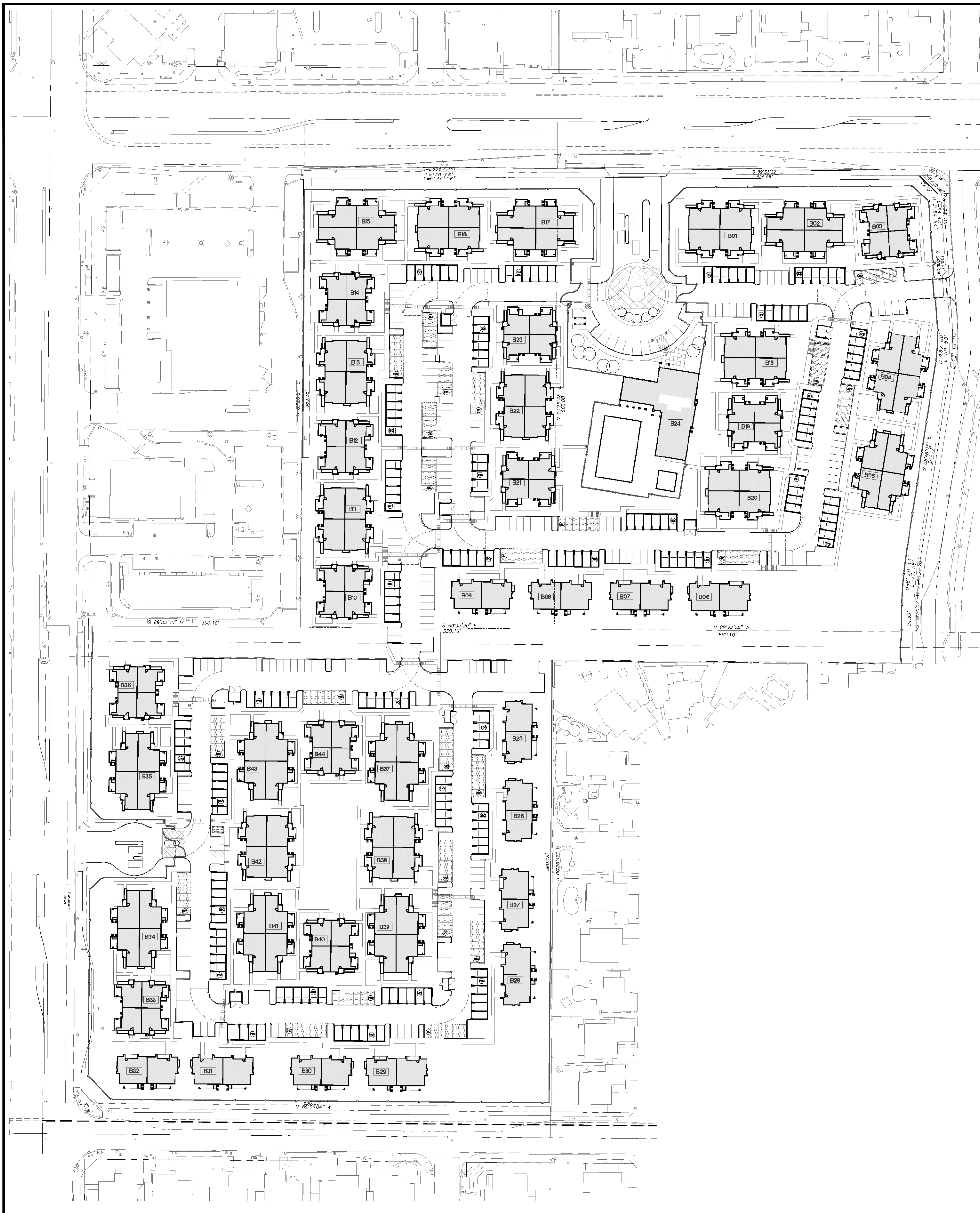
VISTA ENVIRONMENTAL

Figure 1

Project Lo



SOURCE: The Vernal Group.

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VISTA ENVIRONMENTAL

Figure 2

Prop

2.0 POLLUTANTS

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

2.1 Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen oxides, carbon monoxide, sulfur oxides, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

Nitrogen Oxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone is not usually emitted directly into the air but in the vicinity of ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes approximately 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Oxides

Sulfur Oxide (SOx) gases are formed when fuel containing sulfur, such as coal and oil is burned, as well as from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

Particle matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

2.2 Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). DPM is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by CARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. The nearest likely locations of naturally occurring asbestos, as identified in the *General Location Guide for Ultramafic Rocks in California*, prepared by the California Division of Mines and Geology, is located in Santa Barbara County. The nearest historic asbestos mine to the project site, as identified in the *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California,* prepared by U.S. Geological Survey, is located at Asbestos Mountain, which is approximately 82 miles east of the project site in the San Jacinto Mountains. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

2.3 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHGs), play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s, each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20^{th} century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs)). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O is also commonly used as an aerosol spray propellant (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and race cars).

Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

Sulfur Hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

2.4 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. To simplify reporting and analysis, GHGs are commonly defined in terms of their GWP. The IPCCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e. The GWP of CO_2 is by definition, 1. The GWP values used in this analysis are based on the IPCC Second Assessment Report (SAR) and United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines, and are detailed in Table A. The SAR GWPs are used in CARB's California inventory and AB32 Scoping Plan estimates.

Table A – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs

Gas	Atmospheric Lifetime (years)[1]	Global Warming Potential (100 Year Horizon)[2]	Atmospheric Abundance
Carbon Dioxide (CO_2)	50-200	1	379 ppm
Methane (CH_4)	9-15	21	1,774 ppb
Nitrous Oxide (N_2O)	120	310	319 ppb
HFC-23	264	11,700	18 ppt
HFC-134a	14.6	1,300	35 ppt
HFC-152a	1.5	140	3.9 ppt
PFC: Tetrafluoromethane (CF_4)	50,000	6,500	74 ppt
PFC: Hexafluoroethane (C_2F_6)	10,000	9,200	2.9 ppt
Sulfur Hexafluoride (SF_6)	3,200	23,900	5.6 ppt

Notes:
[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions.
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: IPCC, 2007.

3.0 AIR QUALITY MANAGEMENT

3.1 Regulatory Setting

The air quality at the project site is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

International

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, the objective of reducing their collective GHG emissions by five percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries, but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012 and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. NAAQS pollutants were identified using medical evidence and are shown below in Table C.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

On December 14, 2012, the EPA revised the primary annual PM2.5 NAAQS from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ and retained the 24 hour PM2.5 standard at 35 $\mu g/m^3$ in order to provide increased protection for children, older adults, persons with pre-existing heart and lung disease and other at risk populations.

Table B – State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time: California Standards	Concentration / Averaging Time: Federal Primary Standards	Most Relevant Effects
Ozone (O_3)	0.09 ppm / 1-hour 0.07 ppm / 8-hour	0.070 ppm, / 8-hour	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm / 1-hour 9.0 ppm / 8-hour	35.0 ppm / 1-hour 9.0 ppm / 8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm / 1-hour 0.030 ppm / annual	100 ppb / 1-hour 0.053 ppm / annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm / 1-hour 0.04 ppm / 24-hour	75 ppb / 1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 $\mu g/m^3$ / 24-hour 20 $\mu g/m^3$ / annual	150 $\mu g/m^3$ / 24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 $\mu g/m^3$ / annual	35 $\mu g/m^3$ / 24-hour 12 $\mu g/m^3$ / annual	
Sulfates	25 $\mu g/m^3$ / 24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage.
Lead	1.5 $\mu g/m^3$ / 30-day	0.15 $\mu g/m^3$ /3-month rolling	(a) Learning disabilities; and (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf .

The CARB defines attainment as the category given to an area with no violations in the past three years. As indicated below in Table C, the Air Basin has been designated by EPA for the national standards as a non-attainment area for ozone (O_3) and suspended particulates (PM10 and PM2.5) and partial nonattainment for lead. Currently, the Air Basin is in attainment with the national ambient air quality standards for carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2).

Table C – South Coast Air Basin Attainment Status

Criteria Pollutant	Standard	Averaging Time	Designation[a)]	Attainment Date[b)]
1-Hour Ozone	NAAQS	1979 1-Hour (0.12 ppm)	Nonattainment (Extreme)	2/6/2023 Originally 11/15/2010 (not attained)[c)]
	CAAQS	1-Hour (0.09 ppm)	Nonattainment	N/A
8-Hour Ozone[d)]	NAAQS	1997 8-Hour (0.08 ppm)	Nonattainment (Extreme)	6/15/2024
	NAAQS	2008 8-Hour (0.075 ppm)	Nonattainment (Extreme)	7/20/2032
	NAAQS	2015 8-Hour (0.070 ppm)	Designations Pending	~2037
	CAAQS	8-Hour (0.070 ppm)	Nonattainment	Beyond 2032
CO	NAAQS	1-Hour (35 ppm) 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
	CAAQS	1-Hour (20 ppm) 8-Hour (9 ppm)	Attainment	6/11/2007 (attained)
NO_2[e)]	NAAQS	1-Hour (0.10 ppm)	Unclassifiable/ Attainment	N/A (attained)
	NAAQS	Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (attained)
	CAAQS	1-Hour (0.18 ppm) Annual (0.030 ppm)	Attainment	---
SO_2[f)]	NAAQS	1-Hour (75 ppb)	Designations Pending (expect Unclassifiable/ Attainment)	N/A (attained)
	NAAQS	24-Hour (0.14 ppm) Annual (0.03 ppm)	Unclassifiable/ Attainment	3/19/1979 (attained)
PM10	NAAQS	1987 24-hour (150 µg/m^3)	Attainment (Maintenance)[g)]	7/26/2013 (attained)
	CAAQS	24-hour (50 µg/m^3) Annual (20 µg/m^3)	Nonattainment	N/A
PM2.5[h)]	NAAQS	2006 24-Hour (35 µg/m^3)	Nonattainment (Serious)	12/31/2019
	NAAQS	1997 Annual (15.0 µg/m^3)	Nonattainment	4/5/2015
	NAAQS	2012 Annual (12.0 µg/m^3)	Nonattainment (Serious)	12/31/2025
	CAAQS	Annual (12.0 µg/m^3)	Nonattainment	N/A
Lead	NAAQS	3-Months Rolling (0.15 µg/m^3)	Nonattainment (Partial)	12/31/2015

Source: SCAQMD, February 2016
Notes:
a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable
b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration
c) 1-hour O_3 standard (0.12 ppm) was revoked, effective June 15, 2005; however, the Basin has not attained this standard based on 2008-2010 data and is still subject to anti-backsliding requirements
d) 1997 8-hour O_3 standard (0.08 ppm) was reduced (0.075 ppm), effective May 27, 2008; the revoked 1997 O_3 standard is still subject to anti-backsliding requirements
e) New NO_2 1-hour standard, effective August 2, 2010; attainment designations January 20, 2012; annual NO2 standard retained
f) The 1971 annual and 24-hour SO_2 standards were revoked, effective August 23, 2010; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO_2 1-hour standard. Area designations are still pending, with Basin

expected to be designated Unclassifiable /Attainment.
g) Annual PM10 standard was revoked, effective December 18, 2006; 24-hour PM10 NAAQS deadline was 12/31/2006; SCAQMD request for attainment redesignation and PM10 maintenance plan was approved by U.S. EPA on June 26, 2013, effective July 26, 2013.
h) Attainment deadline for the 2006 24-Hour PM2.5 NAAQS (designation effective December 14, 2009) is December 31, 2019 (end of the 10th calendar year after effective date of designations for Serious nonattainment areas). Annual PM2.5 standard was revised on January 15, 2013, effective March 18, 2013, from 15 to 12 μg/m^3. Designations effective April 15, 2015, so Serious area attainment deadline is December 31, 2025.
i) Partial Nonattainment designation – Los Angeles County portion of Basin only for near-source monitors. Expect to remain in attainment based on current monitoring data.

In 2011, the Air Basin exceeded federal standards for either ozone or PM2.5 at one or more locations on a total of 124 days, based on the current federal standards for 8-hour ozone and 24-hour PM2.5. Despite substantial improvements in air quality over the past few decades, some air monitoring stations in the Air Basin still exceed the NAAQS for ozone more frequently than any other stations in the U.S. In 2011, three of the top five stations that exceeded the 8-hour ozone NAAQS were located in the Air Basin (Central San Bernardino Mountains, East San Bernardino Valley, and Metropolitan Riverside County). (SCAQMD 2012)

PM2.5 in the Air Basin has improved significantly in recent years, with 2010 and 2011 being the cleanest years on record. In 2011, only one station in the Air Basin (Metropolitan Riverside County at Mira Loma) exceeded the annual PM2.5 NAAQS and the 98th percentile form of the 24-hour PM2.5 NAAQS, as well as the 3-year design values for these standards. Basin-wide, the federal PM2.5 24-hour standard level was exceeded in 2011 on 17 sampling days. (SCAQMD 2012)

The Air Basin is currently in attainment for the federal standards for NO_2. While the concentration level of the new 1-hour NO_2 federal standard (100 ppb) was exceeded in the Air Basin at two stations (Central Los Angeles and Long Beach) on the same day in 2011, the NAAQS NO_2 design value has not been exceeded. (SCAQMD 2012) Therefore, the Basin remains in attainment of the NO_2 NAAQS.

Although much of the South Coast Air Basin, including the proposed site location of San Bernardino County, is in attainment for lead, the EPA designated the Los Angeles County portion of the Air Basin as nonattainment for the revised (2008) federal lead standard (0.15 μg/m^3, rolling 3-month average). This was due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the revised standard in the 2007-2009 period of data used. For the most recent 2009-2011 data period, only one of these stations (Vernon) still exceeded the lead standard. The *2012 Lead State Implementation Plan Los Angeles County*, prepared by SCAQMD and adopted on May 4, 2012, provides measures to meet attainment of lead by December 31, 2015.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions did not impose any requirements on industry or other entities, however, since 2009 the EPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that are regulated by the EPA. On September 13, 2013 the EPA Administrator signed 40 CFR Part 60, that limits emissions from new sources to 1,100 pounds of CO_2 per MWh for fossil fuel-fired utility boilers and 1,000 pounds of CO_2 per MWh for large natural gas-fired combustion units.

On August 3, 2015, the EPA announced the Clean Power Plan, emissions guidelines for U.S. states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23 2015). Implementation of the rule has been temporarily frozen by a legal challenge from 29 states, pending review by the Washington DC circuit court of appeals scheduled for June 2016.

State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants are shown above in Table B. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The Air Basin has been designated by the CARB as a non-attainment area for ozone, PM10, PM2.5 and lead. Currently, the South Coast Air Basin is in attainment with the ambient air quality standards for CO, NO_2, SO_2, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

In 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. In 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California.

CARB is also responsible for regulations pertaining to Toxic Air Contaminants (TACs). The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release in California. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

CARB also proposed interim statewide CEQA thresholds for GHG emissions and released *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California*

Environmental Quality Act, on October 24, 2008. The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

Executive Order B-30-15

The California Governor issued Executive Order B-30-15 on April 29, 2015 that aims to reduce California's GHG emissions 40 percent below 1990 levels by 2030. This executive order aligns California's GHG reduction targets with those of other international governments, such as the European Union that set the same target for 2030 in October, 2014. This target will make it possible to reach the ultimate goal of reducing GHG emissions 80 percent under 1990 levels by 2050 that is based on scientifically established levels needed in the U.S.A to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels. As B-30-15 is a state-level executive order, it is not legally enforceable for local governments and the private sector, but legislation for post-2020 targets and requirements is pending in the State Legislature.

Executive Order B-29-15

The California Governor issued Executive Order B-29-15 on April 1, 2015 and directed the State Water Resources Control Board to impose restrictions to achieve a statewide 25% reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of lawn with drought tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The Ordinance also requires installation of more efficient irrigation systems, promotion of greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles.

Assembly Bill 1109

California Assembly Bill 1109 (AB 1109), which also known as the Lighting Efficiency and Toxics Reduction Act, prohibits the manufacturing of lights after January 1, 2010 that contain levels of hazardous substances prohibited by the European Union pursuant to the RoHS Directive. AB 1109 also requires reductions in energy usage for lighting and is structured to reduce lighting electrical consumption by: (1) At least 50 percent reduction from 2007 levels for indoor residential lighting; and (2) At least 25 percent reduction from 2007 levels for indoor commercial and all outdoor lighting by 2018.

Assembly Bill 1493

California Assembly Bill 1493 (also known as the Pavley Bill, in reference to its author Fran Pavley) was enacted on July 22, 2002 and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2004, CARB approved the "Pavley I" regulations limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 through 2016. These regulations will reduce GHG emissions by 30 percent from 2002 levels by 2016. The second set of regulations "Pavley II" is currently in development and will be phased in between model years 2017 through 2025 and will reduce emissions by 45 percent by the year 2020. The Pavley II standards are being developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the "LEV III" (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen, and through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the U.S. EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks and sport utility vehicles. In September 2009, the Pavley I regulations were adopted by CARB.

Executive Order S-3-05

In 2005 the California Governor issued Executive Order S 3-05, GHG Emission, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels;
- 2020: Reduce greenhouse gas emissions to 1990 levels;
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

The executive order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs. The State achieved its first goal of reducing greenhouse gas emissions to 2000 levels by 2010.

Assembly Bill 32

In 2006, the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and utilize best management practices that are technologically feasible and cost effective.

In 2007 CARB released the calculated Year 1990 GHG emissions of 431 million metric tons of CO2e ($MMTCO_2e$). The 2020 target of 431 $MMTCO_2e$ requires the reduction of 78 $MMTCO_2e$, or approximately 16 percent from the State's projected 2020 business as usual emissions of 509 $MMTCO_2e$ (CARB, 2014). Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources, all of which became enforceable on or before January 1, 2010.

CARB's Scoping Plan that was adopted in 2009, proposes a variety of measures including: strengthening energy efficiency and building standards; targeted fees on water and energy use; a market-based cap-and-trade system; achieving a 33 percent renewable energy mix; and a fee regulation to fund the program. The 2014 update to the Scoping Plan identifies strategies moving beyond the 2020 targets to the year 2050.

The Cap and Trade Program established under the Scoping Plan sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and has established a market for long-term investment in energy efficiency and cleaner fuels since 2012.

Senate Bill 1368

Senate Bill 1368 (SB 1368) is the companion Bill of AB 32 and was adopted September 2006. SB 1368 requires that the California Public Utilities Commission (CPUC) establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007 and for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas-fired plant. Furthermore, the legislation states that all electricity provided to the State, including imported electricity, must be generated by plants that meet the standards set by CPUC and California Energy Commission (CEC).

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

In 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The standard was challenged in the courts, but has been in effect since 2011 and was re-approved by the CARB in 2015. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet annually. Reformulated gasoline mixed with corn-derived ethanol and low-sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel. Compressed natural gas and liquefied natural gas also may be low-carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles, are also considered as low-carbon fuels.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the State CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporated GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.

- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation.”
- OPR’s emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

Senate Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09

Senate Bill 1078 (SB 1078) requires retail sellers of electricity to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) changed the target date to 2010. Executive Order S-14-08 was signed on November 2008 and expands the State’s Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO’s sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS or APS. However, new provisions of CEQA would incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS or APS and categorized as “transit priority projects.”

Assembly Bill 341 and Senate Bills 939 and 1374

Senate Bill 939 (SB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills. Assembly Bill 341 (AB 341) was adopted in 2011 and builds upon the waste reduction measures of SB 939 and 1374, and sets a new target of a 75 percent reduction in solid waste generated by the year 2020.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008 and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. On May 31, 2012 the Energy Commission adopted the proposed 2013 Building Standards that became effective on July 1, 2014. The 2013 Building Standards are anticipated to reduce energy use in residential buildings by 25 percent over the 2008 Standards and now require all hot water pipes to be insulated, the use of higher performance windows, installation of whole house fans, increased wall insulation, mandatory duct sealing, as well as requiring all roofs to be solar-ready to facilitate future solar systems (http://www.energy.ca.gov/releases/2014_releases/2014-07-01_new_title24_standards_nr.html). The standards are updated on a three-year schedule, with the 2016 update to go into effect on January 1, 2017.

California Code of Regulations (CCR) Title 24, Part 11

CCR Title 24, Part 11: *California Green Building Standards* (Title 24) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The most current version is the 2013 California Green Building Standards Code (CalGreen), which became effective on January 1, 2014 and replaced the 2010 CalGreen. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for residential uses include a 20 percent reduction of potable water use within buildings through the use of low-flow faucets, outdoor water use is reduced through the use of smart irrigation system controllers, a 50 percent construction waste diversion from landfills, and use of building finish materials that emit low levels of volatile organic compounds.

Regional

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. The *Final 2012 Air Quality Management Plan* (2012 AQMP) was adopted by the SCAQMD Board on December 7, 2012 and was adopted by CARB via Resolution 13-3 on January 25, 2013. The 2012 AQMP was prepared in order to meet the federal Clean Air Act requirement that all 24-hour PM2.5 non-attainment areas prepare a SIP, that were required to be submitted to the U.S. EPA by December 14, 2012 and demonstrate attainment with the 24-hour PM2.5 standard by 2014. The 2012 AQMP demonstrates attainment of the federal 24-

hour PM2.5 standard by 2014 in the Air Basin through adoption of all feasible measures, and therefore, no extension of the attainment date is needed.

The 2007 AQMP demonstrated attainment with the 1997 8-hour ozone (80 ppb) standard by 2023, through implementation of future improvements in control techniques and technologies. These "black box" emissions reductions represent 65 percent of the remaining NOx emission reductions by 2023 in order to show attainment with the 1997 8-hour ozone NAAQS. Given the magnitude of these needed emissions reductions, additional NOx control measures have been provided in this AQMP even though the primary purpose of this AQMP is to show compliance with 24-hour PM2.5 emissions standards.

The 2012 AQMP is designed to satisfy the California Clean Air Act's (CCAA) emission reductions of 5 percent per year or adoption of all feasible measures requirements and fulfill the EPA's requirement to update transportation conformity emissions budgets based on the latest approved motor vehicle emissions model and planning assumptions. The 2012 AQMP updates and revises the previous 2007 AQMP. The 2012 AQMP was prepared to comply with the Federal and State CCAA and amendments, to accommodate growth, to reduce the high pollutant levels in the Air Basin, to meet Federal and State ambient air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The purpose of the 2012 AQMP for the Air Basin is to set forth a comprehensive program that will lead this area into compliance with all federal and state air-quality planning requirements.

The 2012 AQMP builds upon the approaches taken in the 2007 AQMP for the attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the need to engage in interagency coordinated planning of mobile sources to meet all of the federal criteria pollutant standards. Compared with the 2007 AQMP, the 2012 AQMP utilizes revised emissions inventory projections that use 2008 as the base year. On-road emissions are calculated using CARB EMFAC2011 emission factors and the transportation activity data provided by SCAG from their 2012 Regional Transportation Plan (2012 RTP). Off-road emissions were updated using CARB's 2011 In-Use Off-Road Fleet Inventory Model. Since the 2007 AQMP was finalized new area source categories such as LPG transmission losses, storage tank and pipeline cleaning and degassing, and architectural colorants, were created and included in the emissions inventories. Composting waste was revised and now includes the emissions from green waste composting covered under SCAQMD Rule 1133.3. The 2012 AQMP also includes analysis of several additional sources of GHG emissions such as landfills and could also assist in reaching the GHG target goals in the AB32 Scoping Plan.

The control measures in the 2012 AQMP consist of three components: 1) Basin-wide and episodic short-term PM2.5 measures; 2) Section 182(e)(5) implementation measures; and 3) Transportation control measures. Many of the control measures are not based on command and control regulations, but instead focus on incentives, outreach, and education to bring about emissions reductions through voluntary participation and behavioral changes. More broadly, a transition to zero- and near-zero emission technologies is necessary to meet 2023 and 2032 air quality standards and 2050 climate goals. Many of the same technologies will address both air quality and climate needs.

In January 2016, the SCAQMD released a fact sheet on its forthcoming 2016 Air Quality Management Plan. The plan will develop integrated strategies and measures to meet the following standards:

- 8-hour Ozone (75 ppb) by 2032
- Annual PM2.5 (12 μg/m3) by 2021-2025
- 8-hour Ozone (80 ppb) by 2024 (updated from the 2007 and 2012 AQMPs)
- 1-hour Ozone (120 ppb) by 2023 (updated from the 2012 AQMP)

- 24-hour PM2.5 (35 µg/m3) by 2019 (updated from the 2012 AQMP)

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the Air Basin. Instead, this is controlled through local jurisdictions in accordance to the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the *CEQA Air Quality Handbook* (SCAQMD CEQA Handbook), prepared by SCAQMD, 1993, with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Air Basin, and adverse impacts will be minimized.

SCAQMD Working Group

Since neither CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that either provides a quantitative annual thresholds of 3,500 $MTCO_2e$ for residential uses, 1,400 $MTCO_2e$ for commercial uses, and 3,000 $MTCO_2e$ for mixed uses. An alternative annual threshold of 3,000 $MTCO_2e$ for all land use types is also proposed.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the RTP/SCS and *Regional Transportation Improvement Plan* (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The RTP/SCS, RTIP, and AQMP are based on projections originating within the City and County General Plans.

Local – City of Moreno Valley

Local jurisdictions, such as the City of Moreno Valley, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the 2007 AQMP and 2012 AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with the CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

City of Moreno Valley General Plan

The City of Moreno Valley General Plan contains the following air quality-related objectives and policies that are applicable to the proposed project:

Objective 6.6

Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.

Policies

6.6.2 Provide multi-family residential development sites in close proximity to neighborhood commercial centers in order to encourage pedestrian instead of vehicular travel.

6.6.3 Locate neighborhood parks in close proximity to the appropriate concentration of residents in order to encourage pedestrian and bicycle travel to local recreation areas.

Objective 6.7

Reduce mobile and stationary source air pollutant emissions.

Policies

6.7.5 Require grading activities to comply with SCAQMD's Rule 403 regarding the control of fugitive dust.

6.7.6 Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code.

City of Moreno Valley Climate Action Strategy

The *City of Moreno Valley Energy Efficiency and Climate Action Strategy*, prepared October 2012 and the *City of Moreno Valley Greenhouse Gas Analysis*, prepared February 2012 provide several GHG reduction measures that are applicable to the proposed project and are detailed below:

R2-T1: Land Use Based Trips and VMT Reduction Policies. Encourage the development of Transit Priority Projects along High Quality Transit Corridors identified in the SCAG Sustainable Communities Plan, to allow a reduction in vehicle miles traveled.

R2-T3: Employment-Based Trip Reductions. Require a Transportation Demand Management (TDM) program for new development to reduce automobile travel by encouraging ride-sharing, carpooling, and alternative modes of transportation.

R2-E1: New Construction Residential Renewable Energy. Require energy efficient design for all new residential building to be 10% beyond the current Title 24 standards.

R2-E2: New Construction Residential Renewable Energy. Facilitate the use of renewable energy (such as solar (photovoltaic) panels or small wind turbines) for new residential developments. Alternative approach would be the purchase of renewable energy resources offsite.

R2-L1: Electric Landscaping Equipment. Promote the use of electric landscaping equipment.

R3-L2: Heat Island Plan. Develop measures that address "heat islands". Potential measures include using strategically placed shade trees, using paving materials with a Solar Reflective Index (SRI) of at least 29, using an open grid paving system, or provide covered parking.

R2-W1: Water Use Reduction Initiative. Consider adopting a per capita water use reduction goal which mandates the reduction of water use of 20 percent per capita with requirements applicable to new development and with cooperative support of the water agencies.

R2-S1: City Diversion Program. This measure sets a target for the City to increase the waste diverted from landfills to 75% by 2020.

4.0 ATMOSPHERIC SETTING

4.1 Local Climate

The project site is located within the western portion of Riverside County, which is part of the South Coast Air Basin (Basin) that includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The South Coast Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the South Coast Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter. The project site is located toward the northeast portion of the South Coast Air Basin near the foot of the San Bernardino Mountains, which define the eastern boundary of the South Coast Air Basin.

The climate of western Riverside County, technically called an interior valley subclimate of the Southern California's Mediterranean-type climate, is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern. The clouds and fog that form along the area's coastline rarely extend as far inland as western Riverside County. When morning clouds and fog form, they typically burn off quickly after sunrise. The most important weather pattern from an air quality perspective is associated with the warm season airflow across the populated areas of the Los Angeles Basin. This airflow brings polluted air into western Riverside County late in the afternoon. This transport pattern creates unhealthful air quality that may extend to the project site particularly during the summer months.

Winds are an important parameter in characterizing the air quality environment of a project site because they both determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in western Riverside County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but as discussed above, these coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the South Coast Air Basin into the interior valleys which become trapped by the mountains that border the eastern edge of the South Coast Air Basin.

In the summer, strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the City of Moreno Valley site are shown below in Table D. Table D shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table D – Moreno Valley Monthly Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Max. Temperature	64	65	68	73	78	85	92	92	89	80	72	65
Average Min. Temperature	40	41	43	46	51	55	61	62	59	51	44	40
Average Total Precipitation (in.)	2.33	2.50	1.60	0.68	0.20	0.09	0.04	0.09	0.16	0.46	0.81	1.37

Source: http://www.weather.com/weather/wxclimatology/monthly/graph/USCA0730

4.2 Monitored Local Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. Estimates of the existing emissions in the Air Basin provided in the 2012 AQMP, indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NOx emissions and 40 percent of directly emitted PM2.5, with another 10 percent of PM2.5 from road dust.

SCAQMD has divided the Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in air monitoring area 24, which is located in western Riverside County and covers the Perris and Moreno Valley areas to the San Bernardino County Line. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the project site have been used; Perris Monitoring Station (Perris Station) and Riverside-Magnolia Monitoring Station (Riverside-Magnolia Station).

The Perris Station is located approximately 8.8 miles south of the project site at 237 ½ N. D Street, Perris and the Riverside-Magnolia Station is located approximately 10.3 miles west of the project site at 7002 Magnolia Avenue, Riverside. Table E presents the monitored pollutant levels from these Monitoring Stations. Ozone and PM10 were measured at the Perris Station and NO_2 and PM2.5 were measured at the Riverside-Magnolia Station. CO measurements have not been provided, since CO is currently in attainment in the Air Basin and monitoring of CO within the Air Basin ended on March 31, 2013. It should also be noted that due to the air monitoring stations distances from the project site, recorded air pollution levels at the air monitoring stations reflect with varying degrees of accuracy, local air quality conditions at the project site.

Ozone

During the last three years, the State 1-hour concentration standard for ozone has been exceeded between 16 and 25 days each year at the Perris Station. The State 8-hour ozone standard has been exceeded between 50 and 63 days each year over the past three years at the Perris Station. The Federal 8-hour ozone standard has been exceeded between 31 and 38 days each year over the past three years at the Perris Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of Southern California contribute to the ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

Table E – Local Area Air Quality Monitoring Summary

Pollutant (Standard)	Year[1] 2013	2014	2015
Ozone:[1]			
Maximum 1-Hour Concentration (ppm)	0.108	0.117	0.124
Days > CAAQS (0.09 ppm)	17	16	25
Maximum 8-Hour Concentration (ppm)	0.090	0.094	0.102
Days > NAAQS (0.075 ppm)	34	38	31
Days > CAAQs (0.070 ppm)	60	63	50
Nitrogen Dioxide:[2]			
Maximum 1-Hour Concentration (ppb)	57.6	56.3	ND
Days > NAAQS (100 ppb)	0	0	ND
Inhalable Particulates (PM10):[1]			
Maximum 24-Hour California Measurement (ug/m^3)	67.0	82.0	178.0
Days > NAAQS (150 ug/m^3)	0	0	**1**
Days > CAAQS (50 ug/m^3)	**7**	**6**	**4**
Annual Arithmetic Mean (AAM) (ug/m^3)	33.6	35.1	33.1
Annual > NAAQS (50 ug/m^3)	No	No	No
Annual > CAAQS (20 ug/m^3)	**Yes**	**Yes**	**Yes**
Ultra-Fine Particulates (PM2.5):[2]			
Maximum 24-Hour National Measurement (ug/m^3)	53.7	30.9	ND
Days > NAAQS (35 ug/m^3)	**1**	0	ND
Annual Arithmetic Mean (AAM) (ug/m^3)	16.4	16.5	ND
Annual > NAAQS and CAAQS (12 ug/m^3)	**Yes**	**Yes**	ND

Notes: Exceedances are listed in **bold.** CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion; ND = no data available.

[1] Data obtained from Perris Station.

[2] Data obtained from Riverside-Magnolia Station.

Source: http://www.arb.ca.gov/adam/

Nitrogen Dioxide

The Riverside-Magnolia Station did not record an exceedance of the Federal 1-hour NO_2 standard for the last three years.

Particulate Matter

The State 24-hour concentration standard for PM10 has been exceeded between 4 and 7 days each year over the past three years at the Perris Station. Over the past three years the Federal 24-hour standard for PM10 has only been exceeded for one day in 2015 at the Perris Station. The annual PM10 concentration at the Perris Station has exceeded the State standard for the past three years and has not exceeded the Federal standard for the past three years.

Over the past three years the 24-hour concentration standard for PM2.5 has only been exceeded for one day in 2013 over the past three years at the Riverside-Magnolia Station. The annual PM2.5 concentration at the Riverside-Magnolia Station has exceeded the State and Federal standard the past three years. There does not appear to be a noticeable trend for PM10 or PM2.5 in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

4.3 Toxic Air Contaminant Levels in the Air Basin

In order to determine the Air Basin-wide risks associated with major airborne carcinogens, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES) studies. According to the SCAQMD's MATES-IV study, the project site has an estimated cancer risk of 566 per million persons chance of cancer. In comparison, the average cancer risk for the Air Basin is 991 per million persons, which is based on the use of age-sensitivity factors detailed in the OEHHA Guidelines (OEHHA, 2015).

In order to provide a perspective of risk, it is often estimated that the incidence in cancer over a lifetime for the U.S. population ranges between 1 in 3 to 4 and 1 in 3, or a risk of about 300,000 per million persons. The MATES-III study referenced a Harvard Report on Cancer Prevention, which estimated that of cancers associated with known risk factors, about 30 percent were related to tobacco, about 30 percent were related to diet and obesity, and about 2 percent were associated with environmental pollution related exposures that includes hazardous air pollutants.

5.0 MODELING PARAMETERS AND ASSUMPTIONS

5.1 CalEEMod Model Input Parameters

The criteria air pollution and GHG emissions impacts created by the proposed project have been analyzed through use of CalEEMod Version 2013.2.2. CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2011 computer program to calculate the emission rates specific for South Coast Air Basin portion of Riverside County for employee, vendor and haul truck vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy equipment operations. EMFAC2011 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The project characteristics in the CalEEMod were set to a project location of the South Coast Air Basin portion of Riverside County, a Climate Zone of 10, land use setting of Urban, utility company of Southern California Edison, and a project location of suburban center. For the criteria pollutant analysis, the anticipated project opening year of 2018 was utilized and the GHG analysis utilized year 2018 for the business-as-usual (BAU) condition and year 2020 for the project analysis year.

Land Use Parameters

The proposed project would consist of development of a residential apartment complex with 272 apartment dwelling units, a community building with a pool and spa, open space with a tot lot, onsite roadways and parking areas, and two retention basins. A summary of the proposed project's development is shown above in Table F.

Table F – CalEEMod Land Use Parameters

Proposed Land Use	Land Use Subtype in CalEEMod	Land Use Size[1]	Lot Acreage	Building/Paving[2] (square feet)
Residential Apartment Units	Apartments Low Rise	272 DU	15.47	272,000
Private Street and Driveways	Other Asphalt Surfaces	4.0 AC	4.00	10,000

Notes:
[1] DU = Dwelling Unit; AC = Acres
[2] Building/Paving square feet represent area where architectural coatings will be applied.

Construction Parameters

Construction activities are anticipated to start around February 2017 and take approximately 18 months to complete. The construction-related GHG emissions were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The phases of construction activities that have been analyzed are detailed below and include: 1) grading, 2) building construction, 3) paving, and 4) application of architectural coatings. The demolition phase was not analyzed since there are no structures on the project site and the site preparation phase was not analyzed since the project site has been disked on a regular basis and there is no mature vegetation on the project site that would need to be removed.

Grading

The grading phase has been modelled as taking six weeks to complete and starting in February 2017. The proposed grading is balanced, which would result in no dirt being imported or exported from the project site. The grading activities would require up to 20 worker trips per day. In order to account for water truck emissions, six vendor truck emissions were added to the grading phase. The onsite equipment would consist of the simultaneous operation of two excavators, one grader, one rubber tired dozer, two scrapers, and two of either a tractor, loader or backhoe, which is based on the CalEEMod default equipment mix. The mitigation of water all exposed areas three times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

Building Construction

The building construction would occur after the completion of the grading phase. The building construction phase was modeled based on occurring over 14 months. The building construction would require up to 200 worker trips and 31 vendor trips per day. The onsite equipment would consist of the simultaneous operation of one crane, three forklifts, one generator set, one welders, and three of either a tractor, loader, or backhoe, which is based on the CalEEMod default equipment mix.

Paving

The paving would occur after the completion of the building construction phase. The paving phase was modeled based on the paving of the onsite roads that would require paving approximately 0.55 acres of the project site. The paving activities was modeled as occurring over four weeks and would require up to 15 worker trips per day. The onsite equipment would consist of the simultaneous operation of, two pavers, two paving equipment, and two rollers, which is based on the CalEEMod default equipment mix.

Architectural Coating

The application of architectural coatings would occur after the completion of the paving phase. The architectural coating phase was modeled based on covering 550,800 square feet residential interior area, 183,600 square feet residential exterior area, and 20,000 square feet of non-residential area that includes striping on the streets, painting of signs, and other architectural coatings in public areas. The architectural coating phase was modeled as occurring over eight weeks and would require up to 40 worker trips per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix.

Operational Emissions Modeling

The operations-related criteria air pollutant emissions and GHG emissions created by the proposed project have been analyzed through use of the CalEEMod model. The proposed project was analyzed in the CalEEMod model based on the land use parameters provided above.

Mobile Sources

Mobile sources include emissions the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trip rates from the *Draft Traffic Impact Analysis Alessandro Apartments, City of Moreno Valley, California* (Traffic Impact Analysis), prepared by Transpogroup, July 7, 2016, into the CalEEMod Model. The Traffic Impact Analysis found that the proposed project would create 1,792 vehicle trips per day, which is based on each apartment unit generating 6.59 trips per weekday. The CalEEMod default Saturday daily trip rate of 7.16 trips per unit and Sunday daily trips of 6.07 trips per unit were utilized, since the Traffic Impact Analysis did not provide weekend daily trip rates. The CalEEMod default vehicle trip lengths of 14.7 miles for home to work, 5.9 miles for home to shopping, and 8.7 miles for home to other locations were also used in the analysis. No other changes were made to the CalEEMod default mobile source parameters.

The year 2020 GHG analysis included implementation of Executive Order S-1-07 (EO S-1-07), and Assembly Bill 1493 (AB 1493). EO S-1-07 establishes performance standards for the carbon intensity of transportation fuels and AB 149, which limits GHG emissions from new vehicles sold in California. The year 2020 GHG analysis also accounted for the bus stops that are located adjacent to the project site on Perris Boulevard and approximately 50 feet west of the project site on Alessandro Boulevard as well as the construction of sidewalks on the project site adjacent to Perris Boulevard and Alessandro Boulevard, which are detailed on the site plans. Project Design Feature 2 has been detailed above in order to clearly identify that sidewalks will be constructed adjacent to Perris Boulevard and Alessandro Boulevard.

Area Sources

Area sources include emissions from hearths, consumer products, landscape equipment and architectural coatings. The area source emissions were based on the on-going use of the proposed 272 apartment units in the CalEEMod model. The project applicant has stated that no fireplaces would be constructed in the proposed apartments, however there is a possibility that a natural gas fireplace will be constructed at the community building and pool. Therefore, the CalEEMod model was set to account for only one natural gas fireplace. No other changes were made to the default area source parameters.

Energy Usage

Energy usage includes emissions from natural gas used on-site (excluding fireplaces). The energy usage was based on the on-going use of the proposed 272 apartment units in the CalEEMod model. No changes were made to the default energy usage parameters.

For the opening year 2018 analysis, the CalEEMod mitigation of a 25 percent reduction to the Title 24 were selected in order to account for the CCR Title 24, Part 6 2013 Building Energy Efficiency Standards that became effective on July 1, 2014 and result in a 25 percent improvement to the prior 2008 Title 24 building standards for industrial buildings that the CalEEMod emission rates are based on. The CCR Title 24, Part 6 Building Energy Efficiency Standards are scheduled to be revised every three years, with each revisions providing around a 25 percent improvement over the prior standard. Therefore, the year 2020 analysis was based on a 50 percent improvement of Title 24 standards.

Solid Waste

Waste includes the GHG emissions associated with the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. The analysis was based on the default CalEEMod waste generation rates of 125 tons of solid waste per year from the 272 apartment units. All emission factors were based on the default emission levels in the CalEEMod model.

The CalEEMod mitigation of a 75 percent reduction in landfill waste was selected for year 2020 analysis to account for implementation of AB 341 that provides strategies to reduce, recycle or compost solid waste by 75 percent by 2020 and Project Design Feature 3 has been detailed above in order to clearly identify the onsite recycling steps required to meet this target. Since SB 939 and 1374 were enacted prior to the project opening year, it was assumed that for year 2018, 50 percent would be diverted by the baseline BAU year of 2018.

Water and Wastewater

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. The analysis was based on the default CalEEMod water usage rate of 17,721,895 gallons per year of indoor water usage and 11,172,499 gallons per year of outdoor water usage from the 272 apartment units. No changes were made to the default water and wastewater parameters in the CalEEMod model.

The CalEEMod mitigation of the use of low flow faucets, shower heads, and toilets and use of smart irrigation system controllers were selected to account for the implementation of the 2013 CCR Title 24 Part 11 (CalGreen) requirements in the opening year 2018 and year 2020 analyses.

6.0 THRESHOLDS OF SIGNIFICANCE

6.1 Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the Air Basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table G.

Table G – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance

	Pollutant Emissions (pounds/day)						
	VOC	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**Lead**
Construction	75	100	550	150	150	55	3
Operation	55	55	550	150	150	55	3

Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf

6.2 Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. SCAQMD has also provided *Final Localized Significance Threshold Methodology* (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The LST Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The LST Methodology provides Look-Up Tables with different thresholds based on the location and size of the project site and distance to the nearest sensitive receptors. The project site is 19.47-acres, however the project applicant has stated that no more than 5-acres would be disturbed in any day during construction activities associated with the proposed project and therefore, the 5-acre project site shown in the Look-Up Tables was utilized for this analysis. In order to assure compliance with the 5-acre limitation, Project Design Feature 1 has been provided above in Section 1.6.

As detailed above in Section 4.2, the project site is located in Air Monitoring Area 24, which covers the Perris and Moreno Valley areas to the San Bernardino County line. The nearest sensitive receptors to the south section of the project site are single-family homes located as near as 25 feet to the east and the nearest sensitive receptors to the north section of the project site are single-family homes, located as near as 50 feet south. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25 meter thresholds. Table H below shows the LSTs for NO_2, PM10 and PM2.5 for both construction and operational activities.

Table H – SCAQMD Local Air Quality Thresholds of Significance

Activity	Allowable Emissions (pounds/day)[1]			
	NOx	CO	PM10	PM2.5
Construction	270	1,577	13	8
Operation	270	1,577	4	2

Notes:
[1] The nearest sensitive receptors are single-family homes located as near as 25 feet east of the south section of the project site. According to SCAQMD methodology, all receptors closer than 25 meters are based on the 25 meter threshold.
Source: Calculated from SCAQMD's Mass Rate Look-up Tables for five acres in Air Monitoring Area 24.

6.3 Toxic Air Contaminants

According to the SCAQMD CEQA Handbook, any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact:

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

In order to determine if the proposed project may have a significant impact related to hazardous air pollutants (HAP), the *Health Risk Assessment Guidance for analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, (Diesel Analysis) prepared by SCAQMD, August 2003, recommends that if the proposed project is anticipated to create HAPs through stationary sources or regular operations of diesel trucks on the project site, then the proximity of the nearest receptors to the source of the HAP and the toxicity of the HAP should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

6.4 Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

> "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
>
> The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

6.5 Greenhouse Gases

The City of Moreno Valley has adopted the *City of Moreno Valley Energy Efficiency and Climate Action Strategy*, on October 9, 2012, which along with the *City of Moreno Valley Greenhouse Gas Analysis*, prepared February 2012, detail potential programs and policies to reduce overall City energy consumption and increase the use of renewable energy. The Greenhouse Gas Analysis develops a target of a 15 percent decrease in GHG emissions over 2007 levels by 2020. The Greenhouse Gas Analysis has been prepared to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. Consistent with the CARB Scoping Plan, the City of Moreno Valley has chosen a reduction target of 15 percent below 2007 GHG emissions levels by 2020.

Therefore, the proposed project would be considered to create a significant cumulative GHG emissions impact if the proposed project's GHG emissions are not 15 percent less in 2020 than GHG emissions from business-as-usual conditions for a similar size project in year 2007.

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality and global climate change would occur if the proposed project is determined to result in:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people.
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

7.2 Air Quality Compliance

The proposed project would not conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan (AQMP). The following section discusses the proposed project's consistency with the SCAQMD AQMP.

SCAQMD Air Quality Management Plan

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable GPs and regional plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

(2) Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance discussed above in Section 6.1 or local thresholds of significance discussed above in Section 6.2. The ongoing operation of the proposed project would generate air pollutant emissions that are inconsequential on a regional basis and would not result in significant impacts based on SCAQMD thresholds of significance discussed above in Section 6.1. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the air quality standards. Therefore, no long-term impact would occur and no mitigation would be required.

Therefore, based on the information provided above, the proposed project would be consistent with the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to insure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The *2012-2035 Regional Transportation/Sustainable Communities Strategy* consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the City of Moreno Valley Land Use Plan defines the assumptions that are represented in the AQMP.

The project site is currently designated as Residential (Max 15 dwelling units per acre) in the General Plan and zoned Multi-Family (R15). The proposed project would consist of the development of 272 apartment units on 19.47-acres, which would result in a density of 13.97 dwelling units per acre and would be consistent with the General Plan land use designation and zoning. As such, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur in relation to implementation of the AQMP.

Level of Significance

Less than significant impact.

7.3 Air Quality Standard Violation

The proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the SCAQMD standards.

Construction Emissions

The proposed project would consist of construction of a residential apartment complex with 272 apartment dwelling units, a community building with a pool and spa, open space with a tot lot, onsite roadways and parking areas, and two retention basins. The construction emissions have been analyzed for both regional and local air quality impacts as well as potential toxic air impacts.

Construction-Related Regional Impacts

The CalEEMod model has been utilized to calculate the construction-related regional emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 5.1. The worst-case summer or winter daily construction-related criteria pollutant emissions from the proposed project for each phase of construction activities are shown below in Table I and the CalEEMod daily printouts are shown in Appendix A. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently, Table I also shows the combined criteria pollutant emissions from building construction, paving and architectural coating phases of construction.

Table I – Construction-Related Regional Criteria Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Grading[1]						
Onsite	6.10	65.59	46.81	0.06	6.70	4.45
Offsite	0.11	0.55	1.51	0.00	0.27	0.08
Total	**6.21**	**66.14**	**48.32**	**0.06**	**6.97**	**4.53**
Building Construction						
Onsite	3.10	26.41	18.13	0.03	1.78	1.67
Offsite	0.90	3.28	12.73	0.03	2.49	0.70
Total	**4.00**	**29.69**	**30.86**	**0.06**	**4.27**	**2.37**
Paving						
Onsite	2.14	17.16	14.49	0.02	0.94	0.86
Offsite	0.05	0.06	0.69	0.00	0.17	0.05
Total	**2.19**	**17.22**	**15.18**	**0.02**	**1.11**	**0.91**
Architectural Coatings						
Onsite	59.28	2.01	1.85	0.00	0.15	0.15
Offsite	0.12	0.16	1.84	0.01	0.45	0.12
Total	**59.40**	**2.17**	**3.69**	**0.01**	**0.60**	**0.27**
Combined Building Construction, Paving, and Architectural Coatings	**65.59**	**49.08**	**49.73**	**0.09**	**5.98**	**3.55**
SCQAMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[2] Onsite emissions from equipment not operated on public roads.
[3] Offsite emissions from vehicles operating on public roads.
Source: CalEEMod Version 2013.2.2.

Table I shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

The local air quality emissions from construction were analyzed through utilizing the methodology described in *Localized Significance Threshold Methodology* (LST Methodology), prepared by SCAQMD, revised October 2009. The LST Methodology found the primary criteria pollutant emissions of concern are NOx, CO, PM10, and PM2.5. In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-up Tables. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily onsite emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. Table J shows the onsite emissions from the CalEEMod model for the different construction phases and the calculated emissions thresholds that have been detailed above in Section 6.2. Since it is possible that building construction, paving, and architectural coating activities may occur concurrently, Table J also shows the combined local criteria pollutant emissions from building construction, paving and architectural coating phases of construction.

Table J – Construction-Related Local Criteria Pollutant Emissions

	Pollutant Emissions (pounds/day)			
Phase	**NOx**	**CO**	**PM10**	**PM2.5**
Grading	65.59	46.81	6.70	4.45
Building Construction	26.41	18.13	1.78	1.67
Paving	17.16	14.49	0.94	0.86
Architectural Coatings	2.01	1.85	0.15	0.15
Combined Building Construction, Paving, and Architectural Coatings	**45.58**	**34.47**	**2.87**	**2.68**
SCAQMD Thresholds for 25 meters (82 feet) or less[2]	**270**	**1,577**	**13**	**8**
Exceeds Threshold?	No	No	No	No

Notes:
[1] Demolition and Grading based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.
[2] The nearest sensitive receptors are single-family homes located as near as 25 feet east of the south section of the project site. According to LST methodology any receptor closer than 25 meters should be based on the 25-meter threshold.
Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for five acres in Air Monitoring Area 24.

The data provided in Table J shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds for any phase of construction. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

Operational Emissions

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality and local air quality impacts with the on-going operations of the proposed project. The potential operations-related air emissions have been analyzed below for the regional and local criteria pollutant emissions and cumulative impacts.

Operations-Related Criteria Pollutant Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model and the input parameters utilized in this analysis have been detailed in Section 5.2. The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 daily emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table K and the CalEEMod daily emissions printouts are shown in Appendix A.

Table K – Operational Regional Criteria Pollutant Emissions

	Pollutant Emissions (pounds/day)					
Activity	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Area Sources[1]	6.93	0.26	22.60	0.00	0.12	0.12
Energy Usage[2]	0.09	0.75	0.32	0.00	0.06	0.06
Mobile Sources[3]	6.52	21.26	72.42	0.21	14.42	4.06
Total Emissions	**13.54**	**22.27**	**95.34**	**0.21**	**14.60**	**4.24**
SCQAMD Operational Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] Area sources consist of emissions from hearths, consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consist of emissions from natural gas usage (excluding hearths).
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: Calculated from CalEEMod Version 2013.2.2.

The data provided in Table K above shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analysis analyzes the vehicular CO emissions and local impacts from on-site operations.

Local CO Hotspot Impacts from Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards of 20 ppm over one hour or 9 ppm over eight hours.

At the time of the 1993 Handbook, the Air Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Air Basin and in the state have steadily declined. In 2007, the Air Basin was designated in attainment for CO under both the CAAQS and NAAQS. SCAQMD conducted a CO hot spot analysis for attainment at the busiest intersections in Los

Angeles during the peak morning and afternoon periods and did not predict a violation of CO standards[1]. Since the nearby intersections to the proposed project are much smaller with less traffic than what was analyzed by the SCAQMD, no local CO Hotspot are anticipated to be created from the proposed project and no CO Hotspot modeling was performed. Therefore, a less than significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

Local Air Quality Impacts from Onsite Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances may have the potential to create emissions areas that exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

The local air quality emissions from on-site operations were analyzed using the SCAQMD's Mass Rate LST Look-up Tables and the methodology described in LST Methodology. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. Table L shows the on-site emissions from the CalEEMod model that includes area sources, energy usage, and vehicles operating on-site and the calculated emissions thresholds.

Table L – Operations-Related Local Criteria Pollutant Emissions

On-Site Emission Source	Pollutant Emissions (pounds/day)			
	NOx	**CO**	**PM10**	**PM2.5**
Area Sources	0.26	22.60	0.12	0.12
Energy Usage	0.75	0.32	0.06	0.06
Onsite Vehicle Emissions[(a)]	2.66	9.05	1.80	0.51
Total Emissions	**3.67**	**31.97**	**1.98**	**0.69**
SCAQMD Thresholds for 25 meters (82 feet) or less[(b)]	**270**	**1,577**	**4**	**2**
Exceeds Threshold?	No	No	No	No

Notes:
(a) Onsite vehicle emissions based on 1/8 of the gross vehicular emissions, which is the estimated portion of vehicle emissions occurring within a quarter mile of the project site.
(b) The nearest sensitive receptors are single-family homes located as near as 25 feet east of the south section of the project site. According to LST methodology any receptor closer than 25 meters should be based on the 25-meter threshold.
Source: Calculated from CalEEMod2013 and SCAQMD's Mass Rate Look-up Tables for five acres in Air Monitoring Area 24.

The data provided in Table L shows that the on-going operations of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 6.2. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Level of Significance

Less than significant impact.

[1] The four intersections analyzed by the SCAQMD were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning and LOS F in the evening peak hour.

7.4 Cumulative Net Increase in Non-Attainment Pollution

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel throughout the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. Accordingly, the cumulative analysis for the project's air quality must be generic by nature. The project area is out of attainment for ozone and PM10 and PM2.5 particulate matter. In accordance with CEQA Guidelines Section 15130(b), this analysis of cumulative impacts incorporates a three-tiered approach to assess cumulative air quality impacts.

- Consistency with the SCAQMD project specific thresholds for construction and operations;
- Project consistency with existing air quality plans; and
- Assessment of the cumulative health effects of the pollutants.

Consistency with Project Specific Thresholds

Construction-Related Impacts

The project site is located in the South Coast Air Basin, which is currently designated by the EPA for federal standards as a non-attainment area for ozone and PM2.5 and by CARB for the state standards as a non-attainment area for ozone, PM10, and PM2.5. The regional ozone, PM10, and PM2.5 emissions associated with construction of the proposed project have been calculated above in Section 7.3. The above analysis found that development of the proposed project would result in less than significant regional emissions of VOC and NOx (ozone precursors), PM10, and PM2.5 during construction of the proposed project. Therefore, a less than significant cumulative impact would occur from construction of the proposed project.

Operational-Related Impacts

The greatest cumulative operational impact on the air quality to the Air Basin will be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development. In accordance with SCAQMD methodology, projects that do not exceed SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. The regional ozone, PM10, and PM2.5 emissions created from the on-going operations of the proposed project have been calculated above in Section 7.3. The above analysis found that development of the proposed project would result in less than significant regional emissions of VOC and NOx (ozone precursors), PM10, and PM2.5 during operation of the proposed project. With respect to long-term emissions, this project would create a less than significant cumulative impact.

Consistency with Air Quality Plans

As detailed above in Section 7.2, the project site is currently designated as Residential (Max 15 dwelling units per acre) in the General Plan and zoned Multi-Family (R15). The proposed project would consist of the development of 272 apartment units on 19.47-acres, which would result in a density of 13.97 dwelling units per acre and would be consistent with the General Plan land use designation and zoning. Therefore, the proposed project would not result in an inconsistency with the current land use designations with respect to the regional forecasts utilized by the AQMPs.

Cumulative Health Impacts

The Air Basin is designated as nonattainment for ozone, PM10, and PM2.5, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (elderly, children, and the sick). Therefore, when the concentrations of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects. The regional analysis detailed above in Section 7.3 found that the proposed project would not exceed the SCAQMD regional significance thresholds for VOC and NOx (ozone precursors), PM10 and PM2.5. As such, the proposed project would result in a less than significant cumulative health impact.

Level of Significance

Less than significant impact.

7.5 Sensitive Receptors

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the proposed project, which may expose sensitive receptors to substantial concentrations have been calculated above in Section 7.3 for both construction and operations, which are discussed separately below. The discussion below also includes an analysis of the potential impacts from toxic air contaminant emissions. The nearest offsite sensitive receptors to the south section of the project site are single-family homes located as near as 25 feet to the east and the nearest sensitive receptors to the north section of the project site are single-family homes, located as near as 50 feet south.

Construction-Related Sensitive Receptor Impacts

Construction of the proposed project may expose sensitive receptors to substantial pollutant concentrations of localized criteria pollutant concentrations and from toxic air contaminant emissions created from onsite construction equipment, which are described below.

<u>Local Criteria Pollutant Impacts from Construction</u>

The local air quality impacts from construction of the proposed project has been analyzed above in Section 7.3 and found that the construction of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 6.2. Therefore, construction of the proposed project would create a less than significant construction-related impact to local air quality and no mitigation would be required.

<u>Toxic Air Contaminants Impacts from Construction</u>

The greatest potential for toxic air contaminant emissions would be related to diesel particulate matter (DPM) emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of “individual cancer risk”. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. In addition, California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449 regulates emissions from off-road diesel equipment in California. This regulation limits idling of equipment to no more than five minutes, requires equipment operators to label each piece of equipment and provide annual reports to CARB of their fleet’s usage and emissions. This regulation also requires systematic upgrading of the emission Tier level of each fleet, and currently no commercial operator is allowed to purchase Tier 0 or Tier 1 equipment and by January 2023 no commercial operator is allowed to purchase Tier 2 equipment. In addition to the purchase restrictions, equipment operators need to meet fleet average emissions targets that become more stringent each year between years 2014 and 2023.

In order to ensure that construction-related TAC emission impacts are minimized at the nearby homes, the project applicant will implement Project Design Feature 4 that requires all contractors to adhere to SCAQMD's Rule 402 requirements that do not allow the discharge of any source of air contaminants that may create a nuisance at the nearby homes. Project Design Feature 4 also provides specific actions to reduce air contaminants at the nearby homes that include: (1) Placement of stockpiles of material as far away as practical from the nearby homes; (2) Placement of equipment storage and maintenance area as far away as practical from the nearby homes; and (3) Restriction on the outdoor spraying of architectural coatings and other solvents, when the wind is blowing directly at the nearby homes. Therefore, through implementation of State regulations that limit TAC emissions from off-road equipment as well as from implementation of Project Design Feature 4, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project. As such, construction of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Operations-Related Sensitive Receptor Impacts

The on-going operations of the proposed project may expose sensitive receptors to substantial pollutant concentrations of local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from onsite operations. The following analyzes the vehicular CO emissions. Local criteria pollutant impacts from onsite operations, and toxic air contaminant impacts.

Local CO Hotspot Impacts from Project-Generated Vehicle Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential impacts to sensitive receptors. The analysis provided above in Section 7.3 shows that no local CO Hotspots are anticipated to be created at any nearby intersections from the vehicle traffic generated by the proposed project. Therefore, operation of the proposed project would result in a less than significant exposure of offsite sensitive receptors to substantial pollutant concentrations.

Local Criteria Pollutant Impacts from Onsite Operations

The local air quality impacts from the operation of the proposed project would occur from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances. The analysis provided above in Section 7.3 found that the operation of the proposed project would not exceed the local NOx, CO, PM10 and PM2.5 thresholds of significance discussed above in Section 6.2. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

Operations-Related Toxic Air Contaminant Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas and according to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips generated by the proposed residential project, a less than significant toxic air contaminant impact would occur during the on-going operations of the proposed project and no mitigation would be required.

Therefore, operation of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Level of Significance
Less than significant impact.

7.6 Objectionable Odors

The proposed project would not create objectionable odors affecting a substantial number of people. Potential odor impacts have been analyzed separately for construction and operations below.

Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people that live and work in the immediate vicinity of the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality, this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration.

Construction-Related Odor Impacts
Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement, paints and solvents and from emissions from diesel equipment. The objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. In order to ensure that construction-related odor impacts are minimized at the nearby homes, the project applicant will implement Project Design Feature 4, that requires all contractors to adhere to SCAQMD's Rule 402 requirements that do not allow the discharge of any source of odors that may create a nuisance at the nearby homes. Project Design Feature 4 also provides specific actions to reduce odor impacts that include: (1) Placement of stockpiles of material that may emit odors as far away as practical from the nearby homes; (2) Placement of equipment storage and maintenance area as far away as practical from the nearby homes; and (3) Restriction on the outdoor spraying of architectural coatings and other solvents, when the wind is blowing directly at the nearby homes. Due to the transitory nature of construction odors and through the odor reductions that would occur from implementation of Project Design Feature 4, a less than significant odor impact would occur and no mitigation would be required.

Potential Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would primarily occur from odor emissions from the trash storage areas. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402, no significant impact related to odors would occur during the on-going operations of the proposed project. Therefore, a less than significant odor impact would occur and no mitigation would be required.

Level of Significance

Less than significant impact.

7.7 Generation of Greenhouse Gas Emissions

The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The proposed project would result in the development of a residential apartment complex with 272 apartment dwelling units, a community building with a pool and spa, open space with a tot lot, onsite roadways and parking areas, and two retention basins. The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste disposal, water usage, and construction equipment.

The City of Moreno Valley has adopted the *City of Moreno Valley Greenhouse Gas Analysis* that requires a 15 percent reduction in GHG emissions between years 2007 and 2020. In order to determine if the proposed project would comply with the Plan's Standards, the GHG emissions from the proposed project were analyzed for both year 2018, (opening year of the proposed project) and year 2020. Using year 2018 versus 2007 provides a worst-case analysis, since the State has enacted several laws that took effect after 2007 that reduce GHG emissions and using the latter date means that less GHG reductions can be accounted for from the State measures.

The project's GHG emissions have been calculated with the CalEEMod model based on the parameters detailed in Section 5.1 for construction emissions and Section 5.2 for operational emissions. A summary of the results is shown below in Table M and the CalEEMod model run annual printouts for the year 2018 is provided in Appendix B and the year 2020 is provided in Appendix C.

The data provided in Table M shows that the proposed project would create 3,094.38 $MTCO_2e$ per year based on the default year 2018 GHG emissions rates and in year 2020 would produce 2,625.95 $MTCO_2e$ per year that is based on approved Statewide GHG reduction regulations that would be fully implemented by year 2020 as well as from GHG emission reduction design features that have been incorporated into the proposed site plan. Table M shows that through implementation of EO S-1-07, that establishes performance standards for the carbon intensity of transportation fuels, AB 149, which limits GHG emissions from new vehicles sold in California, AB 341 that reduces solid waste transferred to landfills, implementation of the CCR Title 24, Part 6 2013 Building Energy Efficiency Standards and CCR Title 24 Part 11 2013 CalGreen Standards that improves the energy efficiency of the proposed project, and project design features such as providing sidewalks and providing recycling bins on the project site, the proposed project's GHG emissions would be reduced by 15.1 percent and would meet the City of Moreno Valley's minimum 15 percent GHG reduction standard. In addition, the proposed project would be below the SCAQMD draft residential significance threshold of 3,500 $MTCO_2e$ per year for both the year 2018 and year 2020 GHG emissions. Therefore, a less than significant generation of GHG emissions would occur from development and operation of the proposed project.

Table M – Project Related Greenhouse Gas Annual Emissions

Category	Greenhouse Gas Emissions (Metric Tons per Year)			
	CO_2	CH_4	N_2O	CO_2e
Year 2018 BAU Emissions				
Area Sources[1]	4.82	0.00	0.00	4.92
Energy Usage[2]	463.47	0.02	0.01	465.62
Mobile Sources[3]	2,461.78	0.08	0.00	2,463.40
Solid Waste[4]	12.70	0.75	0.00	28.46
Water and Wastewater[5]	90.68	0.47	0.01	104.09
Construction[6]	27.79	0.00	0.00	27.89
Total 2018 Emissions	**3,061.24**	**1.32**	**0.02**	**3,094.38**
Year 2020 Emissions				
Area Sources[1]	4.82	0.00	0.00	4.92
Energy Usage[2]	410.35	0.02	0.00	412.21
Mobile Sources[3]	2,061.32	0.06	0.00	2,062.61
Solid Waste[4]	6.35	0.38	0.00	14.23
Water and Wastewater[5]	90.68	0.47	0.01	104.09
Construction[6]	27.79	0.00	0.00	27.89
Total 2020 Emissions	**2,601.31**	**0.93**	**0.01**	**2,625.95**
Percent Reduction between 2018 and 2020				**15.1%**
City of Moreno Valley Reduction Threshold				**15.0%**
SCAQMD Draft Threshold of Significance for Residential Uses				**3,500**

Notes:
[1] Area sources consist of GHG emissions from hearths, consumer products, architectural coatings, and landscaping equipment.
[2] Energy usage consist of GHG emissions from electricity and natural gas usage (not including hearths).
[3] Mobile sources consist of GHG emissions from vehicles.
[4] Waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.
[5] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.
[6] Construction emissions amortized over 30 years as recommended in the SCAQMD GHG Working Group on November 19, 2009.
Source: CalEEMod Version 2013.2.2.

Level of Significance

Less than significant impact.

7.8 Greenhouse Gas Plan Consistency

The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The applicable plans for the proposed project are the *City of Moreno Valley Greenhouse Gas Analysis*, adopted February 2012 and the *City of Moreno Valley Energy Efficiency and Climate Action Strategy*, adopted October 2012. The City of Moreno Valley has adopted these plans in order to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. Both Plans provide the same reduction measures to be implemented in new developments to reduce GHG emissions as well as a GHG emissions reduction target of 15 percent below 2007 GHG emissions levels by 2020. Consistent with the CARB Scoping Plan, the City of Moreno Valley has chosen a reduction target of 15 percent below 2007 GHG emissions levels by 2020. Therefore, the proposed project would be considered to be inconsistent with the City's Plans if the proposed project did not implement all applicable measures identified in the Plans and if the proposed project's GHG emissions are not 15 percent less than GHG emissions from business-as-usual conditions for a similar size project in year 2007.

The applicable measures provided in the City's GHG Plans were incorporated into the project design of the proposed project and include providing housing along a high quality transit corridor, promotion of alternative transportation methods through the providing of sidewalks throughout the project, utilization of shade trees and covered parking to reduce heat island impacts, utilization of low-flow water fixtures and smart irrigation controls to reduce water use, and through providing recycling bins to reduce waste sent to landfills. Section 7.6 above found that with implementation of various state requirements as well as from GHG emission reduction design features that have been incorporated into the proposed site plan, the proposed project's GHG emissions would be reduced by 15.1 percent by year 2020. Therefore, the proposed project would not conflict with the City's GHG reduction plans.

In addition to the City's GHG reduction plans, the SCAQMD initiated a Working Group to develop a GHG emissions policy and provided detailed methodology for evaluating significance under CEQA. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual threshold of 3,500 $MTCO_2e$ for residential uses. Although the SCAQMD provided substantial evidence supporting the use of the above threshold, they have not been formally adopted because the SCAQMD was awaiting the outcome of the State Supreme Court decision of the California Building Industry Association v. Bay Area Air Quality Management District (BAAQMD), which was filed on December 17, 2015 and the SCAQMD Board has not yet approved these thresholds. Table M shows that both the year 2018 business-as-usual GHG emissions and the year 2020 GHG emissions would be below the SCAQMD draft residential significance threshold of 3,500 $MTCO_2e$ per year. Therefore, the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Level of Significance

Less than significant impact.

8.0 REFERENCES

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U.S. Geological Survey, *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California,* 2011.

APPENDIX A

CalEEMod Model Daily Printouts

Alessandro Apartments - Opening Year 2018

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	4.00	Acre	4.00	10,000.00	0
Apartments Low Rise	272.00	Dwelling Unit	15.47	272,000.00	778

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO_2 Intensity (lb/MWhr)	630.89	**CH_4 Intensity (lb/MWhr)**	0.029	**N_2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 272 Low Rise Apartments on 15.47 acres & 4 acres other asphalt surfaces

Construction Phase - Construction schedule provided by applicant.

Trips and VMT - 6 vendor trips added to Grading Phase to account for water truck emissions

Woodstoves - No woodstoves and 1 natural gas only fireplace

Construction Off-road Equipment Mitigation - Water Exposed Area 3x per day selected to account for SCAQMD's Rule 403 minimum requirements

Mobile Land Use Mitigation -

Energy Mitigation - Exceed Title 24 by 25%

Water Mitigation - Install Low-Flow faucets, toilets, and showers and use water-efficient irrigation systems

Waste Mitigation - 50% reduction in solid waste per SB 939 and 1374

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	PhaseEndDate	8/10/2018	8/11/2018
tblFireplaces	NumberGas	231.20	1.00
tblFireplaces	NumberNoFireplace	27.20	272.00
tblFireplaces	NumberWood	13.60	0.00
tblLandUse	LandUseSquareFeet	174,240.00	10,000.00
tblLandUse	LotAcreage	17.00	15.47
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblWoodstoves	NumberCatalytic	13.60	0.00
tblWoodstoves	NumberNoncatalytic	13.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.2099	70.1299	48.3158	0.0657	8.9346	3.3273	12.2620	3.6666	3.0611	6.7277	0.0000	6,651.127 9	6,651.127 9	1.9440	0.0000	6,691.951 4
2018	59.4028	26.1534	29.1665	0.0601	2.4305	1.5503	3.9809	0.6486	1.4564	2.1050	0.0000	5,293.089 0	5,293.089 0	0.7240	0.0000	5,308.292 1
Total	**65.6126**	**96.2832**	**77.4822**	**0.1258**	**11.3652**	**4.8776**	**16.2428**	**4.3151**	**4.5175**	**8.8327**	**0.0000**	**11,944.21 69**	**11,944.21 69**	**2.6679**	**0.0000**	**12,000.24 36**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.2099	70.1299	48.3158	0.0657	3.6439	3.3273	6.9712	1.4727	3.0611	4.5338	0.0000	6,651.127 9	6,651.127 9	1.9440	0.0000	6,691.951 4
2018	59.4028	26.1534	29.1665	0.0601	2.4305	1.5503	3.9809	0.6486	1.4564	2.1050	0.0000	5,293.089 0	5,293.089 0	0.7240	0.0000	5,308.292 1
Total	**65.6126**	**96.2832**	**77.4822**	**0.1258**	**6.0744**	**4.8776**	**10.9521**	**2.1213**	**4.5175**	**6.6388**	**0.0000**	**11,944.21 69**	**11,944.21 69**	**2.6679**	**0.0000**	**12,000.24 36**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**46.55**	**0.00**	**32.57**	**50.84**	**0.00**	**24.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.9286	0.2623	22.5996	1.1800e-003		0.1247	0.1247		0.1247	0.1247	0.0000	61.5836	61.5836	0.0405	3.9000e-004	62.5534
Energy	0.1103	0.9424	0.4010	6.0200e-003		0.0762	0.0762		0.0762	0.0762		1,203.0422	1,203.0422	0.0231	0.0221	1,210.3637
Mobile	6.5173	20.4056	72.4214	0.2081	14.1024	0.3190	14.4214	3.7636	0.2938	4.0574		17,121.3878	17,121.3878	0.5075		17,132.0461
Total	**13.5562**	**21.6103**	**95.4220**	**0.2153**	**14.1024**	**0.5199**	**14.6223**	**3.7636**	**0.4947**	**4.2583**	**0.0000**	**18,386.0136**	**18,386.0136**	**0.5711**	**0.0225**	**18,404.9633**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.9286	0.2623	22.5996	1.1800e-003		0.1247	0.1247		0.1247	0.1247	0.0000	61.5836	61.5836	0.0405	3.9000e-004	62.5534
Energy	0.0877	0.7497	0.3190	4.7900e-003		0.0606	0.0606		0.0606	0.0606		957.0323	957.0323	0.0183	0.0176	962.8567
Mobile	6.5173	20.4056	72.4214	0.2081	14.1024	0.3190	14.4214	3.7636	0.2938	4.0574		17,121.3878	17,121.3878	0.5075		17,132.0461
Total	**13.5336**	**21.4176**	**95.3400**	**0.2141**	**14.1024**	**0.5043**	**14.6067**	**3.7636**	**0.4791**	**4.2427**	**0.0000**	**18,140.0037**	**18,140.0037**	**0.5663**	**0.0179**	**18,157.4562**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.17	0.89	0.09	0.57	0.00	3.00	0.11	0.00	3.15	0.37	0.00	1.34	1.34	0.83	20.09	1.34

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/11/2017	3/24/2017	5	30	
2	Building Construction	Building Construction	3/25/2017	5/18/2018	5	300	
3	Paving	Paving	5/19/2018	6/15/2018	5	20	
4	Architectural Coating	Architectural Coating	6/16/2018	8/11/2018	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 550,800; Residential Outdoor: 183,600; Non-Residential Indoor: 15,000; Non-Residential Outdoor: 5,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	200.00	31.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.369 0	6,313.369 0	1.9344		6,353.991 5
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.6733**	**3.3172**	**11.9905**	**3.5965**	**3.0518**	**6.6483**		**6,313.369 0**	**6,313.369 0**	**1.9344**		**6,353.991 5**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0421	0.4567	0.4921	1.2600e-003	0.0378	8.7600e-003	0.0465	0.0108	8.0600e-003	0.0188		124.6276	124.6276	7.9000e-004		124.6443
Worker	0.0687	0.0812	1.0186	2.6800e-003	0.2236	1.3600e-003	0.2249	0.0593	1.2500e-003	0.0605		213.1313	213.1313	8.7800e-003		213.3156
Total	**0.1108**	**0.5379**	**1.5107**	**3.9400e-003**	**0.2613**	**0.0101**	**0.2714**	**0.0701**	**9.3100e-003**	**0.0794**		**337.7589**	**337.7589**	**9.5700e-003**		**337.9599**

3.2 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.369 0	6,313.369 0	1.9344		6,353.991 5
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.3826**	**3.3172**	**6.6998**	**1.4026**	**3.0518**	**4.4545**	**0.0000**	**6,313.369 0**	**6,313.369 0**	**1.9344**		**6,353.991 5**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0421	0.4567	0.4921	1.2600e-003	0.0378	8.7600e-003	0.0465	0.0108	8.0600e-003	0.0188		124.6276	124.6276	7.9000e-004		124.6443
Worker	0.0687	0.0812	1.0186	2.6800e-003	0.2236	1.3600e-003	0.2249	0.0593	1.2500e-003	0.0605		213.1313	213.1313	8.7800e-003		213.3156
Total	**0.1108**	**0.5379**	**1.5107**	**3.9400e-003**	**0.2613**	**0.0101**	**0.2714**	**0.0701**	**9.3100e-003**	**0.0794**		**337.7589**	**337.7589**	**9.5700e-003**		**337.9599**

Attachment: Appendix A - Air Quality and Greenhouse Gas (2340 : PA16-0039 Plot Plan)

3.3 Building Construction - 2017

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2175	2.3595	2.5426	6.5100e-003	0.1950	0.0453	0.2403	0.0557	0.0416	0.0973		643.9093	643.9093	4.1100e-003		643.9955
Worker	0.6865	0.8119	10.1861	0.0268	2.2355	0.0136	2.2491	0.5929	0.0125	0.6054		2,131.3126	2,131.3126	0.0878		2,133.1562
Total	**0.9040**	**3.1714**	**12.7287**	**0.0333**	**2.4306**	**0.0588**	**2.4894**	**0.6486**	**0.0542**	**0.7027**		**2,775.2219**	**2,775.2219**	**0.0919**		**2,777.1517**

Attachment: Appendix A - Air Quality and Greenhouse Gas (2340 : PA16-0039 Plot Plan)

3.3 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2175	2.3595	2.5426	6.5100e-003	0.1950	0.0453	0.2403	0.0557	0.0416	0.0973		643.9093	643.9093	4.1100e-003		643.9955
Worker	0.6865	0.8119	10.1861	0.0268	2.2355	0.0136	2.2491	0.5929	0.0125	0.6054		2,131.3126	2,131.3126	0.0878		2,133.1562
Total	**0.9040**	**3.1714**	**12.7287**	**0.0333**	**2.4306**	**0.0588**	**2.4894**	**0.6486**	**0.0542**	**0.7027**		**2,775.2219**	**2,775.2219**	**0.0919**		**2,777.1517**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.939 0	2,609.939 0	0.6387		2,623.351 7
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.939 0**	**2,609.939 0**	**0.6387**		**2,623.351 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2014	2.1585	2.4198	6.5000e-003	0.1950	0.0427	0.2377	0.0557	0.0393	0.0949		632.7052	632.7052	4.0700e-003		632.7908
Worker	0.6187	0.7340	9.2140	0.0268	2.2355	0.0134	2.2489	0.5929	0.0124	0.6053		2,050.444 8	2,050.444 8	0.0812		2,052.149 6
Total	**0.8201**	**2.8925**	**11.6338**	**0.0333**	**2.4305**	**0.0561**	**2.4866**	**0.6486**	**0.0516**	**0.7002**		**2,683.150 0**	**2,683.150 0**	**0.0853**		**2,684.940 4**

3.3 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.938 9	2,609.938 9	0.6387		2,623.351 7
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.938 9**	**2,609.938 9**	**0.6387**		**2,623.351 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2014	2.1585	2.4198	6.5000e-003	0.1950	0.0427	0.2377	0.0557	0.0393	0.0949		632.7052	632.7052	4.0700e-003		632.7908
Worker	0.6187	0.7340	9.2140	0.0268	2.2355	0.0134	2.2489	0.5929	0.0124	0.6053		2,050.444 8	2,050.444 8	0.0812		2,052.149 6
Total	**0.8201**	**2.8925**	**11.6338**	**0.0333**	**2.4305**	**0.0561**	**2.4866**	**0.6486**	**0.0516**	**0.7002**		**2,683.150 0**	**2,683.150 0**	**0.0853**		**2,684.940 4**

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.5240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1354**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0551	0.6911	2.0100e-003	0.1677	1.0000e-003	0.1687	0.0445	9.3000e-004	0.0454		153.7834	153.7834	6.0900e-003		153.9112
Total	**0.0464**	**0.0551**	**0.6911**	**2.0100e-003**	**0.1677**	**1.0000e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**153.7834**	**153.7834**	**6.0900e-003**		**153.9112**

3.4 Paving - 2018

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.269 5	2,245.269 5	0.6990		2,259.948 1
Paving	0.5240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1354**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.269 5**	**2,245.269 5**	**0.6990**		**2,259.948 1**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0551	0.6911	2.0100e-003	0.1677	1.0000e-003	0.1687	0.0445	9.3000e-004	0.0454		153.7834	153.7834	6.0900e-003		153.9112
Total	**0.0464**	**0.0551**	**0.6911**	**2.0100e-003**	**0.1677**	**1.0000e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**153.7834**	**153.7834**	**6.0900e-003**		**153.9112**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.9804					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**59.2790**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1238	0.1468	1.8428	5.3600e-003	0.4471	2.6800e-003	0.4498	0.1186	2.4800e-003	0.1211		410.0890	410.0890	0.0162		410.4299
Total	**0.1238**	**0.1468**	**1.8428**	**5.3600e-003**	**0.4471**	**2.6800e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**410.0890**	**410.0890**	**0.0162**		**410.4299**

3.5 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.9804					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**59.2790**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1238	0.1468	1.8428	5.3600e-003	0.4471	2.6800e-003	0.4498	0.1186	2.4800e-003	0.1211		410.0890	410.0890	0.0162		410.4299
Total	**0.1238**	**0.1468**	**1.8428**	**5.3600e-003**	**0.4471**	**2.6800e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**410.0890**	**410.0890**	**0.0162**		**410.4299**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.5173	20.4056	72.4214	0.2081	14.1024	0.3190	14.4214	3.7636	0.2938	4.0574		17,121.38 78	17,121.38 78	0.5075		17,132.04 61
Unmitigated	6.5173	20.4056	72.4214	0.2081	14.1024	0.3190	14.4214	3.7636	0.2938	4.0574		17,121.38 78	17,121.38 78	0.5075		17,132.04 61

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,792.48	1,947.52	1651.04	6,131,816	6,131,816
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	1,792.48	1,947.52	1,651.04	6,131,816	6,131,816

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.459583	0.069267	0.177530	0.170944	0.045911	0.007406	0.012759	0.044006	0.000935	0.001057	0.006483	0.000867	0.003251

5.0 Energy Detail
4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0877	0.7497	0.3190	4.7900e-003		0.0606	0.0606		0.0606	0.0606		957.0323	957.0323	0.0183	0.0176	962.8567
NaturalGas Unmitigated	0.1103	0.9424	0.4010	6.0200e-003		0.0762	0.0762		0.0762	0.0762		1,203.0422	1,203.0422	0.0231	0.0221	1,210.3637

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	10225.9	0.1103	0.9424	0.4010	6.0200e-003		0.0762	0.0762		0.0762	0.0762		1,203.0422	1,203.0422	0.0231	0.0221	1,210.3637
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1103**	**0.9424**	**0.4010**	**6.0200e-003**		**0.0762**	**0.0762**		**0.0762**	**0.0762**		**1,203.0422**	**1,203.0422**	**0.0231**	**0.0221**	**1,210.3637**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Low Rise	8.13477	0.0877	0.7497	0.3190	4.7900e-003		0.0606	0.0606		0.0606	0.0606		957.0323	957.0323	0.0183	0.0176	962.8567
Total		**0.0877**	**0.7497**	**0.3190**	**4.7900e-003**		**0.0606**	**0.0606**		**0.0606**	**0.0606**		**957.0323**	**957.0323**	**0.0183**	**0.0176**	**962.8567**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.9286	0.2623	22.5996	1.1800e-003		0.1247	0.1247		0.1247	0.1247	0.0000	61.5836	61.5836	0.0405	3.9000e-004	62.5534
Unmitigated	6.9286	0.2623	22.5996	1.1800e-003		0.1247	0.1247		0.1247	0.1247	0.0000	61.5836	61.5836	0.0405	3.9000e-004	62.5534

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6464					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.5836					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.9400e-003	0.0000	1.1000e-004	0.0000		1.3400e-003	1.3400e-003		1.3300e-003	1.3300e-003	0.0000	21.1765	21.1765	4.1000e-004	3.9000e-004	21.3054
Landscaping	0.6967	0.2623	22.5995	1.1800e-003		0.1233	0.1233		0.1233	0.1233		40.4071	40.4071	0.0401		41.2481
Total	**6.9286**	**0.2623**	**22.5996**	**1.1800e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**0.0000**	**61.5836**	**61.5836**	**0.0405**	**3.9000e-004**	**62.5534**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6464					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.5836					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.9400e-003	0.0000	1.1000e-004	0.0000		1.3400e-003	1.3400e-003		1.3300e-003	1.3300e-003	0.0000	21.1765	21.1765	4.1000e-004	3.9000e-004	21.3054
Landscaping	0.6967	0.2623	22.5995	1.1800e-003		0.1233	0.1233		0.1233	0.1233		40.4071	40.4071	0.0401		41.2481
Total	**6.9286**	**0.2623**	**22.5996**	**1.1800e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**0.0000**	**61.5836**	**61.5836**	**0.0405**	**3.9000e-004**	**62.5534**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Alessandro Apartments - Opening Year 2018

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	4.00	Acre	4.00	10,000.00	0
Apartments Low Rise	272.00	Dwelling Unit	15.47	272,000.00	778

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 272 Low Rise Apartments on 15.47 acres & 4 acres other asphalt surfaces

Construction Phase - Construction schedule provided by applicant.

Trips and VMT - 6 vendor trips added to Grading Phase to account for water truck emissions

Woodstoves - No woodstoves and 1 natural gas only fireplace

Construction Off-road Equipment Mitigation - Water Exposed Area 3x per day selected to account for SCAQMD's Rule 403 minimum requirements

Mobile Land Use Mitigation -

Energy Mitigation - Exceed Title 24 by 25%

Water Mitigation - Install Low-Flow faucets, toilets, and showers and use water-efficient irrigation systems

Waste Mitigation - 50% reduction in solid waste per SB 939 and 1374

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	PhaseEndDate	8/10/2018	8/11/2018
tblFireplaces	NumberGas	231.20	1.00
tblFireplaces	NumberNoFireplace	27.20	272.00
tblFireplaces	NumberWood	13.60	0.00
tblLandUse	LandUseSquareFeet	174,240.00	10,000.00
tblLandUse	LotAcreage	17.00	15.47
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblWoodstoves	NumberCatalytic	13.60	0.00
tblWoodstoves	NumberNoncatalytic	13.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.2093	70.1462	48.2464	0.0654	8.9346	3.3274	12.2620	3.6666	3.0612	6.7278	0.0000	6,631.660 9	6,631.660 9	1.9440	0.0000	6,672.485 0
2018	59.3964	26.2510	28.2330	0.0577	2.4305	1.5507	3.9812	0.6486	1.4567	2.1053	0.0000	5,110.553 6	5,110.553 6	0.7241	0.0000	5,125.759 9
Total	**65.6057**	**96.3972**	**76.4794**	**0.1231**	**11.3652**	**4.8781**	**16.2432**	**4.3151**	**4.5179**	**8.8331**	**0.0000**	**11,742.21 44**	**11,742.21 44**	**2.6681**	**0.0000**	**11,798.24 49**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	6.2093	70.1462	48.2464	0.0654	3.6439	3.3274	6.9713	1.4727	3.0612	4.5339	0.0000	6,631.660 9	6,631.660 9	1.9440	0.0000	6,672.485 0
2018	59.3964	26.2510	28.2330	0.0577	2.4305	1.5507	3.9812	0.6486	1.4567	2.1053	0.0000	5,110.5536	5,110.5536	0.7241	0.0000	5,125.759 9
Total	**65.6057**	**96.3972**	**76.4794**	**0.1231**	**6.0744**	**4.8781**	**10.9525**	**2.1213**	**4.5179**	**6.6392**	**0.0000**	**11,742.21 44**	**11,742.21 44**	**2.6681**	**0.0000**	**11,798.24 49**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**46.55**	**0.00**	**32.57**	**50.84**	**0.00**	**24.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.9286	0.2623	22.5996	1.1800e-003		0.1247	0.1247		0.1247	0.1247	0.0000	61.5836	61.5836	0.0405	3.9000e-004	62.5534
Energy	0.1103	0.9424	0.4010	6.0200e-003		0.0762	0.0762		0.0762	0.0762		1,203.0422	1,203.0422	0.0231	0.0221	1,210.3637
Mobile	6.3488	21.2605	67.7385	0.1941	14.1024	0.3201	14.4225	3.7636	0.2949	4.0584		16,035.9215	16,035.9215	0.5083		16,046.5947
Total	**13.3876**	**22.4652**	**90.7391**	**0.2013**	**14.1024**	**0.5210**	**14.6234**	**3.7636**	**0.4957**	**4.2593**	**0.0000**	**17,300.5472**	**17,300.5472**	**0.5718**	**0.0225**	**17,319.5118**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.9286	0.2623	22.5996	1.1800e-003		0.1247	0.1247		0.1247	0.1247	0.0000	61.5836	61.5836	0.0405	3.9000e-004	62.5534
Energy	0.0877	0.7497	0.3190	4.7900e-003		0.0606	0.0606		0.0606	0.0606		957.0323	957.0323	0.0183	0.0176	962.8567
Mobile	6.3488	21.2605	67.7385	0.1941	14.1024	0.3201	14.4225	3.7636	0.2949	4.0584		16,035.9215	16,035.9215	0.5083		16,046.5947
Total	**13.3651**	**22.2725**	**90.6571**	**0.2001**	**14.1024**	**0.5054**	**14.6078**	**3.7636**	**0.4801**	**4.2437**	**0.0000**	**17,054.5374**	**17,054.5374**	**0.5670**	**0.0179**	**17,072.0048**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.17	0.86	0.09	0.61	0.00	2.99	0.11	0.00	3.14	0.37	0.00	1.42	1.42	0.83	20.09	1.43

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/11/2017	3/24/2017	5	30	
2	Building Construction	Building Construction	3/25/2017	5/18/2018	5	300	
3	Paving	Paving	5/19/2018	6/15/2018	5	20	
4	Architectural Coating	Architectural Coating	6/16/2018	8/11/2018	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 550,800; Residential Outdoor: 183,600; Non-Residential Indoor: 15,000; Non-Residential Outdoor: 5,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	200.00	31.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.369 0	6,313.369 0	1.9344		6,353.991 5
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.6733**	**3.3172**	**11.9905**	**3.5965**	**3.0518**	**6.6483**		**6,313.369 0**	**6,313.369 0**	**1.9344**		**6,353.991 5**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0448	0.4678	0.5662	1.2500e-003	0.0378	8.8300e-003	0.0466	0.0108	8.1200e-003	0.0189		123.5456	123.5456	8.2000e-004		123.5629
Worker	0.0653	0.0864	0.8751	2.4500e-003	0.2236	1.3600e-003	0.2249	0.0593	1.2500e-003	0.0605		194.7462	194.7462	8.7800e-003		194.9306
Total	**0.1101**	**0.5542**	**1.4414**	**3.7000e-003**	**0.2613**	**0.0102**	**0.2715**	**0.0701**	**9.3700e-003**	**0.0795**		**318.2919**	**318.2919**	**9.6000e-003**		**318.4935**

Attachment: Appendix A - Air Quality and Greenhouse Gas (2340 : PA16-0039 Plot Plan)

3.2 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**3.3826**	**3.3172**	**6.6998**	**1.4026**	**3.0518**	**4.4545**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0448	0.4678	0.5662	1.2500e-003	0.0378	8.8300e-003	0.0466	0.0108	8.1200e-003	0.0189		123.5456	123.5456	8.2000e-004		123.5629
Worker	0.0653	0.0864	0.8751	2.4500e-003	0.2236	1.3600e-003	0.2249	0.0593	1.2500e-003	0.0605		194.7462	194.7462	8.7800e-003		194.9306
Total	**0.1101**	**0.5542**	**1.4414**	**3.7000e-003**	**0.2613**	**0.0102**	**0.2715**	**0.0701**	**9.3700e-003**	**0.0795**		**318.2919**	**318.2919**	**9.6000e-003**		**318.4935**

3.3 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.805 3	2,639.805 3	0.6497		2,653.449 0
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.805 3**	**2,639.805 3**	**0.6497**		**2,653.449 0**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2316	2.4170	2.9256	6.4600e-003	0.1950	0.0456	0.2407	0.0557	0.0420	0.0977		638.3191	638.3191	4.2500e-003		638.4084
Worker	0.6531	0.8641	8.7512	0.0245	2.2355	0.0136	2.2491	0.5929	0.0125	0.6054		1,947.462 2	1,947.462 2	0.0878		1,949.305 8
Total	**0.8847**	**3.2811**	**11.6768**	**0.0309**	**2.4306**	**0.0592**	**2.4898**	**0.6486**	**0.0545**	**0.7031**		**2,585.781 3**	**2,585.781 3**	**0.0920**		**2,587.714 2**

3.3 Building Construction - 2017

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2316	2.4170	2.9256	6.4600e-003	0.1950	0.0456	0.2407	0.0557	0.0420	0.0977		638.3191	638.3191	4.2500e-003		638.4084
Worker	0.6531	0.8641	8.7512	0.0245	2.2355	0.0136	2.2491	0.5929	0.0125	0.6054		1,947.4622	1,947.4622	0.0878		1,949.3058
Total	**0.8847**	**3.2811**	**11.6768**	**0.0309**	**2.4306**	**0.0592**	**2.4898**	**0.6486**	**0.0545**	**0.7031**		**2,585.7813**	**2,585.7813**	**0.0920**		**2,587.7142**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.939 0	2,609.939 0	0.6387		2,623.351 7
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.939 0**	**2,609.939 0**	**0.6387**		**2,623.351 7**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2141	2.2097	2.8083	6.4500e-003	0.1950	0.0430	0.2380	0.0557	0.0396	0.0953		627.1971	627.1971	4.2200e-003		627.2859
Worker	0.5871	0.7805	7.8921	0.0245	2.2355	0.0134	2.2489	0.5929	0.0124	0.6053		1,873.417 5	1,873.417 5	0.0812		1,875.122 3
Total	**0.8012**	**2.9902**	**10.7004**	**0.0309**	**2.4305**	**0.0564**	**2.4869**	**0.6486**	**0.0520**	**0.7005**		**2,500.614 6**	**2,500.614 6**	**0.0854**		**2,502.408 2**

3.3 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.938 9	2,609.938 9	0.6387		2,623.351 7
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.938 9**	**2,609.938 9**	**0.6387**		**2,623.351 7**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2141	2.2097	2.8083	6.4500e-003	0.1950	0.0430	0.2380	0.0557	0.0396	0.0953		627.1971	627.1971	4.2200e-003		627.2859
Worker	0.5871	0.7805	7.8921	0.0245	2.2355	0.0134	2.2489	0.5929	0.0124	0.6053		1,873.417 5	1,873.417 5	0.0812		1,875.122 3
Total	**0.8012**	**2.9902**	**10.7004**	**0.0309**	**2.4305**	**0.0564**	**2.4869**	**0.6486**	**0.0520**	**0.7005**		**2,500.614 6**	**2,500.614 6**	**0.0854**		**2,502.408 2**

3.4 Paving - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.269 5	2,245.269 5	0.6990		2,259.948 1
Paving	0.5240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1354**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.269 5**	**2,245.269 5**	**0.6990**		**2,259.948 1**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0440	0.0585	0.5919	1.8400e-003	0.1677	1.0000e-003	0.1687	0.0445	9.3000e-004	0.0454		140.5063	140.5063	6.0900e-003		140.6342
Total	**0.0440**	**0.0585**	**0.5919**	**1.8400e-003**	**0.1677**	**1.0000e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**140.5063**	**140.5063**	**6.0900e-003**		**140.6342**

3.4 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.269 5	2,245.269 5	0.6990		2,259.948 1
Paving	0.5240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1354**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.269 5**	**2,245.269 5**	**0.6990**		**2,259.948 1**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0440	0.0585	0.5919	1.8400e-003	0.1677	1.0000e-003	0.1687	0.0445	9.3000e-004	0.0454		140.5063	140.5063	6.0900e-003		140.6342
Total	**0.0440**	**0.0585**	**0.5919**	**1.8400e-003**	**0.1677**	**1.0000e-003**	**0.1687**	**0.0445**	**9.3000e-004**	**0.0454**		**140.5063**	**140.5063**	**6.0900e-003**		**140.6342**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	58.9804					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**59.2790**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1174	0.1561	1.5784	4.8900e-003	0.4471	2.6800e-003	0.4498	0.1186	2.4800e-003	0.1211		374.6835	374.6835	0.0162		375.0245
Total	**0.1174**	**0.1561**	**1.5784**	**4.8900e-003**	**0.4471**	**2.6800e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**374.6835**	**374.6835**	**0.0162**		**375.0245**

3.5 Architectural Coating - 2018

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	58.9804					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**59.2790**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1174	0.1561	1.5784	4.8900e-003	0.4471	2.6800e-003	0.4498	0.1186	2.4800e-003	0.1211		374.6835	374.6835	0.0162		375.0245
Total	**0.1174**	**0.1561**	**1.5784**	**4.8900e-003**	**0.4471**	**2.6800e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**374.6835**	**374.6835**	**0.0162**		**375.0245**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	6.3488	21.2605	67.7385	0.1941	14.1024	0.3201	14.4225	3.7636	0.2949	4.0584		16,035.92 15	16,035.92 15	0.5083		16,046.59 47
Unmitigated	6.3488	21.2605	67.7385	0.1941	14.1024	0.3201	14.4225	3.7636	0.2949	4.0584		16,035.92 15	16,035.92 15	0.5083		16,046.59 47

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,792.48	1,947.52	1651.04	6,131,816	6,131,816
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	1,792.48	1,947.52	1,651.04	6,131,816	6,131,816

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.459583	0.069267	0.177530	0.170944	0.045911	0.007406	0.012759	0.044006	0.000935	0.001057	0.006483	0.000867	0.003251

4.4 Fleet Mix
5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	0.0877	0.7497	0.3190	4.7900e-003		0.0606	0.0606		0.0606	0.0606		957.0323	957.0323	0.0183	0.0176	962.8567
NaturalGas Unmitigated	0.1103	0.9424	0.4010	6.0200e-003		0.0762	0.0762		0.0762	0.0762		1,203.0422	1,203.0422	0.0231	0.0221	1,210.3637

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	10225.9	0.1103	0.9424	0.4010	6.0200e-003		0.0762	0.0762		0.0762	0.0762		1,203.0422	1,203.0422	0.0231	0.0221	1,210.3637
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1103**	**0.9424**	**0.4010**	**6.0200e-003**		**0.0762**	**0.0762**		**0.0762**	**0.0762**		**1,203.0422**	**1,203.0422**	**0.0231**	**0.0221**	**1,210.3637**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	8.13477	0.0877	0.7497	0.3190	4.7900e-003		0.0606	0.0606		0.0606	0.0606		957.0323	957.0323	0.0183	0.0176	962.8567
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0877**	**0.7497**	**0.3190**	**4.7900e-003**		**0.0606**	**0.0606**		**0.0606**	**0.0606**		**957.0323**	**957.0323**	**0.0183**	**0.0176**	**962.8567**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.9286	0.2623	22.5996	1.1800e-003		0.1247	0.1247		0.1247	0.1247	0.0000	61.5836	61.5836	0.0405	3.9000e-004	62.5534
Unmitigated	6.9286	0.2623	22.5996	1.1800e-003		0.1247	0.1247		0.1247	0.1247	0.0000	61.5836	61.5836	0.0405	3.9000e-004	62.5534

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6464					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.5836					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.9400e-003	0.0000	1.1000e-004	0.0000		1.3400e-003	1.3400e-003		1.3300e-003	1.3300e-003	0.0000	21.1765	21.1765	4.1000e-004	3.9000e-004	21.3054
Landscaping	0.6967	0.2623	22.5995	1.1800e-003		0.1233	0.1233		0.1233	0.1233		40.4071	40.4071	0.0401		41.2481
Total	**6.9286**	**0.2623**	**22.5996**	**1.1800e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**0.0000**	**61.5836**	**61.5836**	**0.0405**	**3.9000e-004**	**62.5534**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6464					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.5836					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.9400e-003	0.0000	1.1000e-004	0.0000		1.3400e-003	1.3400e-003		1.3300e-003	1.3300e-003	0.0000	21.1765	21.1765	4.1000e-004	3.9000e-004	21.3054
Landscaping	0.6967	0.2623	22.5995	1.1800e-003		0.1233	0.1233		0.1233	0.1233		40.4071	40.4071	0.0401		41.2481
Total	**6.9286**	**0.2623**	**22.5996**	**1.1800e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**0.0000**	**61.5836**	**61.5836**	**0.0405**	**3.9000e-004**	**62.5534**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX B

CalEEMod Model Year 2018 Annual Printouts

Alessandro Apartments - Opening Year 2018

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	4.00	Acre	4.00	10,000.00	0
Apartments Low Rise	272.00	Dwelling Unit	15.47	272,000.00	778

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO_2 Intensity (lb/MWhr)	630.89	**CH_4 Intensity (lb/MWhr)**	0.029	**N_2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 272 Low Rise Apartments on 15.47 acres & 4 acres other asphalt surfaces

Construction Phase - Construction schedule provided by applicant.

Trips and VMT - 6 vendor trips added to Grading Phase to account for water truck emissions

Woodstoves - No woodstoves and 1 natural gas only fireplace

Construction Off-road Equipment Mitigation - Water Exposed Area 3x per day selected to account for SCAQMD's Rule 403 minimum requirements

Mobile Land Use Mitigation -

Energy Mitigation - Exceed Title 24 by 25%

Water Mitigation - Install Low-Flow faucets, toilets, and showers and use water-efficient irrigation systems

Waste Mitigation - 50% reduction in solid waste per SB 939 and 1374

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	PhaseEndDate	8/10/2018	8/11/2018
tblFireplaces	NumberGas	231.20	1.00
tblFireplaces	NumberNoFireplace	27.20	272.00
tblFireplaces	NumberWood	13.60	0.00
tblLandUse	LandUseSquareFeet	174,240.00	10,000.00
tblLandUse	LotAcreage	17.00	15.47
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblWoodstoves	NumberCatalytic	13.60	0.00
tblWoodstoves	NumberNoncatalytic	13.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.4875	4.0295	3.7444	6.7900e-003	0.3730	0.2339	0.6070	0.1189	0.2186	0.3375	0.0000	567.0504	567.0504	0.0937	0.0000	569.0189
2018	1.3811	1.5320	1.6502	3.3100e-003	0.1300	0.0900	0.2200	0.0347	0.0845	0.1192	0.0000	266.7754	266.7754	0.0400	0.0000	267.6158
Total	**1.8686**	**5.5615**	**5.3945**	**0.0101**	**0.5030**	**0.3239**	**0.8269**	**0.1536**	**0.3032**	**0.4567**	**0.0000**	**833.8259**	**833.8259**	**0.1338**	**0.0000**	**836.6347**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.4875	4.0295	3.7444	6.7900e-003	0.2937	0.2339	0.5276	0.0860	0.2186	0.3046	0.0000	567.0500	567.0500	0.0937	0.0000	569.0185
2018	1.3811	1.5320	1.6502	3.3100e-003	0.1300	0.0900	0.2200	0.0347	0.0845	0.1192	0.0000	266.7753	266.7753	0.0400	0.0000	267.6156
Total	**1.8686**	**5.5615**	**5.3945**	**0.0101**	**0.4236**	**0.3239**	**0.7475**	**0.1207**	**0.3032**	**0.4238**	**0.0000**	**833.8253**	**833.8253**	**0.1338**	**0.0000**	**836.6341**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**15.78**	**0.00**	**9.60**	**21.43**	**0.00**	**7.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2241	0.0328	2.8249	1.5000e-004		0.0154	0.0154		0.0154	0.0154	0.0000	4.8222	4.8222	4.5500e-003	0.0000	4.9191
Energy	0.0201	0.1720	0.0732	1.1000e-003		0.0139	0.0139		0.0139	0.0139	0.0000	516.5840	516.5840	0.0184	6.6700e-003	519.0384
Mobile	1.0185	3.6428	11.7152	0.0329	2.3260	0.0535	2.3795	0.6216	0.0493	0.6709	0.0000	2,461.7829	2,461.7829	0.0772	0.0000	2,463.4034
Waste						0.0000	0.0000		0.0000	0.0000	25.3982	0.0000	25.3982	1.5010	0.0000	56.9191
Water						0.0000	0.0000		0.0000	0.0000	5.6223	101.5558	107.1782	0.5821	0.0146	123.9294
Total	**2.2627**	**3.8476**	**14.6133**	**0.0341**	**2.3260**	**0.0829**	**2.4089**	**0.6216**	**0.0786**	**0.7002**	**31.0206**	**3,084.7450**	**3,115.7655**	**2.1833**	**0.0213**	**3,168.2092**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2241	0.0328	2.8249	1.5000e-004		0.0154	0.0154		0.0154	0.0154	0.0000	4.8222	4.8222	4.5500e-003	0.0000	4.9191
Energy	0.0160	0.1368	0.0582	8.7000e-004		0.0111	0.0111		0.0111	0.0111	0.0000	463.4669	463.4669	0.0171	5.8100e-003	465.6249
Mobile	1.0185	3.6428	11.7152	0.0329	2.3260	0.0535	2.3795	0.6216	0.0493	0.6709	0.0000	2,461.7829	2,461.7829	0.0772	0.0000	2,463.4034
Waste						0.0000	0.0000		0.0000	0.0000	12.6991	0.0000	12.6991	0.7505	0.0000	28.4595
Water						0.0000	0.0000		0.0000	0.0000	4.4979	86.1821	90.6800	0.4659	0.0117	104.0931
Total	**2.2586**	**3.8124**	**14.5983**	**0.0339**	**2.3260**	**0.0800**	**2.4060**	**0.6216**	**0.0758**	**0.6974**	**17.1970**	**3,016.2541**	**3,033.4511**	**1.3151**	**0.0175**	**3,066.4999**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.18	0.91	0.10	0.67	0.00	3.44	0.12	0.00	3.62	0.41	44.56	2.22	2.64	39.76	17.63	3.21

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/11/2017	3/24/2017	5	30	
2	Building Construction	Building Construction	3/25/2017	5/18/2018	5	300	
3	Paving	Paving	5/19/2018	6/15/2018	5	20	
4	Architectural Coating	Architectural Coating	6/16/2018	8/11/2018	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 550,800; Residential Outdoor: 183,600; Non-Residential Indoor: 15,000; Non-Residential Outdoor: 5,000 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	200.00	31.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9109	85.9109	0.0263	0.0000	86.4637
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.1301**	**0.0498**	**0.1799**	**0.0540**	**0.0458**	**0.0997**	**0.0000**	**85.9109**	**85.9109**	**0.0263**	**0.0000**	**86.4637**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.7000e-004	7.1600e-003	8.7200e-003	2.0000e-005	5.6000e-004	1.3000e-004	6.9000e-004	1.6000e-004	1.2000e-004	2.8000e-004	0.0000	1.6897	1.6897	1.0000e-005	0.0000	1.6900
Worker	9.2000e-004	1.3500e-003	0.0136	4.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	8.9000e-004	0.0000	2.6862	2.6862	1.2000e-004	0.0000	2.6888
Total	**1.5900e-003**	**8.5100e-003**	**0.0223**	**6.0000e-005**	**3.8600e-003**	**1.5000e-004**	**4.0100e-003**	**1.0400e-003**	**1.4000e-004**	**1.1700e-003**	**0.0000**	**4.3760**	**4.3760**	**1.3000e-004**	**0.0000**	**4.3787**

3.2 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0507	0.0000	0.0507	0.0210	0.0000	0.0210	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0915	1.0439	0.7021	9.3000e-004		0.0498	0.0498		0.0458	0.0458	0.0000	85.9108	85.9108	0.0263	0.0000	86.4636
Total	**0.0915**	**1.0439**	**0.7021**	**9.3000e-004**	**0.0507**	**0.0498**	**0.1005**	**0.0210**	**0.0458**	**0.0668**	**0.0000**	**85.9108**	**85.9108**	**0.0263**	**0.0000**	**86.4636**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.7000e-004	7.1600e-003	8.7200e-003	2.0000e-005	5.6000e-004	1.3000e-004	6.9000e-004	1.6000e-004	1.2000e-004	2.8000e-004	0.0000	1.6897	1.6897	1.0000e-005	0.0000	1.6900
Worker	9.2000e-004	1.3500e-003	0.0136	4.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	8.9000e-004	0.0000	2.6862	2.6862	1.2000e-004	0.0000	2.6888
Total	**1.5900e-003**	**8.5100e-003**	**0.0223**	**6.0000e-005**	**3.8600e-003**	**1.5000e-004**	**4.0100e-003**	**1.0400e-003**	**1.4000e-004**	**1.1700e-003**	**0.0000**	**4.3760**	**4.3760**	**1.3000e-004**	**0.0000**	**4.3787**

3.3 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3102	2.6406	1.8129	2.6800e-003		0.1781	0.1781		0.1673	0.1673	0.0000	239.4791	239.4791	0.0589	0.0000	240.7169
Total	**0.3102**	**2.6406**	**1.8129**	**2.6800e-003**		**0.1781**	**0.1781**		**0.1673**	**0.1673**	**0.0000**	**239.4791**	**239.4791**	**0.0589**	**0.0000**	**240.7169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0229	0.2465	0.3004	6.5000e-004	0.0192	4.5400e-003	0.0238	5.5000e-003	4.1800e-003	9.6800e-003	0.0000	58.2015	58.2015	3.8000e-004	0.0000	58.2094
Worker	0.0613	0.0901	0.9067	2.4800e-003	0.2198	1.3600e-003	0.2212	0.0584	1.2500e-003	0.0596	0.0000	179.0830	179.0830	7.9600e-003	0.0000	179.2502
Total	**0.0842**	**0.3366**	**1.2071**	**3.1300e-003**	**0.2391**	**5.9000e-003**	**0.2450**	**0.0639**	**5.4300e-003**	**0.0693**	**0.0000**	**237.2845**	**237.2845**	**8.3400e-003**	**0.0000**	**237.4597**

3.3 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3102	2.6406	1.8129	2.6800e-003		0.1781	0.1781		0.1673	0.1673	0.0000	239.4788	239.4788	0.0589	0.0000	240.7166
Total	**0.3102**	**2.6406**	**1.8129**	**2.6800e-003**		**0.1781**	**0.1781**		**0.1673**	**0.1673**	**0.0000**	**239.4788**	**239.4788**	**0.0589**	**0.0000**	**240.7166**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0229	0.2465	0.3004	6.5000e-004	0.0192	4.5400e-003	0.0238	5.5000e-003	4.1800e-003	9.6800e-003	0.0000	58.2015	58.2015	3.8000e-004	0.0000	58.2094
Worker	0.0613	0.0901	0.9067	2.4800e-003	0.2198	1.3600e-003	0.2212	0.0584	1.2500e-003	0.0596	0.0000	179.0830	179.0830	7.9600e-003	0.0000	179.2502
Total	**0.0842**	**0.3366**	**1.2071**	**3.1300e-003**	**0.2391**	**5.9000e-003**	**0.2450**	**0.0639**	**5.4300e-003**	**0.0693**	**0.0000**	**237.2845**	**237.2845**	**8.3400e-003**	**0.0000**	**237.4597**

Attachment: Appendix A - Air Quality and Greenhouse Gas (2340 : PA16-0039 Plot Plan)

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1334	1.1630	0.8766	1.3400e-003		0.0747	0.0747		0.0702	0.0702	0.0000	118.3848	118.3848	0.0290	0.0000	118.9932
Total	**0.1334**	**1.1630**	**0.8766**	**1.3400e-003**		**0.0747**	**0.0747**		**0.0702**	**0.0702**	**0.0000**	**118.3848**	**118.3848**	**0.0290**	**0.0000**	**118.9932**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0106	0.1127	0.1440	3.2000e-004	9.6100e-003	2.1400e-003	0.0118	2.7500e-003	1.9700e-003	4.7200e-003	0.0000	28.5941	28.5941	1.9000e-004	0.0000	28.5980
Worker	0.0275	0.0407	0.4087	1.2400e-003	0.1099	6.7000e-004	0.1106	0.0292	6.2000e-004	0.0298	0.0000	86.1381	86.1381	3.6800e-003	0.0000	86.2155
Total	**0.0381**	**0.1534**	**0.5527**	**1.5600e-003**	**0.1195**	**2.8100e-003**	**0.1223**	**0.0319**	**2.5900e-003**	**0.0345**	**0.0000**	**114.7322**	**114.7322**	**3.8700e-003**	**0.0000**	**114.8135**

Attachment: Appendix A - Air Quality and Greenhouse Gas (2340 : PA16-0039 Plot Plan)

3.3 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1334	1.1630	0.8766	1.3400e-003		0.0747	0.0747		0.0702	0.0702	0.0000	118.3847	118.3847	0.0290	0.0000	118.9931
Total	**0.1334**	**1.1630**	**0.8766**	**1.3400e-003**		**0.0747**	**0.0747**		**0.0702**	**0.0702**	**0.0000**	**118.3847**	**118.3847**	**0.0290**	**0.0000**	**118.9931**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0106	0.1127	0.1440	3.2000e-004	9.6100e-003	2.1400e-003	0.0118	2.7500e-003	1.9700e-003	4.7200e-003	0.0000	28.5941	28.5941	1.9000e-004	0.0000	28.5980
Worker	0.0275	0.0407	0.4087	1.2400e-003	0.1099	6.7000e-004	0.1106	0.0292	6.2000e-004	0.0298	0.0000	86.1381	86.1381	3.6800e-003	0.0000	86.2155
Total	**0.0381**	**0.1534**	**0.5527**	**1.5600e-003**	**0.1195**	**2.8100e-003**	**0.1223**	**0.0319**	**2.5900e-003**	**0.0345**	**0.0000**	**114.7322**	**114.7322**	**3.8700e-003**	**0.0000**	**114.8135**

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving	5.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0214**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	6.1000e-004	6.1300e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2921	1.2921	6.0000e-005	0.0000	1.2932
Total	**4.1000e-004**	**6.1000e-004**	**6.1300e-003**	**2.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.2921**	**1.2921**	**6.0000e-005**	**0.0000**	**1.2932**

3.4 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1716	0.1449	2.2000e-004		9.3900e-003	9.3900e-003		8.6400e-003	8.6400e-003	0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving	5.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0214**	**0.1716**	**0.1449**	**2.2000e-004**		**9.3900e-003**	**9.3900e-003**		**8.6400e-003**	**8.6400e-003**	**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	6.1000e-004	6.1300e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.2921	1.2921	6.0000e-005	0.0000	1.2932
Total	**4.1000e-004**	**6.1000e-004**	**6.1300e-003**	**2.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.2921**	**1.2921**	**6.0000e-005**	**0.0000**	**1.2932**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating	1.1796					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9700e-003	0.0401	0.0371	6.0000e-005		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003	0.0000	5.1065	5.1065	4.9000e-004	0.0000	5.1167
Total	**1.1856**	**0.0401**	**0.0371**	**6.0000e-005**		**3.0100e-003**	**3.0100e-003**		**3.0100e-003**	**3.0100e-003**	**0.0000**	**5.1065**	**5.1065**	**4.9000e-004**	**0.0000**	**5.1167**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-003	3.2600e-003	0.0327	1.0000e-004	8.7900e-003	5.0000e-005	8.8500e-003	2.3300e-003	5.0000e-005	2.3800e-003	0.0000	6.8911	6.8911	2.9000e-004	0.0000	6.8972
Total	**2.2000e-003**	**3.2600e-003**	**0.0327**	**1.0000e-004**	**8.7900e-003**	**5.0000e-005**	**8.8500e-003**	**2.3300e-003**	**5.0000e-005**	**2.3800e-003**	**0.0000**	**6.8911**	**6.8911**	**2.9000e-004**	**0.0000**	**6.8972**

3.5 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1796					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9700e-003	0.0401	0.0371	6.0000e-005		3.0100e-003	3.0100e-003		3.0100e-003	3.0100e-003	0.0000	5.1065	5.1065	4.9000e-004	0.0000	5.1167
Total	**1.1856**	**0.0401**	**0.0371**	**6.0000e-005**		**3.0100e-003**	**3.0100e-003**		**3.0100e-003**	**3.0100e-003**	**0.0000**	**5.1065**	**5.1065**	**4.9000e-004**	**0.0000**	**5.1167**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-003	3.2600e-003	0.0327	1.0000e-004	8.7900e-003	5.0000e-005	8.8500e-003	2.3300e-003	5.0000e-005	2.3800e-003	0.0000	6.8911	6.8911	2.9000e-004	0.0000	6.8972
Total	**2.2000e-003**	**3.2600e-003**	**0.0327**	**1.0000e-004**	**8.7900e-003**	**5.0000e-005**	**8.8500e-003**	**2.3300e-003**	**5.0000e-005**	**2.3800e-003**	**0.0000**	**6.8911**	**6.8911**	**2.9000e-004**	**0.0000**	**6.8972**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0185	3.6428	11.7152	0.0329	2.3260	0.0535	2.3795	0.6216	0.0493	0.6709	0.0000	2,461.7829	2,461.7829	0.0772	0.0000	2,463.4034
Unmitigated	1.0185	3.6428	11.7152	0.0329	2.3260	0.0535	2.3795	0.6216	0.0493	0.6709	0.0000	2,461.7829	2,461.7829	0.0772	0.0000	2,463.4034

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,792.48	1,947.52	1651.04	6,131,816	6,131,816
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	1,792.48	1,947.52	1,651.04	6,131,816	6,131,816

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.459583	0.069267	0.177530	0.170944	0.045911	0.007406	0.012759	0.044006	0.000935	0.001057	0.006483	0.000867	0.003251

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	305.0195	305.0195	0.0140	2.9000e-003	306.2132
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	317.4069	317.4069	0.0146	3.0200e-003	318.6491
NaturalGas Mitigated	0.0160	0.1368	0.0582	8.7000e-004		0.0111	0.0111		0.0111	0.0111	0.0000	158.4474	158.4474	3.0400e-003	2.9000e-003	159.4117
NaturalGas Unmitigated	0.0201	0.1720	0.0732	1.1000e-003		0.0139	0.0139		0.0139	0.0139	0.0000	199.1771	199.1771	3.8200e-003	3.6500e-003	200.3893

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.73244e+006	0.0201	0.1720	0.0732	1.1000e-003		0.0139	0.0139		0.0139	0.0139	0.0000	199.1771	199.1771	3.8200e-003	3.6500e-003	200.3893
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0201**	**0.1720**	**0.0732**	**1.1000e-003**		**0.0139**	**0.0139**		**0.0139**	**0.0139**	**0.0000**	**199.1771**	**199.1771**	**3.8200e-003**	**3.6500e-003**	**200.3893**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Low Rise	2.96919e+006	0.0160	0.1368	0.0582	8.7000e-004		0.0111	0.0111		0.0111	0.0111	0.0000	158.4474	158.4474	3.0400e-003	2.9000e-003	159.4117
Total		**0.0160**	**0.1368**	**0.0582**	**8.7000e-004**		**0.0111**	**0.0111**		**0.0111**	**0.0111**	**0.0000**	**158.4474**	**158.4474**	**3.0400e-003**	**2.9000e-003**	**159.4117**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.10917e +006	317.4069	0.0146	3.0200e-003	318.6491
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**317.4069**	**0.0146**	**3.0200e-003**	**318.6491**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.06588e +006	305.0195	0.0140	2.9000e-003	306.2132
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**305.0195**	**0.0140**	**2.9000e-003**	**306.2132**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2241	0.0328	2.8249	1.5000e-004		0.0154	0.0154		0.0154	0.0154	0.0000	4.8222	4.8222	4.5500e-003	0.0000	4.9191
Unmitigated	1.2241	0.0328	2.8249	1.5000e-004		0.0154	0.0154		0.0154	0.0154	0.0000	4.8222	4.8222	4.5500e-003	0.0000	4.9191

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1180					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.0000e-005	0.0000	0.0000	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2401	0.2401	0.0000	0.0000	0.2416
Landscaping	0.0871	0.0328	2.8249	1.5000e-004		0.0154	0.0154		0.0154	0.0154	0.0000	4.5821	4.5821	4.5400e-003	0.0000	4.6775
Total	**1.2241**	**0.0328**	**2.8249**	**1.5000e-004**		**0.0154**	**0.0154**		**0.0154**	**0.0154**	**0.0000**	**4.8222**	**4.8222**	**4.5400e-003**	**0.0000**	**4.9191**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1180					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.0000e-005	0.0000	0.0000	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2401	0.2401	0.0000	0.0000	0.2416
Landscaping	0.0871	0.0328	2.8249	1.5000e-004		0.0154	0.0154		0.0154	0.0154	0.0000	4.5821	4.5821	4.5400e-003	0.0000	4.6775
Total	**1.2241**	**0.0328**	**2.8249**	**1.5000e-004**		**0.0154**	**0.0154**		**0.0154**	**0.0154**	**0.0000**	**4.8222**	**4.8222**	**4.5400e-003**	**0.0000**	**4.9191**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	90.6800	0.4659	0.0117	104.0931
Unmitigated	107.1782	0.5821	0.0146	123.9294

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	17.7219 / 11.1725	107.1782	0.5821	0.0146	123.9294
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**107.1782**	**0.5821**	**0.0146**	**123.9294**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	14.1775 / 10.491	90.6800	0.4659	0.0117	104.0931
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**90.6800**	**0.4659**	**0.0117**	**104.0931**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.6991	0.7505	0.0000	28.4595
Unmitigated	25.3982	1.5010	0.0000	56.9191

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	125.12	25.3982	1.5010	0.0000	56.9191
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**25.3982**	**1.5010**	**0.0000**	**56.9191**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	62.56	12.6991	0.7505	0.0000	28.4595
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**12.6991**	**0.7505**	**0.0000**	**28.4595**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX C

CalEEMod Model Year 2020 Annual Printouts

Alessandro Apartments - Year 2020

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	4.00	Acre	4.00	10,000.00	0
Apartments Low Rise	272.00	Dwelling Unit	15.47	272,000.00	778

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 272 Low Rise Apartments on 15.47 acres & 4 acres other asphalt surfaces

Construction Phase - Construction schedule provided by applicant.

Trips and VMT - 6 vendor trips added to Grading Phase to account for water truck emissions

Woodstoves - No woodstoves and 1 natural gas only fireplace

Construction Off-road Equipment Mitigation - Water Exposed Area 3x per day selected to account for SCAQMD's Rule 403 minimum requirements

Mobile Land Use Mitigation - Increase Density 13.97 DU/ac; Increase Transit Access 0.01 mi; Improve Ped Network on Project Site

Energy Mitigation - 50% improvement to Title 24

Water Mitigation - Install low-flow faucets, toilets, and showers and use water-efficient irrigation systems

Waste Mitigation - 75% reduction in waste per AB 341

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	PhaseEndDate	8/10/2018	8/11/2018
tblFireplaces	NumberGas	231.20	1.00
tblFireplaces	NumberNoFireplace	27.20	272.00
tblFireplaces	NumberWood	13.60	0.00
tblLandUse	LandUseSquareFeet	174,240.00	10,000.00
tblLandUse	LotAcreage	17.00	15.47
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblWoodstoves	NumberCatalytic	13.60	0.00
tblWoodstoves	NumberNoncatalytic	13.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	567.0504	567.0504	0.0937	0.0000	569.0189
2018											0.0000	266.7754	266.7754	0.0400	0.0000	267.6158
Total											**0.0000**	**833.8259**	**833.8259**	**0.1338**	**0.0000**	**836.6347**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	567.0500	567.0500	0.0937	0.0000	569.0185
2018											0.0000	266.7753	266.7753	0.0400	0.0000	267.6156
Total											**0.0000**	**833.8253**	**833.8253**	**0.1338**	**0.0000**	**836.6341**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	4.8222	4.8222	4.4700e-003	0.0000	4.9175
Energy											0.0000	516.5840	516.5840	0.0184	6.6700e-003	519.0384
Mobile											0.0000	2,305.8201	2,305.8201	0.0682	0.0000	2,307.2520
Waste											25.3982	0.0000	25.3982	1.5010	0.0000	56.9191
Water											5.6223	101.5558	107.1782	0.5821	0.0146	123.9294
Total											**31.0206**	**2,928.7822**	**2,959.8028**	**2.1742**	**0.0213**	**3,012.0563**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	4.8222	4.8222	4.4700e-003	0.0000	4.9175
Energy											0.0000	410.3498	410.3498	0.0157	4.9400e-003	412.2114
Mobile											0.0000	2,061.3179	2,061.3179	0.0614	0.0000	2,062.6072
Waste											6.3496	0.0000	6.3496	0.3753	0.0000	14.2298
Water											4.4979	86.1821	90.6800	0.4659	0.0117	104.0931
Total											**10.8474**	**2,562.6720**	**2,573.5194**	**0.9227**	**0.0167**	**2,598.0589**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**65.03**	**12.50**	**13.05**	**57.56**	**21.72**	**13.74**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/11/2017	3/24/2017	5	30	
2	Building Construction	Building Construction	3/25/2017	5/18/2018	5	300	
3	Paving	Paving	5/19/2018	6/15/2018	5	20	
4	Architectural Coating	Architectural Coating	6/16/2018	8/11/2018	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 550,800; Residential Outdoor: 183,600; Non-Residential Indoor: 15,000; Non-Residential Outdoor: 5,000 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	200.00	31.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	85.9109	85.9109	0.0263	0.0000	86.4637
Total											**0.0000**	**85.9109**	**85.9109**	**0.0263**	**0.0000**	**86.4637**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	1.6897	1.6897	1.0000e-005	0.0000	1.6900
Worker											0.0000	2.6862	2.6862	1.2000e-004	0.0000	2.6888
Total											**0.0000**	**4.3760**	**4.3760**	**1.3000e-004**	**0.0000**	**4.3787**

3.2 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	85.9108	85.9108	0.0263	0.0000	86.4636
Total											**0.0000**	**85.9108**	**85.9108**	**0.0263**	**0.0000**	**86.4636**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	1.6897	1.6897	1.0000e-005	0.0000	1.6900
Worker											0.0000	2.6862	2.6862	1.2000e-004	0.0000	2.6888
Total											**0.0000**	**4.3760**	**4.3760**	**1.3000e-004**	**0.0000**	**4.3787**

3.3 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	239.4791	239.4791	0.0589	0.0000	240.7169
Total											**0.0000**	**239.4791**	**239.4791**	**0.0589**	**0.0000**	**240.7169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	58.2015	58.2015	3.8000e-004	0.0000	58.2094
Worker											0.0000	179.0830	179.0830	7.9600e-003	0.0000	179.2502
Total											**0.0000**	**237.2845**	**237.2845**	**8.3400e-003**	**0.0000**	**237.4597**

3.3 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	239.4788	239.4788	0.0589	0.0000	240.7166
Total											**0.0000**	**239.4788**	**239.4788**	**0.0589**	**0.0000**	**240.7166**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	58.2015	58.2015	3.8000e-004	0.0000	58.2094
Worker											0.0000	179.0830	179.0830	7.9600e-003	0.0000	179.2502
Total											**0.0000**	**237.2845**	**237.2845**	**8.3400e-003**	**0.0000**	**237.4597**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	118.3848	118.3848	0.0290	0.0000	118.9932
Total											**0.0000**	**118.3848**	**118.3848**	**0.0290**	**0.0000**	**118.9932**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	28.5941	28.5941	1.9000e-004	0.0000	28.5980
Worker											0.0000	86.1381	86.1381	3.6800e-003	0.0000	86.2155
Total											**0.0000**	**114.7322**	**114.7322**	**3.8700e-003**	**0.0000**	**114.8135**

3.3 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	118.3847	118.3847	0.0290	0.0000	118.9931
Total											**0.0000**	**118.3847**	**118.3847**	**0.0290**	**0.0000**	**118.9931**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	28.5941	28.5941	1.9000e-004	0.0000	28.5980
Worker											0.0000	86.1381	86.1381	3.6800e-003	0.0000	86.2155
Total											**0.0000**	**114.7322**	**114.7322**	**3.8700e-003**	**0.0000**	**114.8135**

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.2921	1.2921	6.0000e-005	0.0000	1.2932
Total											**0.0000**	**1.2921**	**1.2921**	**6.0000e-005**	**0.0000**	**1.2932**

3.4 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	20.3687	20.3687	6.3400e-003	0.0000	20.5019
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**20.3687**	**20.3687**	**6.3400e-003**	**0.0000**	**20.5019**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.2921	1.2921	6.0000e-005	0.0000	1.2932
Total											**0.0000**	**1.2921**	**1.2921**	**6.0000e-005**	**0.0000**	**1.2932**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	5.1065	5.1065	4.9000e-004	0.0000	5.1167
Total											**0.0000**	**5.1065**	**5.1065**	**4.9000e-004**	**0.0000**	**5.1167**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	6.8911	6.8911	2.9000e-004	0.0000	6.8972
Total											**0.0000**	**6.8911**	**6.8911**	**2.9000e-004**	**0.0000**	**6.8972**

3.5 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	5.1065	5.1065	4.9000e-004	0.0000	5.1167
Total											**0.0000**	**5.1065**	**5.1065**	**4.9000e-004**	**0.0000**	**5.1167**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	6.8911	6.8911	2.9000e-004	0.0000	6.8972
Total											**0.0000**	**6.8911**	**6.8911**	**2.9000e-004**	**0.0000**	**6.8972**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	2,061.317 9	2,061.317 9	0.0614	0.0000	2,062.607 2
Unmitigated											0.0000	2,305.820 1	2,305.820 1	0.0682	0.0000	2,307.252 0

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,792.48	1,947.52	1651.04	6,131,816	5,463,448
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	1,792.48	1,947.52	1,651.04	6,131,816	5,463,448

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.457065	0.068684	0.178597	0.172280	0.046891	0.007460	0.012475	0.043976	0.000902	0.001056	0.006515	0.000828	0.003272

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	292.6320	292.6320	0.0135	2.7800e-003	293.7772
Electricity Unmitigated											0.0000	317.4069	317.4069	0.0146	3.0200e-003	318.6491
NaturalGas Mitigated											0.0000	117.7177	117.7177	2.2600e-003	2.1600e-003	118.4342
NaturalGas Unmitigated											0.0000	199.1771	199.1771	3.8200e-003	3.6500e-003	200.3893

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.73244e+006											0.0000	199.1771	199.1771	3.8200e-003	3.6500e-003	200.3893
Other Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**199.1771**	**199.1771**	**3.8200e-003**	**3.6500e-003**	**200.3893**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Low Rise	2.20595e+006											0.0000	117.7177	117.7177	2.2600e-003	2.1600e-003	118.4342
Total												**0.0000**	**117.7177**	**117.7177**	**2.2600e-003**	**2.1600e-003**	**118.4342**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.10917e+006	317.4069	0.0146	3.0200e-003	318.6491
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**317.4069**	**0.0146**	**3.0200e-003**	**318.6491**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.02259e+006	292.6320	0.0135	2.7800e-003	293.7772
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**292.6320**	**0.0135**	**2.7800e-003**	**293.7772**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	4.8222	4.8222	4.4700e-003	0.0000	4.9175
Unmitigated											0.0000	4.8222	4.8222	4.4700e-003	0.0000	4.9175

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	0.2401	0.2401	0.0000	0.0000	0.2416
Landscaping											0.0000	4.5821	4.5821	4.4700e-003	0.0000	4.6759
Total											**0.0000**	**4.8222**	**4.8222**	**4.4700e-003**	**0.0000**	**4.9175**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	0.2401	0.2401	0.0000	0.0000	0.2416
Landscaping											0.0000	4.5821	4.5821	4.4700e-003	0.0000	4.6759
Total											**0.0000**	**4.8222**	**4.8222**	**4.4700e-003**	**0.0000**	**4.9175**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	90.6800	0.4659	0.0117	104.0931
Unmitigated	107.1782	0.5821	0.0146	123.9294

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	17.7219 / 11.1725	107.1782	0.5821	0.0146	123.9294
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**107.1782**	**0.5821**	**0.0146**	**123.9294**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	14.1775 / 10.491	90.6800	0.4659	0.0117	104.0931
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**90.6800**	**0.4659**	**0.0117**	**104.0931**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.3496	0.3753	0.0000	14.2298
Unmitigated	25.3982	1.5010	0.0000	56.9191

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	125.12	25.3982	1.5010	0.0000	56.9191
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**25.3982**	**1.5010**	**0.0000**	**56.9191**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	31.28	6.3496	0.3753	0.0000	14.2298
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**6.3496**	**0.3753**	**0.0000**	**14.2298**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix B: Focused Western Burrowing Owl Survey

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Focused Western Burrowing Owl Survey

(Athene cunicularia)

±20-acre Site

APNs: 484-020-25, 484-020-18, 484-020-006

Site Location:
City of Moreno Valley
Riverside County
Sunnymead 7.5-minute USGS Quadrangle Map
Township 3 South, Range 3 West, Section 17

Prepared for:

Prepared by:
Scott Cameron
Ecological Sciences, Inc.
601 Glade Drive
Santa Paula, CA 93060
805.921.0583
scameron@ecosciencesinc.com

Total Area Surveyed:
±20 acres

Survey Conducted by:
Scott Cameron

Survey Conducted On:
June 18-22, 2016

Report Date:
July 3, 2016

ECOLOGICAL SCIENCES, inc.

July 3, 2016

Robert B Lattanzio
LATCO Enterprises
940 Calle Negocio Ste 200
San Clemente, CA 92673

SUBJECT: ***Results of Focused Burrowing Owl Surveys; ±20-acre Site; APNs: 484-020-25, 484-020-18, 484-020-006; City of Moreno Valley, Riverside County, California***

Dear Robert:

This letter report presents findings of a focused survey conducted to evaluate the presence/absence of the burrowing owl (*Athene cunicularia* -BUOW) on a ±20-acre site. Survey results are intended to provide the project applicant specific biological information regarding the BUOW in support of the environmental review process.

Introduction

The ±20-acre site (consisting of 2 parcels) is located in Riverside County, California (***Plate 1***). Specifically, the site is located south of Alessandro Boulevard, east of Perris Boulevard, and north of Brodiaea Avenue in the City of Moreno Valley. The site occurs on the "Sunnymead" USGS 7.5-minute quadrangle map, Township 3 South, Range 3 West, comprising a portion of Section 17 (***Plate 2***). A site vicinity aerial is illustrated in ***Plate 3.***

Projects proposed in the area that contain potentially suitable habitat to support sensitive biological resources such as the BUOW must demonstrate to reviewing agencies that potential project-related impacts are adequately addressed and mitigated pursuant to the California Environmental Quality Act (CEQA) and MSHCP guidelines as part of project approval. We understand that the study area is not located within a Multiple Species Habitat Conservation Plan (MSHCP) Criteria Area. However the site is located within a MSHCP Additional Survey Needs and Procedures survey area (MSHCP Section 6.3.2) requiring a BUOW habitat assessment. If potentially suitable habitat is present, focused surveys are required.

Selected Species Overview

The western burrowing owl (BUOW) is a small ground-dwelling owl with white eyebrows, yellow eyes, and long legs. The owl's head, back, and wings are sand-colored, with white barring on the breast and belly. Male BUOW are larger and lighter than females. The BUOW ranges across most of western North America from 200 feet below sea level to 9,000 feet above sea level (CBOC 2000). Although the BUOW is migratory throughout much of its range, in central and southern California, owls are predominantly non-migratory (CBOC 2000). In coastal southern California, they occur in annual and perennial grasslands, agricultural areas, and coastal dunes. Habitat characteristics also include deserts and arid scrublands that contain low-growing vegetation (Zarn 1974). It is a resident in the open areas of the lowlands over much of the southern California region (Garrett and Dunn 1981). BUOW have also been observed utilizing roadway ditches, airports, vacant lots in residential/commercial areas, abandoned buildings, and

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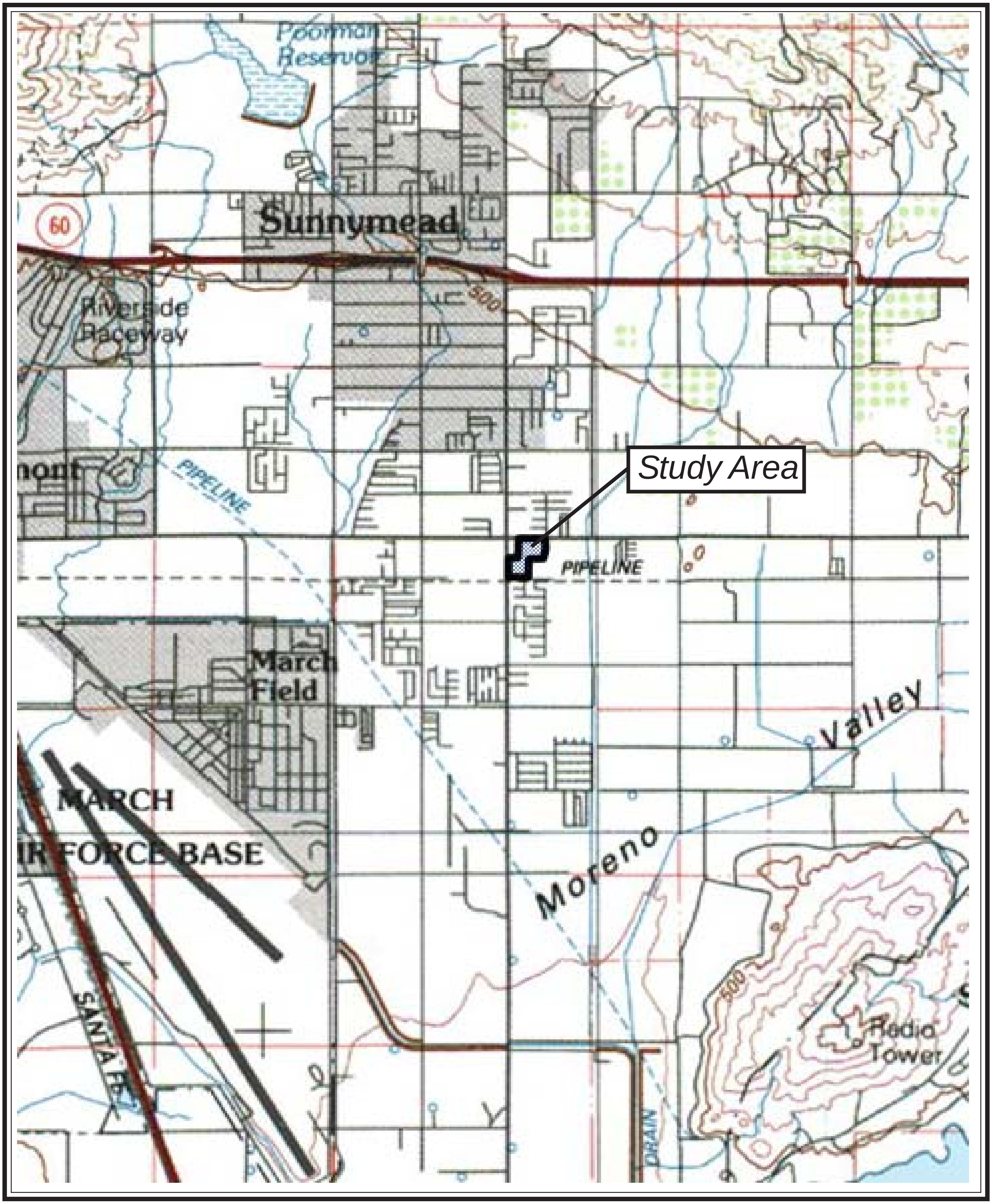

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July 2016

plate 1

Regional Site Location

±20-acre Moreno Valley Site

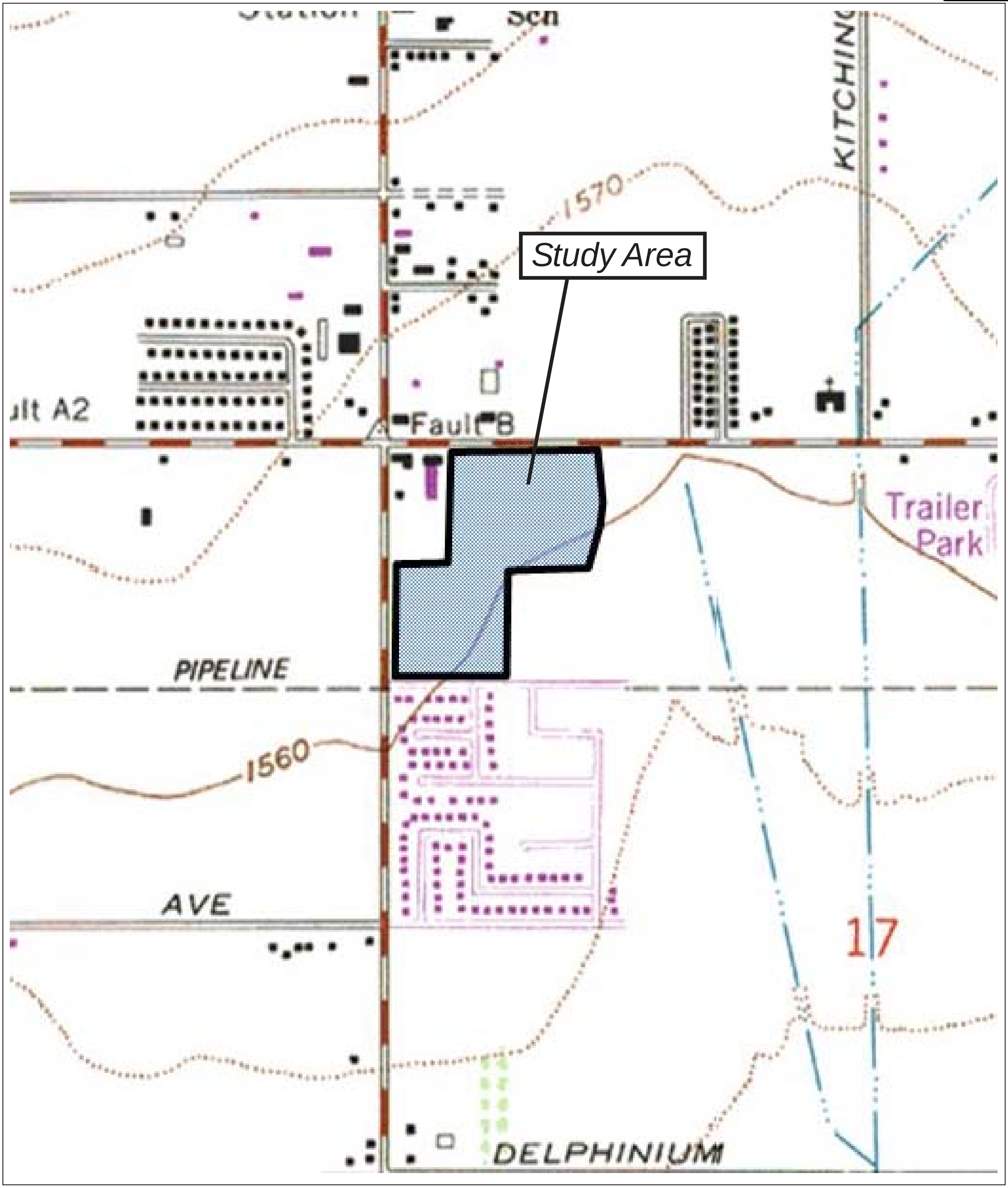

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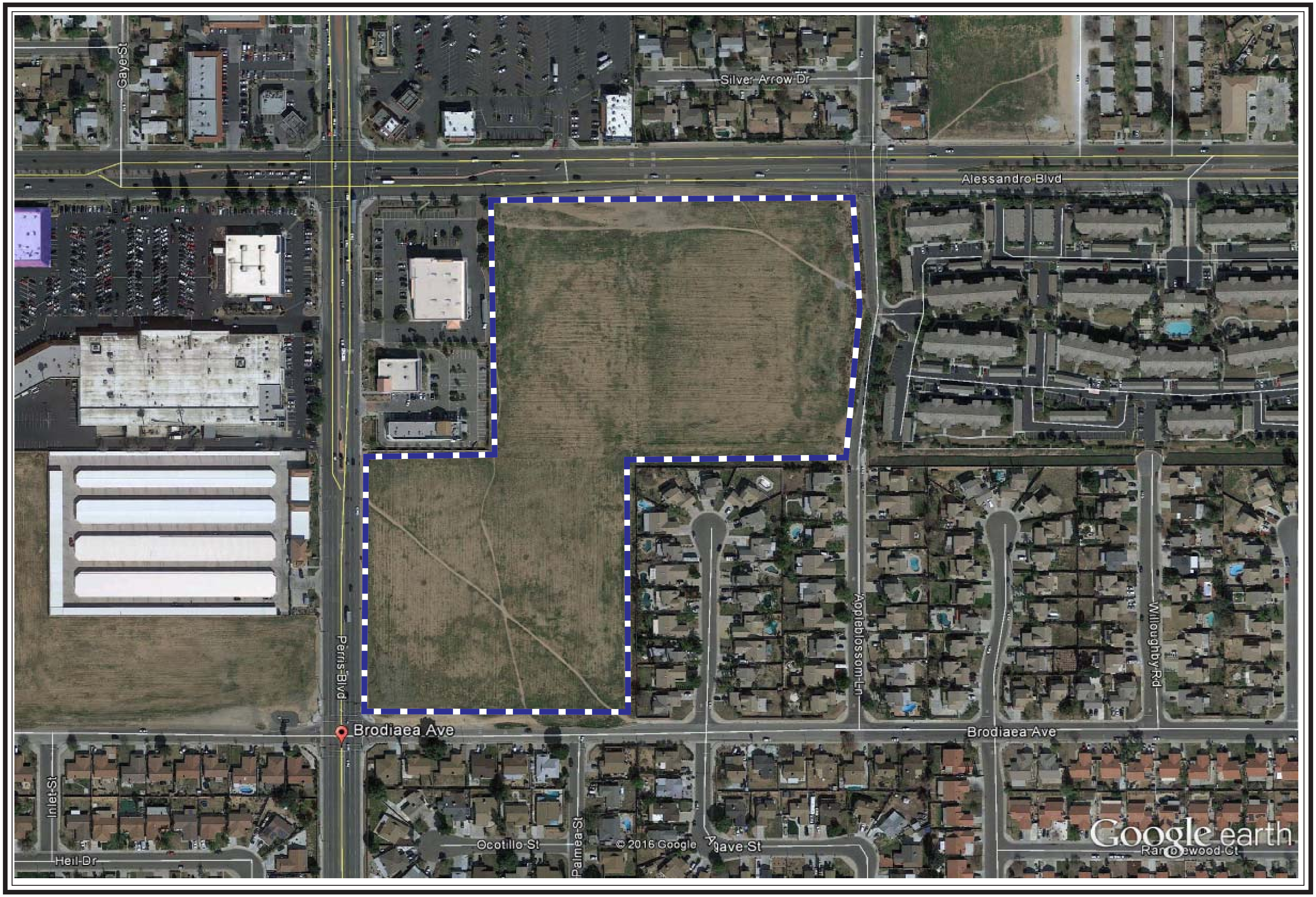
plate **2**

Site Vicinity

±20-acre Moreno Valley Site



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=Study Area

plate **3**

Site Vicinity Aerial

±20-acre Moreno Valley Site

irrigation ditches/flood control channels. It is believed that burrowing owls require open areas supporting sparsely vegetated habitat on gently rolling or level terrain. The BUOW generally prefers moderately to heavily grazed grasslands for nesting and roosting and avoids cultivated fields.

The BUOW also requires an abundance of active small mammal burrows as a critical habitat feature for roosting and nesting cover. The availability of numerous small mammal burrows [e.g., ground squirrel (*Spermophilus beecheyi*] is a major factor in determining whether an area with apparently suitable habitat will support burrowing owls (Coulombe 1971 in Volume II-B, Species Accounts, MSHCP 2003). The mammal burrows are modified and enlarged as needed. BUOW are also capable of digging their own burrows, and do so over a limited portion of their range. One burrow is typically selected for use as the nest, however, satellite burrows are usually found within the immediate vicinity of the nest burrow within the defended territory of the owl (Volume II-B, Species Accounts, MSHCP 2003). BUOW may utilize multiple burrows/sites throughout the year (e.g., small seasonal migrations). Burrowing owls rarely use areas unoccupied by colonies of burrowing mammals (Zarn 1974). While burrows are the essential component of burrowing owl habitat (CDFG 1995), the BUOW is also known to use artificial burrows under certain circumstances such as abandoned concrete structures and debris piles. They are commonly seen perching on fence posts or on mounds outside their burrows.

The BUOW is a crepuscular (dawn and dusk) hunter with a prey base primarily consisting of invertebrates and small vertebrates. Nesting season generally occurs between February 1 and August 30 (CDFG 1994). Actual breeding occurs between March through August, with a peak activity in April and May. Eggs are laid between March and May depending upon regional location. Incubation lasts 3-4 weeks, and after hatching, the chicks remain in the nest for 2-3 weeks. Fledging (development of flight feathers) occurs about four weeks after emergence from the burrow, so young are capable of sustained flight by about 6 weeks of age. BUOW adults feed the young for another 6-8 weeks after emergence, and the young are able to catch their own prey by about the ninth week. By mid September, the young molt into adult plumage and disperse.

Threats to the BUOW include conversion of grassland to agriculture, habitat destruction, predators, collisions with vehicles, and pesticides/poisoning of ground squirrels (Grinnell and Miller 1944, Zarn 1974, Remsen 1978 in Volume II-B, Species Accounts, MSHCP 2003).

BUOW Regulatory Summary

The BUOW is also considered a MSHCP Group 3 species, California Species of Special Concern, Federal Species of Concern, Partners in Flight Priority Bird Species, and Fish and Wildlife Service Species of Management Concern. Although this special-status species is not protected by state or federal endangered species acts, the BUOW is protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) and California Department of Fish and Wildlife/Game (CDFW/CDFG) Code sections 3503, 3503.5, and 3800. These sections prohibit take, possession, or destruction of birds, their nests or eggs. If it were later determined that active nests would be lost as a result of site-preparation, it would be in conflict with these regulations, as well as MSHCP species-specific objectives, and could also be considered a significant impact under CEQA.

In order to avoid violation of the MBTA, CDFG Code, or MSHCP requirements, CDFG guidelines (1995) suggest that project-related disturbances at active nesting territories be reduced or eliminated during the BUOW nesting/breeding cycle (typically February 1 to August 31). Accordingly, construction should take place, as much as possible, outside of the breeding season for BUOW (i.e., construction between September 1 to January 31) to avoid or reduce potential impacts to this species. However, BUOW nesting activity is variable, and as such the time frame should be adjusted accordingly based on specific site information. Owl survival can be adversely affected by disturbance (e.g., foraging habitat loss) even when impacts to individual birds and nest/burrows are avoided (CDFG 1995). Per CDFG guidelines, impacts to BUOW should be considered to occur if there is (1) disturbance within 50 meters (±160 feet) of a burrow, destruction of natural or artificial burrows, or destruction and/or degradation of foraging habitat within 100 meters (±320 feet) of a burrow. It is important to minimize disturbance near occupied burrows during all seasons.

Should eggs or fledglings be discovered in any owl burrow during the breeding season, the burrow cannot be disturbed (pursuant to 1995 CDFG guidelines) until the young have hatched and fledged (matured to a stage that they can leave the nest on their own). Take of active nests will be avoided. If owls must be moved away from the disturbance area, passive relocation techniques (where applicable outside of the breeding season) should be used rather than trapping (CDFG Staff Report 1995). At least one or more weeks would be necessary to accomplish passive translocation and allow for owls to acclimate to alternate burrows (CDFG 1995). If avoidance is the preferred or accepted mitigation method, no grading or heavy equipment activity should take place within at least 75 meters (±250 feet) of an active nest during the breeding season, and 50 meters (±160 feet) during the non-breeding season (CDFG 1995).

If the subject site is located within a MSHCP BUOW survey area (Volume II-B, page B-6), occupied areas require the following for those areas located outside the MSHCP Criteria Area: (1) If the site contains, or is part of an area supporting less than 35 acres of suitable habitat, or the survey reveals that the site and the surrounding area supports fewer than three pairs of burrowing owls, then on-site burrowing owls will be passively or actively relocated following accepted protocols; (2) if the site (including adjacent areas) supports three or more burrowing owls, supports greater than 35 acres of suitable habitat and is non-contiguous with MSHCP Conservation Area lands, at least 90 percent of the area with long-term conservation value and burrowing owl pairs will be conserved on site. Compliance with the MBTA, CDFG code, and MSHCP species-specific objectives would be necessary prior to development.

All project sites containing burrows or suitable habitat (based on Step I/Habitat Assessment) whether owls were found or not, require pre-construction surveys that shall be conducted within 30 days prior to ground disturbance to avoid direct take of burrowing owls (MSHCP Species-Specific Objective 6). If ground-disturbing activities are delayed or suspended for more than 30 days after the survey, the site should be resurveyed for owls if suitable habitat is present. Additional mitigation measures detailed in the CDFG 1995 staff report include: (1) preservation of habitat [e.g., 6.5 acres of foraging habitat per pair and provision of two burrows for each burrow impacted (2:1 ratio)], (2) artificial burrow construction, and (3) provide funding for long-term management and monitoring of protected mitigation lands. Mitigation measures successfully implemented for this species also include giving the Service/CDFG right of first refusal for actively relocating any BUOW present. Currently occupied receiving sites may be available where this species has a greater chance of successful long-term relocation. Translocation sites for the BUOW will be created in the MSHCP Conservation Area for the establishment of new colonies. Translocation sites will be identified, taking into consideration unoccupied areas, presence of burrowing mammals to provide suitable burrow sites, existing colonies and effects to other Covered Species. Reserve Managers will consult with the Wildlife Agencies regarding site selection prior to translocation site development (Volume II-B, page B-6). Compliance with the MBTA, CDFG code, and MSHCP species-specific objectives would be necessary prior to development.

Methodology

Review of Existing Information

Existing documentation pertinent to the distribution and habitat requirements of the BUOW was reviewed and analyzed. This included a review of: (1) the California Natural Diversity Data Base (CNDDB) for the "Sunnymead" USGS 7.5-minute quadrangle map; (2) Riverside County Final Multi Species Habitat Conservation Plan MSHCP (2003), and (3) other literature pertaining to habitat requirements of the BUOW.

Focused Burrowing Owl Survey

The general process for those projects occurring within an MSHCP BUOW survey area begins with the performance of focused surveys to determine if the BUOW is foraging or nesting on or adjacent to the site prior to development. Current MSCHP BUOW survey protocol includes four separate breeding season surveys conducted between March 1 and August 31. Per MSHCP Burrowing Owl Survey Instructions (10-24-05), surveys should be conducted during weather that is conducive to observing owls outside their burrows and detecting burrowing owl sign. Surveys may not be accepted if they are conducted within 5 days following rain, during rain, high winds (> 20 mph), dense fog, or temperatures over 90 °F. Focused surveys should be conducted in the morning one hour before sunrise to two hours after sunrise or in the early evening two hours before sunset to one hour after sunset.

Ecological Sciences conducted focused burrowing owl surveys on June 18-22, 2016. Surveys for BUOW were conducted in accordance with current MSHCP guidelines. Accordingly, a series of 4 morning (one hour before sunrise to two hours after sunrise) surveys were conducted over a four-day period per current protocol. Pursuant to survey protocol, surveyors initially used binoculars to scan all suitable habitat/potential refugia prior to the start of pedestrian surveys. Following the initial site scan, a systematic survey for burrows, burrowing owls, and owl sign was conducted by walking through suitable habitat over the entire survey area (i.e. the project site and within 150 meters where possible). To the extent possible, pedestrian survey transects were spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 30 meters (±100 feet) and were reduced to account for differences in terrain, vegetation density, and ground surface visibility (where necessary). Potentially suitable burrows were examined for sign of BUOW use such as the presence of owl pellets, prey remains, or feathers at potential burrow entrances. Burrows were inspected with the aid of a mirror to better view burrow interiors. Any owls using habitat areas adjacent to the project site were also noted (if present). Weather conditions were characterized as clear (0 percent cloud cover). Ambient air temperatures were 72-88 °F with generally calm conditions (0-5 mph breezes).

Existing Site Conditions

The subject site is characterized by exposure to historic and recurring anthropogenic disturbances such as discing and vehicle parking. Ground cover ranged from mostly barren to areas with scattered patchy vegetation. Multiple dirt trails bisect the site. Surrounding land use includes residential and commercial. ***Plates 4a-4b*** photographically illustrate existing site conditions.

Vegetation

The site is has been primarily colonized by ruderal (weedy) herbs and grasses. Invasive species such as Russian thistle (*Salsola tragus*), pigweed (*Chenopodium album*), cheeseweed (*Malva parviflora*), brome grasses (*Bromus* spp.), oat (*Avena* sp.), barley (*Hordeum murinum*), jimsonweed (*Datura stramonium*), mustard (*Brassica* sp.), filaree (*Erodium cicutarium*), and puncture vine (*Tribulus terrestris*) were recorded.

Focused BUOW Survey Results

No direct ***burrowing owl*** observations or sign (pellets, fecal material, or prey remains) were recorded during the July 2016 focused surveys. Birds observed generally included those species that are accustomed to nearby human presence such as common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), black phoebe (*Sayornis nigricans*), European starling (*Sturnus vulgaris*), rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), and house sparrow (*Passer domesticus*).

Only a few scattered potentially suitable BUOW burrows/refugia were recorded on site likely because of discing activities and other long-standing anthropogenic disturbances that may reduce potential small

View to south

View to west

ECOLOGICAL SCIENCES, Inc.

July 2016

plate 4a

Site Photographs

±20-acre Moreno Valley Site

View to north

View to east

ECOLOGICAL SCIENCES, Inc.

July 2016

plate **4b**

Site Photographs

±20-acre Moreno Valley Site

mammal colonies (e.g., ground squirrel). Although the BUOW is well known to occur in certain disturbed situations, the BUOW generally prefers moderately to heavily grazed grasslands for nesting and roosting and generally avoids recently disced fields that occlude/collapse ground squirrel burrows or other refugia. None of the burrows/refugia inspected during the July 2016 focused surveys were determined to be currently occupied or recently used by BUOW based on the lack of owl observations and absence of sign around burrow entrances. Surveys of the site and scanning adjacent areas during peak BUOW activity times did not reveal any indication that this species was currently present or utilizing adjacent sites for foraging purposes. An additional 30-day pre-construction survey may also be required.

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I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological survey, and that the facts, statements, and information presented herein are true and correct to the best of my knowledge and belief.

Sincerely,

Ecological Sciences, Inc.

Scott D. Cameron
Principal Biologist

References

California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. April 1993. 12 pp.

California Burrowing Owl Consortium and The Santa Cruz Predatory Bird Research Group. [online]. Burrowing Owl Consortium Survey Protocol. Available: www2.ucsc.edu/~scpbrg. (2000) May.

California Department of Fish and Game. 1995. Staff Report on Burrowing Owl Mitigation. C. F. Raysbrook Interim Director. October 17, 1995. 7 pp.

California, State of. 1989. *Fish and Game Code*.

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County of Riverside. 2003. Final Western Riverside County Multiple Species Habitat Conservation Plan. June. Review of information from RCIP website.

Ehrlich, Paul R., David S. Dobkin, and Darryl Wheye. 1988. *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*. Simon and Schuster, New York.

Hickman, James C., ed. 1993. *The Jepson Manual.* University of California Press, Berkeley and Los Angeles, California. 1400 pp.

Zarn, M. 1974. Burrowing owl. U.S. Department of Interior, Bureau of Land Management. Technical Note T-N 250. Denver, Colorado. 25 pp. in California Department of Fish and Game (1995), Staff Report on Burrowing Owl Mitigation. C. F. Raysbrook Interim Director. October 17, 1995. 7 pp.

Attachment E-3

BIOLOGICAL REPORT SUMMARY SHEET

(Submit two copies to the County)

Applicant Name: LATCO Enterprises
Assessor's Parcel Number (APN): 484-020-25, 484-020-18, 484-020-006
APN cont. :
Site Location: Section: 17 **Township:** 3 South **Range:** 3 West
Site Address:
Related Case Number(s): **PDB Number:**

CHECK SPECIES SURVEYED FOR	SPECIES or ENVIRONMENTAL ISSUE OF CONCERN	(Circle Yes, No or N/A regarding species findings on the referenced site)		
	Arroyo Southwestern Toad	Yes	No	N/A
	Blueline Stream(s)	Yes	No	N/A
	Coachella Valley Fringed-Toed Lizard	Yes	No	N/A
	Coastal California Gnatcatcher	Yes	No	N/A
	Coastal Safe Scrub	Yes	No	N/A
	Delhi Sands Flower-Loving Fly	Yes	No	N/A
	Desert Pupfish	Yes	No	N/A
	Desert Slender Salamander	Yes	No	N/A
	Desert Tortoise	Yes	No	N/A
	Flat-Tailed Horned Lizard	Yes	No	N/A
	Least Bell's Vireo	Yes	No	N/A
	Oak Woodlands	Yes	No	N/A
	Quino Checkerspot Butterfly	Yes	No	N/A
	Riverside Fairy Shrimp	Yes	No	N/A
	Santa Ana River Woolystar	Yes	No	N/A
	San Bernardino Kangaroo Rat	Yes	No	N/A
	Slender Horned Spineflower	Yes	No	N/A
	Stephen's Kangaroo Rat	Yes	No	N/A
	Vernal Pools	Yes	No	N/A
	Wetlands	Yes	No	N/A

CHECK SPECIES SURVEYED FOR	SPECIES or ENVIRONMENTAL ISSUE OF CONCERN	(Circle Yes, No or N/A regarding species findings on the referenced site)		
X	Other Burrowing Owl	Yes	No	N/A
X	Other Burrowing Owl Habitat	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A
	Other	Yes	No	N/A

Species of concern shall be any unique, rare, endangered, or threatened species. It shall include species used to delineate wetlands and riparian corridors. It shall also include any hosts, perching, or food plants used by any animals listed as rare, endangered, threatened or candidate species by either State, or Federal regulations, or for Riverside County as listed by the California Department of Fish and Game Natural Diversity Data Base (NDDB).

I declare under penalty of perjury that the information provided on this summary sheet is in accordance with the information provided in the biological report.

Ecological Sciences, Inc. July 3, 2016

Signature and Company Name Report Date

10(a) Permit Number (if applicable) Permit Expiration Date

County Use Only

Received by:__________ **Date:**__________

PD-B#__________

Attachment E-4

LEVEL OF SIGNIFICANCE CHECKLIST
For Biological Resources
(Submit Two Copies)

Case Number: ____________ **Lot/Parcel No.** ____________ **EA Number** ______________

Wildlife & Vegetation

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

(Check the level of impact the applies to the following questions)

a) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan?

Participation in MSHCP required

b) Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?

c) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Wildlife Service?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?

f) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

g) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Source: CGP Fig. VI.36-VI.40

Findings of Fact: >No BUOW or BUOW sign recorded during focused surveys conducted in July 2016. Suitable BUOW nesting/foraging habitat is present.

Proposed Mitigation: <If required, conduct BUOW pre-construction survey 30 days prior to construction to determine current presence/absence per MSCHP guidelines. If surveys indicate presence of BUOW, additional mitigation would be necessary relative to MBTA, CDFG code, and/or MSHCP guidelines (e.g., passive relocation outside of the breeding season if owl(s) are present).

Monitoring Recommended: <Not recommended unless BUOW recorded during pre-construction survey

E-4.1

Hydrology Study

272 Unit Residential Apartments
Villa Annette
Moreno Valley, California 92553

Prepared For:

LATCO Enterprises
940 Calle Negocia, Suite 200
San Clemente, California 92673
(949) 276-4402

Prepared By:

Civil Landworks Corporation
110 Copperwood Way, Suite P
Oceanside CA, USA 92058
760-908-8745

CLW No. 1159-D

September 8, 2016

TABLE OF CONTENTS

Section

ATTACHMENTS

1.0 INTRODUCTION

The purpose of this study is to determine the pre and post development storm water runoff and site drainage for a 2 year, 5 year, 10 year, and 100 year storm event at 1 hour, 3 hours, 6 hours and 24 hours.

The project proposes 43 apartment buildings, with 272 units, a community building, and a pool/spa. The project site is located in the City of Moreno Valley, California southeast of the intersection of Alessandro Boulevard and Perris Boulevard. The site is currently vacant and drains from the northwest to the southeast of the property. The project area is approximately 19.862 acres. (See Attachment 1).

2.0 DESIGN CRITERIA AND ASSUMPTIONS

1. The site soil classification as hydrologic soil type A and C. See Attachment 2.
2. Per the Riverside County Flood Control and Water Conservation District Hydrology Manual (1978) Precipitation Maps (See Attachment 2):
   - 100 Year Rainfall Event – 1 hours = 1.20 inches/hour
   - 100 Year Rainfall Event – 3 hours = 1.80 inches/hour
   - 100 Year Rainfall Event – 6 hours = 2.50 inches/hour
   - 100 Year Rainfall Event – 24 hours = 4.30 inches/hour
   - 2 Year Rainfall Event – 1 hours = 0.48 inches/hour
   - 2 Year Rainfall Event – 3 hours = 0.80 inches/hour
   - 2 Year Rainfall Event – 6 hours = 1.10 inches/hour
   - 2 Year Rainfall Event – 24 hours = 1.72 inches/hour
3. Hydrologic calculations were performed using the CIVILCAD/CIVILDESIGN Engineering software Version 8.2 per methods as outlined within the Riverside County Flood Control and Water Conservation District Hydrology Manual (1978). The Synthetic Unit Hydrology Method was used for the 2, 5, 10, and 100 year storms. The hydrology calculations for proposed and existing conditions may be found within the hydrology calculations section of this report.
4. Storm to be studied will include the 1-hour, 3-hour, 6-hour, and 24 hour duration events for the 2-year, 5-year, 10-year, and 100-year return frequencies.
5. The 2 year and 5 year storms were calculated using the Antecedent Moisture Condition I.
6. The 10 year storm was calculated using the Antecedent Moisture Condition II.

7. The 100 year storm was calculated using the Antecedent Moisture Condition II PER County of Riverside Manual.
8. Calculations using CIVILCAD/CIVILDESIGN Engineering software for the node to node component was only used to evaluate the hydrology and hydraulics for the interior drainage system. Values from those calculations were used to incorporate into WSPGW for the HGL of the major storm drains.

3.0 DISCUSSION

3.1 Existing Conditions

The site is undeveloped and is comprised of approximately 19.862 acres on 1 square shaped parcel and 1 rectangular parcel southeast of the intersection of Alessandro Boulevard and Perris Boulevard. Onsite, the rectangular parcel drains from the northwest to the southeast corner of the property, as does the square parcel.

See Attachment 6 for existing drainage patterns.

3.2 Proposed Conditions

The proposed project consists of an apartment complex with private roads, utilities, and landscaping.

The onsite drainage is divided into five basins. The first basin consists of the northern rectangular parcel (divided into two basins) and the second basin (divided into three basins) consists of the southern square parcel.

Basins flow from the northwest to the southeast and discharge into infiltration basins located in the southeast corner of each parcel

For the northern basin, there are two basins. Both flow into a ribbon gutter that dischargers into a basin at the south eastern point of the parcel. Throughout the travel path of these courses, water will be directed through curb openings with LID basins. This will help to decrease the proposed Q.

The southern basin is divided into three separate basins. The most eastern basin flows into ribbon gutters and enters a swale on the eastern portion of the property through a curb opening. The flow discharges into a basin in the southern eastern corner of the parcel. The eastern basin also flows through ribbon gutters and discharges into the basin in the southern eastern corner of the parcel. As the northern parcel was designed, the flow from this basin will be directed through curb openings throughout its path in order to reduce the Q from the propose development. The center basin was graded so that water flow south easterly toward the basin in the corner of the parcel.

See Attachment 7 for proposed drainage patterns.

4.0 CONCLUSION

The proposed large area of surface area will capture the runoff from the proposed project. The proposed Q will be below the existing Q due to the fact that the runoff will be dispersed into curb openings with LID basins throughout the path into the infiltration basins. The ultimate flow will discharge to the southeast portion of the site and be captured by infiltration basins.

On the next two pages there are summaries of the pre and post development flows (also included in Attachment 5). The difference between maximum volumes was also placed onto the table for reference.

Below are the Centroid Method Summaries:

Basin A - CENTROID

Maximum Flow Rate For Different Rain Events (CFS)

Year/Event	Pre/Post	Q max 1 hr	Q max 3 hr	Q max 6 hr	Q max 24 hr
2	Pre	7.94	4.46	3.57	0.26
	Post	8.87	4.91	4.41	1.51
	Difference	0.93	0.44	0.83	1.25
5	Pre	11.86	6.71	5.60	0.76
	Post	13.08	7.27	6.41	2.04
	Difference	1.22	0.56	0.81	1.28
10	Pre	16.47	10.05	8.78	2.87
	Post	17.39	10.14	9.19	2.44
	Difference	0.91	0.08	0.41	-0.43
100	Pre	26.34	15.71	13.88	5.19
	Post	28.18	16.22	14.88	4.56
	Difference	1.84	0.50	1.00	-0.63

Maximum Volume (Ac.Ft)

Year/Event	Pre/Post	Q max 1 hr	Q max 3 hr	Q max 6 hr	Q max 24 hr
2	Pre	0.1401	0.1488	0.1549	0.1046
	Post	0.2001	0.3553	0.5420	0.6077
	Difference	0.0600	0.2065	0.3871	0.5031
5	Pre	0.2503	0.2530	0.2743	0.1536
	Post	0.2821	0.4728	0.7100	0.8212
	Difference	0.0318	0.2198	0.4357	0.6676
10	Pre	0.4477	0.6127	0.6879	0.4999
	Post	0.3798	0.5934	0.8840	0.9827
	Difference	-0.0679	-0.0193	0.1961	0.4828
100	Pre	0.7489	1.0732	1.3437	1.1661
	Post	0.6629	0.9628	1.4231	1.5576
	Difference	-0.0860	-0.1104	0.0794	0.3915

Basin B - CENTROID

Maximum Flow Rate For Different Rain Events (CFS)

Year/Event	Pre/Post	Q max 1 hr	Q max 3 hr	Q max 6 hr	Q max 24 hr
2	Pre	5.53	2.84	2.20	0.20
	Post	6.24	3.46	3.19	1.12
	Difference	0.70	0.62	0.99	0.92
5	Pre	8.56	4.57	3.78	0.28
	Post	9.26	5.06	4.43	1.51
	Difference	0.70	0.50	0.65	1.24
10	Pre	12.40	7.42	6.52	1.88
	Post	12.45	7.24	6.52	1.81
	Difference	0.06	-0.18	0.00	-0.07
100	Pre	20.06	11.81	10.53	3.68
	Post	20.53	11.87	10.87	3.09
	Difference	0.48	0.06	0.34	-0.59

Maximum Volume (Ac.Ft)

Year/Event	Pre/Post	Q max 1 hr	Q max 3 hr	Q max 6 hr	Q max 24 hr
2	Pre	0.0928	0.0959	0.0994	0.0811
	Post	0.1442	0.2607	0.3998	0.4500
	Difference	0.0514	0.1648	0.3004	0.3689
5	Pre	0.1625	0.1557	0.1637	0.1096
	Post	0.2030	0.3434	0.5211	0.6080
	Difference	0.0405	0.1877	0.3574	0.4984
10	Pre	0.3295	0.4016	0.4380	0.2662
	Post	0.2668	0.4278	0.6403	0.7276
	Difference	-0.0627	0.0262	0.2023	0.4614
100	Pre	0.5684	0.7572	0.8815	0.7178
	Post	0.4691	0.6835	1.0199	1.1348
	Difference	-0.0993	-0.0737	0.1384	0.4170

Below are the Rational Method Summaries:

Rational Method

Basin	Q10 -1 Hour			Q100 - 1 Hour		
	Existing	Proposed	Difference	Existing	Proposed	Difference
Basin A	10.144	13.511	-3.367	16.834	21.627	-4.793
Basin B	8.665	10.307	-1.642	12.991	16.590	-3.599

5.0 DECLARATION OF RESPONSIBLE CHARGE

I, hereby declare that I am the Engineer of Work for this project, that I have exercised responsible charge over the design of the project as defined in section 6703 of the business and professions code, and that the design is consistent with current standards.

ENGINEER OF WORK:

Civil Landworks Corporation
110 Copperwood Way, Suite P
Oceanside CA, USA 92058

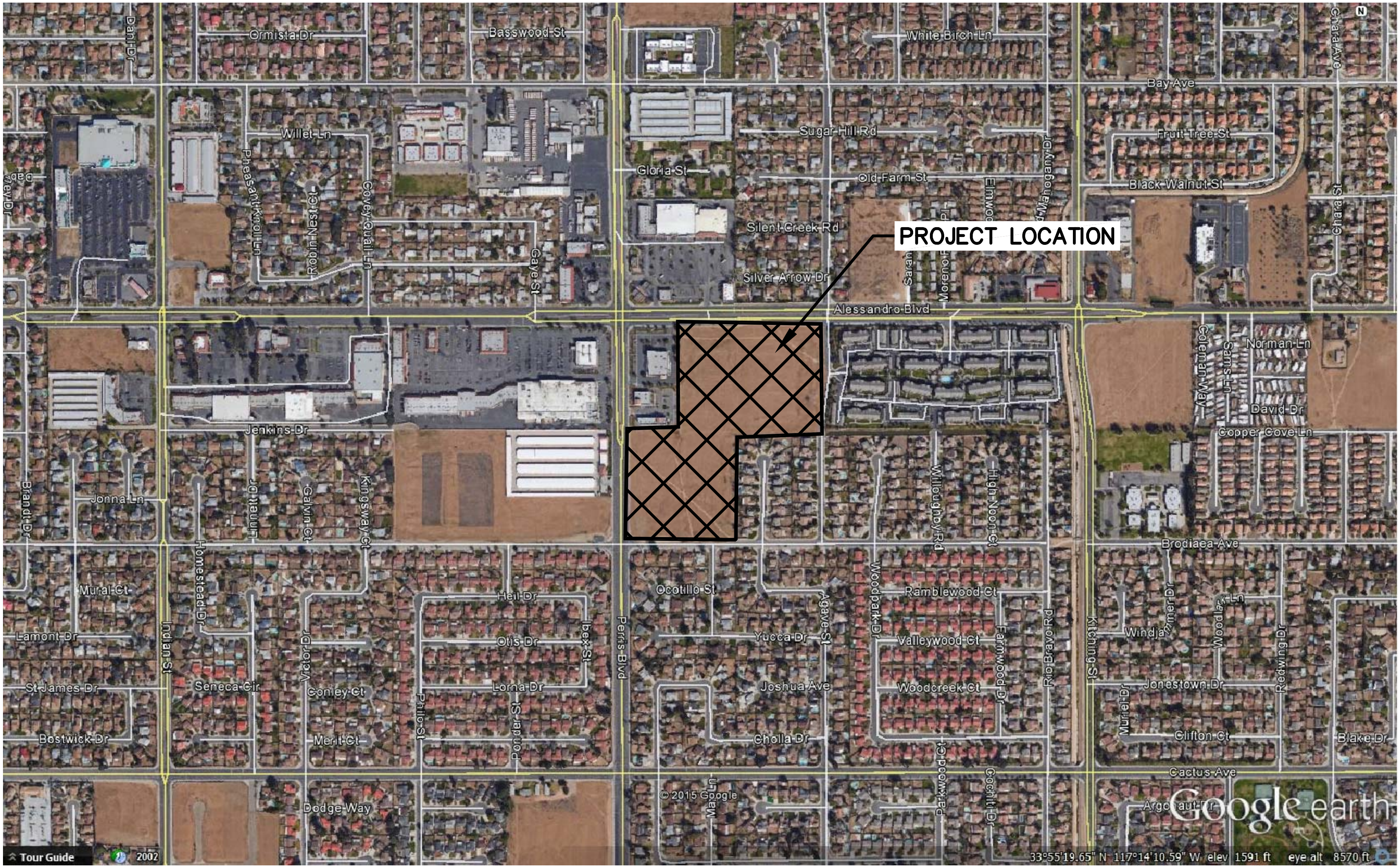
____________________________ 9-8-16
David V. Caron Date
R.C.E. 70066
Exp. 9-30-18

6.0 REFERENCES

1. Riverside County Flood Control and Water Conservation District Hydrology Manual (1978).
2. CIVILCADD/CIVILDESIGN Engineering Software, © 1989-2012 Version 8.2. Riverside County Rational Hydrology Method.

ATTACHMENT 1

VICINTY AND LOCATION MAPS



SITE VICINITY MAP

DATE: 1-14-16	ALESSANDRO BLVD AND PERRIS BLVD	
SCALE: AS SHOWN		DRAWN BY: P. NONG

SITE LOCATION MAP

DATE: 1-14-16	ALESSANDRO BLVD AND PERRIS BLVD	
SCALE: AS SHOWN		DRAWN BY: P. NONG

ATTACHMENT 2

SOIL MAP AND PRECIPITATION MAPS

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	72	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	28	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
AGRICULTURAL COVERS -					
Fallow (Land plowed but not tilled or seeded)		76	85	90	92

RCFC & WCD
HYDROLOGY MANUAL

RUNOFF INDEX NUMBERS FOR PERVIOUS AREAS

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Western Riverside Area, California

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Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

117° 13' 35" W
117° 13' 19" W

Map Scale: 1:2,760 if printed on A portrait (8.5" x 11") sheet.

N

0 40 80 160 240 Meters

0 100 200 400 600 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 8, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 14, 2015—Jan 21, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Western Riverside Area, California (CA679)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
EpC2	Exeter sandy loam, deep, 2 to 8 percent slopes, eroded	16.0	69.9%
GyA	Greenfield sandy loam, 0 to 2 percent slopes	6.8	29.6%
HgA	Hanford fine sandy loam, 0 to 2 percent slopes	0.1	0.5%
Totals for Area of Interest		**22.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Western Riverside Area, California

EpC2—Exeter sandy loam, deep, 2 to 8 percent slopes, eroded

Map Unit Setting

National map unit symbol: hctl
Elevation: 300 to 700 feet
Mean annual precipitation: 7 to 15 inches
Mean annual air temperature: 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Exeter and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exeter

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 16 inches: sandy loam
H2 - 16 to 37 inches: sandy clay loam
H3 - 37 to 50 inches: indurated
H4 - 50 to 60 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 35 to 60 inches to duripan
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: LOAMY (1975) (R019XD029CA)

Minor Components

Ramona

Percent of map unit: 5 percent

Monserate

Percent of map unit: 5 percent

Greenfield

Percent of map unit: 5 percent

GyA—Greenfield sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hcvv
Elevation: 100 to 3,500 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Greenfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greenfield

Setting

Landform: Alluvial fans, terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 26 inches: sandy loam
H2 - 26 to 43 inches: fine sandy loam
H3 - 43 to 60 inches: loam
H4 - 60 to 72 inches: stratified loamy sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: LOAMY (1975) (R019XD029CA)

Minor Components

Hanford

Percent of map unit: 10 percent

Pachappa

Percent of map unit: 2 percent

Arlington

Percent of map unit: 2 percent

Unnamed

Percent of map unit: 1 percent

HgA—Hanford fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hcw7
Elevation: 150 to 900 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 40 inches: fine sandy loam
H3 - 40 to 60 inches: stratified loamy sand to coarse sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: LOAMY (1975) (R019XD029CA)

Minor Components

Greenfield

Percent of map unit: 5 percent

Ramona

Percent of map unit: 5 percent

Tujunga

Percent of map unit: 5 percent

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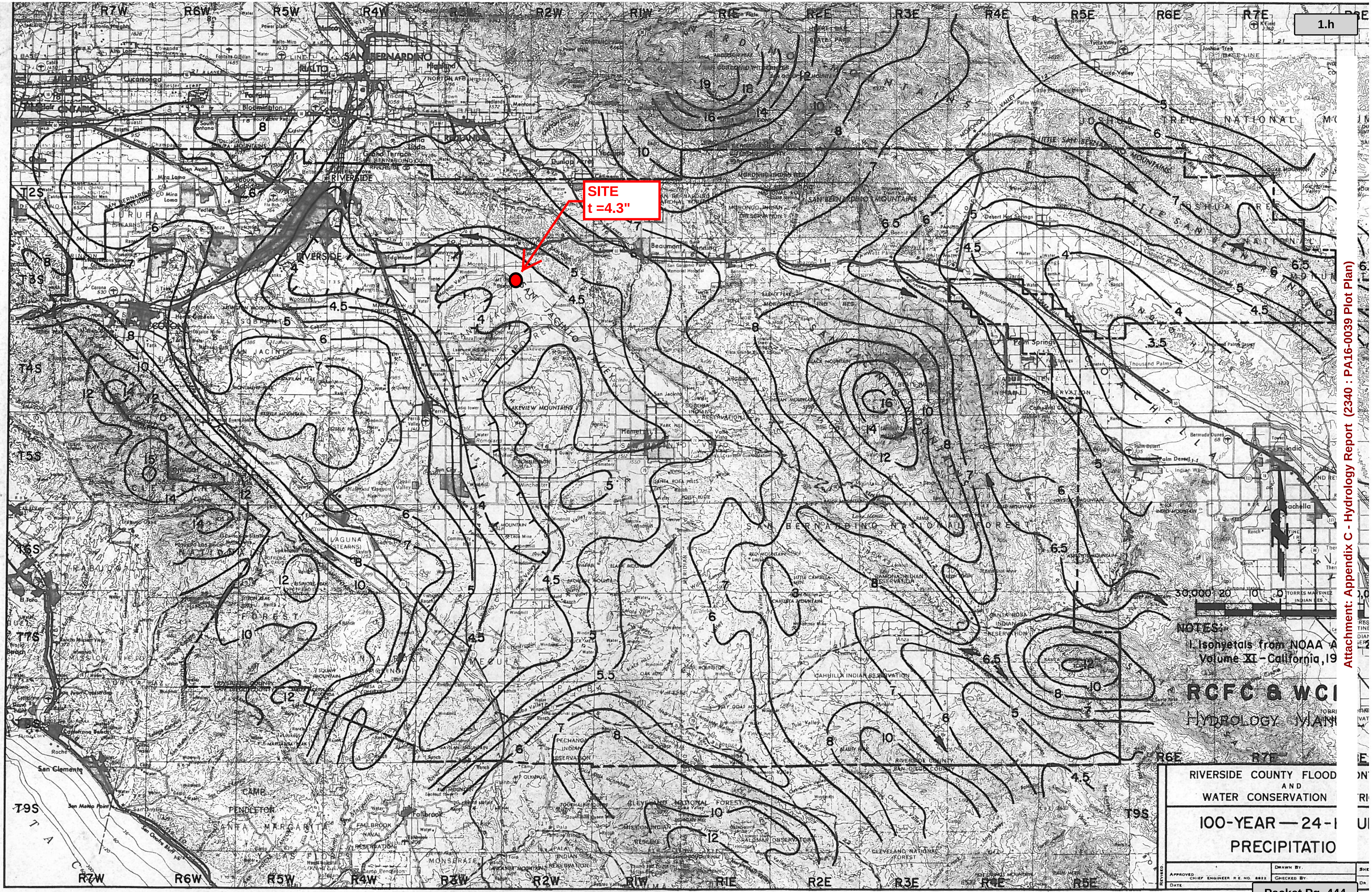
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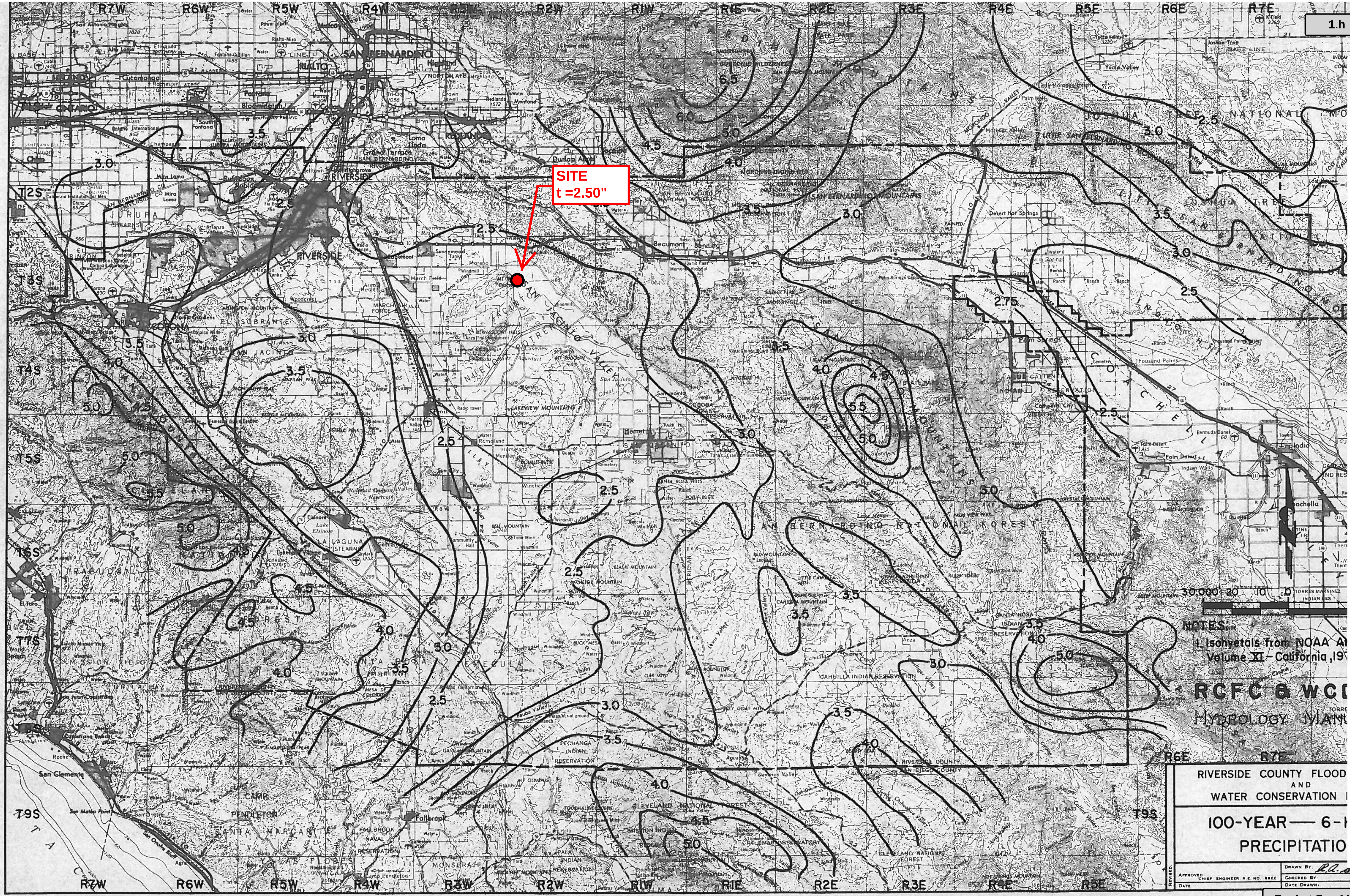
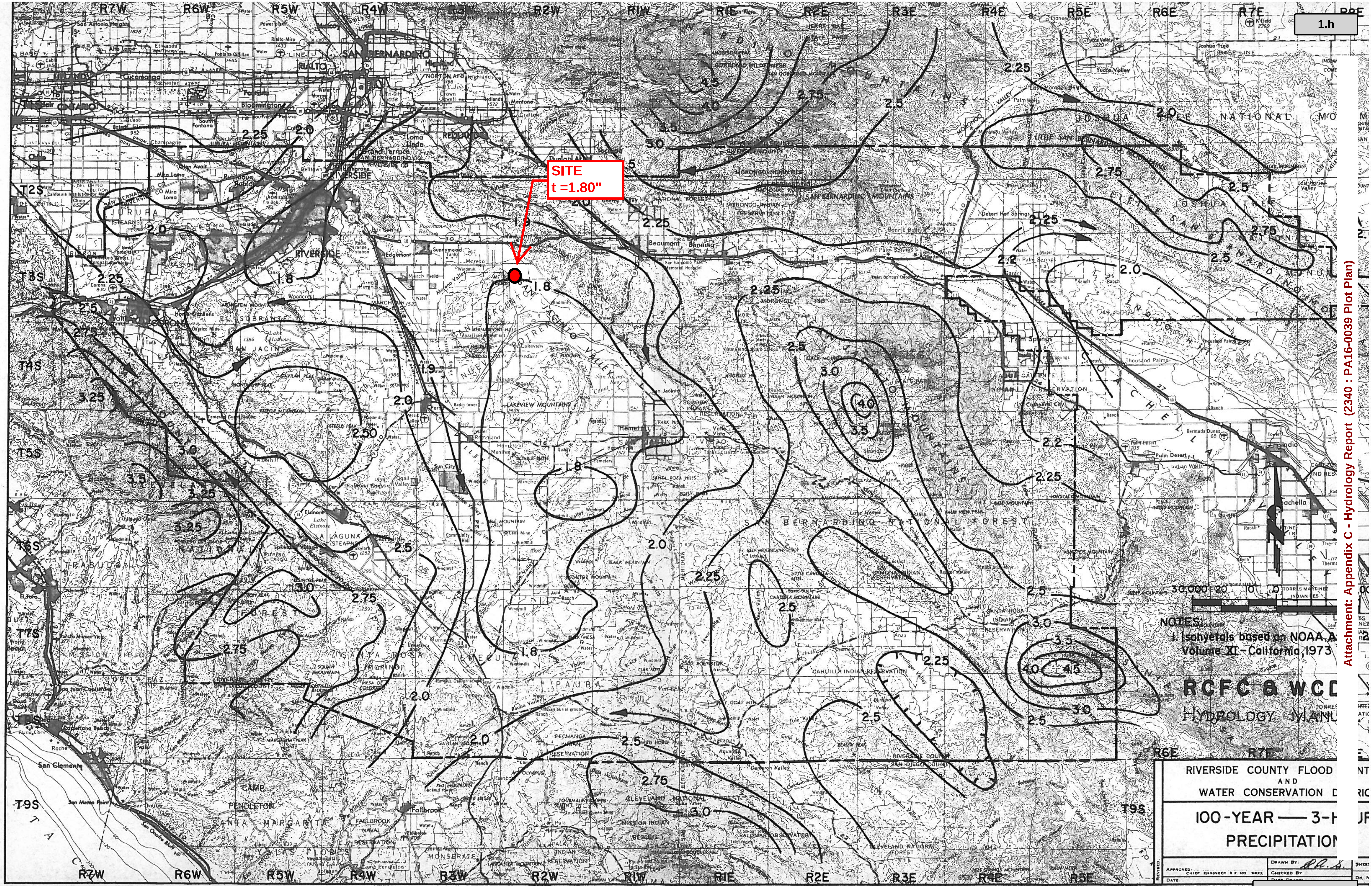


Attachment: Appendix C - Hydrology Report (2340 : PA16-0039 Plot Plan)



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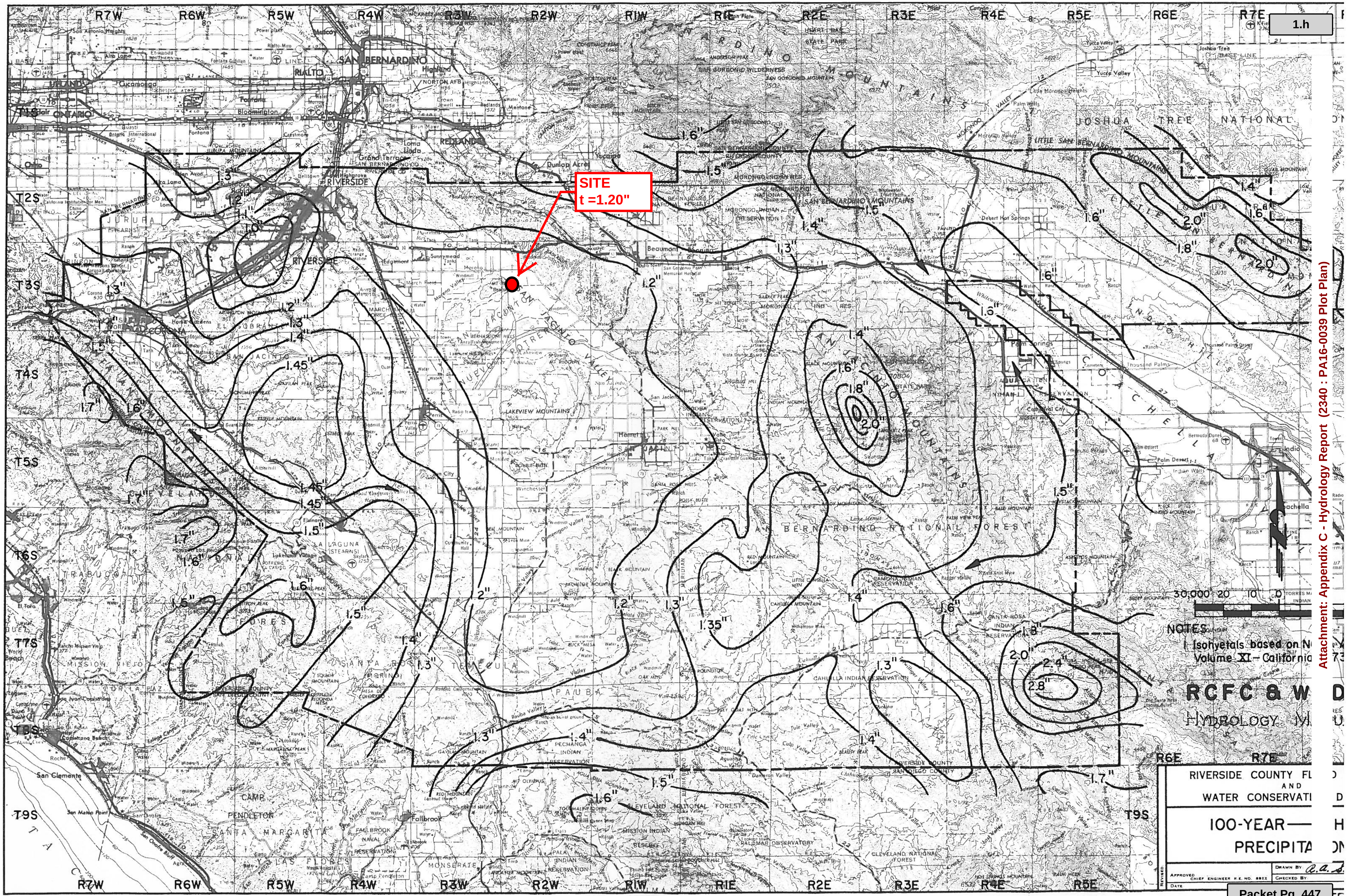
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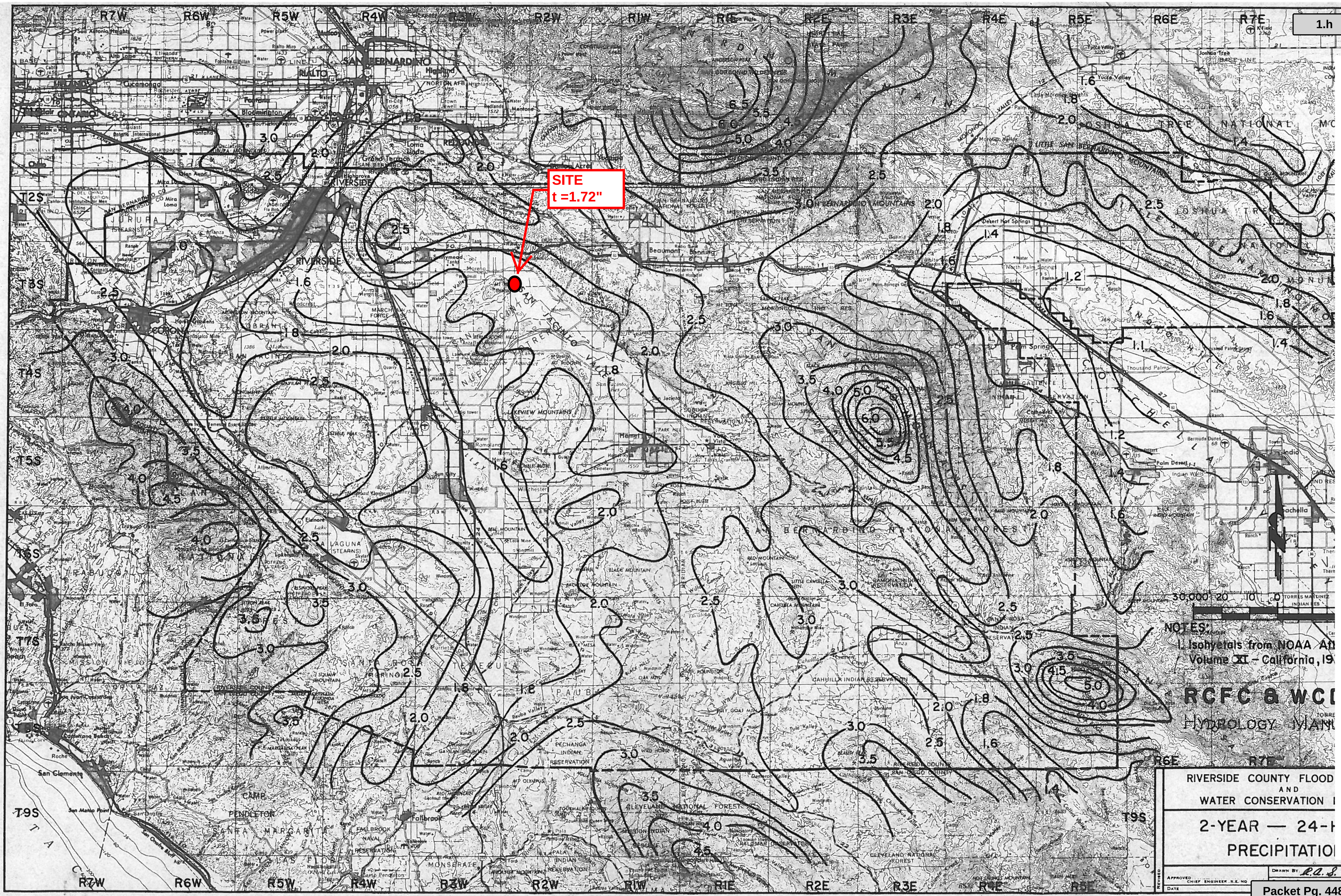
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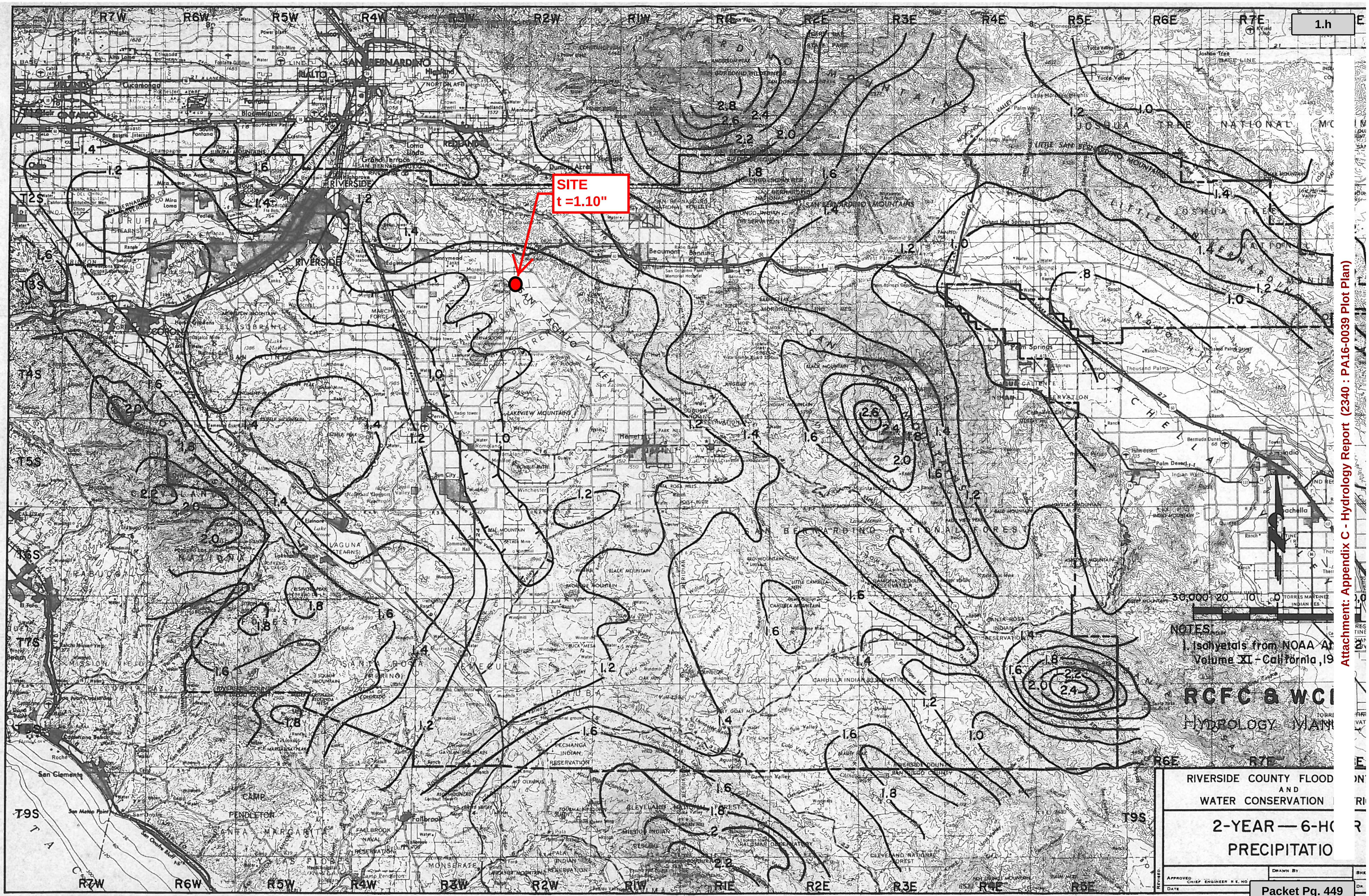
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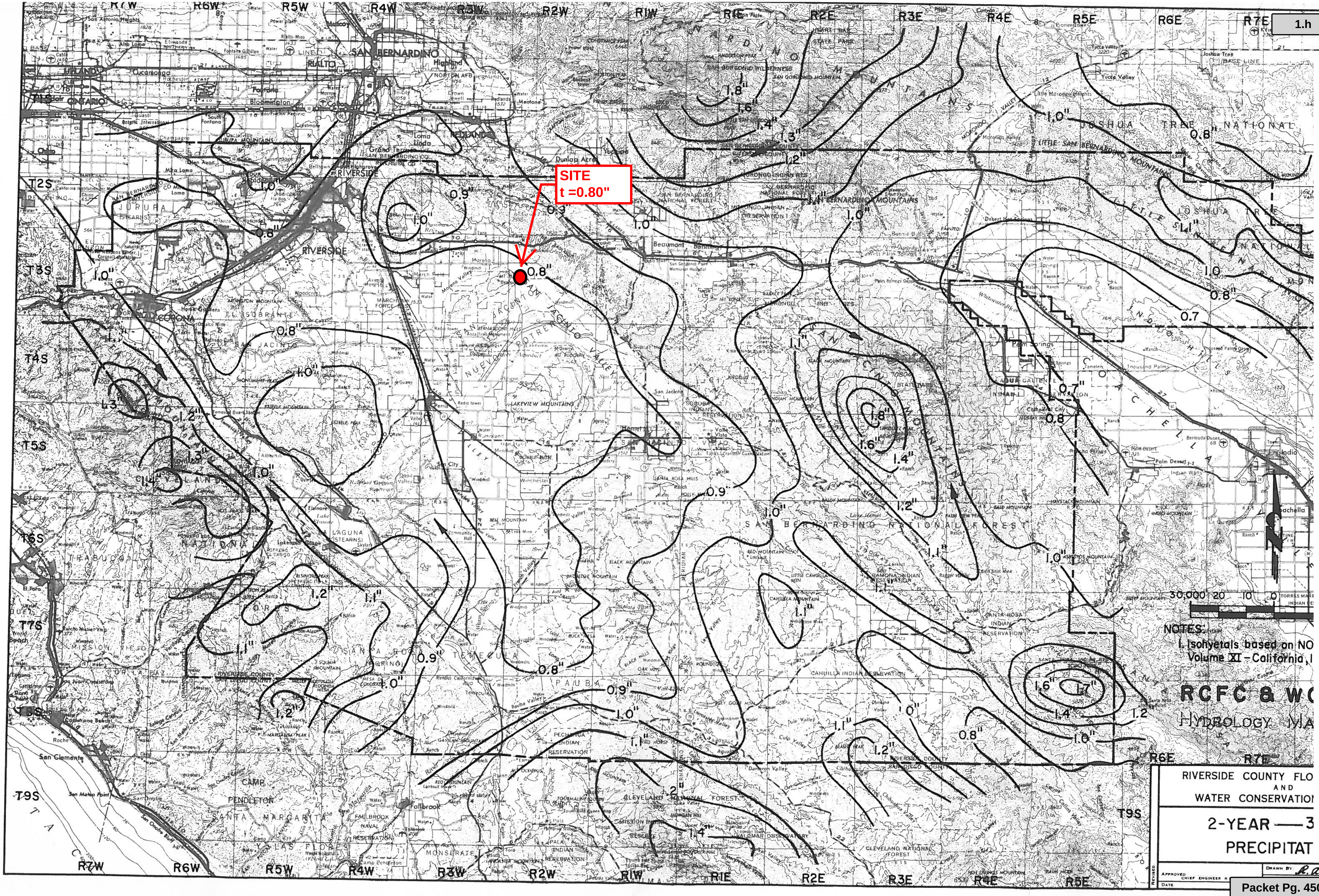
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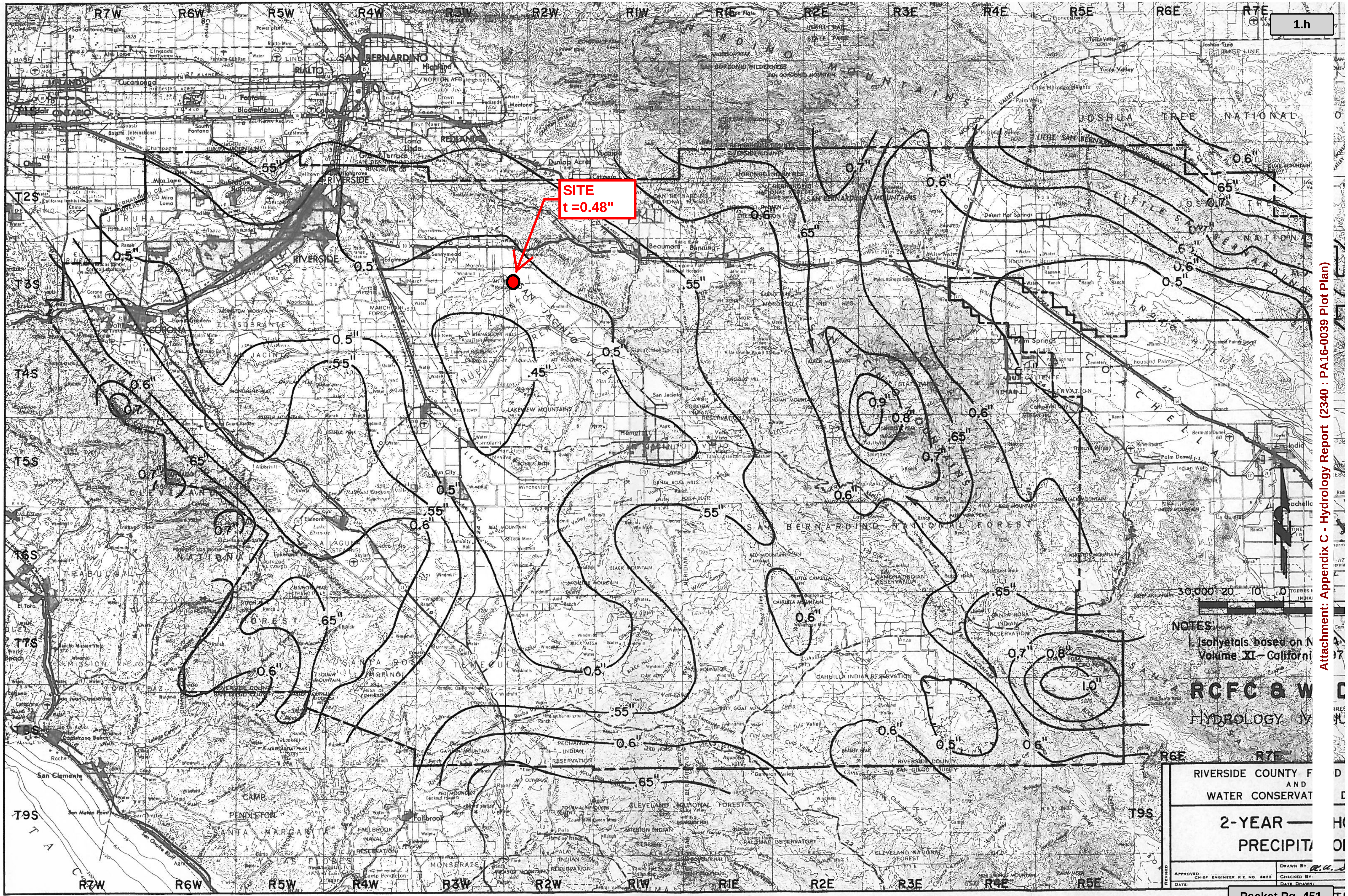

Attachment: Appendix C - Hydrology Report (2340 : PA16-0039 Plot Plan)

ATTACHMENT 3

EXISTING HYDROLOGY CALCULATIONS

Existing Area Calculations

Basin No.	Pervious areas A Soil 78 SF	Pervious areas C Soil 91 SF	Total Area Pervious only SF	Total Area Pervious only Acres	Impervious Bldg & roads SF	Impervious Bldg & roads Acres	Total Area ALL SF	Total Area ALL Acres	Percent Impervious	Runoff Index Composite
A-1	80,726	407,031	487,757	11.197	0	0.000	487,757	11.197	0%	89
B-1	178,644	198,818	377,462	8.665	0	0.000	377,462	8.665	0%	85

BASIN A

2 YEAR

```
                              EX1HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX12.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.48                    5.37

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.20                   13.44

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.480(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.480(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%      F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  76.4      0.286     0.000        0.286       1.000      0.286
                                                 Sum (F) =    0.286
Area averaged mean soil loss (F) (In/Hr) =  0.286
Minimum soil loss rate ((In/Hr)) =  0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                        EX1HR2YR
       ---------------------------------------------------------------------

                       U n i t   H y d r o g r a p h
                               VALLEY S-Curve
       --------------------------------------------------------------------
                       Unit Hydrograph Data
       ---------------------------------------------------------------------
       Unit time period   Time % of lag   Distribution    Unit Hydrograph
           (hrs)                             Graph %            (CFS)
       ---------------------------------------------------------------------
           1   0.083         97.789         18.521              2.090
           2   0.167        195.577         48.209              5.440
           3   0.250        293.366         15.982              1.803
           4   0.333        391.154          7.182              0.810
           5   0.417        488.943          4.067              0.459
           6   0.500        586.731          2.639              0.298
           7   0.583        684.520          1.671              0.189
           8   0.667        782.309          1.063              0.120
           9   0.750        880.097          0.666              0.075
                                      Sum = 100.000   Sum=      11.284
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     4.40      0.253       (  0.286)       0.228        0.025
   2   0.17     4.50      0.259       (  0.286)       0.233        0.026
   3   0.25     5.40      0.311       (  0.286)       0.280        0.031
   4   0.33     5.40      0.311       (  0.286)       0.280        0.031
   5   0.42     5.70      0.328          0.286    (  0.295)        0.042
   6   0.50     6.40      0.369          0.286    (  0.332)        0.082
   7   0.58     7.90      0.455          0.286    (  0.409)        0.169
   8   0.67     9.10      0.524          0.286    (  0.472)        0.238
   9   0.75    12.80      0.737          0.286    (  0.663)        0.451
  10   0.83    25.60      1.474          0.286    (  1.327)        1.188
  11   0.92     7.90      0.455          0.286    (  0.409)        0.169
  12   1.00     4.90      0.282       (  0.286)       0.254        0.028
                 (Loss Rate Not Used)
     Sum =     100.0                                   Sum =     2.5
        Flood volume = Effective rainfall      0.21(In)
         times area      11.2(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
        Total soil loss =      0.27(In)
        Total soil loss =     0.255(Ac.Ft)
        Total rainfall =      0.48(In)
        Flood volume =        8396.3 Cubic Feet
        Total soil loss =       11111.3 Cubic Feet
       --------------------------------------------------------------------
         Peak flow rate of this hydrograph =      7.940(CFS)
       --------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
       --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       --------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5       5.0       7.5      10.0
 ----------------------------------------------------------------------
   0+ 5      0.0004      0.05  Q         |         |         |         |
   0+10      0.0017      0.19  Q         |         |         |         |
   0+15      0.0034      0.25  VQ        |         |         |         |
   0+20      0.0055      0.30  |Q        |         |         |         |
   0+25      0.0079      0.35  |Q        |         |         |         |
   0+30      0.0113      0.50  | Q       |         |         |         |
   0+35      0.0177      0.93  |  Q      |         |         |         |
   0+40      0.0289      1.63  |     Q   |         |         |         |
   0+45      0.0471      2.65  |        VQ         |         |         |
   0+50      0.0855      5.56  |         |      V  |  Q      |         |
   0+55      0.1401      7.94  |         |         |        V|Q        |
   1+ 0      0.1654      3.67  |         |   Q     |         |   V     |
   1+ 5      0.1774      1.74  |     Q   |         |         |     V   |
   1+10      0.1839      0.94  |  Q      |         |         |       V |
   1+15      0.1879      0.58  | Q       |         |         |       V |
   1+20      0.1903      0.36  |Q        |         |         |        V|
   1+25      0.1918      0.22  Q         |         |         |        V|
   1+30      0.1926      0.11  Q         |         |         |        V|
                                      Page 2
```

Attachment: Appendix C - Hydrology Report (2340 : PA16-0039 Plot Plan)

```
    1+35       0.1927      0.02  Q         |         |         |        V|
    1+40       0.1928      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                                   EX3HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.80                   8.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.80                  20.15

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    0.800(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    0.800(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00          0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  76.4      0.286     0.000        0.286       1.000      0.286
                                                  Sum (F) =   0.286
Area averaged mean soil loss (F) (In/Hr) =  0.286
Minimum soil loss rate ((In/Hr)) =  0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX3HR2YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	1.30	0.125	(0.286)	0.112	0.012
2	0.17	1.30	0.125	(0.286)	0.112	0.012
3	0.25	1.10	0.106	(0.286)	0.095	0.011
4	0.33	1.50	0.144	(0.286)	0.130	0.014
5	0.42	1.50	0.144	(0.286)	0.130	0.014
6	0.50	1.80	0.173	(0.286)	0.156	0.017
7	0.58	1.50	0.144	(0.286)	0.130	0.014
8	0.67	1.80	0.173	(0.286)	0.156	0.017
9	0.75	1.80	0.173	(0.286)	0.156	0.017
10	0.83	1.50	0.144	(0.286)	0.130	0.014
11	0.92	1.60	0.154	(0.286)	0.138	0.015
12	1.00	1.80	0.173	(0.286)	0.156	0.017
13	1.08	2.20	0.211	(0.286)	0.190	0.021
14	1.17	2.20	0.211	(0.286)	0.190	0.021
15	1.25	2.20	0.211	(0.286)	0.190	0.021
16	1.33	2.00	0.192	(0.286)	0.173	0.019
17	1.42	2.60	0.250	(0.286)	0.225	0.025
18	1.50	2.70	0.259	(0.286)	0.233	0.026
19	1.58	2.40	0.230	(0.286)	0.207	0.023
20	1.67	2.70	0.259	(0.286)	0.233	0.026
21	1.75	3.30	0.317	(0.286)	0.285	0.032
22	1.83	3.10	0.298	(0.286)	0.268	0.030
23	1.92	2.90	0.278	(0.286)	0.251	0.028
24	2.00	3.00	0.288	(0.286)	0.259	0.029
25	2.08	3.10	0.298	(0.286)	0.268	0.030
26	2.17	4.20	0.403	0.286	(0.363)	0.117
27	2.25	5.00	0.480	0.286	(0.432)	0.193
28	2.33	3.50	0.336	0.286	(0.302)	0.050
29	2.42	6.80	0.653	0.286	(0.587)	0.366
30	2.50	7.30	0.701	0.286	(0.631)	0.414
31	2.58	8.20	0.787	0.286	(0.708)	0.501
32	2.67	5.90	0.566	0.286	(0.510)	0.280
33	2.75	2.00	0.192	(0.286)	0.173	0.019
34	2.83	1.80	0.173	(0.286)	0.156	0.017
35	2.92	1.80	0.173	(0.286)	0.156	0.017
36	3.00	0.60	0.058	(0.286)	0.052	0.006

(Loss Rate Not Used)

Sum = 100.0   Sum = 2.5

Flood volume = Effective rainfall 0.21(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 0.59(In)
Total soil loss = 0.553(Ac.Ft)
Total rainfall = 0.80(In)
Flood volume = 8427.7 Cubic Feet
Total soil loss = 24086.8 Cubic Feet

Peak flow rate of this hydrograph = 4.463(CFS)

3-HOUR STORM
Runoff Hydrograph

Hydrograph in 5 Minute intervals ((CFS))

EX3HR2YR

```
      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft    Q(CFS)  0         2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0002       0.03  Q         |         |         |         |
  0+10       0.0008       0.09  Q         |         |         |         |
  0+15       0.0016       0.11  Q         |         |         |         |
  0+20       0.0024       0.12  Q         |         |         |         |
  0+25       0.0034       0.14  Q         |         |         |         |
  0+30       0.0045       0.16  Q         |         |         |         |
  0+35       0.0057       0.17  QV        |         |         |         |
  0+40       0.0069       0.17  QV        |         |         |         |
  0+45       0.0082       0.19  QV        |         |         |         |
  0+50       0.0094       0.18  QV        |         |         |         |
  0+55       0.0106       0.17  Q V       |         |         |         |
  1+ 0       0.0118       0.18  Q V       |         |         |         |
  1+ 5       0.0132       0.20  Q V       |         |         |         |
  1+10       0.0147       0.22  Q  V      |         |         |         |
  1+15       0.0163       0.23  Q  V      |         |         |         |
  1+20       0.0179       0.23  Q  V      |         |         |         |
  1+25       0.0195       0.23  Q   V     |         |         |         |
  1+30       0.0213       0.26  |Q  V     |         |         |         |
  1+35       0.0232       0.27  |Q  V     |         |         |         |
  1+40       0.0250       0.27  |Q   V    |         |         |         |
  1+45       0.0271       0.30  |Q   V    |         |         |         |
  1+50       0.0293       0.33  |Q    V   |         |         |         |
  1+55       0.0315       0.33  |Q    V   |         |         |         |
  2+ 0       0.0337       0.32  |Q    V   |         |         |         |
  2+ 5       0.0360       0.32  |Q     V  |         |         |         |
  2+10       0.0395       0.51  | Q     V |         |         |         |
  2+15       0.0474       1.15  |   Q    V|         |         |         |
  2+20       0.0572       1.42  |    Q    |V        |         |         |
  2+25       0.0677       1.51  |     Q   |  V      |         |         |
  2+30       0.0896       3.18  |         | Q     V |         |         |
  2+35       0.1181       4.14  |         |     Q   |   V     |         |
  2+40       0.1488       4.46  |         |      Q  |         V         |
  2+45       0.1697       3.04  |         | Q       |         |    V    |
  2+50       0.1793       1.39  |    Q    |         |         |      V  |
  2+55       0.1851       0.83  |  Q      |         |         |       V |
  3+ 0       0.1889       0.56  | Q       |         |         |        V|
  3+ 5       0.1912       0.34  |Q        |         |         |        V|
  3+10       0.1925       0.18  Q         |         |         |        V|
  3+15       0.1931       0.09  Q         |         |         |        V|
  3+20       0.1934       0.03  Q         |         |         |        V|
  3+25       0.1934       0.01  Q         |         |         |        V|
  3+30       0.1935       0.00  Q         |         |         |        V|
  3+35       0.1935       0.00  Q         |         |         |        V|
  3+40       0.1935       0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                              EX6HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX62.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.10                   12.32

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            2.50                   27.99

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.100(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.100(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%      F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  76.4      0.286     0.000        0.286       1.000      0.286
                                                  Sum (F) =   0.286
Area averaged mean soil loss (F) (In/Hr) =  0.286
Minimum soil loss rate ((In/Hr)) =  0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX6HR2YR

U n i t   H y d r o g r a p h

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.066	(0.286)	0.059	0.007
2	0.17	0.60	0.079	(0.286)	0.071	0.008
3	0.25	0.60	0.079	(0.286)	0.071	0.008
4	0.33	0.60	0.079	(0.286)	0.071	0.008
5	0.42	0.60	0.079	(0.286)	0.071	0.008
6	0.50	0.70	0.092	(0.286)	0.083	0.009
7	0.58	0.70	0.092	(0.286)	0.083	0.009
8	0.67	0.70	0.092	(0.286)	0.083	0.009
9	0.75	0.70	0.092	(0.286)	0.083	0.009
10	0.83	0.70	0.092	(0.286)	0.083	0.009
11	0.92	0.70	0.092	(0.286)	0.083	0.009
12	1.00	0.80	0.106	(0.286)	0.095	0.011
13	1.08	0.80	0.106	(0.286)	0.095	0.011
14	1.17	0.80	0.106	(0.286)	0.095	0.011
15	1.25	0.80	0.106	(0.286)	0.095	0.011
16	1.33	0.80	0.106	(0.286)	0.095	0.011
17	1.42	0.80	0.106	(0.286)	0.095	0.011
18	1.50	0.80	0.106	(0.286)	0.095	0.011
19	1.58	0.80	0.106	(0.286)	0.095	0.011
20	1.67	0.80	0.106	(0.286)	0.095	0.011
21	1.75	0.80	0.106	(0.286)	0.095	0.011
22	1.83	0.80	0.106	(0.286)	0.095	0.011
23	1.92	0.80	0.106	(0.286)	0.095	0.011
24	2.00	0.90	0.119	(0.286)	0.107	0.012
25	2.08	0.80	0.106	(0.286)	0.095	0.011
26	2.17	0.90	0.119	(0.286)	0.107	0.012
27	2.25	0.90	0.119	(0.286)	0.107	0.012
28	2.33	0.90	0.119	(0.286)	0.107	0.012
29	2.42	0.90	0.119	(0.286)	0.107	0.012
30	2.50	0.90	0.119	(0.286)	0.107	0.012
31	2.58	0.90	0.119	(0.286)	0.107	0.012
32	2.67	0.90	0.119	(0.286)	0.107	0.012
33	2.75	1.00	0.132	(0.286)	0.119	0.013
34	2.83	1.00	0.132	(0.286)	0.119	0.013
35	2.92	1.00	0.132	(0.286)	0.119	0.013
36	3.00	1.00	0.132	(0.286)	0.119	0.013
37	3.08	1.00	0.132	(0.286)	0.119	0.013
38	3.17	1.10	0.145	(0.286)	0.131	0.015
39	3.25	1.10	0.145	(0.286)	0.131	0.015
40	3.33	1.10	0.145	(0.286)	0.131	0.015
41	3.42	1.20	0.158	(0.286)	0.143	0.016
42	3.50	1.30	0.172	(0.286)	0.154	0.017
43	3.58	1.40	0.185	(0.286)	0.166	0.018
44	3.67	1.40	0.185	(0.286)	0.166	0.018
45	3.75	1.50	0.198	(0.286)	0.178	0.020
46	3.83	1.50	0.198	(0.286)	0.178	0.020
47	3.92	1.60	0.211	(0.286)	0.190	0.021
48	4.00	1.60	0.211	(0.286)	0.190	0.021
49	4.08	1.70	0.224	(0.286)	0.202	0.022
50	4.17	1.80	0.238	(0.286)	0.214	0.024
51	4.25	1.90	0.251	(0.286)	0.226	0.025
52	4.33	2.00	0.264	(0.286)	0.238	0.026
53	4.42	2.10	0.277	(0.286)	0.249	0.028

EX6HR2YR

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54   4.50     2.10      0.277       (  0.286)       0.249        0.028
55   4.58     2.20      0.290       (  0.286)       0.261        0.029
56   4.67     2.30      0.304       (  0.286)       0.273        0.030
57   4.75     2.40      0.317       (  0.286)       0.285        0.032
58   4.83     2.40      0.317       (  0.286)       0.285        0.032
59   4.92     2.50      0.330          0.286    (  0.297)        0.044
60   5.00     2.60      0.343          0.286    (  0.309)        0.057
61   5.08     3.10      0.409          0.286    (  0.368)        0.123
62   5.17     3.60      0.475          0.286    (  0.428)        0.189
63   5.25     3.90      0.515          0.286    (  0.463)        0.228
64   5.33     4.20      0.554          0.286    (  0.499)        0.268
65   5.42     4.70      0.620          0.286    (  0.558)        0.334
66   5.50     5.60      0.739          0.286    (  0.665)        0.453
67   5.58     1.90      0.251       (  0.286)       0.226        0.025
68   5.67     0.90      0.119       (  0.286)       0.107        0.012
69   5.75     0.60      0.079       (  0.286)       0.071        0.008
70   5.83     0.50      0.066       (  0.286)       0.059        0.007
71   5.92     0.30      0.040       (  0.286)       0.036        0.004
72   6.00     0.20      0.026       (  0.286)       0.024        0.003
                (Loss Rate Not Used)
   Sum =     100.0                                 Sum =     2.6
      Flood volume = Effective rainfall      0.22(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      0.88(In)
      Total soil loss =     0.823(Ac.Ft)
      Total rainfall =      1.10(In)
      Flood volume =        8859.7 Cubic Feet
      Total soil loss =       35848.2 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      3.574(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R     S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q         |         |         |         |
  0+10       0.0005      0.05  Q         |         |         |         |
  0+15       0.0009      0.07  Q         |         |         |         |
  0+20       0.0015      0.08  Q         |         |         |         |
  0+25       0.0021      0.08  Q         |         |         |         |
  0+30       0.0027      0.09  Q         |         |         |         |
  0+35       0.0034      0.10  Q         |         |         |         |
  0+40       0.0040      0.10  Q         |         |         |         |
  0+45       0.0048      0.10  Q         |         |         |         |
  0+50       0.0055      0.10  QV        |         |         |         |
  0+55       0.0062      0.10  QV        |         |         |         |
  1+ 0       0.0069      0.11  QV        |         |         |         |
  1+ 5       0.0077      0.11  QV        |         |         |         |
  1+10       0.0085      0.12  QV        |         |         |         |
  1+15       0.0093      0.12  QV        |         |         |         |
  1+20       0.0101      0.12  QV        |         |         |         |
  1+25       0.0110      0.12  Q V       |         |         |         |
  1+30       0.0118      0.12  Q V       |         |         |         |
  1+35       0.0126      0.12  Q V       |         |         |         |
  1+40       0.0134      0.12  Q V       |         |         |         |
  1+45       0.0142      0.12  Q V       |         |         |         |
  1+50       0.0151      0.12  Q V       |         |         |         |
  1+55       0.0159      0.12  Q  V      |         |         |         |
  2+ 0       0.0167      0.12  Q  V      |         |         |         |
  2+ 5       0.0176      0.13  Q  V      |         |         |         |
  2+10       0.0184      0.12  Q  V      |         |         |         |
  2+15       0.0193      0.13  Q  V      |         |         |         |
  2+20       0.0203      0.13  Q  V      |         |         |         |
  2+25       0.0212      0.13  Q   V     |         |         |         |
  2+30       0.0221      0.13  Q   V     |         |         |         |
  2+35       0.0230      0.13  Q   V     |         |         |         |
  2+40       0.0239      0.13  Q   V     |         |         |         |
  2+45       0.0249      0.14  Q   V     |         |         |         |
  2+50       0.0259      0.14  Q    V    |         |         |         |
  2+55       0.0269      0.15  Q    V    |         |         |         |
  3+ 0       0.0279      0.15  Q    V    |         |         |         |
  3+ 5       0.0289      0.15  Q    V    |         |         |         |
  3+10       0.0300      0.15  Q    V    |         |         |         |
  3+15       0.0310      0.16  Q     V   |         |         |         |
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                                                 EX6HR2YR
    3+20       0.0322      0.16  Q     V   |         |         |         |
    3+25       0.0333      0.17  Q     V   |         |         |         |
    3+30       0.0345      0.18  Q     V   |         |         |         |
    3+35       0.0358      0.19  Q      V  |         |         |         |
    3+40       0.0372      0.20  Q      V  |         |         |         |
    3+45       0.0386      0.21  Q      V  |         |         |         |
    3+50       0.0401      0.22  Q      V  |         |         |         |
    3+55       0.0416      0.22  Q       V |         |         |         |
    4+ 0       0.0432      0.23  Q       V |         |         |         |
    4+ 5       0.0448      0.24  Q       V |         |         |         |
    4+10       0.0465      0.25  Q        V|         |         |         |
    4+15       0.0484      0.26  |Q       V|         |         |         |
    4+20       0.0503      0.28  |Q       V|         |         |         |
    4+25       0.0523      0.29  |Q        V         |         |         |
    4+30       0.0543      0.30  |Q        V         |         |         |
    4+35       0.0565      0.31  |Q        |V        |         |         |
    4+40       0.0587      0.32  |Q        |V        |         |         |
    4+45       0.0610      0.34  |Q        |V        |         |         |
    4+50       0.0634      0.35  |Q        | V       |         |         |
    4+55       0.0660      0.38  |Q        | V       |         |         |
    5+ 0       0.0693      0.47  |Q        |  V      |         |         |
    5+ 5       0.0741      0.70  | Q       |   V     |         |         |
    5+10       0.0826      1.24  |   Q     |     V   |         |         |
    5+15       0.0951      1.81  |      Q  |       V |         |         |
    5+20       0.1109      2.29  |        Q|         |V        |         |
    5+25       0.1302      2.81  |         |Q        |    V    |         |
    5+30       0.1549      3.57  |         |   Q     |         V         |
    5+35       0.1792      3.53  |         |   Q     |         |    V    |
    5+40       0.1895      1.49  |    Q    |         |         |      V  |
    5+45       0.1950      0.80  |  Q      |         |         |       V |
    5+50       0.1984      0.50  |Q        |         |         |        V|
    5+55       0.2007      0.33  |Q        |         |         |        V|
    6+ 0       0.2021      0.20  Q         |         |         |        V|
    6+ 5       0.2029      0.12  Q         |         |         |        V|
    6+10       0.2032      0.05  Q         |         |         |        V|
    6+15       0.2033      0.01  Q         |         |         |        V|
    6+20       0.2034      0.01  Q         |         |         |        V|
    6+25       0.2034      0.00  Q         |         |         |        V|
    6+30       0.2034      0.00  Q         |         |         |        V|
    6+35       0.2034      0.00  Q         |         |         |        V|
    6+40       0.2034      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

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                                EX24HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX242.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.72                   19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            4.30                   48.15

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    1.720(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.720(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  76.4      0.286     0.000        0.286       1.000      0.286
                                                  Sum (F) =   0.286
Area averaged mean soil loss (F) (In/Hr) =  0.286
Minimum soil loss rate ((In/Hr)) =  0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
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EX24HR2YR
U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.014	(0.508)	0.012	0.001
2	0.17	0.07	0.014	(0.506)	0.012	0.001
3	0.25	0.07	0.014	(0.504)	0.012	0.001
4	0.33	0.10	0.021	(0.502)	0.019	0.002
5	0.42	0.10	0.021	(0.500)	0.019	0.002
6	0.50	0.10	0.021	(0.498)	0.019	0.002
7	0.58	0.10	0.021	(0.496)	0.019	0.002
8	0.67	0.10	0.021	(0.494)	0.019	0.002
9	0.75	0.10	0.021	(0.492)	0.019	0.002
10	0.83	0.13	0.028	(0.490)	0.025	0.003
11	0.92	0.13	0.028	(0.488)	0.025	0.003
12	1.00	0.13	0.028	(0.486)	0.025	0.003
13	1.08	0.10	0.021	(0.485)	0.019	0.002
14	1.17	0.10	0.021	(0.483)	0.019	0.002
15	1.25	0.10	0.021	(0.481)	0.019	0.002
16	1.33	0.10	0.021	(0.479)	0.019	0.002
17	1.42	0.10	0.021	(0.477)	0.019	0.002
18	1.50	0.10	0.021	(0.475)	0.019	0.002
19	1.58	0.10	0.021	(0.473)	0.019	0.002
20	1.67	0.10	0.021	(0.471)	0.019	0.002
21	1.75	0.10	0.021	(0.469)	0.019	0.002
22	1.83	0.13	0.028	(0.467)	0.025	0.003
23	1.92	0.13	0.028	(0.466)	0.025	0.003
24	2.00	0.13	0.028	(0.464)	0.025	0.003
25	2.08	0.13	0.028	(0.462)	0.025	0.003
26	2.17	0.13	0.028	(0.460)	0.025	0.003
27	2.25	0.13	0.028	(0.458)	0.025	0.003
28	2.33	0.13	0.028	(0.456)	0.025	0.003
29	2.42	0.13	0.028	(0.454)	0.025	0.003
30	2.50	0.13	0.028	(0.452)	0.025	0.003
31	2.58	0.17	0.034	(0.451)	0.031	0.003
32	2.67	0.17	0.034	(0.449)	0.031	0.003
33	2.75	0.17	0.034	(0.447)	0.031	0.003
34	2.83	0.17	0.034	(0.445)	0.031	0.003
35	2.92	0.17	0.034	(0.443)	0.031	0.003
36	3.00	0.17	0.034	(0.441)	0.031	0.003
37	3.08	0.17	0.034	(0.440)	0.031	0.003
38	3.17	0.17	0.034	(0.438)	0.031	0.003
39	3.25	0.17	0.034	(0.436)	0.031	0.003
40	3.33	0.17	0.034	(0.434)	0.031	0.003
41	3.42	0.17	0.034	(0.432)	0.031	0.003
42	3.50	0.17	0.034	(0.430)	0.031	0.003
43	3.58	0.17	0.034	(0.429)	0.031	0.003
44	3.67	0.17	0.034	(0.427)	0.031	0.003
45	3.75	0.17	0.034	(0.425)	0.031	0.003
46	3.83	0.20	0.041	(0.423)	0.037	0.004
47	3.92	0.20	0.041	(0.422)	0.037	0.004
48	4.00	0.20	0.041	(0.420)	0.037	0.004
49	4.08	0.20	0.041	(0.418)	0.037	0.004
50	4.17	0.20	0.041	(0.416)	0.037	0.004
51	4.25	0.20	0.041	(0.414)	0.037	0.004
52	4.33	0.23	0.048	(0.413)	0.043	0.005
53	4.42	0.23	0.048	(0.411)	0.043	0.005

EX24HR2YR

54	4.50	0.23	0.048	(0.409)	0.043	0.005
55	4.58	0.23	0.048	(0.407)	0.043	0.005
56	4.67	0.23	0.048	(0.406)	0.043	0.005
57	4.75	0.23	0.048	(0.404)	0.043	0.005
58	4.83	0.27	0.055	(0.402)	0.050	0.006
59	4.92	0.27	0.055	(0.400)	0.050	0.006
60	5.00	0.27	0.055	(0.399)	0.050	0.006
61	5.08	0.20	0.041	(0.397)	0.037	0.004
62	5.17	0.20	0.041	(0.395)	0.037	0.004
63	5.25	0.20	0.041	(0.393)	0.037	0.004
64	5.33	0.23	0.048	(0.392)	0.043	0.005
65	5.42	0.23	0.048	(0.390)	0.043	0.005
66	5.50	0.23	0.048	(0.388)	0.043	0.005
67	5.58	0.27	0.055	(0.387)	0.050	0.006
68	5.67	0.27	0.055	(0.385)	0.050	0.006
69	5.75	0.27	0.055	(0.383)	0.050	0.006
70	5.83	0.27	0.055	(0.382)	0.050	0.006
71	5.92	0.27	0.055	(0.380)	0.050	0.006
72	6.00	0.27	0.055	(0.378)	0.050	0.006
73	6.08	0.30	0.062	(0.376)	0.056	0.006
74	6.17	0.30	0.062	(0.375)	0.056	0.006
75	6.25	0.30	0.062	(0.373)	0.056	0.006
76	6.33	0.30	0.062	(0.371)	0.056	0.006
77	6.42	0.30	0.062	(0.370)	0.056	0.006
78	6.50	0.30	0.062	(0.368)	0.056	0.006
79	6.58	0.33	0.069	(0.366)	0.062	0.007
80	6.67	0.33	0.069	(0.365)	0.062	0.007
81	6.75	0.33	0.069	(0.363)	0.062	0.007
82	6.83	0.33	0.069	(0.362)	0.062	0.007
83	6.92	0.33	0.069	(0.360)	0.062	0.007
84	7.00	0.33	0.069	(0.358)	0.062	0.007
85	7.08	0.33	0.069	(0.357)	0.062	0.007
86	7.17	0.33	0.069	(0.355)	0.062	0.007
87	7.25	0.33	0.069	(0.353)	0.062	0.007
88	7.33	0.37	0.076	(0.352)	0.068	0.008
89	7.42	0.37	0.076	(0.350)	0.068	0.008
90	7.50	0.37	0.076	(0.349)	0.068	0.008
91	7.58	0.40	0.083	(0.347)	0.074	0.008
92	7.67	0.40	0.083	(0.345)	0.074	0.008
93	7.75	0.40	0.083	(0.344)	0.074	0.008
94	7.83	0.43	0.089	(0.342)	0.080	0.009
95	7.92	0.43	0.089	(0.341)	0.080	0.009
96	8.00	0.43	0.089	(0.339)	0.080	0.009
97	8.08	0.50	0.103	(0.337)	0.093	0.010
98	8.17	0.50	0.103	(0.336)	0.093	0.010
99	8.25	0.50	0.103	(0.334)	0.093	0.010
100	8.33	0.50	0.103	(0.333)	0.093	0.010
101	8.42	0.50	0.103	(0.331)	0.093	0.010
102	8.50	0.50	0.103	(0.330)	0.093	0.010
103	8.58	0.53	0.110	(0.328)	0.099	0.011
104	8.67	0.53	0.110	(0.327)	0.099	0.011
105	8.75	0.53	0.110	(0.325)	0.099	0.011
106	8.83	0.57	0.117	(0.323)	0.105	0.012
107	8.92	0.57	0.117	(0.322)	0.105	0.012
108	9.00	0.57	0.117	(0.320)	0.105	0.012
109	9.08	0.63	0.131	(0.319)	0.118	0.013
110	9.17	0.63	0.131	(0.317)	0.118	0.013
111	9.25	0.63	0.131	(0.316)	0.118	0.013
112	9.33	0.67	0.138	(0.314)	0.124	0.014
113	9.42	0.67	0.138	(0.313)	0.124	0.014
114	9.50	0.67	0.138	(0.311)	0.124	0.014
115	9.58	0.70	0.144	(0.310)	0.130	0.014
116	9.67	0.70	0.144	(0.308)	0.130	0.014
117	9.75	0.70	0.144	(0.307)	0.130	0.014
118	9.83	0.73	0.151	(0.305)	0.136	0.015
119	9.92	0.73	0.151	(0.304)	0.136	0.015
120	10.00	0.73	0.151	(0.303)	0.136	0.015
121	10.08	0.50	0.103	(0.301)	0.093	0.010
122	10.17	0.50	0.103	(0.300)	0.093	0.010
123	10.25	0.50	0.103	(0.298)	0.093	0.010
124	10.33	0.50	0.103	(0.297)	0.093	0.010
125	10.42	0.50	0.103	(0.295)	0.093	0.010
126	10.50	0.50	0.103	(0.294)	0.093	0.010
127	10.58	0.67	0.138	(0.292)	0.124	0.014
128	10.67	0.67	0.138	(0.291)	0.124	0.014
129	10.75	0.67	0.138	(0.290)	0.124	0.014
130	10.83	0.67	0.138	(0.288)	0.124	0.014
131	10.92	0.67	0.138	(0.287)	0.124	0.014
132	11.00	0.67	0.138	(0.285)	0.124	0.014

133	11.08	0.63	0.131	(0.284)	0.118	0.013
134	11.17	0.63	0.131	(0.282)	0.118	0.013
135	11.25	0.63	0.131	(0.281)	0.118	0.013
136	11.33	0.63	0.131	(0.280)	0.118	0.013
137	11.42	0.63	0.131	(0.278)	0.118	0.013
138	11.50	0.63	0.131	(0.277)	0.118	0.013
139	11.58	0.57	0.117	(0.276)	0.105	0.012
140	11.67	0.57	0.117	(0.274)	0.105	0.012
141	11.75	0.57	0.117	(0.273)	0.105	0.012
142	11.83	0.60	0.124	(0.271)	0.111	0.012
143	11.92	0.60	0.124	(0.270)	0.111	0.012
144	12.00	0.60	0.124	(0.269)	0.111	0.012
145	12.08	0.83	0.172	(0.267)	0.155	0.017
146	12.17	0.83	0.172	(0.266)	0.155	0.017
147	12.25	0.83	0.172	(0.265)	0.155	0.017
148	12.33	0.87	0.179	(0.263)	0.161	0.018
149	12.42	0.87	0.179	(0.262)	0.161	0.018
150	12.50	0.87	0.179	(0.261)	0.161	0.018
151	12.58	0.93	0.193	(0.259)	0.173	0.019
152	12.67	0.93	0.193	(0.258)	0.173	0.019
153	12.75	0.93	0.193	(0.257)	0.173	0.019
154	12.83	0.97	0.200	(0.256)	0.180	0.020
155	12.92	0.97	0.200	(0.254)	0.180	0.020
156	13.00	0.97	0.200	(0.253)	0.180	0.020
157	13.08	1.13	0.234	(0.252)	0.211	0.023
158	13.17	1.13	0.234	(0.250)	0.211	0.023
159	13.25	1.13	0.234	(0.249)	0.211	0.023
160	13.33	1.13	0.234	(0.248)	0.211	0.023
161	13.42	1.13	0.234	(0.247)	0.211	0.023
162	13.50	1.13	0.234	(0.245)	0.211	0.023
163	13.58	0.77	0.158	(0.244)	0.142	0.016
164	13.67	0.77	0.158	(0.243)	0.142	0.016
165	13.75	0.77	0.158	(0.242)	0.142	0.016
166	13.83	0.77	0.158	(0.240)	0.142	0.016
167	13.92	0.77	0.158	(0.239)	0.142	0.016
168	14.00	0.77	0.158	(0.238)	0.142	0.016
169	14.08	0.90	0.186	(0.237)	0.167	0.019
170	14.17	0.90	0.186	(0.236)	0.167	0.019
171	14.25	0.90	0.186	(0.234)	0.167	0.019
172	14.33	0.87	0.179	(0.233)	0.161	0.018
173	14.42	0.87	0.179	(0.232)	0.161	0.018
174	14.50	0.87	0.179	(0.231)	0.161	0.018
175	14.58	0.87	0.179	(0.230)	0.161	0.018
176	14.67	0.87	0.179	(0.228)	0.161	0.018
177	14.75	0.87	0.179	(0.227)	0.161	0.018
178	14.83	0.83	0.172	(0.226)	0.155	0.017
179	14.92	0.83	0.172	(0.225)	0.155	0.017
180	15.00	0.83	0.172	(0.224)	0.155	0.017
181	15.08	0.80	0.165	(0.223)	0.149	0.017
182	15.17	0.80	0.165	(0.221)	0.149	0.017
183	15.25	0.80	0.165	(0.220)	0.149	0.017
184	15.33	0.77	0.158	(0.219)	0.142	0.016
185	15.42	0.77	0.158	(0.218)	0.142	0.016
186	15.50	0.77	0.158	(0.217)	0.142	0.016
187	15.58	0.63	0.131	(0.216)	0.118	0.013
188	15.67	0.63	0.131	(0.215)	0.118	0.013
189	15.75	0.63	0.131	(0.214)	0.118	0.013
190	15.83	0.63	0.131	(0.213)	0.118	0.013
191	15.92	0.63	0.131	(0.211)	0.118	0.013
192	16.00	0.63	0.131	(0.210)	0.118	0.013
193	16.08	0.13	0.028	(0.209)	0.025	0.003
194	16.17	0.13	0.028	(0.208)	0.025	0.003
195	16.25	0.13	0.028	(0.207)	0.025	0.003
196	16.33	0.13	0.028	(0.206)	0.025	0.003
197	16.42	0.13	0.028	(0.205)	0.025	0.003
198	16.50	0.13	0.028	(0.204)	0.025	0.003
199	16.58	0.10	0.021	(0.203)	0.019	0.002
200	16.67	0.10	0.021	(0.202)	0.019	0.002
201	16.75	0.10	0.021	(0.201)	0.019	0.002
202	16.83	0.10	0.021	(0.200)	0.019	0.002
203	16.92	0.10	0.021	(0.199)	0.019	0.002
204	17.00	0.10	0.021	(0.198)	0.019	0.002
205	17.08	0.17	0.034	(0.197)	0.031	0.003
206	17.17	0.17	0.034	(0.196)	0.031	0.003
207	17.25	0.17	0.034	(0.195)	0.031	0.003
208	17.33	0.17	0.034	(0.194)	0.031	0.003
209	17.42	0.17	0.034	(0.193)	0.031	0.003
210	17.50	0.17	0.034	(0.192)	0.031	0.003
211	17.58	0.17	0.034	(0.191)	0.031	0.003

212	17.67	0.17	0.034	(0.190)	0.031	0.003
213	17.75	0.17	0.034	(0.189)	0.031	0.003
214	17.83	0.13	0.028	(0.188)	0.025	0.003
215	17.92	0.13	0.028	(0.187)	0.025	0.003
216	18.00	0.13	0.028	(0.186)	0.025	0.003
217	18.08	0.13	0.028	(0.185)	0.025	0.003
218	18.17	0.13	0.028	(0.185)	0.025	0.003
219	18.25	0.13	0.028	(0.184)	0.025	0.003
220	18.33	0.13	0.028	(0.183)	0.025	0.003
221	18.42	0.13	0.028	(0.182)	0.025	0.003
222	18.50	0.13	0.028	(0.181)	0.025	0.003
223	18.58	0.10	0.021	(0.180)	0.019	0.002
224	18.67	0.10	0.021	(0.179)	0.019	0.002
225	18.75	0.10	0.021	(0.178)	0.019	0.002
226	18.83	0.07	0.014	(0.177)	0.012	0.001
227	18.92	0.07	0.014	(0.177)	0.012	0.001
228	19.00	0.07	0.014	(0.176)	0.012	0.001
229	19.08	0.10	0.021	(0.175)	0.019	0.002
230	19.17	0.10	0.021	(0.174)	0.019	0.002
231	19.25	0.10	0.021	(0.173)	0.019	0.002
232	19.33	0.13	0.028	(0.173)	0.025	0.003
233	19.42	0.13	0.028	(0.172)	0.025	0.003
234	19.50	0.13	0.028	(0.171)	0.025	0.003
235	19.58	0.10	0.021	(0.170)	0.019	0.002
236	19.67	0.10	0.021	(0.169)	0.019	0.002
237	19.75	0.10	0.021	(0.169)	0.019	0.002
238	19.83	0.07	0.014	(0.168)	0.012	0.001
239	19.92	0.07	0.014	(0.167)	0.012	0.001
240	20.00	0.07	0.014	(0.166)	0.012	0.001
241	20.08	0.10	0.021	(0.166)	0.019	0.002
242	20.17	0.10	0.021	(0.165)	0.019	0.002
243	20.25	0.10	0.021	(0.164)	0.019	0.002
244	20.33	0.10	0.021	(0.163)	0.019	0.002
245	20.42	0.10	0.021	(0.163)	0.019	0.002
246	20.50	0.10	0.021	(0.162)	0.019	0.002
247	20.58	0.10	0.021	(0.161)	0.019	0.002
248	20.67	0.10	0.021	(0.161)	0.019	0.002
249	20.75	0.10	0.021	(0.160)	0.019	0.002
250	20.83	0.07	0.014	(0.159)	0.012	0.001
251	20.92	0.07	0.014	(0.159)	0.012	0.001
252	21.00	0.07	0.014	(0.158)	0.012	0.001
253	21.08	0.10	0.021	(0.157)	0.019	0.002
254	21.17	0.10	0.021	(0.157)	0.019	0.002
255	21.25	0.10	0.021	(0.156)	0.019	0.002
256	21.33	0.07	0.014	(0.156)	0.012	0.001
257	21.42	0.07	0.014	(0.155)	0.012	0.001
258	21.50	0.07	0.014	(0.155)	0.012	0.001
259	21.58	0.10	0.021	(0.154)	0.019	0.002
260	21.67	0.10	0.021	(0.153)	0.019	0.002
261	21.75	0.10	0.021	(0.153)	0.019	0.002
262	21.83	0.07	0.014	(0.152)	0.012	0.001
263	21.92	0.07	0.014	(0.152)	0.012	0.001
264	22.00	0.07	0.014	(0.151)	0.012	0.001
265	22.08	0.10	0.021	(0.151)	0.019	0.002
266	22.17	0.10	0.021	(0.150)	0.019	0.002
267	22.25	0.10	0.021	(0.150)	0.019	0.002
268	22.33	0.07	0.014	(0.149)	0.012	0.001
269	22.42	0.07	0.014	(0.149)	0.012	0.001
270	22.50	0.07	0.014	(0.148)	0.012	0.001
271	22.58	0.07	0.014	(0.148)	0.012	0.001
272	22.67	0.07	0.014	(0.148)	0.012	0.001
273	22.75	0.07	0.014	(0.147)	0.012	0.001
274	22.83	0.07	0.014	(0.147)	0.012	0.001
275	22.92	0.07	0.014	(0.146)	0.012	0.001
276	23.00	0.07	0.014	(0.146)	0.012	0.001
277	23.08	0.07	0.014	(0.146)	0.012	0.001
278	23.17	0.07	0.014	(0.145)	0.012	0.001
279	23.25	0.07	0.014	(0.145)	0.012	0.001
280	23.33	0.07	0.014	(0.145)	0.012	0.001
281	23.42	0.07	0.014	(0.145)	0.012	0.001
282	23.50	0.07	0.014	(0.144)	0.012	0.001
283	23.58	0.07	0.014	(0.144)	0.012	0.001
284	23.67	0.07	0.014	(0.144)	0.012	0.001
285	23.75	0.07	0.014	(0.144)	0.012	0.001
286	23.83	0.07	0.014	(0.143)	0.012	0.001
287	23.92	0.07	0.014	(0.143)	0.012	0.001
288	24.00	0.07	0.014	(0.143)	0.012	0.001
		(Loss Rate Not Used)				
	Sum =	100.0			Sum =	2.1

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                                              EX24HR2YR
      Flood volume = Effective rainfall      0.17(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      1.55(In)
      Total soil loss =     1.444(Ac.Ft)
      Total rainfall =      1.72(In)
      Flood volume =        6990.8 Cubic Feet
      Total soil loss =       62917.3 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.263(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0002      0.01  Q         |         |         |         |
  0+20       0.0003      0.02  Q         |         |         |         |
  0+25       0.0004      0.02  Q         |         |         |         |
  0+30       0.0006      0.02  Q         |         |         |         |
  0+35       0.0007      0.02  Q         |         |         |         |
  0+40       0.0009      0.02  Q         |         |         |         |
  0+45       0.0010      0.02  Q         |         |         |         |
  0+50       0.0012      0.02  Q         |         |         |         |
  0+55       0.0014      0.03  Q         |         |         |         |
  1+ 0       0.0016      0.03  Q         |         |         |         |
  1+ 5       0.0018      0.03  Q         |         |         |         |
  1+10       0.0020      0.03  Q         |         |         |         |
  1+15       0.0021      0.02  Q         |         |         |         |
  1+20       0.0023      0.02  Q         |         |         |         |
  1+25       0.0025      0.02  Q         |         |         |         |
  1+30       0.0026      0.02  Q         |         |         |         |
  1+35       0.0028      0.02  Q         |         |         |         |
  1+40       0.0030      0.02  Q         |         |         |         |
  1+45       0.0031      0.02  Q         |         |         |         |
  1+50       0.0033      0.02  Q         |         |         |         |
  1+55       0.0035      0.03  Q         |         |         |         |
  2+ 0       0.0037      0.03  Q         |         |         |         |
  2+ 5       0.0039      0.03  Q         |         |         |         |
  2+10       0.0041      0.03  QV        |         |         |         |
  2+15       0.0043      0.03  QV        |         |         |         |
  2+20       0.0045      0.03  QV        |         |         |         |
  2+25       0.0048      0.03  QV        |         |         |         |
  2+30       0.0050      0.03  QV        |         |         |         |
  2+35       0.0052      0.03  QV        |         |         |         |
  2+40       0.0054      0.04  QV        |         |         |         |
  2+45       0.0057      0.04  QV        |         |         |         |
  2+50       0.0060      0.04  QV        |         |         |         |
  2+55       0.0062      0.04  QV        |         |         |         |
  3+ 0       0.0065      0.04  QV        |         |         |         |
  3+ 5       0.0068      0.04  QV        |         |         |         |
  3+10       0.0070      0.04  QV        |         |         |         |
  3+15       0.0073      0.04  QV        |         |         |         |
  3+20       0.0076      0.04  QV        |         |         |         |
  3+25       0.0078      0.04  QV        |         |         |         |
  3+30       0.0081      0.04  Q V       |         |         |         |
  3+35       0.0084      0.04  Q V       |         |         |         |
  3+40       0.0086      0.04  Q V       |         |         |         |
  3+45       0.0089      0.04  Q V       |         |         |         |
  3+50       0.0092      0.04  Q V       |         |         |         |
  3+55       0.0095      0.04  Q V       |         |         |         |
  4+ 0       0.0098      0.05  Q V       |         |         |         |
  4+ 5       0.0101      0.05  Q V       |         |         |         |
  4+10       0.0104      0.05  Q V       |         |         |         |
  4+15       0.0107      0.05  Q V       |         |         |         |
  4+20       0.0111      0.05  Q V       |         |         |         |
  4+25       0.0114      0.05  Q V       |         |         |         |
  4+30       0.0118      0.05  Q V       |         |         |         |
  4+35       0.0122      0.05  Q  V      |         |         |         |
  4+40       0.0125      0.05  Q  V      |         |         |         |
  4+45       0.0129      0.05  Q  V      |         |         |         |
  4+50       0.0133      0.06  Q  V      |         |         |         |
  4+55       0.0137      0.06  Q  V      |         |         |         |
  5+ 0       0.0141      0.06  Q  V      |         |         |         |
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 5+ 5       0.0145      0.06  Q  V      |         |         |         |
 5+10       0.0149      0.05  Q  V      |         |         |         |
 5+15       0.0152      0.05  Q  V      |         |         |         |
 5+20       0.0156      0.05  Q  V      |         |         |         |
 5+25       0.0159      0.05  Q  V      |         |         |         |
 5+30       0.0163      0.05  Q   V     |         |         |         |
 5+35       0.0167      0.06  Q   V     |         |         |         |
 5+40       0.0171      0.06  Q   V     |         |         |         |
 5+45       0.0175      0.06  Q   V     |         |         |         |
 5+50       0.0179      0.06  Q   V     |         |         |         |
 5+55       0.0183      0.06  Q   V     |         |         |         |
 6+ 0       0.0188      0.06  Q   V     |         |         |         |
 6+ 5       0.0192      0.06  Q   V     |         |         |         |
 6+10       0.0197      0.07  Q   V     |         |         |         |
 6+15       0.0201      0.07  Q    V    |         |         |         |
 6+20       0.0206      0.07  Q    V    |         |         |         |
 6+25       0.0211      0.07  Q    V    |         |         |         |
 6+30       0.0216      0.07  Q    V    |         |         |         |
 6+35       0.0221      0.07  Q    V    |         |         |         |
 6+40       0.0226      0.08  Q    V    |         |         |         |
 6+45       0.0231      0.08  Q    V    |         |         |         |
 6+50       0.0236      0.08  Q    V    |         |         |         |
 6+55       0.0242      0.08  Q     V   |         |         |         |
 7+ 0       0.0247      0.08  Q     V   |         |         |         |
 7+ 5       0.0252      0.08  Q     V   |         |         |         |
 7+10       0.0258      0.08  Q     V   |         |         |         |
 7+15       0.0263      0.08  Q     V   |         |         |         |
 7+20       0.0268      0.08  Q     V   |         |         |         |
 7+25       0.0274      0.08  Q     V   |         |         |         |
 7+30       0.0280      0.08  Q     V   |         |         |         |
 7+35       0.0286      0.09  Q      V  |         |         |         |
 7+40       0.0292      0.09  Q      V  |         |         |         |
 7+45       0.0298      0.09  Q      V  |         |         |         |
 7+50       0.0305      0.09  Q      V  |         |         |         |
 7+55       0.0312      0.10  Q      V  |         |         |         |
 8+ 0       0.0318      0.10  Q      V  |         |         |         |
 8+ 5       0.0326      0.10  Q       V |         |         |         |
 8+10       0.0333      0.11  Q       V |         |         |         |
 8+15       0.0341      0.11  Q       V |         |         |         |
 8+20       0.0349      0.11  Q       V |         |         |         |
 8+25       0.0357      0.12  Q       V |         |         |         |
 8+30       0.0365      0.12  Q        V|         |         |         |
 8+35       0.0373      0.12  Q        V|         |         |         |
 8+40       0.0381      0.12  Q        V|         |         |         |
 8+45       0.0390      0.12  Q        V|         |         |         |
 8+50       0.0398      0.12  Q        V|         |         |         |
 8+55       0.0407      0.13  Q         V         |         |         |
 9+ 0       0.0416      0.13  Q         V         |         |         |
 9+ 5       0.0425      0.13  Q         V         |         |         |
 9+10       0.0435      0.14  Q         V         |         |         |
 9+15       0.0445      0.14  Q         |V        |         |         |
 9+20       0.0455      0.15  Q         |V        |         |         |
 9+25       0.0466      0.15  Q         |V        |         |         |
 9+30       0.0476      0.15  Q         |V        |         |         |
 9+35       0.0487      0.16  Q         | V       |         |         |
 9+40       0.0498      0.16  Q         | V       |         |         |
 9+45       0.0509      0.16  Q         | V       |         |         |
 9+50       0.0520      0.16  Q         | V       |         |         |
 9+55       0.0532      0.17  Q         |  V      |         |         |
10+ 0       0.0544      0.17  Q         |  V      |         |         |
10+ 5       0.0555      0.16  Q         |  V      |         |         |
10+10       0.0564      0.13  Q         |   V     |         |         |
10+15       0.0573      0.13  Q         |   V     |         |         |
10+20       0.0581      0.12  Q         |   V     |         |         |
10+25       0.0589      0.12  Q         |   V     |         |         |
10+30       0.0597      0.12  Q         |   V     |         |         |
10+35       0.0606      0.12  Q         |    V    |         |         |
10+40       0.0616      0.14  Q         |    V    |         |         |
10+45       0.0626      0.15  Q         |    V    |         |         |
10+50       0.0636      0.15  Q         |    V    |         |         |
10+55       0.0647      0.15  Q         |     V   |         |         |
11+ 0       0.0658      0.15  Q         |     V   |         |         |
11+ 5       0.0668      0.15  Q         |     V   |         |         |
11+10       0.0679      0.15  Q         |     V   |         |         |
11+15       0.0689      0.15  Q         |      V  |         |         |
11+20       0.0699      0.15  Q         |      V  |         |         |
11+25       0.0709      0.15  Q         |      V  |         |         |
11+30       0.0719      0.15  Q         |      V  |         |         |
11+35       0.0729      0.14  Q         |       V |         |         |
```

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                                             EX24HR2YR
11+40       0.0739      0.14  Q         |       V |         |         |
11+45       0.0748      0.13  Q         |       V |         |         |
11+50       0.0757      0.14  Q         |       V |         |         |
11+55       0.0767      0.14  Q         |        V|         |         |
12+ 0       0.0776      0.14  Q         |        V|         |         |
12+ 5       0.0787      0.15  Q         |        V|         |         |
12+10       0.0799      0.18  Q         |        V|         |         |
12+15       0.0812      0.18  Q         |         V         |         |
12+20       0.0825      0.19  Q         |         V         |         |
12+25       0.0838      0.20  Q         |         V         |         |
12+30       0.0852      0.20  Q         |         |V        |         |
12+35       0.0866      0.20  Q         |         |V        |         |
12+40       0.0880      0.21  Q         |         |V        |         |
12+45       0.0895      0.21  Q         |         | V       |         |
12+50       0.0910      0.22  Q         |         | V       |         |
12+55       0.0925      0.22  Q         |         |  V      |         |
13+ 0       0.0941      0.22  Q         |         |  V      |         |
13+ 5       0.0957      0.23  Q         |         |  V      |         |
13+10       0.0974      0.25  |Q        |         |   V     |         |
13+15       0.0992      0.26  |Q        |         |   V     |         |
13+20       0.1010      0.26  |Q        |         |    V    |         |
13+25       0.1028      0.26  |Q        |         |    V    |         |
13+30       0.1046      0.26  |Q        |         |     V   |         |
13+35       0.1063      0.25  Q         |         |     V   |         |
13+40       0.1077      0.21  Q         |         |     V   |         |
13+45       0.1090      0.19  Q         |         |      V  |         |
13+50       0.1103      0.19  Q         |         |      V  |         |
13+55       0.1116      0.18  Q         |         |      V  |         |
14+ 0       0.1128      0.18  Q         |         |       V |         |
14+ 5       0.1141      0.19  Q         |         |       V |         |
14+10       0.1155      0.20  Q         |         |       V |         |
14+15       0.1169      0.20  Q         |         |        V|         |
14+20       0.1183      0.21  Q         |         |        V|         |
14+25       0.1197      0.20  Q         |         |        V|         |
14+30       0.1211      0.20  Q         |         |         V         |
14+35       0.1225      0.20  Q         |         |         V         |
14+40       0.1239      0.20  Q         |         |         V         |
14+45       0.1253      0.20  Q         |         |         |V        |
14+50       0.1267      0.20  Q         |         |         |V        |
14+55       0.1280      0.20  Q         |         |         |V        |
15+ 0       0.1294      0.20  Q         |         |         | V       |
15+ 5       0.1307      0.19  Q         |         |         | V       |
15+10       0.1320      0.19  Q         |         |         | V       |
15+15       0.1333      0.19  Q         |         |         |  V      |
15+20       0.1346      0.19  Q         |         |         |  V      |
15+25       0.1358      0.18  Q         |         |         |  V      |
15+30       0.1371      0.18  Q         |         |         |   V     |
15+35       0.1383      0.17  Q         |         |         |   V     |
15+40       0.1394      0.16  Q         |         |         |   V     |
15+45       0.1404      0.15  Q         |         |         |   V     |
15+50       0.1415      0.15  Q         |         |         |    V    |
15+55       0.1425      0.15  Q         |         |         |    V    |
16+ 0       0.1435      0.15  Q         |         |         |    V    |
16+ 5       0.1444      0.13  Q         |         |         |    V    |
16+10       0.1449      0.07  Q         |         |         |     V   |
16+15       0.1452      0.05  Q         |         |         |     V   |
16+20       0.1455      0.04  Q         |         |         |     V   |
16+25       0.1458      0.04  Q         |         |         |     V   |
16+30       0.1460      0.04  Q         |         |         |     V   |
16+35       0.1462      0.03  Q         |         |         |     V   |
16+40       0.1464      0.03  Q         |         |         |     V   |
16+45       0.1466      0.02  Q         |         |         |     V   |
16+50       0.1468      0.02  Q         |         |         |     V   |
16+55       0.1469      0.02  Q         |         |         |     V   |
17+ 0       0.1471      0.02  Q         |         |         |     V   |
17+ 5       0.1473      0.03  Q         |         |         |     V   |
17+10       0.1475      0.03  Q         |         |         |     V   |
17+15       0.1477      0.04  Q         |         |         |     V   |
17+20       0.1480      0.04  Q         |         |         |     V   |
17+25       0.1483      0.04  Q         |         |         |     V   |
17+30       0.1485      0.04  Q         |         |         |      V  |
17+35       0.1488      0.04  Q         |         |         |      V  |
17+40       0.1491      0.04  Q         |         |         |      V  |
17+45       0.1493      0.04  Q         |         |         |      V  |
17+50       0.1496      0.04  Q         |         |         |      V  |
17+55       0.1498      0.03  Q         |         |         |      V  |
18+ 0       0.1500      0.03  Q         |         |         |      V  |
18+ 5       0.1503      0.03  Q         |         |         |      V  |
18+10       0.1505      0.03  Q         |         |         |      V  |
                                              Page 8
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  18+15       0.1507      0.03  Q          |         |         |      V  |
  18+20       0.1509      0.03  Q          |         |         |      V  |
  18+25       0.1511      0.03  Q          |         |         |      V  |
  18+30       0.1513      0.03  Q          |         |         |      V  |
  18+35       0.1515      0.03  Q          |         |         |      V  |
  18+40       0.1517      0.03  Q          |         |         |      V  |
  18+45       0.1519      0.02  Q          |         |         |      V  |
  18+50       0.1520      0.02  Q          |         |         |      V  |
  18+55       0.1522      0.02  Q          |         |         |      V  |
  19+ 0       0.1523      0.02  Q          |         |         |      V  |
  19+ 5       0.1524      0.02  Q          |         |         |      V  |
  19+10       0.1526      0.02  Q          |         |         |       V |
  19+15       0.1527      0.02  Q          |         |         |       V |
  19+20       0.1529      0.02  Q          |         |         |       V |
  19+25       0.1531      0.03  Q          |         |         |       V |
  19+30       0.1533      0.03  Q          |         |         |       V |
  19+35       0.1535      0.03  Q          |         |         |       V |
  19+40       0.1536      0.03  Q          |         |         |       V |
  19+45       0.1538      0.02  Q          |         |         |       V |
  19+50       0.1540      0.02  Q          |         |         |       V |
  19+55       0.1541      0.02  Q          |         |         |       V |
  20+ 0       0.1542      0.02  Q          |         |         |       V |
  20+ 5       0.1543      0.02  Q          |         |         |       V |
  20+10       0.1545      0.02  Q          |         |         |       V |
  20+15       0.1546      0.02  Q          |         |         |       V |
  20+20       0.1548      0.02  Q          |         |         |       V |
  20+25       0.1549      0.02  Q          |         |         |       V |
  20+30       0.1551      0.02  Q          |         |         |       V |
  20+35       0.1553      0.02  Q          |         |         |       V |
  20+40       0.1554      0.02  Q          |         |         |       V |
  20+45       0.1556      0.02  Q          |         |         |       V |
  20+50       0.1557      0.02  Q          |         |         |       V |
  20+55       0.1559      0.02  Q          |         |         |       V |
  21+ 0       0.1560      0.02  Q          |         |         |       V |
  21+ 5       0.1561      0.02  Q          |         |         |       V |
  21+10       0.1562      0.02  Q          |         |         |       V |
  21+15       0.1564      0.02  Q          |         |         |       V |
  21+20       0.1565      0.02  Q          |         |         |        V|
  21+25       0.1567      0.02  Q          |         |         |        V|
  21+30       0.1568      0.02  Q          |         |         |        V|
  21+35       0.1569      0.02  Q          |         |         |        V|
  21+40       0.1570      0.02  Q          |         |         |        V|
  21+45       0.1572      0.02  Q          |         |         |        V|
  21+50       0.1573      0.02  Q          |         |         |        V|
  21+55       0.1575      0.02  Q          |         |         |        V|
  22+ 0       0.1576      0.02  Q          |         |         |        V|
  22+ 5       0.1577      0.02  Q          |         |         |        V|
  22+10       0.1579      0.02  Q          |         |         |        V|
  22+15       0.1580      0.02  Q          |         |         |        V|
  22+20       0.1581      0.02  Q          |         |         |        V|
  22+25       0.1583      0.02  Q          |         |         |        V|
  22+30       0.1584      0.02  Q          |         |         |        V|
  22+35       0.1585      0.02  Q          |         |         |        V|
  22+40       0.1586      0.02  Q          |         |         |        V|
  22+45       0.1587      0.02  Q          |         |         |        V|
  22+50       0.1588      0.02  Q          |         |         |        V|
  22+55       0.1589      0.02  Q          |         |         |        V|
  23+ 0       0.1590      0.02  Q          |         |         |        V|
  23+ 5       0.1591      0.02  Q          |         |         |        V|
  23+10       0.1593      0.02  Q          |         |         |        V|
  23+15       0.1594      0.02  Q          |         |         |        V|
  23+20       0.1595      0.02  Q          |         |         |        V|
  23+25       0.1596      0.02  Q          |         |         |        V|
  23+30       0.1597      0.02  Q          |         |         |        V|
  23+35       0.1598      0.02  Q          |         |         |        V|
  23+40       0.1599      0.02  Q          |         |         |        V|
  23+45       0.1600      0.02  Q          |         |         |        V|
  23+50       0.1601      0.02  Q          |         |         |        V|
  23+55       0.1602      0.02  Q          |         |         |        V|
  24+ 0       0.1603      0.02  Q          |         |         |        V|
  24+ 5       0.1604      0.01  Q          |         |         |        V|
  24+10       0.1604      0.01  Q          |         |         |        V|
  24+15       0.1605      0.00  Q          |         |         |        V|
  24+20       0.1605      0.00  Q          |         |         |        V|
  24+25       0.1605      0.00  Q          |         |         |        V|
  24+30       0.1605      0.00  Q          |         |         |        V|
  24+35       0.1605      0.00  Q          |         |         |        V|
  24+40       0.1605      0.00  Q          |         |         |        V|
-----------------------------------------------------------------------
```

5 YEAR

```
                                EX1HR5YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX15.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.48                    5.37

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.20                   13.44

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.649(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.649(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00          0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  76.4      0.286     0.000        0.286       1.000      0.286
                                                  Sum (F) =   0.286
Area averaged mean soil loss (F) (In/Hr) =  0.286
Minimum soil loss rate ((In/Hr)) =  0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

EX1HR5YR

U n i t   H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.342	0.286	(0.308)	0.056
2	0.17	4.50	0.350	0.286	(0.315)	0.064
3	0.25	5.40	0.420	0.286	(0.378)	0.134
4	0.33	5.40	0.420	0.286	(0.378)	0.134
5	0.42	5.70	0.444	0.286	(0.399)	0.157
6	0.50	6.40	0.498	0.286	(0.448)	0.212
7	0.58	7.90	0.615	0.286	(0.553)	0.328
8	0.67	9.10	0.708	0.286	(0.637)	0.422
9	0.75	12.80	0.996	0.286	(0.897)	0.710
10	0.83	25.60	1.992	0.286	(1.793)	1.706
11	0.92	7.90	0.615	0.286	(0.553)	0.328
12	1.00	4.90	0.381	0.286	(0.343)	0.095
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	4.3

Flood volume = Effective rainfall   0.36(In)
 times area   11.2(Ac.)/[(In)/(Ft.)] =   0.3(Ac.Ft)
Total soil loss =   0.29(In)
Total soil loss =   0.267(Ac.Ft)
Total rainfall =   0.65(In)
Flood volume =   14717.4 Cubic Feet
Total soil loss =   11644.0 Cubic Feet

Peak flow rate of this hydrograph =   11.864(CFS)

1 - H O U R   S T O R M
R u n o f f   H y d r o g r a p h

Hydrograph in   5   Minute intervals ((CFS))

```
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0008      0.12  Q         |         |         |         |
  0+10       0.0038      0.44  Q         |         |         |         |
  0+15       0.0088      0.73  |Q        |         |         |         |
  0+20       0.0169      1.17  |VQ       |         |         |         |
  0+25       0.0264      1.38  | QV      |         |         |         |
  0+30       0.0380      1.69  |  QV     |         |         |         |
  0+35       0.0540      2.32  |   Q V   |         |         |         |
  0+40       0.0767      3.30  |     Q  V|         |         |         |
  0+45       0.1090      4.69  |        Q| V       |         |         |
  0+50       0.1686      8.65  |         |      Q V|         |         |
  0+55       0.2503     11.86  |         |         |  Q     V|         |
  1+ 0       0.2916      6.00  |         |Q        |         |    V    |
  1+ 5       0.3126      3.04  |     Q   |         |         |      V  |
  1+10       0.3234      1.57  |  Q      |         |         |       V |
  1+15       0.3299      0.95  |Q        |         |         |        V|
  1+20       0.3339      0.58  |Q        |         |         |        V|
  1+25       0.3363      0.35  Q         |         |         |        V|
  1+30       0.3376      0.19  Q         |         |         |        V|
```

```
    1+35       0.3378      0.04  Q         |         |         |        V|
    1+40       0.3379      0.01  Q         |         |         |         V
-----------------------------------------------------------------------
```

EX3HR5YR

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.80                   8.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.80                  20.15

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.034(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.034(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  76.4      0.286     0.000        0.286       1.000      0.286
                                                  Sum (F) =   0.286
Area averaged mean soil loss (F) (In/Hr) =  0.286
Minimum soil loss rate ((In/Hr)) =  0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX3HR5YR

U n i t   H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	1.30	0.161	(0.286)	0.145	0.016
2	0.17	1.30	0.161	(0.286)	0.145	0.016
3	0.25	1.10	0.137	(0.286)	0.123	0.014
4	0.33	1.50	0.186	(0.286)	0.168	0.019
5	0.42	1.50	0.186	(0.286)	0.168	0.019
6	0.50	1.80	0.223	(0.286)	0.201	0.022
7	0.58	1.50	0.186	(0.286)	0.168	0.019
8	0.67	1.80	0.223	(0.286)	0.201	0.022
9	0.75	1.80	0.223	(0.286)	0.201	0.022
10	0.83	1.50	0.186	(0.286)	0.168	0.019
11	0.92	1.60	0.199	(0.286)	0.179	0.020
12	1.00	1.80	0.223	(0.286)	0.201	0.022
13	1.08	2.20	0.273	(0.286)	0.246	0.027
14	1.17	2.20	0.273	(0.286)	0.246	0.027
15	1.25	2.20	0.273	(0.286)	0.246	0.027
16	1.33	2.00	0.248	(0.286)	0.223	0.025
17	1.42	2.60	0.323	0.286	(0.290)	0.036
18	1.50	2.70	0.335	0.286	(0.302)	0.049
19	1.58	2.40	0.298	(0.286)	0.268	0.030
20	1.67	2.70	0.335	0.286	(0.302)	0.049
21	1.75	3.30	0.410	0.286	(0.369)	0.123
22	1.83	3.10	0.385	0.286	(0.346)	0.098
23	1.92	2.90	0.360	0.286	(0.324)	0.073
24	2.00	3.00	0.372	0.286	(0.335)	0.086
25	2.08	3.10	0.385	0.286	(0.346)	0.098
26	2.17	4.20	0.521	0.286	(0.469)	0.235
27	2.25	5.00	0.621	0.286	(0.558)	0.334
28	2.33	3.50	0.434	0.286	(0.391)	0.148
29	2.42	6.80	0.844	0.286	(0.759)	0.557
30	2.50	7.30	0.906	0.286	(0.815)	0.619
31	2.58	8.20	1.018	0.286	(0.916)	0.731
32	2.67	5.90	0.732	0.286	(0.659)	0.446
33	2.75	2.00	0.248	(0.286)	0.223	0.025
34	2.83	1.80	0.223	(0.286)	0.201	0.022
35	2.92	1.80	0.223	(0.286)	0.201	0.022
36	3.00	0.60	0.074	(0.286)	0.067	0.007

(Loss Rate Not Used)

Sum = 100.0 Sum = 4.1

Flood volume = Effective rainfall 0.34(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)
Total soil loss = 0.69(In)
Total soil loss = 0.644(Ac.Ft)
Total rainfall = 1.03(In)
Flood volume = 13973.5 Cubic Feet
Total soil loss = 28060.6 Cubic Feet

Peak flow rate of this hydrograph = 6.711(CFS)

+++

3 - H O U R   S T O R M
R u n o f f   H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

EX3HR5YR

```
      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0         2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0011      0.12  Q         |         |         |         |
  0+15       0.0021      0.15  Q         |         |         |         |
  0+20       0.0031      0.16  Q         |         |         |         |
  0+25       0.0044      0.19  Q         |         |         |         |
  0+30       0.0058      0.20  Q         |         |         |         |
  0+35       0.0074      0.22  Q         |         |         |         |
  0+40       0.0089      0.22  QV        |         |         |         |
  0+45       0.0105      0.24  QV        |         |         |         |
  0+50       0.0122      0.24  QV        |         |         |         |
  0+55       0.0137      0.22  QV        |         |         |         |
  1+ 0       0.0153      0.23  QV        |         |         |         |
  1+ 5       0.0171      0.25  |QV       |         |         |         |
  1+10       0.0190      0.29  |QV       |         |         |         |
  1+15       0.0211      0.30  |QV       |         |         |         |
  1+20       0.0231      0.30  |QV       |         |         |         |
  1+25       0.0252      0.31  |Q V      |         |         |         |
  1+30       0.0279      0.39  |Q V      |         |         |         |
  1+35       0.0310      0.44  |Q V      |         |         |         |
  1+40       0.0338      0.41  |Q  V     |         |         |         |
  1+45       0.0383      0.65  | Q V     |         |         |         |
  1+50       0.0454      1.03  |   QV    |         |         |         |
  1+55       0.0522      0.99  |  Q  V   |         |         |         |
  2+ 0       0.0584      0.90  |  Q   V  |         |         |         |
  2+ 5       0.0651      0.97  |  Q    V |         |         |         |
  2+10       0.0743      1.34  |    Q   V|         |         |         |
  2+15       0.0903      2.32  |        Q|V        |         |         |
  2+20       0.1091      2.73  |         Q  V      |         |         |
  2+25       0.1288      2.87  |         |Q    V   |         |         |
  2+30       0.1635      5.04  |         |         Q         |         |
  2+35       0.2068      6.28  |         |         |    Q    |         |
  2+40       0.2530      6.71  |         |         |     Q   |V        |
  2+45       0.2854      4.70  |         |       Q |         |    V    |
  2+50       0.2999      2.12  |       Q |         |         |      V  |
  2+55       0.3085      1.24  |   Q     |         |         |       V |
  3+ 0       0.3141      0.81  |  Q      |         |         |        V|
  3+ 5       0.3175      0.50  |Q        |         |         |        V|
  3+10       0.3194      0.27  |Q        |         |         |        V|
  3+15       0.3203      0.14  Q         |         |         |        V|
  3+20       0.3207      0.05  Q         |         |         |        V|
  3+25       0.3207      0.01  Q         |         |         |        V|
  3+30       0.3208      0.01  Q         |         |         |        V|
  3+35       0.3208      0.00  Q         |         |         |        V|
  3+40       0.3208      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                                EX6HR5YR
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.10                 12.32

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            2.50                 27.99

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.428(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.428(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  76.4      0.286     0.000        0.286       1.000      0.286
                                                  Sum (F) =   0.286
Area averaged mean soil loss (F) (In/Hr) =  0.286
Minimum soil loss rate ((In/Hr)) =  0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX6HR5YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.086	(0.286)	0.077	0.009
2	0.17	0.60	0.103	(0.286)	0.093	0.010
3	0.25	0.60	0.103	(0.286)	0.093	0.010
4	0.33	0.60	0.103	(0.286)	0.093	0.010
5	0.42	0.60	0.103	(0.286)	0.093	0.010
6	0.50	0.70	0.120	(0.286)	0.108	0.012
7	0.58	0.70	0.120	(0.286)	0.108	0.012
8	0.67	0.70	0.120	(0.286)	0.108	0.012
9	0.75	0.70	0.120	(0.286)	0.108	0.012
10	0.83	0.70	0.120	(0.286)	0.108	0.012
11	0.92	0.70	0.120	(0.286)	0.108	0.012
12	1.00	0.80	0.137	(0.286)	0.123	0.014
13	1.08	0.80	0.137	(0.286)	0.123	0.014
14	1.17	0.80	0.137	(0.286)	0.123	0.014
15	1.25	0.80	0.137	(0.286)	0.123	0.014
16	1.33	0.80	0.137	(0.286)	0.123	0.014
17	1.42	0.80	0.137	(0.286)	0.123	0.014
18	1.50	0.80	0.137	(0.286)	0.123	0.014
19	1.58	0.80	0.137	(0.286)	0.123	0.014
20	1.67	0.80	0.137	(0.286)	0.123	0.014
21	1.75	0.80	0.137	(0.286)	0.123	0.014
22	1.83	0.80	0.137	(0.286)	0.123	0.014
23	1.92	0.80	0.137	(0.286)	0.123	0.014
24	2.00	0.90	0.154	(0.286)	0.139	0.015
25	2.08	0.80	0.137	(0.286)	0.123	0.014
26	2.17	0.90	0.154	(0.286)	0.139	0.015
27	2.25	0.90	0.154	(0.286)	0.139	0.015
28	2.33	0.90	0.154	(0.286)	0.139	0.015
29	2.42	0.90	0.154	(0.286)	0.139	0.015
30	2.50	0.90	0.154	(0.286)	0.139	0.015
31	2.58	0.90	0.154	(0.286)	0.139	0.015
32	2.67	0.90	0.154	(0.286)	0.139	0.015
33	2.75	1.00	0.171	(0.286)	0.154	0.017
34	2.83	1.00	0.171	(0.286)	0.154	0.017
35	2.92	1.00	0.171	(0.286)	0.154	0.017
36	3.00	1.00	0.171	(0.286)	0.154	0.017
37	3.08	1.00	0.171	(0.286)	0.154	0.017
38	3.17	1.10	0.188	(0.286)	0.170	0.019
39	3.25	1.10	0.188	(0.286)	0.170	0.019
40	3.33	1.10	0.188	(0.286)	0.170	0.019
41	3.42	1.20	0.206	(0.286)	0.185	0.021
42	3.50	1.30	0.223	(0.286)	0.200	0.022
43	3.58	1.40	0.240	(0.286)	0.216	0.024
44	3.67	1.40	0.240	(0.286)	0.216	0.024
45	3.75	1.50	0.257	(0.286)	0.231	0.026
46	3.83	1.50	0.257	(0.286)	0.231	0.026
47	3.92	1.60	0.274	(0.286)	0.247	0.027
48	4.00	1.60	0.274	(0.286)	0.247	0.027
49	4.08	1.70	0.291	(0.286)	0.262	0.029
50	4.17	1.80	0.308	(0.286)	0.278	0.031
51	4.25	1.90	0.326	0.286	(0.293)	0.039
52	4.33	2.00	0.343	0.286	(0.308)	0.056
53	4.42	2.10	0.360	0.286	(0.324)	0.073

```
54   4.50     2.10      0.360          0.286    (  0.324)        0.073
55   4.58     2.20      0.377          0.286    (  0.339)        0.090
56   4.67     2.30      0.394          0.286    (  0.355)        0.108
57   4.75     2.40      0.411          0.286    (  0.370)        0.125
58   4.83     2.40      0.411          0.286    (  0.370)        0.125
59   4.92     2.50      0.428          0.286    (  0.386)        0.142
60   5.00     2.60      0.445          0.286    (  0.401)        0.159
61   5.08     3.10      0.531          0.286    (  0.478)        0.245
62   5.17     3.60      0.617          0.286    (  0.555)        0.330
63   5.25     3.90      0.668          0.286    (  0.601)        0.382
64   5.33     4.20      0.720          0.286    (  0.648)        0.433
65   5.42     4.70      0.805          0.286    (  0.725)        0.519
66   5.50     5.60      0.960          0.286    (  0.864)        0.673
67   5.58     1.90      0.326          0.286    (  0.293)        0.039
68   5.67     0.90      0.154       (  0.286)       0.139         0.015
69   5.75     0.60      0.103       (  0.286)       0.093         0.010
70   5.83     0.50      0.086       (  0.286)       0.077         0.009
71   5.92     0.30      0.051       (  0.286)       0.046         0.005
72   6.00     0.20      0.034       (  0.286)       0.031         0.003
                   (Loss Rate Not Used)
   Sum =     100.0                                 Sum =     4.5
      Flood volume = Effective rainfall      0.37(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
      Total soil loss =      1.05(In)
      Total soil loss =     0.984(Ac.Ft)
      Total rainfall =      1.43(In)
      Flood volume =       15162.7 Cubic Feet
      Total soil loss =       42872.8 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      5.604(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R     S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q          |         |         |         |
  0+10       0.0006      0.07  Q          |         |         |         |
  0+15       0.0012      0.09  Q          |         |         |         |
  0+20       0.0019      0.10  Q          |         |         |         |
  0+25       0.0027      0.11  Q          |         |         |         |
  0+30       0.0035      0.12  Q          |         |         |         |
  0+35       0.0044      0.13  Q          |         |         |         |
  0+40       0.0053      0.13  Q          |         |         |         |
  0+45       0.0062      0.13  Q          |         |         |         |
  0+50       0.0071      0.13  Q          |         |         |         |
  0+55       0.0080      0.13  Q          |         |         |         |
  1+ 0       0.0090      0.14  QV         |         |         |         |
  1+ 5       0.0100      0.15  QV         |         |         |         |
  1+10       0.0110      0.15  QV         |         |         |         |
  1+15       0.0121      0.15  QV         |         |         |         |
  1+20       0.0132      0.15  QV         |         |         |         |
  1+25       0.0142      0.15  QV         |         |         |         |
  1+30       0.0153      0.15  QV         |         |         |         |
  1+35       0.0163      0.15  QV         |         |         |         |
  1+40       0.0174      0.15  Q V        |         |         |         |
  1+45       0.0185      0.15  Q V        |         |         |         |
  1+50       0.0195      0.15  Q V        |         |         |         |
  1+55       0.0206      0.15  Q V        |         |         |         |
  2+ 0       0.0217      0.16  Q V        |         |         |         |
  2+ 5       0.0228      0.16  Q V        |         |         |         |
  2+10       0.0239      0.16  Q V        |         |         |         |
  2+15       0.0251      0.17  Q V        |         |         |         |
  2+20       0.0263      0.17  Q  V       |         |         |         |
  2+25       0.0275      0.17  Q  V       |         |         |         |
  2+30       0.0287      0.17  Q  V       |         |         |         |
  2+35       0.0299      0.17  Q  V       |         |         |         |
  2+40       0.0311      0.17  Q  V       |         |         |         |
  2+45       0.0323      0.18  Q  V       |         |         |         |
  2+50       0.0336      0.19  Q  V       |         |         |         |
  2+55       0.0349      0.19  Q   V      |         |         |         |
  3+ 0       0.0362      0.19  Q   V      |         |         |         |
  3+ 5       0.0375      0.19  Q   V      |         |         |         |
  3+10       0.0389      0.20  Q   V      |         |         |         |
  3+15       0.0403      0.21  Q   V      |         |         |         |
```

EX6HR5YR

```
    3+20      0.0417      0.21  Q   V     |         |         |         |
    3+25      0.0432      0.21  Q   V     |         |         |         |
    3+30      0.0448      0.23  Q    V    |         |         |         |
    3+35      0.0465      0.24  Q    V    |         |         |         |
    3+40      0.0483      0.26  |Q   V    |         |         |         |
    3+45      0.0501      0.27  |Q   V    |         |         |         |
    3+50      0.0520      0.28  |Q   V    |         |         |         |
    3+55      0.0540      0.29  |Q    V   |         |         |         |
    4+ 0      0.0561      0.30  |Q    V   |         |         |         |
    4+ 5      0.0582      0.31  |Q    V   |         |         |         |
    4+10      0.0604      0.32  |Q    V   |         |         |         |
    4+15      0.0629      0.35  |Q     V  |         |         |         |
    4+20      0.0659      0.44  |Q     V  |         |         |         |
    4+25      0.0699      0.59  | Q     V |         |         |         |
    4+30      0.0749      0.72  | Q     V |         |         |         |
    4+35      0.0804      0.80  |  Q     V|         |         |         |
    4+40      0.0870      0.96  |  Q      V         |         |         |
    4+45      0.0948      1.13  |   Q     V         |         |         |
    4+50      0.1036      1.28  |    Q    |V        |         |         |
    4+55      0.1131      1.37  |    Q    | V       |         |         |
    5+ 0      0.1237      1.53  |     Q   |   V     |         |         |
    5+ 5      0.1365      1.86  |      Q  |    V    |         |         |
    5+10      0.1541      2.56  |         Q      V  |         |         |
    5+15      0.1769      3.31  |         |  Q      V         |         |
    5+20      0.2040      3.94  |         |    Q    |  V      |         |
    5+25      0.2358      4.61  |         |       Q |      V  |         |
    5+30      0.2743      5.60  |         |         | Q       |V        |
    5+35      0.3114      5.38  |         |         |Q        |    V    |
    5+40      0.3272      2.30  |        Q|         |         |      V  |
    5+45      0.3356      1.22  |   Q     |         |         |       V |
    5+50      0.3408      0.75  | Q       |         |         |        V|
    5+55      0.3441      0.49  |Q        |         |         |        V|
    6+ 0      0.3462      0.30  |Q        |         |         |        V|
    6+ 5      0.3474      0.17  Q         |         |         |        V|
    6+10      0.3479      0.08  Q         |         |         |        V|
    6+15      0.3480      0.01  Q         |         |         |        V|
    6+20      0.3480      0.01  Q         |         |         |        V|
    6+25      0.3481      0.00  Q         |         |         |        V|
    6+30      0.3481      0.00  Q         |         |         |        V|
    6+35      0.3481      0.00  Q         |         |         |        V|
    6+40      0.3481      0.00  Q         |         |         |        V|
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                              EX24HR5YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.72                   19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            4.30                   48.15

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    2.324(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.324(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00          0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%      F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  76.4      0.286     0.000        0.286       1.000      0.286
                                                  Sum (F) =   0.286
Area averaged mean soil loss (F) (In/Hr) =  0.286
Minimum soil loss rate ((In/Hr)) =  0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
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EX24HR5YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.019	(0.508)	0.017	0.002
2	0.17	0.07	0.019	(0.506)	0.017	0.002
3	0.25	0.07	0.019	(0.504)	0.017	0.002
4	0.33	0.10	0.028	(0.502)	0.025	0.003
5	0.42	0.10	0.028	(0.500)	0.025	0.003
6	0.50	0.10	0.028	(0.498)	0.025	0.003
7	0.58	0.10	0.028	(0.496)	0.025	0.003
8	0.67	0.10	0.028	(0.494)	0.025	0.003
9	0.75	0.10	0.028	(0.492)	0.025	0.003
10	0.83	0.13	0.037	(0.490)	0.033	0.004
11	0.92	0.13	0.037	(0.488)	0.033	0.004
12	1.00	0.13	0.037	(0.486)	0.033	0.004
13	1.08	0.10	0.028	(0.485)	0.025	0.003
14	1.17	0.10	0.028	(0.483)	0.025	0.003
15	1.25	0.10	0.028	(0.481)	0.025	0.003
16	1.33	0.10	0.028	(0.479)	0.025	0.003
17	1.42	0.10	0.028	(0.477)	0.025	0.003
18	1.50	0.10	0.028	(0.475)	0.025	0.003
19	1.58	0.10	0.028	(0.473)	0.025	0.003
20	1.67	0.10	0.028	(0.471)	0.025	0.003
21	1.75	0.10	0.028	(0.469)	0.025	0.003
22	1.83	0.13	0.037	(0.467)	0.033	0.004
23	1.92	0.13	0.037	(0.466)	0.033	0.004
24	2.00	0.13	0.037	(0.464)	0.033	0.004
25	2.08	0.13	0.037	(0.462)	0.033	0.004
26	2.17	0.13	0.037	(0.460)	0.033	0.004
27	2.25	0.13	0.037	(0.458)	0.033	0.004
28	2.33	0.13	0.037	(0.456)	0.033	0.004
29	2.42	0.13	0.037	(0.454)	0.033	0.004
30	2.50	0.13	0.037	(0.452)	0.033	0.004
31	2.58	0.17	0.046	(0.451)	0.042	0.005
32	2.67	0.17	0.046	(0.449)	0.042	0.005
33	2.75	0.17	0.046	(0.447)	0.042	0.005
34	2.83	0.17	0.046	(0.445)	0.042	0.005
35	2.92	0.17	0.046	(0.443)	0.042	0.005
36	3.00	0.17	0.046	(0.441)	0.042	0.005
37	3.08	0.17	0.046	(0.440)	0.042	0.005
38	3.17	0.17	0.046	(0.438)	0.042	0.005
39	3.25	0.17	0.046	(0.436)	0.042	0.005
40	3.33	0.17	0.046	(0.434)	0.042	0.005
41	3.42	0.17	0.046	(0.432)	0.042	0.005
42	3.50	0.17	0.046	(0.430)	0.042	0.005
43	3.58	0.17	0.046	(0.429)	0.042	0.005
44	3.67	0.17	0.046	(0.427)	0.042	0.005
45	3.75	0.17	0.046	(0.425)	0.042	0.005
46	3.83	0.20	0.056	(0.423)	0.050	0.006
47	3.92	0.20	0.056	(0.422)	0.050	0.006
48	4.00	0.20	0.056	(0.420)	0.050	0.006
49	4.08	0.20	0.056	(0.418)	0.050	0.006
50	4.17	0.20	0.056	(0.416)	0.050	0.006
51	4.25	0.20	0.056	(0.414)	0.050	0.006
52	4.33	0.23	0.065	(0.413)	0.059	0.007
53	4.42	0.23	0.065	(0.411)	0.059	0.007

54	4.50	0.23	0.065	(0.409)	0.059	0.007
55	4.58	0.23	0.065	(0.407)	0.059	0.007
56	4.67	0.23	0.065	(0.406)	0.059	0.007
57	4.75	0.23	0.065	(0.404)	0.059	0.007
58	4.83	0.27	0.074	(0.402)	0.067	0.007
59	4.92	0.27	0.074	(0.400)	0.067	0.007
60	5.00	0.27	0.074	(0.399)	0.067	0.007
61	5.08	0.20	0.056	(0.397)	0.050	0.006
62	5.17	0.20	0.056	(0.395)	0.050	0.006
63	5.25	0.20	0.056	(0.393)	0.050	0.006
64	5.33	0.23	0.065	(0.392)	0.059	0.007
65	5.42	0.23	0.065	(0.390)	0.059	0.007
66	5.50	0.23	0.065	(0.388)	0.059	0.007
67	5.58	0.27	0.074	(0.387)	0.067	0.007
68	5.67	0.27	0.074	(0.385)	0.067	0.007
69	5.75	0.27	0.074	(0.383)	0.067	0.007
70	5.83	0.27	0.074	(0.382)	0.067	0.007
71	5.92	0.27	0.074	(0.380)	0.067	0.007
72	6.00	0.27	0.074	(0.378)	0.067	0.007
73	6.08	0.30	0.084	(0.376)	0.075	0.008
74	6.17	0.30	0.084	(0.375)	0.075	0.008
75	6.25	0.30	0.084	(0.373)	0.075	0.008
76	6.33	0.30	0.084	(0.371)	0.075	0.008
77	6.42	0.30	0.084	(0.370)	0.075	0.008
78	6.50	0.30	0.084	(0.368)	0.075	0.008
79	6.58	0.33	0.093	(0.366)	0.084	0.009
80	6.67	0.33	0.093	(0.365)	0.084	0.009
81	6.75	0.33	0.093	(0.363)	0.084	0.009
82	6.83	0.33	0.093	(0.362)	0.084	0.009
83	6.92	0.33	0.093	(0.360)	0.084	0.009
84	7.00	0.33	0.093	(0.358)	0.084	0.009
85	7.08	0.33	0.093	(0.357)	0.084	0.009
86	7.17	0.33	0.093	(0.355)	0.084	0.009
87	7.25	0.33	0.093	(0.353)	0.084	0.009
88	7.33	0.37	0.102	(0.352)	0.092	0.010
89	7.42	0.37	0.102	(0.350)	0.092	0.010
90	7.50	0.37	0.102	(0.349)	0.092	0.010
91	7.58	0.40	0.112	(0.347)	0.100	0.011
92	7.67	0.40	0.112	(0.345)	0.100	0.011
93	7.75	0.40	0.112	(0.344)	0.100	0.011
94	7.83	0.43	0.121	(0.342)	0.109	0.012
95	7.92	0.43	0.121	(0.341)	0.109	0.012
96	8.00	0.43	0.121	(0.339)	0.109	0.012
97	8.08	0.50	0.139	(0.337)	0.126	0.014
98	8.17	0.50	0.139	(0.336)	0.126	0.014
99	8.25	0.50	0.139	(0.334)	0.126	0.014
100	8.33	0.50	0.139	(0.333)	0.126	0.014
101	8.42	0.50	0.139	(0.331)	0.126	0.014
102	8.50	0.50	0.139	(0.330)	0.126	0.014
103	8.58	0.53	0.149	(0.328)	0.134	0.015
104	8.67	0.53	0.149	(0.327)	0.134	0.015
105	8.75	0.53	0.149	(0.325)	0.134	0.015
106	8.83	0.57	0.158	(0.323)	0.142	0.016
107	8.92	0.57	0.158	(0.322)	0.142	0.016
108	9.00	0.57	0.158	(0.320)	0.142	0.016
109	9.08	0.63	0.177	(0.319)	0.159	0.018
110	9.17	0.63	0.177	(0.317)	0.159	0.018
111	9.25	0.63	0.177	(0.316)	0.159	0.018
112	9.33	0.67	0.186	(0.314)	0.167	0.019
113	9.42	0.67	0.186	(0.313)	0.167	0.019
114	9.50	0.67	0.186	(0.311)	0.167	0.019
115	9.58	0.70	0.195	(0.310)	0.176	0.020
116	9.67	0.70	0.195	(0.308)	0.176	0.020
117	9.75	0.70	0.195	(0.307)	0.176	0.020
118	9.83	0.73	0.205	(0.305)	0.184	0.020
119	9.92	0.73	0.205	(0.304)	0.184	0.020
120	10.00	0.73	0.205	(0.303)	0.184	0.020
121	10.08	0.50	0.139	(0.301)	0.126	0.014
122	10.17	0.50	0.139	(0.300)	0.126	0.014
123	10.25	0.50	0.139	(0.298)	0.126	0.014
124	10.33	0.50	0.139	(0.297)	0.126	0.014
125	10.42	0.50	0.139	(0.295)	0.126	0.014
126	10.50	0.50	0.139	(0.294)	0.126	0.014
127	10.58	0.67	0.186	(0.292)	0.167	0.019
128	10.67	0.67	0.186	(0.291)	0.167	0.019
129	10.75	0.67	0.186	(0.290)	0.167	0.019
130	10.83	0.67	0.186	(0.288)	0.167	0.019
131	10.92	0.67	0.186	(0.287)	0.167	0.019
132	11.00	0.67	0.186	(0.285)	0.167	0.019

133	11.08	0.63	0.177	(0.284)	0.159	0.018
134	11.17	0.63	0.177	(0.282)	0.159	0.018
135	11.25	0.63	0.177	(0.281)	0.159	0.018
136	11.33	0.63	0.177	(0.280)	0.159	0.018
137	11.42	0.63	0.177	(0.278)	0.159	0.018
138	11.50	0.63	0.177	(0.277)	0.159	0.018
139	11.58	0.57	0.158	(0.276)	0.142	0.016
140	11.67	0.57	0.158	(0.274)	0.142	0.016
141	11.75	0.57	0.158	(0.273)	0.142	0.016
142	11.83	0.60	0.167	(0.271)	0.151	0.017
143	11.92	0.60	0.167	(0.270)	0.151	0.017
144	12.00	0.60	0.167	(0.269)	0.151	0.017
145	12.08	0.83	0.232	(0.267)	0.209	0.023
146	12.17	0.83	0.232	(0.266)	0.209	0.023
147	12.25	0.83	0.232	(0.265)	0.209	0.023
148	12.33	0.87	0.242	(0.263)	0.218	0.024
149	12.42	0.87	0.242	(0.262)	0.218	0.024
150	12.50	0.87	0.242	(0.261)	0.218	0.024
151	12.58	0.93	0.260	(0.259)	0.234	0.026
152	12.67	0.93	0.260	(0.258)	0.234	0.026
153	12.75	0.93	0.260	(0.257)	0.234	0.026
154	12.83	0.97	0.270	(0.256)	0.243	0.027
155	12.92	0.97	0.270	(0.254)	0.243	0.027
156	13.00	0.97	0.270	(0.253)	0.243	0.027
157	13.08	1.13	0.316	0.252	(0.284)	0.064
158	13.17	1.13	0.316	0.250	(0.284)	0.066
159	13.25	1.13	0.316	0.249	(0.284)	0.067
160	13.33	1.13	0.316	0.248	(0.284)	0.068
161	13.42	1.13	0.316	0.247	(0.284)	0.069
162	13.50	1.13	0.316	0.245	(0.284)	0.071
163	13.58	0.77	0.214	(0.244)	0.192	0.021
164	13.67	0.77	0.214	(0.243)	0.192	0.021
165	13.75	0.77	0.214	(0.242)	0.192	0.021
166	13.83	0.77	0.214	(0.240)	0.192	0.021
167	13.92	0.77	0.214	(0.239)	0.192	0.021
168	14.00	0.77	0.214	(0.238)	0.192	0.021
169	14.08	0.90	0.251	(0.237)	0.226	0.025
170	14.17	0.90	0.251	(0.236)	0.226	0.025
171	14.25	0.90	0.251	(0.234)	0.226	0.025
172	14.33	0.87	0.242	(0.233)	0.218	0.024
173	14.42	0.87	0.242	(0.232)	0.218	0.024
174	14.50	0.87	0.242	(0.231)	0.218	0.024
175	14.58	0.87	0.242	(0.230)	0.218	0.024
176	14.67	0.87	0.242	(0.228)	0.218	0.024
177	14.75	0.87	0.242	(0.227)	0.218	0.024
178	14.83	0.83	0.232	(0.226)	0.209	0.023
179	14.92	0.83	0.232	(0.225)	0.209	0.023
180	15.00	0.83	0.232	(0.224)	0.209	0.023
181	15.08	0.80	0.223	(0.223)	0.201	0.022
182	15.17	0.80	0.223	(0.221)	0.201	0.022
183	15.25	0.80	0.223	(0.220)	0.201	0.022
184	15.33	0.77	0.214	(0.219)	0.192	0.021
185	15.42	0.77	0.214	(0.218)	0.192	0.021
186	15.50	0.77	0.214	(0.217)	0.192	0.021
187	15.58	0.63	0.177	(0.216)	0.159	0.018
188	15.67	0.63	0.177	(0.215)	0.159	0.018
189	15.75	0.63	0.177	(0.214)	0.159	0.018
190	15.83	0.63	0.177	(0.213)	0.159	0.018
191	15.92	0.63	0.177	(0.211)	0.159	0.018
192	16.00	0.63	0.177	(0.210)	0.159	0.018
193	16.08	0.13	0.037	(0.209)	0.033	0.004
194	16.17	0.13	0.037	(0.208)	0.033	0.004
195	16.25	0.13	0.037	(0.207)	0.033	0.004
196	16.33	0.13	0.037	(0.206)	0.033	0.004
197	16.42	0.13	0.037	(0.205)	0.033	0.004
198	16.50	0.13	0.037	(0.204)	0.033	0.004
199	16.58	0.10	0.028	(0.203)	0.025	0.003
200	16.67	0.10	0.028	(0.202)	0.025	0.003
201	16.75	0.10	0.028	(0.201)	0.025	0.003
202	16.83	0.10	0.028	(0.200)	0.025	0.003
203	16.92	0.10	0.028	(0.199)	0.025	0.003
204	17.00	0.10	0.028	(0.198)	0.025	0.003
205	17.08	0.17	0.046	(0.197)	0.042	0.005
206	17.17	0.17	0.046	(0.196)	0.042	0.005
207	17.25	0.17	0.046	(0.195)	0.042	0.005
208	17.33	0.17	0.046	(0.194)	0.042	0.005
209	17.42	0.17	0.046	(0.193)	0.042	0.005
210	17.50	0.17	0.046	(0.192)	0.042	0.005
211	17.58	0.17	0.046	(0.191)	0.042	0.005

212	17.67	0.17	0.046	(0.190)	0.042	0.005
213	17.75	0.17	0.046	(0.189)	0.042	0.005
214	17.83	0.13	0.037	(0.188)	0.033	0.004
215	17.92	0.13	0.037	(0.187)	0.033	0.004
216	18.00	0.13	0.037	(0.186)	0.033	0.004
217	18.08	0.13	0.037	(0.185)	0.033	0.004
218	18.17	0.13	0.037	(0.185)	0.033	0.004
219	18.25	0.13	0.037	(0.184)	0.033	0.004
220	18.33	0.13	0.037	(0.183)	0.033	0.004
221	18.42	0.13	0.037	(0.182)	0.033	0.004
222	18.50	0.13	0.037	(0.181)	0.033	0.004
223	18.58	0.10	0.028	(0.180)	0.025	0.003
224	18.67	0.10	0.028	(0.179)	0.025	0.003
225	18.75	0.10	0.028	(0.178)	0.025	0.003
226	18.83	0.07	0.019	(0.177)	0.017	0.002
227	18.92	0.07	0.019	(0.177)	0.017	0.002
228	19.00	0.07	0.019	(0.176)	0.017	0.002
229	19.08	0.10	0.028	(0.175)	0.025	0.003
230	19.17	0.10	0.028	(0.174)	0.025	0.003
231	19.25	0.10	0.028	(0.173)	0.025	0.003
232	19.33	0.13	0.037	(0.173)	0.033	0.004
233	19.42	0.13	0.037	(0.172)	0.033	0.004
234	19.50	0.13	0.037	(0.171)	0.033	0.004
235	19.58	0.10	0.028	(0.170)	0.025	0.003
236	19.67	0.10	0.028	(0.169)	0.025	0.003
237	19.75	0.10	0.028	(0.169)	0.025	0.003
238	19.83	0.07	0.019	(0.168)	0.017	0.002
239	19.92	0.07	0.019	(0.167)	0.017	0.002
240	20.00	0.07	0.019	(0.166)	0.017	0.002
241	20.08	0.10	0.028	(0.166)	0.025	0.003
242	20.17	0.10	0.028	(0.165)	0.025	0.003
243	20.25	0.10	0.028	(0.164)	0.025	0.003
244	20.33	0.10	0.028	(0.163)	0.025	0.003
245	20.42	0.10	0.028	(0.163)	0.025	0.003
246	20.50	0.10	0.028	(0.162)	0.025	0.003
247	20.58	0.10	0.028	(0.161)	0.025	0.003
248	20.67	0.10	0.028	(0.161)	0.025	0.003
249	20.75	0.10	0.028	(0.160)	0.025	0.003
250	20.83	0.07	0.019	(0.159)	0.017	0.002
251	20.92	0.07	0.019	(0.159)	0.017	0.002
252	21.00	0.07	0.019	(0.158)	0.017	0.002
253	21.08	0.10	0.028	(0.157)	0.025	0.003
254	21.17	0.10	0.028	(0.157)	0.025	0.003
255	21.25	0.10	0.028	(0.156)	0.025	0.003
256	21.33	0.07	0.019	(0.156)	0.017	0.002
257	21.42	0.07	0.019	(0.155)	0.017	0.002
258	21.50	0.07	0.019	(0.155)	0.017	0.002
259	21.58	0.10	0.028	(0.154)	0.025	0.003
260	21.67	0.10	0.028	(0.153)	0.025	0.003
261	21.75	0.10	0.028	(0.153)	0.025	0.003
262	21.83	0.07	0.019	(0.152)	0.017	0.002
263	21.92	0.07	0.019	(0.152)	0.017	0.002
264	22.00	0.07	0.019	(0.151)	0.017	0.002
265	22.08	0.10	0.028	(0.151)	0.025	0.003
266	22.17	0.10	0.028	(0.150)	0.025	0.003
267	22.25	0.10	0.028	(0.150)	0.025	0.003
268	22.33	0.07	0.019	(0.149)	0.017	0.002
269	22.42	0.07	0.019	(0.149)	0.017	0.002
270	22.50	0.07	0.019	(0.148)	0.017	0.002
271	22.58	0.07	0.019	(0.148)	0.017	0.002
272	22.67	0.07	0.019	(0.148)	0.017	0.002
273	22.75	0.07	0.019	(0.147)	0.017	0.002
274	22.83	0.07	0.019	(0.147)	0.017	0.002
275	22.92	0.07	0.019	(0.146)	0.017	0.002
276	23.00	0.07	0.019	(0.146)	0.017	0.002
277	23.08	0.07	0.019	(0.146)	0.017	0.002
278	23.17	0.07	0.019	(0.145)	0.017	0.002
279	23.25	0.07	0.019	(0.145)	0.017	0.002
280	23.33	0.07	0.019	(0.145)	0.017	0.002
281	23.42	0.07	0.019	(0.145)	0.017	0.002
282	23.50	0.07	0.019	(0.144)	0.017	0.002
283	23.58	0.07	0.019	(0.144)	0.017	0.002
284	23.67	0.07	0.019	(0.144)	0.017	0.002
285	23.75	0.07	0.019	(0.144)	0.017	0.002
286	23.83	0.07	0.019	(0.143)	0.017	0.002
287	23.92	0.07	0.019	(0.143)	0.017	0.002
288	24.00	0.07	0.019	(0.143)	0.017	0.002

(Loss Rate Not Used)

Sum = 100.0 Sum = 3.0

EX24HR5YR

```
      Flood volume = Effective rainfall      0.25(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      2.07(In)
      Total soil loss =     1.935(Ac.Ft)
      Total rainfall =      2.32(In)
      Flood volume =       10177.7 Cubic Feet
      Total soil loss =       84291.6 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.763(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R     S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0002      0.02  Q         |         |         |         |
  0+20       0.0004      0.02  Q         |         |         |         |
  0+25       0.0006      0.03  Q         |         |         |         |
  0+30       0.0008      0.03  Q         |         |         |         |
  0+35       0.0010      0.03  Q         |         |         |         |
  0+40       0.0012      0.03  Q         |         |         |         |
  0+45       0.0014      0.03  Q         |         |         |         |
  0+50       0.0016      0.03  Q         |         |         |         |
  0+55       0.0019      0.04  Q         |         |         |         |
  1+ 0       0.0022      0.04  Q         |         |         |         |
  1+ 5       0.0024      0.04  Q         |         |         |         |
  1+10       0.0027      0.03  Q         |         |         |         |
  1+15       0.0029      0.03  Q         |         |         |         |
  1+20       0.0031      0.03  Q         |         |         |         |
  1+25       0.0033      0.03  Q         |         |         |         |
  1+30       0.0036      0.03  Q         |         |         |         |
  1+35       0.0038      0.03  Q         |         |         |         |
  1+40       0.0040      0.03  Q         |         |         |         |
  1+45       0.0042      0.03  Q         |         |         |         |
  1+50       0.0045      0.03  Q         |         |         |         |
  1+55       0.0047      0.04  Q         |         |         |         |
  2+ 0       0.0050      0.04  Q         |         |         |         |
  2+ 5       0.0053      0.04  Q         |         |         |         |
  2+10       0.0056      0.04  Q         |         |         |         |
  2+15       0.0058      0.04  QV        |         |         |         |
  2+20       0.0061      0.04  QV        |         |         |         |
  2+25       0.0064      0.04  QV        |         |         |         |
  2+30       0.0067      0.04  QV        |         |         |         |
  2+35       0.0070      0.04  QV        |         |         |         |
  2+40       0.0074      0.05  QV        |         |         |         |
  2+45       0.0077      0.05  QV        |         |         |         |
  2+50       0.0081      0.05  QV        |         |         |         |
  2+55       0.0084      0.05  QV        |         |         |         |
  3+ 0       0.0088      0.05  QV        |         |         |         |
  3+ 5       0.0091      0.05  QV        |         |         |         |
  3+10       0.0095      0.05  QV        |         |         |         |
  3+15       0.0099      0.05  QV        |         |         |         |
  3+20       0.0102      0.05  QV        |         |         |         |
  3+25       0.0106      0.05  QV        |         |         |         |
  3+30       0.0109      0.05  QV        |         |         |         |
  3+35       0.0113      0.05  QV        |         |         |         |
  3+40       0.0117      0.05  QV        |         |         |         |
  3+45       0.0120      0.05  Q V       |         |         |         |
  3+50       0.0124      0.05  Q V       |         |         |         |
  3+55       0.0128      0.06  Q V       |         |         |         |
  4+ 0       0.0132      0.06  Q V       |         |         |         |
  4+ 5       0.0137      0.06  Q V       |         |         |         |
  4+10       0.0141      0.06  Q V       |         |         |         |
  4+15       0.0145      0.06  Q V       |         |         |         |
  4+20       0.0150      0.06  Q V       |         |         |         |
  4+25       0.0154      0.07  Q V       |         |         |         |
  4+30       0.0159      0.07  Q V       |         |         |         |
  4+35       0.0164      0.07  Q V       |         |         |         |
  4+40       0.0169      0.07  Q V       |         |         |         |
  4+45       0.0174      0.07  Q V       |         |         |         |
  4+50       0.0180      0.08  Q  V      |         |         |         |
  4+55       0.0185      0.08  Q  V      |         |         |         |
  5+ 0       0.0191      0.08  Q  V      |         |         |         |
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EX24HR5YR

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 5+ 5       0.0196      0.08  Q  V      |         |         |         |
 5+10       0.0201      0.07  Q  V      |         |         |         |
 5+15       0.0206      0.07  Q  V      |         |         |         |
 5+20       0.0210      0.07  Q  V      |         |         |         |
 5+25       0.0215      0.07  Q  V      |         |         |         |
 5+30       0.0220      0.07  Q  V      |         |         |         |
 5+35       0.0225      0.07  Q  V      |         |         |         |
 5+40       0.0231      0.08  Q  V      |         |         |         |
 5+45       0.0236      0.08  Q   V     |         |         |         |
 5+50       0.0242      0.08  Q   V     |         |         |         |
 5+55       0.0248      0.08  Q   V     |         |         |         |
 6+ 0       0.0254      0.08  Q   V     |         |         |         |
 6+ 5       0.0259      0.09  Q   V     |         |         |         |
 6+10       0.0266      0.09  Q   V     |         |         |         |
 6+15       0.0272      0.09  Q   V     |         |         |         |
 6+20       0.0279      0.09  Q   V     |         |         |         |
 6+25       0.0285      0.09  Q   V     |         |         |         |
 6+30       0.0291      0.09  Q   V     |         |         |         |
 6+35       0.0298      0.10  Q    V    |         |         |         |
 6+40       0.0305      0.10  Q    V    |         |         |         |
 6+45       0.0312      0.10  Q    V    |         |         |         |
 6+50       0.0319      0.10  Q    V    |         |         |         |
 6+55       0.0327      0.10  Q    V    |         |         |         |
 7+ 0       0.0334      0.10  Q    V    |         |         |         |
 7+ 5       0.0341      0.10  Q    V    |         |         |         |
 7+10       0.0348      0.10  Q    V    |         |         |         |
 7+15       0.0355      0.10  Q     V   |         |         |         |
 7+20       0.0363      0.11  Q     V   |         |         |         |
 7+25       0.0370      0.11  Q     V   |         |         |         |
 7+30       0.0378      0.11  Q     V   |         |         |         |
 7+35       0.0386      0.12  Q     V   |         |         |         |
 7+40       0.0395      0.12  Q     V   |         |         |         |
 7+45       0.0403      0.12  Q     V   |         |         |         |
 7+50       0.0412      0.13  Q      V  |         |         |         |
 7+55       0.0421      0.13  Q      V  |         |         |         |
 8+ 0       0.0430      0.13  Q      V  |         |         |         |
 8+ 5       0.0440      0.14  Q      V  |         |         |         |
 8+10       0.0450      0.15  Q      V  |         |         |         |
 8+15       0.0461      0.15  Q      V  |         |         |         |
 8+20       0.0471      0.16  Q       V |         |         |         |
 8+25       0.0482      0.16  Q       V |         |         |         |
 8+30       0.0493      0.16  Q       V |         |         |         |
 8+35       0.0504      0.16  Q       V |         |         |         |
 8+40       0.0515      0.16  Q       V |         |         |         |
 8+45       0.0527      0.17  Q        V|         |         |         |
 8+50       0.0538      0.17  Q        V|         |         |         |
 8+55       0.0550      0.17  Q        V|         |         |         |
 9+ 0       0.0562      0.18  Q        V|         |         |         |
 9+ 5       0.0575      0.18  Q        V|         |         |         |
 9+10       0.0588      0.19  Q         V         |         |         |
 9+15       0.0602      0.20  Q         V         |         |         |
 9+20       0.0615      0.20  Q         V         |         |         |
 9+25       0.0629      0.21  Q         V         |         |         |
 9+30       0.0644      0.21  Q         |V        |         |         |
 9+35       0.0658      0.21  Q         |V        |         |         |
 9+40       0.0673      0.22  Q         |V        |         |         |
 9+45       0.0688      0.22  Q         |V        |         |         |
 9+50       0.0703      0.22  Q         | V       |         |         |
 9+55       0.0719      0.23  Q         | V       |         |         |
10+ 0       0.0735      0.23  Q         | V       |         |         |
10+ 5       0.0750      0.22  Q         | V       |         |         |
10+10       0.0762      0.18  Q         |  V      |         |         |
10+15       0.0774      0.17  Q         |  V      |         |         |
10+20       0.0785      0.16  Q         |  V      |         |         |
10+25       0.0796      0.16  Q         |  V      |         |         |
10+30       0.0807      0.16  Q         |  V      |         |         |
10+35       0.0819      0.17  Q         |   V     |         |         |
10+40       0.0832      0.19  Q         |   V     |         |         |
10+45       0.0846      0.20  Q         |   V     |         |         |
10+50       0.0860      0.20  Q         |   V     |         |         |
10+55       0.0874      0.21  Q         |   V     |         |         |
11+ 0       0.0889      0.21  Q         |    V    |         |         |
11+ 5       0.0903      0.21  Q         |    V    |         |         |
11+10       0.0917      0.20  Q         |    V    |         |         |
11+15       0.0931      0.20  Q         |    V    |         |         |
11+20       0.0945      0.20  Q         |     V   |         |         |
11+25       0.0958      0.20  Q         |     V   |         |         |
11+30       0.0972      0.20  Q         |     V   |         |         |
11+35       0.0986      0.20  Q         |     V   |         |         |
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                                             EX24HR5YR
11+40       0.0998      0.19  Q         |      V  |         |         |
11+45       0.1011      0.18  Q         |      V  |         |         |
11+50       0.1023      0.18  Q         |      V  |         |         |
11+55       0.1036      0.19  Q         |      V  |         |         |
12+ 0       0.1049      0.19  Q         |      V  |         |         |
12+ 5       0.1063      0.20  Q         |       V |         |         |
12+10       0.1080      0.24  Q         |       V |         |         |
12+15       0.1097      0.25  Q         |       V |         |         |
12+20       0.1114      0.26  |Q        |        V|         |         |
12+25       0.1133      0.26  |Q        |        V|         |         |
12+30       0.1151      0.27  |Q        |        V|         |         |
12+35       0.1170      0.27  |Q        |         V         |         |
12+40       0.1190      0.29  |Q        |         V         |         |
12+45       0.1210      0.29  |Q        |         V         |         |
12+50       0.1230      0.29  |Q        |         |V        |         |
12+55       0.1251      0.30  |Q        |         |V        |         |
13+ 0       0.1271      0.30  |Q        |         |V        |         |
13+ 5       0.1298      0.38  |Q        |         | V       |         |
13+10       0.1338      0.59  | Q       |         | V       |         |
13+15       0.1384      0.67  | Q       |         |  V      |         |
13+20       0.1433      0.71  | Q       |         |   V     |         |
13+25       0.1484      0.74  | Q       |         |    V    |         |
13+30       0.1536      0.76  |  Q      |         |     V   |         |
13+35       0.1583      0.68  | Q       |         |      V  |         |
13+40       0.1612      0.42  |Q        |         |      V  |         |
13+45       0.1635      0.33  |Q        |         |      V  |         |
13+50       0.1655      0.30  |Q        |         |       V |         |
13+55       0.1674      0.27  |Q        |         |       V |         |
14+ 0       0.1692      0.26  |Q        |         |       V |         |
14+ 5       0.1710      0.26  |Q        |         |        V|         |
14+10       0.1729      0.27  |Q        |         |        V|         |
14+15       0.1748      0.28  |Q        |         |        V|         |
14+20       0.1767      0.28  |Q        |         |         V         |
14+25       0.1785      0.27  |Q        |         |         V         |
14+30       0.1804      0.27  |Q        |         |         V         |
14+35       0.1823      0.27  |Q        |         |         |V        |
14+40       0.1842      0.27  |Q        |         |         |V        |
14+45       0.1861      0.27  |Q        |         |         |V        |
14+50       0.1879      0.27  |Q        |         |         | V       |
14+55       0.1898      0.27  |Q        |         |         | V       |
15+ 0       0.1916      0.26  |Q        |         |         | V       |
15+ 5       0.1934      0.26  |Q        |         |         |  V      |
15+10       0.1952      0.26  |Q        |         |         |  V      |
15+15       0.1969      0.25  |Q        |         |         |  V      |
15+20       0.1986      0.25  |Q        |         |         |   V     |
15+25       0.2003      0.25  Q         |         |         |   V     |
15+30       0.2020      0.24  Q         |         |         |   V     |
15+35       0.2036      0.23  Q         |         |         |   V     |
15+40       0.2051      0.21  Q         |         |         |    V    |
15+45       0.2065      0.21  Q         |         |         |    V    |
15+50       0.2079      0.20  Q         |         |         |    V    |
15+55       0.2093      0.20  Q         |         |         |    V    |
16+ 0       0.2107      0.20  Q         |         |         |     V   |
16+ 5       0.2119      0.17  Q         |         |         |     V   |
16+10       0.2125      0.09  Q         |         |         |     V   |
16+15       0.2130      0.07  Q         |         |         |     V   |
16+20       0.2134      0.06  Q         |         |         |     V   |
16+25       0.2138      0.05  Q         |         |         |     V   |
16+30       0.2141      0.05  Q         |         |         |     V   |
16+35       0.2144      0.04  Q         |         |         |     V   |
16+40       0.2146      0.04  Q         |         |         |     V   |
16+45       0.2149      0.03  Q         |         |         |     V   |
16+50       0.2151      0.03  Q         |         |         |     V   |
16+55       0.2153      0.03  Q         |         |         |     V   |
17+ 0       0.2155      0.03  Q         |         |         |     V   |
17+ 5       0.2158      0.04  Q         |         |         |     V   |
17+10       0.2161      0.05  Q         |         |         |     V   |
17+15       0.2164      0.05  Q         |         |         |      V  |
17+20       0.2168      0.05  Q         |         |         |      V  |
17+25       0.2171      0.05  Q         |         |         |      V  |
17+30       0.2175      0.05  Q         |         |         |      V  |
17+35       0.2178      0.05  Q         |         |         |      V  |
17+40       0.2182      0.05  Q         |         |         |      V  |
17+45       0.2186      0.05  Q         |         |         |      V  |
17+50       0.2189      0.05  Q         |         |         |      V  |
17+55       0.2192      0.05  Q         |         |         |      V  |
18+ 0       0.2195      0.04  Q         |         |         |      V  |
18+ 5       0.2198      0.04  Q         |         |         |      V  |
18+10       0.2201      0.04  Q         |         |         |      V  |
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 18+15       0.2204      0.04  Q         |         |         |      V   |
 18+20       0.2207      0.04  Q         |         |         |      V   |
 18+25       0.2210      0.04  Q         |         |         |      V   |
 18+30       0.2213      0.04  Q         |         |         |      V   |
 18+35       0.2216      0.04  Q         |         |         |      V   |
 18+40       0.2218      0.03  Q         |         |         |      V   |
 18+45       0.2220      0.03  Q         |         |         |       V  |
 18+50       0.2222      0.03  Q         |         |         |       V  |
 18+55       0.2224      0.03  Q         |         |         |       V  |
 19+ 0       0.2226      0.02  Q         |         |         |       V  |
 19+ 5       0.2227      0.02  Q         |         |         |       V  |
 19+10       0.2229      0.03  Q         |         |         |       V  |
 19+15       0.2231      0.03  Q         |         |         |       V  |
 19+20       0.2234      0.03  Q         |         |         |       V  |
 19+25       0.2236      0.04  Q         |         |         |       V  |
 19+30       0.2239      0.04  Q         |         |         |       V  |
 19+35       0.2242      0.04  Q         |         |         |       V  |
 19+40       0.2244      0.03  Q         |         |         |       V  |
 19+45       0.2246      0.03  Q         |         |         |       V  |
 19+50       0.2248      0.03  Q         |         |         |       V  |
 19+55       0.2250      0.03  Q         |         |         |       V  |
 20+ 0       0.2252      0.02  Q         |         |         |       V  |
 20+ 5       0.2253      0.02  Q         |         |         |       V  |
 20+10       0.2255      0.03  Q         |         |         |       V  |
 20+15       0.2257      0.03  Q         |         |         |       V  |
 20+20       0.2259      0.03  Q         |         |         |       V  |
 20+25       0.2262      0.03  Q         |         |         |       V  |
 20+30       0.2264      0.03  Q         |         |         |       V  |
 20+35       0.2266      0.03  Q         |         |         |       V  |
 20+40       0.2268      0.03  Q         |         |         |       V  |
 20+45       0.2270      0.03  Q         |         |         |       V  |
 20+50       0.2272      0.03  Q         |         |         |       V  |
 20+55       0.2274      0.02  Q         |         |         |       V  |
 21+ 0       0.2276      0.02  Q         |         |         |       V  |
 21+ 5       0.2277      0.02  Q         |         |         |       V  |
 21+10       0.2279      0.03  Q         |         |         |        V|
 21+15       0.2281      0.03  Q         |         |         |        V|
 21+20       0.2283      0.03  Q         |         |         |        V|
 21+25       0.2285      0.02  Q         |         |         |        V|
 21+30       0.2286      0.02  Q         |         |         |        V|
 21+35       0.2288      0.02  Q         |         |         |        V|
 21+40       0.2290      0.03  Q         |         |         |        V|
 21+45       0.2292      0.03  Q         |         |         |        V|
 21+50       0.2294      0.03  Q         |         |         |        V|
 21+55       0.2296      0.02  Q         |         |         |        V|
 22+ 0       0.2297      0.02  Q         |         |         |        V|
 22+ 5       0.2299      0.02  Q         |         |         |        V|
 22+10       0.2301      0.03  Q         |         |         |        V|
 22+15       0.2303      0.03  Q         |         |         |        V|
 22+20       0.2305      0.03  Q         |         |         |        V|
 22+25       0.2307      0.02  Q         |         |         |        V|
 22+30       0.2308      0.02  Q         |         |         |        V|
 22+35       0.2310      0.02  Q         |         |         |        V|
 22+40       0.2311      0.02  Q         |         |         |        V|
 22+45       0.2313      0.02  Q         |         |         |        V|
 22+50       0.2314      0.02  Q         |         |         |        V|
 22+55       0.2315      0.02  Q         |         |         |        V|
 23+ 0       0.2317      0.02  Q         |         |         |        V|
 23+ 5       0.2318      0.02  Q         |         |         |        V|
 23+10       0.2320      0.02  Q         |         |         |        V|
 23+15       0.2321      0.02  Q         |         |         |        V|
 23+20       0.2323      0.02  Q         |         |         |        V|
 23+25       0.2324      0.02  Q         |         |         |        V|
 23+30       0.2326      0.02  Q         |         |         |        V|
 23+35       0.2327      0.02  Q         |         |         |        V|
 23+40       0.2328      0.02  Q         |         |         |        V|
 23+45       0.2330      0.02  Q         |         |         |        V|
 23+50       0.2331      0.02  Q         |         |         |        V|
 23+55       0.2333      0.02  Q         |         |         |        V|
 24+ 0       0.2334      0.02  Q         |         |         |        V|
 24+ 5       0.2335      0.02  Q         |         |         |        V|
 24+10       0.2336      0.01  Q         |         |         |        V|
 24+15       0.2336      0.00  Q         |         |         |        V|
 24+20       0.2336      0.00  Q         |         |         |        V|
 24+25       0.2336      0.00  Q         |         |         |        V|
 24+30       0.2336      0.00  Q         |         |         |        V|
 24+35       0.2336      0.00  Q         |         |         |        V|
 24+40       0.2336      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

10 YEAR

```
                              EX1HR10YR
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.48                   5.37

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.20                  13.44

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.776(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.776(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  89.0      0.141     0.000        0.141       1.000      0.141
                                                 Sum (F) =    0.141
Area averaged mean soil loss (F) (In/Hr) =  0.141
Minimum soil loss rate ((In/Hr)) =  0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                        EX1HR10YR
        ----------------------------------------------------------------------

                        U n i t   H y d r o g r a p h
                                VALLEY S-Curve
        --------------------------------------------------------------------
                        Unit Hydrograph Data
        ---------------------------------------------------------------------
        Unit time period   Time % of lag   Distribution   Unit Hydrograph
            (hrs)                            Graph %          (CFS)
        ---------------------------------------------------------------------
            1   0.083         97.789         18.521              2.090
            2   0.167        195.577         48.209              5.440
            3   0.250        293.366         15.982              1.803
            4   0.333        391.154          7.182              0.810
            5   0.417        488.943          4.067              0.459
            6   0.500        586.731          2.639              0.298
            7   0.583        684.520          1.671              0.189
            8   0.667        782.309          1.063              0.120
            9   0.750        880.097          0.666              0.075
                                       Sum = 100.000   Sum=      11.284
----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low       (In/Hr)
   1   0.08     4.40      0.410          0.141    (  0.369)        0.268
   2   0.17     4.50      0.419          0.141    (  0.377)        0.278
   3   0.25     5.40      0.503          0.141    (  0.453)        0.362
   4   0.33     5.40      0.503          0.141    (  0.453)        0.362
   5   0.42     5.70      0.531          0.141    (  0.478)        0.389
   6   0.50     6.40      0.596          0.141    (  0.536)        0.455
   7   0.58     7.90      0.736          0.141    (  0.662)        0.594
   8   0.67     9.10      0.848          0.141    (  0.763)        0.706
   9   0.75    12.80      1.192          0.141    (  1.073)        1.051
  10   0.83    25.60      2.384          0.141    (  2.146)        2.243
  11   0.92     7.90      0.736          0.141    (  0.662)        0.594
  12   1.00     4.90      0.456          0.141    (  0.411)        0.315
                (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     7.6
        Flood volume = Effective rainfall      0.63(In)
         times area      11.2(Ac.)/[(In)/(Ft.)] =       0.6(Ac.Ft)
        Total soil loss =      0.14(In)
        Total soil loss =     0.132(Ac.Ft)
        Total rainfall =      0.78(In)
        Flood volume =       25798.9 Cubic Feet
        Total soil loss =        5747.2 Cubic Feet
        --------------------------------------------------------------------
         Peak flow rate of this hydrograph =     16.472(CFS)
        --------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                            1 - H O U R    S T O R M
                       R u n o f f      H y d r o g r a p h
        --------------------------------------------------------------------
                     Hydrograph in   5   Minute intervals ((CFS))

        --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
  -----------------------------------------------------------------------
    0+ 5      0.0039      0.56  VQ        |         |         |         |
    0+10      0.0179      2.04  |V  Q     |         |         |         |
    0+15      0.0369      2.75  | V  Q    |         |         |         |
    0+20      0.0606      3.44  |   V Q   |         |         |         |
    0+25      0.0866      3.78  |    V Q  |         |         |         |
    0+30      0.1157      4.22  |       VQ|         |         |         |
    0+35      0.1503      5.01  |         Q         |         |         |
    0+40      0.1930      6.21  |         | QV      |         |         |
    0+45      0.2473      7.89  |         |    QV   |         |         |
    0+50      0.3343     12.62  |         |         | V   Q   |         |
    0+55      0.4477     16.47  |         |         |         V Q       |
    1+ 0      0.5128      9.45  |         |       Q |         |   V     |
    1+ 5      0.5507      5.49  |         Q         |         |      V  |
    1+10      0.5688      2.63  |     Q   |         |         |       V |
    1+15      0.5793      1.52  |   Q     |         |         |        V|
    1+20      0.5857      0.92  |Q        |         |         |        V|
    1+25      0.5895      0.55  |Q        |         |         |        V|
    1+30      0.5915      0.30  Q         |         |         |        V|
```

EX1HR10YR

```
    1+35       0.5921      0.08  Q         |         |         |        V|
    1+40       0.5923      0.02  Q         |         |         |        V|
-----------------------------------------------------------------------
```

```
                          EX3HR10YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.80                    8.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.80                   20.15

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.211(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.211(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  89.0      0.141     0.000        0.141       1.000      0.141
                                                  Sum (F) =   0.141
Area averaged mean soil loss (F) (In/Hr) =  0.141
Minimum soil loss rate ((In/Hr)) =  0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX3HR10YR

U n i t H y d r o g r a p h

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.189	0.141	(0.170)	0.048
2	0.17	1.30	0.189	0.141	(0.170)	0.048
3	0.25	1.10	0.160	0.141	(0.144)	0.018
4	0.33	1.50	0.218	0.141	(0.196)	0.077
5	0.42	1.50	0.218	0.141	(0.196)	0.077
6	0.50	1.80	0.262	0.141	(0.235)	0.120
7	0.58	1.50	0.218	0.141	(0.196)	0.077
8	0.67	1.80	0.262	0.141	(0.235)	0.120
9	0.75	1.80	0.262	0.141	(0.235)	0.120
10	0.83	1.50	0.218	0.141	(0.196)	0.077
11	0.92	1.60	0.233	0.141	(0.209)	0.091
12	1.00	1.80	0.262	0.141	(0.235)	0.120
13	1.08	2.20	0.320	0.141	(0.288)	0.178
14	1.17	2.20	0.320	0.141	(0.288)	0.178
15	1.25	2.20	0.320	0.141	(0.288)	0.178
16	1.33	2.00	0.291	0.141	(0.262)	0.149
17	1.42	2.60	0.378	0.141	(0.340)	0.237
18	1.50	2.70	0.392	0.141	(0.353)	0.251
19	1.58	2.40	0.349	0.141	(0.314)	0.207
20	1.67	2.70	0.392	0.141	(0.353)	0.251
21	1.75	3.30	0.480	0.141	(0.432)	0.338
22	1.83	3.10	0.451	0.141	(0.406)	0.309
23	1.92	2.90	0.422	0.141	(0.379)	0.280
24	2.00	3.00	0.436	0.141	(0.392)	0.295
25	2.08	3.10	0.451	0.141	(0.406)	0.309
26	2.17	4.20	0.611	0.141	(0.549)	0.469
27	2.25	5.00	0.727	0.141	(0.654)	0.585
28	2.33	3.50	0.509	0.141	(0.458)	0.367
29	2.42	6.80	0.988	0.141	(0.890)	0.847
30	2.50	7.30	1.061	0.141	(0.955)	0.920
31	2.58	8.20	1.192	0.141	(1.073)	1.051
32	2.67	5.90	0.858	0.141	(0.772)	0.716
33	2.75	2.00	0.291	0.141	(0.262)	0.149
34	2.83	1.80	0.262	0.141	(0.235)	0.120
35	2.92	1.80	0.262	0.141	(0.235)	0.120
36	3.00	0.60	0.087	(0.141)	0.078	0.009
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	9.5

Flood volume = Effective rainfall 0.79(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)
Total soil loss = 0.42(In)
Total soil loss = 0.391(Ac.Ft)
Total rainfall = 1.21(In)
Flood volume = 32206.8 Cubic Feet
Total soil loss = 17028.6 Cubic Feet

Peak flow rate of this hydrograph = 10.053(CFS)

3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

EX3HR10YR

```
        --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
  -----------------------------------------------------------------------
    0+ 5       0.0007       0.10  Q         |         |         |         |
    0+10       0.0032       0.36  Q         |         |         |         |
    0+15       0.0058       0.38  Q         |         |         |         |
    0+20       0.0084       0.39  Q         |         |         |         |
    0+25       0.0131       0.67  VQ        |         |         |         |
    0+30       0.0190       0.86  |Q        |         |         |         |
    0+35       0.0262       1.05  |VQ       |         |         |         |
    0+40       0.0331       1.00  |VQ       |         |         |         |
    0+45       0.0414       1.21  | Q       |         |         |         |
    0+50       0.0497       1.19  | Q       |         |         |         |
    0+55       0.0567       1.02  | QV      |         |         |         |
    1+ 0       0.0642       1.10  | QV      |         |         |         |
    1+ 5       0.0737       1.38  | QV      |         |         |         |
    1+10       0.0858       1.75  |  QV     |         |         |         |
    1+15       0.0987       1.87  |  Q V    |         |         |         |
    1+20       0.1115       1.87  |  Q  V   |         |         |         |
    1+25       0.1248       1.93  |  Q  V   |         |         |         |
    1+30       0.1414       2.40  |   Q  V  |         |         |         |
    1+35       0.1588       2.54  |    Q  V |         |         |         |
    1+40       0.1759       2.48  |   Q    V|         |         |         |
    1+45       0.1957       2.87  |    Q    V         |         |         |
    1+50       0.2189       3.36  |     Q   |V        |         |         |
    1+55       0.2418       3.33  |     Q   |  V      |         |         |
    2+ 0       0.2641       3.24  |     Q   |   V     |         |         |
    2+ 5       0.2870       3.32  |     Q   |    V    |         |         |
    2+10       0.3129       3.76  |      Q  |     V   |         |         |
    2+15       0.3466       4.90  |        Q|       V |         |         |
    2+20       0.3837       5.39  |         Q         V         |         |
    2+25       0.4220       5.55  |         |Q        | V       |         |
    2+30       0.4777       8.09  |         |     Q   |    V    |         |
    2+35       0.5435       9.55  |         |        Q|        V|         |
    2+40       0.6127      10.05  |         |         Q         |  V      |
    2+45       0.6647       7.54  |         |    Q    |         |    V    |
    2+50       0.6926       4.06  |       Q |         |         |      V  |
    2+55       0.7116       2.76  |    Q    |         |         |       V |
    3+ 0       0.7251       1.96  |  Q      |         |         |        V|
    3+ 5       0.7321       1.02  | Q       |         |         |        V|
    3+10       0.7358       0.54  |Q        |         |         |        V|
    3+15       0.7378       0.29  Q         |         |         |        V|
    3+20       0.7388       0.13  Q         |         |         |        V|
    3+25       0.7391       0.05  Q         |         |         |        V|
    3+30       0.7393       0.03  Q         |         |         |        V|
    3+35       0.7394       0.01  Q         |         |         |        V|
    3+40       0.7394       0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

EX6HR10YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 06/28/16 File: EX610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

----------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



----------------------------------------------------------------------
---------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.10                 12.32

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            2.50                 27.99

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.676(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.676(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  89.0      0.141     0.000        0.141       1.000      0.141
                                                  Sum (F) =   0.141
Area averaged mean soil loss (F) (In/Hr) =  0.141
Minimum soil loss rate ((In/Hr)) =  0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
----------------------------------------------------------------------
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EX6HR10YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	0.50	0.101	(0.141)	0.090	0.010
2	0.17	0.60	0.121	(0.141)	0.109	0.012
3	0.25	0.60	0.121	(0.141)	0.109	0.012
4	0.33	0.60	0.121	(0.141)	0.109	0.012
5	0.42	0.60	0.121	(0.141)	0.109	0.012
6	0.50	0.70	0.141	(0.141)	0.127	0.014
7	0.58	0.70	0.141	(0.141)	0.127	0.014
8	0.67	0.70	0.141	(0.141)	0.127	0.014
9	0.75	0.70	0.141	(0.141)	0.127	0.014
10	0.83	0.70	0.141	(0.141)	0.127	0.014
11	0.92	0.70	0.141	(0.141)	0.127	0.014
12	1.00	0.80	0.161	0.141	(0.145)	0.019
13	1.08	0.80	0.161	0.141	(0.145)	0.019
14	1.17	0.80	0.161	0.141	(0.145)	0.019
15	1.25	0.80	0.161	0.141	(0.145)	0.019
16	1.33	0.80	0.161	0.141	(0.145)	0.019
17	1.42	0.80	0.161	0.141	(0.145)	0.019
18	1.50	0.80	0.161	0.141	(0.145)	0.019
19	1.58	0.80	0.161	0.141	(0.145)	0.019
20	1.67	0.80	0.161	0.141	(0.145)	0.019
21	1.75	0.80	0.161	0.141	(0.145)	0.019
22	1.83	0.80	0.161	0.141	(0.145)	0.019
23	1.92	0.80	0.161	0.141	(0.145)	0.019
24	2.00	0.90	0.181	0.141	(0.163)	0.040
25	2.08	0.80	0.161	0.141	(0.145)	0.019
26	2.17	0.90	0.181	0.141	(0.163)	0.040
27	2.25	0.90	0.181	0.141	(0.163)	0.040
28	2.33	0.90	0.181	0.141	(0.163)	0.040
29	2.42	0.90	0.181	0.141	(0.163)	0.040
30	2.50	0.90	0.181	0.141	(0.163)	0.040
31	2.58	0.90	0.181	0.141	(0.163)	0.040
32	2.67	0.90	0.181	0.141	(0.163)	0.040
33	2.75	1.00	0.201	0.141	(0.181)	0.060
34	2.83	1.00	0.201	0.141	(0.181)	0.060
35	2.92	1.00	0.201	0.141	(0.181)	0.060
36	3.00	1.00	0.201	0.141	(0.181)	0.060
37	3.08	1.00	0.201	0.141	(0.181)	0.060
38	3.17	1.10	0.221	0.141	(0.199)	0.080
39	3.25	1.10	0.221	0.141	(0.199)	0.080
40	3.33	1.10	0.221	0.141	(0.199)	0.080
41	3.42	1.20	0.241	0.141	(0.217)	0.100
42	3.50	1.30	0.261	0.141	(0.235)	0.120
43	3.58	1.40	0.282	0.141	(0.253)	0.140
44	3.67	1.40	0.282	0.141	(0.253)	0.140
45	3.75	1.50	0.302	0.141	(0.271)	0.160
46	3.83	1.50	0.302	0.141	(0.271)	0.160
47	3.92	1.60	0.322	0.141	(0.290)	0.180
48	4.00	1.60	0.322	0.141	(0.290)	0.180
49	4.08	1.70	0.342	0.141	(0.308)	0.200
50	4.17	1.80	0.362	0.141	(0.326)	0.221
51	4.25	1.90	0.382	0.141	(0.344)	0.241
52	4.33	2.00	0.402	0.141	(0.362)	0.261
53	4.42	2.10	0.422	0.141	(0.380)	0.281

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                                    EX6HR10YR
54   4.50     2.10      0.422          0.141    (  0.380)        0.281
55   4.58     2.20      0.442          0.141    (  0.398)        0.301
56   4.67     2.30      0.463          0.141    (  0.416)        0.321
57   4.75     2.40      0.483          0.141    (  0.434)        0.341
58   4.83     2.40      0.483          0.141    (  0.434)        0.341
59   4.92     2.50      0.503          0.141    (  0.452)        0.361
60   5.00     2.60      0.523          0.141    (  0.471)        0.381
61   5.08     3.10      0.623          0.141    (  0.561)        0.482
62   5.17     3.60      0.724          0.141    (  0.652)        0.583
63   5.25     3.90      0.784          0.141    (  0.706)        0.643
64   5.33     4.20      0.845          0.141    (  0.760)        0.703
65   5.42     4.70      0.945          0.141    (  0.851)        0.804
66   5.50     5.60      1.126          0.141    (  1.014)        0.985
67   5.58     1.90      0.382          0.141    (  0.344)        0.241
68   5.67     0.90      0.181          0.141    (  0.163)        0.040
69   5.75     0.60      0.121       (  0.141)       0.109         0.012
70   5.83     0.50      0.101       (  0.141)       0.090         0.010
71   5.92     0.30      0.060       (  0.141)       0.054         0.006
72   6.00     0.20      0.040       (  0.141)       0.036         0.004
                (Loss Rate Not Used)
   Sum =     100.0                                 Sum =    10.5
      Flood volume = Effective rainfall      0.87(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       0.8(Ac.Ft)
      Total soil loss =      0.80(In)
      Total soil loss =     0.749(Ac.Ft)
      Total rainfall =     1.68(In)
      Flood volume =      35484.5 Cubic Feet
      Total soil loss =      32632.9 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      8.777(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q         |         |         |         |
  0+10       0.0007      0.08  Q         |         |         |         |
  0+15       0.0014      0.11  Q         |         |         |         |
  0+20       0.0023      0.12  Q         |         |         |         |
  0+25       0.0032      0.13  Q         |         |         |         |
  0+30       0.0041      0.14  Q         |         |         |         |
  0+35       0.0051      0.15  Q         |         |         |         |
  0+40       0.0062      0.15  Q         |         |         |         |
  0+45       0.0072      0.16  Q         |         |         |         |
  0+50       0.0083      0.16  Q         |         |         |         |
  0+55       0.0094      0.16  Q         |         |         |         |
  1+ 0       0.0106      0.17  Q         |         |         |         |
  1+ 5       0.0120      0.20  Q         |         |         |         |
  1+10       0.0134      0.21  Q         |         |         |         |
  1+15       0.0149      0.21  Q         |         |         |         |
  1+20       0.0164      0.22  Q         |         |         |         |
  1+25       0.0179      0.22  Q         |         |         |         |
  1+30       0.0194      0.22  Q         |         |         |         |
  1+35       0.0209      0.22  QV        |         |         |         |
  1+40       0.0224      0.22  QV        |         |         |         |
  1+45       0.0239      0.22  QV        |         |         |         |
  1+50       0.0254      0.22  QV        |         |         |         |
  1+55       0.0270      0.22  QV        |         |         |         |
  2+ 0       0.0288      0.26  |Q        |         |         |         |
  2+ 5       0.0310      0.33  |Q        |         |         |         |
  2+10       0.0331      0.30  |Q        |         |         |         |
  2+15       0.0358      0.39  |Q        |         |         |         |
  2+20       0.0386      0.42  |Q        |         |         |         |
  2+25       0.0416      0.43  |QV       |         |         |         |
  2+30       0.0446      0.44  |QV       |         |         |         |
  2+35       0.0476      0.44  |QV       |         |         |         |
  2+40       0.0507      0.44  |QV       |         |         |         |
  2+45       0.0541      0.49  |QV       |         |         |         |
  2+50       0.0582      0.60  | Q       |         |         |         |
  2+55       0.0626      0.63  | QV      |         |         |         |
  3+ 0       0.0670      0.65  | QV      |         |         |         |
  3+ 5       0.0716      0.66  | QV      |         |         |         |
  3+10       0.0765      0.71  | QV      |         |         |         |
  3+15       0.0821      0.82  |  QV     |         |         |         |
                                      Page 3
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                                                 EX6HR10YR
     3+20       0.0881      0.86  |  QV     |         |         |         |
     3+25       0.0944      0.92  |  QV     |         |         |         |
     3+30       0.1018      1.08  |   QV    |         |         |         |
     3+35       0.1106      1.27  |    Q    |         |         |         |
     3+40       0.1205      1.44  |    Q    |         |         |         |
     3+45       0.1312      1.55  |     Q   |         |         |         |
     3+50       0.1428      1.69  |     QV  |         |         |         |
     3+55       0.1551      1.79  |      Q  |         |         |         |
     4+ 0       0.1684      1.92  |      QV |         |         |         |
     4+ 5       0.1823      2.02  |       Q |         |         |         |
     4+10       0.1974      2.20  |       QV|         |         |         |
     4+15       0.2140      2.40  |        QV         |         |         |
     4+20       0.2320      2.61  |         QV        |         |         |
     4+25       0.2515      2.83  |         |QV       |         |         |
     4+30       0.2722      3.01  |         | QV      |         |         |
     4+35       0.2937      3.13  |         | Q V     |         |         |
     4+40       0.3166      3.32  |         |  Q V    |         |         |
     4+45       0.3409      3.53  |         |   Q V   |         |         |
     4+50       0.3663      3.70  |         |   Q  V  |         |         |
     4+55       0.3926      3.81  |         |    Q   V|         |         |
     5+ 0       0.4202      4.00  |         |     Q   V         |         |
     5+ 5       0.4503      4.38  |         |      Q  | V       |         |
     5+10       0.4861      5.20  |         |         Q  V      |         |
     5+15       0.5280      6.09  |         |         |   QV    |         |
     5+20       0.5750      6.82  |         |         |      QV |         |
     5+25       0.6275      7.61  |         |         |         Q         |
     5+30       0.6879      8.78  |         |         |         |  V Q    |
     5+35       0.7466      8.52  |         |         |         |   Q V   |
     5+40       0.7778      4.53  |         |       Q |         |       V |
     5+45       0.7935      2.28  |        Q|         |         |       V |
     5+50       0.8024      1.30  |    Q    |         |         |        V|
     5+55       0.8080      0.81  |  Q      |         |         |        V|
     6+ 0       0.8114      0.49  |Q        |         |         |        V|
     6+ 5       0.8134      0.28  |Q        |         |         |        V|
     6+10       0.8143      0.13  Q         |         |         |        V|
     6+15       0.8145      0.03  Q         |         |         |        V|
     6+20       0.8146      0.01  Q         |         |         |        V|
     6+25       0.8146      0.00  Q         |         |         |        V|
     6+30       0.8146      0.00  Q         |         |         |        V|
     6+35       0.8146      0.00  Q         |         |         |        V|
     6+40       0.8146      0.00  Q         |         |         |        V|
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                                 EX24HR10YR
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
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Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20           1.72                  19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20           4.30                  48.15

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    2.781(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.781(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  89.0      0.141     0.000        0.141       1.000      0.141
                                                  Sum (F) =   0.141
Area averaged mean soil loss (F) (In/Hr) =  0.141
Minimum soil loss rate ((In/Hr)) =  0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX24HR10YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.022	(0.251)	0.020	0.002
2	0.17	0.07	0.022	(0.250)	0.020	0.002
3	0.25	0.07	0.022	(0.249)	0.020	0.002
4	0.33	0.10	0.033	(0.248)	0.030	0.003
5	0.42	0.10	0.033	(0.247)	0.030	0.003
6	0.50	0.10	0.033	(0.246)	0.030	0.003
7	0.58	0.10	0.033	(0.245)	0.030	0.003
8	0.67	0.10	0.033	(0.244)	0.030	0.003
9	0.75	0.10	0.033	(0.243)	0.030	0.003
10	0.83	0.13	0.045	(0.242)	0.040	0.004
11	0.92	0.13	0.045	(0.241)	0.040	0.004
12	1.00	0.13	0.045	(0.240)	0.040	0.004
13	1.08	0.10	0.033	(0.239)	0.030	0.003
14	1.17	0.10	0.033	(0.238)	0.030	0.003
15	1.25	0.10	0.033	(0.237)	0.030	0.003
16	1.33	0.10	0.033	(0.236)	0.030	0.003
17	1.42	0.10	0.033	(0.235)	0.030	0.003
18	1.50	0.10	0.033	(0.234)	0.030	0.003
19	1.58	0.10	0.033	(0.234)	0.030	0.003
20	1.67	0.10	0.033	(0.233)	0.030	0.003
21	1.75	0.10	0.033	(0.232)	0.030	0.003
22	1.83	0.13	0.045	(0.231)	0.040	0.004
23	1.92	0.13	0.045	(0.230)	0.040	0.004
24	2.00	0.13	0.045	(0.229)	0.040	0.004
25	2.08	0.13	0.045	(0.228)	0.040	0.004
26	2.17	0.13	0.045	(0.227)	0.040	0.004
27	2.25	0.13	0.045	(0.226)	0.040	0.004
28	2.33	0.13	0.045	(0.225)	0.040	0.004
29	2.42	0.13	0.045	(0.224)	0.040	0.004
30	2.50	0.13	0.045	(0.223)	0.040	0.004
31	2.58	0.17	0.056	(0.222)	0.050	0.006
32	2.67	0.17	0.056	(0.221)	0.050	0.006
33	2.75	0.17	0.056	(0.221)	0.050	0.006
34	2.83	0.17	0.056	(0.220)	0.050	0.006
35	2.92	0.17	0.056	(0.219)	0.050	0.006
36	3.00	0.17	0.056	(0.218)	0.050	0.006
37	3.08	0.17	0.056	(0.217)	0.050	0.006
38	3.17	0.17	0.056	(0.216)	0.050	0.006
39	3.25	0.17	0.056	(0.215)	0.050	0.006
40	3.33	0.17	0.056	(0.214)	0.050	0.006
41	3.42	0.17	0.056	(0.213)	0.050	0.006
42	3.50	0.17	0.056	(0.212)	0.050	0.006
43	3.58	0.17	0.056	(0.212)	0.050	0.006
44	3.67	0.17	0.056	(0.211)	0.050	0.006
45	3.75	0.17	0.056	(0.210)	0.050	0.006
46	3.83	0.20	0.067	(0.209)	0.060	0.007
47	3.92	0.20	0.067	(0.208)	0.060	0.007
48	4.00	0.20	0.067	(0.207)	0.060	0.007
49	4.08	0.20	0.067	(0.206)	0.060	0.007
50	4.17	0.20	0.067	(0.205)	0.060	0.007
51	4.25	0.20	0.067	(0.205)	0.060	0.007
52	4.33	0.23	0.078	(0.204)	0.070	0.008
53	4.42	0.23	0.078	(0.203)	0.070	0.008

54	4.50	0.23	0.078	(0.202)	0.070	0.008
55	4.58	0.23	0.078	(0.201)	0.070	0.008
56	4.67	0.23	0.078	(0.200)	0.070	0.008
57	4.75	0.23	0.078	(0.199)	0.070	0.008
58	4.83	0.27	0.089	(0.198)	0.080	0.009
59	4.92	0.27	0.089	(0.198)	0.080	0.009
60	5.00	0.27	0.089	(0.197)	0.080	0.009
61	5.08	0.20	0.067	(0.196)	0.060	0.007
62	5.17	0.20	0.067	(0.195)	0.060	0.007
63	5.25	0.20	0.067	(0.194)	0.060	0.007
64	5.33	0.23	0.078	(0.193)	0.070	0.008
65	5.42	0.23	0.078	(0.193)	0.070	0.008
66	5.50	0.23	0.078	(0.192)	0.070	0.008
67	5.58	0.27	0.089	(0.191)	0.080	0.009
68	5.67	0.27	0.089	(0.190)	0.080	0.009
69	5.75	0.27	0.089	(0.189)	0.080	0.009
70	5.83	0.27	0.089	(0.188)	0.080	0.009
71	5.92	0.27	0.089	(0.187)	0.080	0.009
72	6.00	0.27	0.089	(0.187)	0.080	0.009
73	6.08	0.30	0.100	(0.186)	0.090	0.010
74	6.17	0.30	0.100	(0.185)	0.090	0.010
75	6.25	0.30	0.100	(0.184)	0.090	0.010
76	6.33	0.30	0.100	(0.183)	0.090	0.010
77	6.42	0.30	0.100	(0.183)	0.090	0.010
78	6.50	0.30	0.100	(0.182)	0.090	0.010
79	6.58	0.33	0.111	(0.181)	0.100	0.011
80	6.67	0.33	0.111	(0.180)	0.100	0.011
81	6.75	0.33	0.111	(0.179)	0.100	0.011
82	6.83	0.33	0.111	(0.178)	0.100	0.011
83	6.92	0.33	0.111	(0.178)	0.100	0.011
84	7.00	0.33	0.111	(0.177)	0.100	0.011
85	7.08	0.33	0.111	(0.176)	0.100	0.011
86	7.17	0.33	0.111	(0.175)	0.100	0.011
87	7.25	0.33	0.111	(0.174)	0.100	0.011
88	7.33	0.37	0.122	(0.174)	0.110	0.012
89	7.42	0.37	0.122	(0.173)	0.110	0.012
90	7.50	0.37	0.122	(0.172)	0.110	0.012
91	7.58	0.40	0.134	(0.171)	0.120	0.013
92	7.67	0.40	0.134	(0.170)	0.120	0.013
93	7.75	0.40	0.134	(0.170)	0.120	0.013
94	7.83	0.43	0.145	(0.169)	0.130	0.014
95	7.92	0.43	0.145	(0.168)	0.130	0.014
96	8.00	0.43	0.145	(0.167)	0.130	0.014
97	8.08	0.50	0.167	(0.167)	0.150	0.017
98	8.17	0.50	0.167	(0.166)	0.150	0.017
99	8.25	0.50	0.167	(0.165)	0.150	0.017
100	8.33	0.50	0.167	(0.164)	0.150	0.017
101	8.42	0.50	0.167	(0.163)	0.150	0.017
102	8.50	0.50	0.167	(0.163)	0.150	0.017
103	8.58	0.53	0.178	(0.162)	0.160	0.018
104	8.67	0.53	0.178	(0.161)	0.160	0.018
105	8.75	0.53	0.178	(0.160)	0.160	0.018
106	8.83	0.57	0.189	0.160	(0.170)	0.029
107	8.92	0.57	0.189	0.159	(0.170)	0.030
108	9.00	0.57	0.189	0.158	(0.170)	0.031
109	9.08	0.63	0.211	0.157	(0.190)	0.054
110	9.17	0.63	0.211	0.157	(0.190)	0.055
111	9.25	0.63	0.211	0.156	(0.190)	0.055
112	9.33	0.67	0.223	0.155	(0.200)	0.067
113	9.42	0.67	0.223	0.154	(0.200)	0.068
114	9.50	0.67	0.223	0.154	(0.200)	0.069
115	9.58	0.70	0.234	0.153	(0.210)	0.081
116	9.67	0.70	0.234	0.152	(0.210)	0.081
117	9.75	0.70	0.234	0.151	(0.210)	0.082
118	9.83	0.73	0.245	0.151	(0.220)	0.094
119	9.92	0.73	0.245	0.150	(0.220)	0.095
120	10.00	0.73	0.245	0.149	(0.220)	0.095
121	10.08	0.50	0.167	0.149	(0.150)	0.018
122	10.17	0.50	0.167	0.148	(0.150)	0.019
123	10.25	0.50	0.167	0.147	(0.150)	0.020
124	10.33	0.50	0.167	0.146	(0.150)	0.020
125	10.42	0.50	0.167	0.146	(0.150)	0.021
126	10.50	0.50	0.167	0.145	(0.150)	0.022
127	10.58	0.67	0.223	0.144	(0.200)	0.078
128	10.67	0.67	0.223	0.144	(0.200)	0.079
129	10.75	0.67	0.223	0.143	(0.200)	0.080
130	10.83	0.67	0.223	0.142	(0.200)	0.080
131	10.92	0.67	0.223	0.142	(0.200)	0.081
132	11.00	0.67	0.223	0.141	(0.200)	0.082

133	11.08	0.63	0.211	0.140	(0.190)	0.071
134	11.17	0.63	0.211	0.139	(0.190)	0.072
135	11.25	0.63	0.211	0.139	(0.190)	0.073
136	11.33	0.63	0.211	0.138	(0.190)	0.073
137	11.42	0.63	0.211	0.137	(0.190)	0.074
138	11.50	0.63	0.211	0.137	(0.190)	0.075
139	11.58	0.57	0.189	0.136	(0.170)	0.053
140	11.67	0.57	0.189	0.135	(0.170)	0.054
141	11.75	0.57	0.189	0.135	(0.170)	0.054
142	11.83	0.60	0.200	0.134	(0.180)	0.066
143	11.92	0.60	0.200	0.133	(0.180)	0.067
144	12.00	0.60	0.200	0.133	(0.180)	0.068
145	12.08	0.83	0.278	0.132	(0.250)	0.146
146	12.17	0.83	0.278	0.131	(0.250)	0.147
147	12.25	0.83	0.278	0.131	(0.250)	0.147
148	12.33	0.87	0.289	0.130	(0.260)	0.159
149	12.42	0.87	0.289	0.129	(0.260)	0.160
150	12.50	0.87	0.289	0.129	(0.260)	0.161
151	12.58	0.93	0.312	0.128	(0.280)	0.183
152	12.67	0.93	0.312	0.127	(0.280)	0.184
153	12.75	0.93	0.312	0.127	(0.280)	0.185
154	12.83	0.97	0.323	0.126	(0.290)	0.197
155	12.92	0.97	0.323	0.126	(0.290)	0.197
156	13.00	0.97	0.323	0.125	(0.290)	0.198
157	13.08	1.13	0.378	0.124	(0.340)	0.254
158	13.17	1.13	0.378	0.124	(0.340)	0.255
159	13.25	1.13	0.378	0.123	(0.340)	0.255
160	13.33	1.13	0.378	0.122	(0.340)	0.256
161	13.42	1.13	0.378	0.122	(0.340)	0.257
162	13.50	1.13	0.378	0.121	(0.340)	0.257
163	13.58	0.77	0.256	0.120	(0.230)	0.135
164	13.67	0.77	0.256	0.120	(0.230)	0.136
165	13.75	0.77	0.256	0.119	(0.230)	0.137
166	13.83	0.77	0.256	0.119	(0.230)	0.137
167	13.92	0.77	0.256	0.118	(0.230)	0.138
168	14.00	0.77	0.256	0.117	(0.230)	0.138
169	14.08	0.90	0.300	0.117	(0.270)	0.184
170	14.17	0.90	0.300	0.116	(0.270)	0.184
171	14.25	0.90	0.300	0.116	(0.270)	0.185
172	14.33	0.87	0.289	0.115	(0.260)	0.174
173	14.42	0.87	0.289	0.114	(0.260)	0.175
174	14.50	0.87	0.289	0.114	(0.260)	0.175
175	14.58	0.87	0.289	0.113	(0.260)	0.176
176	14.67	0.87	0.289	0.113	(0.260)	0.177
177	14.75	0.87	0.289	0.112	(0.260)	0.177
178	14.83	0.83	0.278	0.112	(0.250)	0.167
179	14.92	0.83	0.278	0.111	(0.250)	0.167
180	15.00	0.83	0.278	0.110	(0.250)	0.168
181	15.08	0.80	0.267	0.110	(0.240)	0.157
182	15.17	0.80	0.267	0.109	(0.240)	0.158
183	15.25	0.80	0.267	0.109	(0.240)	0.158
184	15.33	0.77	0.256	0.108	(0.230)	0.148
185	15.42	0.77	0.256	0.108	(0.230)	0.148
186	15.50	0.77	0.256	0.107	(0.230)	0.149
187	15.58	0.63	0.211	0.107	(0.190)	0.105
188	15.67	0.63	0.211	0.106	(0.190)	0.105
189	15.75	0.63	0.211	0.105	(0.190)	0.106
190	15.83	0.63	0.211	0.105	(0.190)	0.106
191	15.92	0.63	0.211	0.104	(0.190)	0.107
192	16.00	0.63	0.211	0.104	(0.190)	0.108
193	16.08	0.13	0.045	(0.103)	0.040	0.004
194	16.17	0.13	0.045	(0.103)	0.040	0.004
195	16.25	0.13	0.045	(0.102)	0.040	0.004
196	16.33	0.13	0.045	(0.102)	0.040	0.004
197	16.42	0.13	0.045	(0.101)	0.040	0.004
198	16.50	0.13	0.045	(0.101)	0.040	0.004
199	16.58	0.10	0.033	(0.100)	0.030	0.003
200	16.67	0.10	0.033	(0.100)	0.030	0.003
201	16.75	0.10	0.033	(0.099)	0.030	0.003
202	16.83	0.10	0.033	(0.099)	0.030	0.003
203	16.92	0.10	0.033	(0.098)	0.030	0.003
204	17.00	0.10	0.033	(0.098)	0.030	0.003
205	17.08	0.17	0.056	(0.097)	0.050	0.006
206	17.17	0.17	0.056	(0.097)	0.050	0.006
207	17.25	0.17	0.056	(0.096)	0.050	0.006
208	17.33	0.17	0.056	(0.096)	0.050	0.006
209	17.42	0.17	0.056	(0.095)	0.050	0.006
210	17.50	0.17	0.056	(0.095)	0.050	0.006
211	17.58	0.17	0.056	(0.094)	0.050	0.006

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212	17.67	0.17	0.056	(0.094)	0.050	0.006
213	17.75	0.17	0.056	(0.093)	0.050	0.006
214	17.83	0.13	0.045	(0.093)	0.040	0.004
215	17.92	0.13	0.045	(0.092)	0.040	0.004
216	18.00	0.13	0.045	(0.092)	0.040	0.004
217	18.08	0.13	0.045	(0.092)	0.040	0.004
218	18.17	0.13	0.045	(0.091)	0.040	0.004
219	18.25	0.13	0.045	(0.091)	0.040	0.004
220	18.33	0.13	0.045	(0.090)	0.040	0.004
221	18.42	0.13	0.045	(0.090)	0.040	0.004
222	18.50	0.13	0.045	(0.089)	0.040	0.004
223	18.58	0.10	0.033	(0.089)	0.030	0.003
224	18.67	0.10	0.033	(0.088)	0.030	0.003
225	18.75	0.10	0.033	(0.088)	0.030	0.003
226	18.83	0.07	0.022	(0.088)	0.020	0.002
227	18.92	0.07	0.022	(0.087)	0.020	0.002
228	19.00	0.07	0.022	(0.087)	0.020	0.002
229	19.08	0.10	0.033	(0.086)	0.030	0.003
230	19.17	0.10	0.033	(0.086)	0.030	0.003
231	19.25	0.10	0.033	(0.086)	0.030	0.003
232	19.33	0.13	0.045	(0.085)	0.040	0.004
233	19.42	0.13	0.045	(0.085)	0.040	0.004
234	19.50	0.13	0.045	(0.084)	0.040	0.004
235	19.58	0.10	0.033	(0.084)	0.030	0.003
236	19.67	0.10	0.033	(0.084)	0.030	0.003
237	19.75	0.10	0.033	(0.083)	0.030	0.003
238	19.83	0.07	0.022	(0.083)	0.020	0.002
239	19.92	0.07	0.022	(0.082)	0.020	0.002
240	20.00	0.07	0.022	(0.082)	0.020	0.002
241	20.08	0.10	0.033	(0.082)	0.030	0.003
242	20.17	0.10	0.033	(0.081)	0.030	0.003
243	20.25	0.10	0.033	(0.081)	0.030	0.003
244	20.33	0.10	0.033	(0.081)	0.030	0.003
245	20.42	0.10	0.033	(0.080)	0.030	0.003
246	20.50	0.10	0.033	(0.080)	0.030	0.003
247	20.58	0.10	0.033	(0.080)	0.030	0.003
248	20.67	0.10	0.033	(0.079)	0.030	0.003
249	20.75	0.10	0.033	(0.079)	0.030	0.003
250	20.83	0.07	0.022	(0.079)	0.020	0.002
251	20.92	0.07	0.022	(0.078)	0.020	0.002
252	21.00	0.07	0.022	(0.078)	0.020	0.002
253	21.08	0.10	0.033	(0.078)	0.030	0.003
254	21.17	0.10	0.033	(0.077)	0.030	0.003
255	21.25	0.10	0.033	(0.077)	0.030	0.003
256	21.33	0.07	0.022	(0.077)	0.020	0.002
257	21.42	0.07	0.022	(0.077)	0.020	0.002
258	21.50	0.07	0.022	(0.076)	0.020	0.002
259	21.58	0.10	0.033	(0.076)	0.030	0.003
260	21.67	0.10	0.033	(0.076)	0.030	0.003
261	21.75	0.10	0.033	(0.075)	0.030	0.003
262	21.83	0.07	0.022	(0.075)	0.020	0.002
263	21.92	0.07	0.022	(0.075)	0.020	0.002
264	22.00	0.07	0.022	(0.075)	0.020	0.002
265	22.08	0.10	0.033	(0.074)	0.030	0.003
266	22.17	0.10	0.033	(0.074)	0.030	0.003
267	22.25	0.10	0.033	(0.074)	0.030	0.003
268	22.33	0.07	0.022	(0.074)	0.020	0.002
269	22.42	0.07	0.022	(0.073)	0.020	0.002
270	22.50	0.07	0.022	(0.073)	0.020	0.002
271	22.58	0.07	0.022	(0.073)	0.020	0.002
272	22.67	0.07	0.022	(0.073)	0.020	0.002
273	22.75	0.07	0.022	(0.073)	0.020	0.002
274	22.83	0.07	0.022	(0.072)	0.020	0.002
275	22.92	0.07	0.022	(0.072)	0.020	0.002
276	23.00	0.07	0.022	(0.072)	0.020	0.002
277	23.08	0.07	0.022	(0.072)	0.020	0.002
278	23.17	0.07	0.022	(0.072)	0.020	0.002
279	23.25	0.07	0.022	(0.072)	0.020	0.002
280	23.33	0.07	0.022	(0.071)	0.020	0.002
281	23.42	0.07	0.022	(0.071)	0.020	0.002
282	23.50	0.07	0.022	(0.071)	0.020	0.002
283	23.58	0.07	0.022	(0.071)	0.020	0.002
284	23.67	0.07	0.022	(0.071)	0.020	0.002
285	23.75	0.07	0.022	(0.071)	0.020	0.002
286	23.83	0.07	0.022	(0.071)	0.020	0.002
287	23.92	0.07	0.022	(0.071)	0.020	0.002
288	24.00	0.07	0.022	(0.071)	0.020	0.002

(Loss Rate Not Used)

Sum = 100.0 Sum = 11.6

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                                     EX24HR10YR
     Flood volume = Effective rainfall      0.97(In)
      times area      11.2(Ac.)/[(In)/(Ft.)] =       0.9(Ac.Ft)
     Total soil loss =      1.81(In)
     Total soil loss =     1.691(Ac.Ft)
     Total rainfall =      2.78(In)
     Flood volume =      39383.2 Cubic Feet
     Total soil loss =      73666.0 Cubic Feet
     --------------------------------------------------------------------
      Peak flow rate of this hydrograph =      2.871(CFS)
     --------------------------------------------------------------------
     ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                         24 - H O U R    S T O R M
                    R u n o f f     H y d r o g r a p h
     --------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

     --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.02  Q         |         |         |         |
  0+15       0.0003      0.02  Q         |         |         |         |
  0+20       0.0005      0.02  Q         |         |         |         |
  0+25       0.0007      0.03  Q         |         |         |         |
  0+30       0.0009      0.03  Q         |         |         |         |
  0+35       0.0012      0.04  Q         |         |         |         |
  0+40       0.0014      0.04  Q         |         |         |         |
  0+45       0.0017      0.04  Q         |         |         |         |
  0+50       0.0020      0.04  Q         |         |         |         |
  0+55       0.0023      0.05  Q         |         |         |         |
  1+ 0       0.0026      0.05  Q         |         |         |         |
  1+ 5       0.0029      0.05  Q         |         |         |         |
  1+10       0.0032      0.04  Q         |         |         |         |
  1+15       0.0035      0.04  Q         |         |         |         |
  1+20       0.0037      0.04  Q         |         |         |         |
  1+25       0.0040      0.04  Q         |         |         |         |
  1+30       0.0043      0.04  Q         |         |         |         |
  1+35       0.0045      0.04  Q         |         |         |         |
  1+40       0.0048      0.04  Q         |         |         |         |
  1+45       0.0051      0.04  Q         |         |         |         |
  1+50       0.0053      0.04  Q         |         |         |         |
  1+55       0.0056      0.05  Q         |         |         |         |
  2+ 0       0.0060      0.05  Q         |         |         |         |
  2+ 5       0.0063      0.05  Q         |         |         |         |
  2+10       0.0067      0.05  Q         |         |         |         |
  2+15       0.0070      0.05  Q         |         |         |         |
  2+20       0.0073      0.05  Q         |         |         |         |
  2+25       0.0077      0.05  Q         |         |         |         |
  2+30       0.0080      0.05  Q         |         |         |         |
  2+35       0.0084      0.05  Q         |         |         |         |
  2+40       0.0088      0.06  Q         |         |         |         |
  2+45       0.0092      0.06  Q         |         |         |         |
  2+50       0.0096      0.06  Q         |         |         |         |
  2+55       0.0101      0.06  Q         |         |         |         |
  3+ 0       0.0105      0.06  Q         |         |         |         |
  3+ 5       0.0109      0.06  Q         |         |         |         |
  3+10       0.0114      0.06  Q         |         |         |         |
  3+15       0.0118      0.06  Q         |         |         |         |
  3+20       0.0122      0.06  Q         |         |         |         |
  3+25       0.0127      0.06  Q         |         |         |         |
  3+30       0.0131      0.06  Q         |         |         |         |
  3+35       0.0135      0.06  Q         |         |         |         |
  3+40       0.0140      0.06  Q         |         |         |         |
  3+45       0.0144      0.06  Q         |         |         |         |
  3+50       0.0148      0.07  Q         |         |         |         |
  3+55       0.0153      0.07  Q         |         |         |         |
  4+ 0       0.0158      0.07  Q         |         |         |         |
  4+ 5       0.0163      0.07  Q         |         |         |         |
  4+10       0.0169      0.07  Q         |         |         |         |
  4+15       0.0174      0.07  Q         |         |         |         |
  4+20       0.0179      0.08  Q         |         |         |         |
  4+25       0.0185      0.08  Q         |         |         |         |
  4+30       0.0191      0.09  Q         |         |         |         |
  4+35       0.0197      0.09  Q         |         |         |         |
  4+40       0.0203      0.09  Q         |         |         |         |
  4+45       0.0209      0.09  Q         |         |         |         |
  4+50       0.0215      0.09  Q         |         |         |         |
  4+55       0.0222      0.10  Q         |         |         |         |
  5+ 0       0.0228      0.10  QV        |         |         |         |
```

```
 5+ 5       0.0235      0.09  QV        |         |         |         |
 5+10       0.0241      0.08  QV        |         |         |         |
 5+15       0.0246      0.08  QV        |         |         |         |
 5+20       0.0251      0.08  QV        |         |         |         |
 5+25       0.0257      0.09  QV        |         |         |         |
 5+30       0.0263      0.09  QV        |         |         |         |
 5+35       0.0269      0.09  QV        |         |         |         |
 5+40       0.0276      0.10  QV        |         |         |         |
 5+45       0.0283      0.10  QV        |         |         |         |
 5+50       0.0290      0.10  QV        |         |         |         |
 5+55       0.0296      0.10  QV        |         |         |         |
 6+ 0       0.0303      0.10  QV        |         |         |         |
 6+ 5       0.0310      0.10  QV        |         |         |         |
 6+10       0.0318      0.11  QV        |         |         |         |
 6+15       0.0326      0.11  QV        |         |         |         |
 6+20       0.0333      0.11  QV        |         |         |         |
 6+25       0.0341      0.11  QV        |         |         |         |
 6+30       0.0349      0.11  QV        |         |         |         |
 6+35       0.0357      0.12  QV        |         |         |         |
 6+40       0.0365      0.12  QV        |         |         |         |
 6+45       0.0374      0.12  QV        |         |         |         |
 6+50       0.0382      0.12  QV        |         |         |         |
 6+55       0.0391      0.12  QV        |         |         |         |
 7+ 0       0.0399      0.13  QV        |         |         |         |
 7+ 5       0.0408      0.13  QV        |         |         |         |
 7+10       0.0417      0.13  QV        |         |         |         |
 7+15       0.0425      0.13  QV        |         |         |         |
 7+20       0.0434      0.13  QV        |         |         |         |
 7+25       0.0443      0.13  QV        |         |         |         |
 7+30       0.0453      0.14  Q V       |         |         |         |
 7+35       0.0462      0.14  Q V       |         |         |         |
 7+40       0.0472      0.15  Q V       |         |         |         |
 7+45       0.0483      0.15  Q V       |         |         |         |
 7+50       0.0493      0.15  Q V       |         |         |         |
 7+55       0.0504      0.16  Q V       |         |         |         |
 8+ 0       0.0515      0.16  Q V       |         |         |         |
 8+ 5       0.0526      0.17  Q V       |         |         |         |
 8+10       0.0539      0.18  Q V       |         |         |         |
 8+15       0.0551      0.18  Q V       |         |         |         |
 8+20       0.0564      0.19  Q V       |         |         |         |
 8+25       0.0577      0.19  Q V       |         |         |         |
 8+30       0.0590      0.19  Q V       |         |         |         |
 8+35       0.0603      0.19  Q V       |         |         |         |
 8+40       0.0617      0.20  Q V       |         |         |         |
 8+45       0.0630      0.20  Q V       |         |         |         |
 8+50       0.0646      0.22  Q V       |         |         |         |
 8+55       0.0666      0.29  |QV       |         |         |         |
 9+ 0       0.0687      0.32  |Q V      |         |         |         |
 9+ 5       0.0714      0.38  |Q V      |         |         |         |
 9+10       0.0749      0.51  | QV      |         |         |         |
 9+15       0.0788      0.57  | QV      |         |         |         |
 9+20       0.0831      0.62  | QV      |         |         |         |
 9+25       0.0879      0.70  | QV      |         |         |         |
 9+30       0.0929      0.73  | Q V     |         |         |         |
 9+35       0.0983      0.78  |  QV     |         |         |         |
 9+40       0.1042      0.86  |  QV     |         |         |         |
 9+45       0.1103      0.89  |  QV     |         |         |         |
 9+50       0.1167      0.93  |  Q V    |         |         |         |
 9+55       0.1236      1.01  |   QV    |         |         |         |
10+ 0       0.1308      1.04  |   QV    |         |         |         |
10+ 5       0.1370      0.90  |  Q  V   |         |         |         |
10+10       0.1403      0.49  |Q    V   |         |         |         |
10+15       0.1428      0.36  |Q    V   |         |         |         |
10+20       0.1449      0.30  |Q    V   |         |         |         |
10+25       0.1468      0.28  |Q    V   |         |         |         |
10+30       0.1486      0.26  |Q    V   |         |         |         |
10+35       0.1512      0.37  |Q    V   |         |         |         |
10+40       0.1558      0.68  | Q   V   |         |         |         |
10+45       0.1612      0.78  |  Q   V  |         |         |         |
10+50       0.1669      0.83  |  Q   V  |         |         |         |
10+55       0.1729      0.86  |  Q   V  |         |         |         |
11+ 0       0.1790      0.89  |  Q   V  |         |         |         |
11+ 5       0.1851      0.88  |  Q    V |         |         |         |
11+10       0.1908      0.84  |  Q    V |         |         |         |
11+15       0.1966      0.83  |  Q    V |         |         |         |
11+20       0.2023      0.83  |  Q    V |         |         |         |
11+25       0.2080      0.83  |  Q     V|         |         |         |
11+30       0.2138      0.84  |  Q     V|         |         |         |
11+35       0.2192      0.79  |  Q     V|         |         |         |
```

```
                                            EX24HR10YR
11+40       0.2239      0.68  | Q      V|         |         |         |
11+45       0.2284      0.65  | Q       V         |         |         |
11+50       0.2329      0.66  | Q       V         |         |         |
11+55       0.2378      0.72  | Q       V         |         |         |
12+ 0       0.2429      0.74  | Q       V         |         |         |
12+ 5       0.2492      0.91  |  Q      |V        |         |         |
12+10       0.2585      1.35  |    Q    |V        |         |         |
12+15       0.2688      1.50  |    Q    |V        |         |         |
12+20       0.2798      1.59  |     Q   | V       |         |         |
12+25       0.2915      1.70  |     Q   | V       |         |         |
12+30       0.3035      1.75  |     Q   |  V      |         |         |
12+35       0.3161      1.83  |      Q  |  V      |         |         |
12+40       0.3297      1.97  |      Q  |   V     |         |         |
12+45       0.3436      2.03  |       Q |    V    |         |         |
12+50       0.3580      2.08  |       Q |    V    |         |         |
12+55       0.3728      2.16  |       Q |     V   |         |         |
13+ 0       0.3879      2.19  |       Q |      V  |         |         |
13+ 5       0.4039      2.33  |        Q|      V  |         |         |
13+10       0.4222      2.65  |         Q       V |         |         |
13+15       0.4412      2.76  |         |Q       V|         |         |
13+20       0.4605      2.81  |         |Q        V         |         |
13+25       0.4801      2.85  |         |Q        |V        |         |
13+30       0.4999      2.87  |         |Q        | V       |         |
13+35       0.5180      2.63  |         Q         | V       |         |
13+40       0.5317      1.98  |      Q  |         |  V      |         |
13+45       0.5439      1.77  |      Q  |         |   V     |         |
13+50       0.5554      1.68  |     Q   |         |   V     |         |
13+55       0.5666      1.63  |     Q   |         |    V    |         |
14+ 0       0.5777      1.60  |     Q   |         |    V    |         |
14+ 5       0.5892      1.68  |     Q   |         |     V   |         |
14+10       0.6024      1.91  |      Q  |         |     V   |         |
14+15       0.6161      1.99  |      Q  |         |      V  |         |
14+20       0.6299      2.01  |       Q |         |      V  |         |
14+25       0.6435      1.97  |      Q  |         |       V |         |
14+30       0.6571      1.97  |      Q  |         |        V|         |
14+35       0.6707      1.98  |      Q  |         |        V|         |
14+40       0.6844      1.99  |      Q  |         |         V         |
14+45       0.6981      1.99  |      Q  |         |         V         |
14+50       0.7117      1.97  |      Q  |         |         |V        |
14+55       0.7250      1.92  |      Q  |         |         | V       |
15+ 0       0.7381      1.91  |      Q  |         |         | V       |
15+ 5       0.7510      1.88  |      Q  |         |         |  V      |
15+10       0.7636      1.82  |      Q  |         |         |  V      |
15+15       0.7760      1.80  |      Q  |         |         |   V     |
15+20       0.7882      1.77  |      Q  |         |         |   V     |
15+25       0.8000      1.71  |     Q   |         |         |    V    |
15+30       0.8117      1.70  |     Q   |         |         |    V    |
15+35       0.8227      1.60  |     Q   |         |         |     V   |
15+40       0.8320      1.36  |    Q    |         |         |     V   |
15+45       0.8408      1.28  |    Q    |         |         |      V  |
15+50       0.8494      1.25  |   Q     |         |         |      V  |
15+55       0.8579      1.23  |   Q     |         |         |      V  |
16+ 0       0.8663      1.22  |   Q     |         |         |       V |
16+ 5       0.8732      1.00  |   Q     |         |         |       V |
16+10       0.8762      0.44  |Q        |         |         |       V |
16+15       0.8780      0.25  |Q        |         |         |       V |
16+20       0.8791      0.17  Q         |         |         |       V |
16+25       0.8799      0.12  Q         |         |         |       V |
16+30       0.8806      0.09  Q         |         |         |       V |
16+35       0.8810      0.07  Q         |         |         |       V |
16+40       0.8814      0.05  Q         |         |         |       V |
16+45       0.8816      0.04  Q         |         |         |        V|
16+50       0.8819      0.04  Q         |         |         |        V|
16+55       0.8822      0.04  Q         |         |         |        V|
17+ 0       0.8824      0.04  Q         |         |         |        V|
17+ 5       0.8827      0.04  Q         |         |         |        V|
17+10       0.8831      0.05  Q         |         |         |        V|
17+15       0.8835      0.06  Q         |         |         |        V|
17+20       0.8839      0.06  Q         |         |         |        V|
17+25       0.8843      0.06  Q         |         |         |        V|
17+30       0.8848      0.06  Q         |         |         |        V|
17+35       0.8852      0.06  Q         |         |         |        V|
17+40       0.8856      0.06  Q         |         |         |        V|
17+45       0.8861      0.06  Q         |         |         |        V|
17+50       0.8865      0.06  Q         |         |         |        V|
17+55       0.8869      0.05  Q         |         |         |        V|
18+ 0       0.8872      0.05  Q         |         |         |        V|
18+ 5       0.8876      0.05  Q         |         |         |        V|
18+10       0.8879      0.05  Q         |         |         |        V|
```

18+15	0.8883	0.05	Q				V
18+20	0.8886	0.05	Q				V
18+25	0.8890	0.05	Q				V
18+30	0.8893	0.05	Q				V
18+35	0.8896	0.05	Q				V
18+40	0.8899	0.04	Q				V
18+45	0.8902	0.04	Q				V
18+50	0.8905	0.04	Q				V
18+55	0.8907	0.03	Q				V
19+ 0	0.8909	0.03	Q				V
19+ 5	0.8910	0.03	Q				V
19+10	0.8913	0.03	Q				V
19+15	0.8915	0.04	Q				V
19+20	0.8918	0.04	Q				V
19+25	0.8921	0.05	Q				V
19+30	0.8924	0.05	Q				V
19+35	0.8928	0.05	Q				V
19+40	0.8930	0.04	Q				V
19+45	0.8933	0.04	Q				V
19+50	0.8936	0.04	Q				V
19+55	0.8938	0.03	Q				V
20+ 0	0.8940	0.03	Q				V
20+ 5	0.8942	0.03	Q				V
20+10	0.8944	0.03	Q				V
20+15	0.8946	0.04	Q				V
20+20	0.8949	0.04	Q				V
20+25	0.8952	0.04	Q				V
20+30	0.8954	0.04	Q				V
20+35	0.8957	0.04	Q				V
20+40	0.8959	0.04	Q				V
20+45	0.8962	0.04	Q				V
20+50	0.8964	0.04	Q				V
20+55	0.8966	0.03	Q				V
21+ 0	0.8968	0.03	Q				V
21+ 5	0.8970	0.03	Q				V
21+10	0.8973	0.03	Q				V
21+15	0.8975	0.04	Q				V
21+20	0.8977	0.03	Q				V
21+25	0.8979	0.03	Q				V
21+30	0.8981	0.03	Q				V
21+35	0.8983	0.03	Q				V
21+40	0.8986	0.03	Q				V
21+45	0.8988	0.04	Q				V
21+50	0.8990	0.03	Q				V
21+55	0.8992	0.03	Q				V
22+ 0	0.8994	0.03	Q				V
22+ 5	0.8996	0.03	Q				V
22+10	0.8999	0.03	Q				V
22+15	0.9001	0.04	Q				V
22+20	0.9003	0.03	Q				V
22+25	0.9005	0.03	Q				V
22+30	0.9007	0.03	Q				V
22+35	0.9009	0.03	Q				V
22+40	0.9011	0.03	Q				V
22+45	0.9013	0.03	Q				V
22+50	0.9014	0.03	Q				V
22+55	0.9016	0.03	Q				V
23+ 0	0.9018	0.03	Q				V
23+ 5	0.9019	0.03	Q				V
23+10	0.9021	0.03	Q				V
23+15	0.9023	0.03	Q				V
23+20	0.9025	0.03	Q				V
23+25	0.9026	0.03	Q				V
23+30	0.9028	0.03	Q				V
23+35	0.9030	0.03	Q				V
23+40	0.9032	0.03	Q				V
23+45	0.9033	0.03	Q				V
23+50	0.9035	0.03	Q				V
23+55	0.9037	0.03	Q				V
24+ 0	0.9038	0.03	Q				V
24+ 5	0.9040	0.02	Q				V
24+10	0.9040	0.01	Q				V
24+15	0.9041	0.00	Q				V
24+20	0.9041	0.00	Q				V
24+25	0.9041	0.00	Q				V
24+30	0.9041	0.00	Q				V
24+35	0.9041	0.00	Q				V
24+40	0.9041	0.00	Q				V

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100 YEAR

```
                              EX1HR100YR
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX1100.out

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------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.48                    5.37

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.20                   13.44

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    1.200(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.200(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  89.0      0.141     0.000        0.141       1.000      0.141
                                                  Sum (F) =   0.141
Area averaged mean soil loss (F) (In/Hr) =  0.141
Minimum soil loss rate ((In/Hr)) =  0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                              EX1HR100YR
       ----------------------------------------------------------------------

                 U n i t   H y d r o g r a p h
                         VALLEY S-Curve
       --------------------------------------------------------------------
                 Unit Hydrograph Data
       ---------------------------------------------------------------------
       Unit time period   Time % of lag   Distribution   Unit Hydrograph
           (hrs)                            Graph %           (CFS)
       ---------------------------------------------------------------------
           1   0.083          97.789         18.521             2.090
           2   0.167         195.577         48.209             5.440
           3   0.250         293.366         15.982             1.803
           4   0.333         391.154          7.182             0.810
           5   0.417         488.943          4.067             0.459
           6   0.500         586.731          2.639             0.298
           7   0.583         684.520          1.671             0.189
           8   0.667         782.309          1.063             0.120
           9   0.750         880.097          0.666             0.075
                                     Sum = 100.000   Sum=      11.284
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |    Low      (In/Hr)
   1   0.08     4.40      0.634          0.141   (  0.570)       0.492
   2   0.17     4.50      0.648          0.141   (  0.583)       0.507
   3   0.25     5.40      0.778          0.141   (  0.700)       0.636
   4   0.33     5.40      0.778          0.141   (  0.700)       0.636
   5   0.42     5.70      0.821          0.141   (  0.739)       0.679
   6   0.50     6.40      0.922          0.141   (  0.829)       0.780
   7   0.58     7.90      1.137          0.141   (  1.024)       0.996
   8   0.67     9.10      1.310          0.141   (  1.179)       1.169
   9   0.75    12.80      1.843          0.141   (  1.659)       1.702
  10   0.83    25.60      3.686          0.141   (  3.317)       3.545
  11   0.92     7.90      1.137          0.141   (  1.024)       0.996
  12   1.00     4.90      0.706          0.141   (  0.635)       0.564
                (Loss Rate Not Used)
     Sum =     100.0                                  Sum =    12.7
        Flood volume = Effective rainfall      1.06(In)
         times area      11.2(Ac.)/[(In)/(Ft.)] =       1.0(Ac.Ft)
        Total soil loss =      0.14(In)
        Total soil loss =     0.132(Ac.Ft)
        Total rainfall =      1.20(In)
        Flood volume =       43022.0 Cubic Feet
        Total soil loss =        5747.2 Cubic Feet
       --------------------------------------------------------------------
         Peak flow rate of this hydrograph =     26.337(CFS)
       --------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        1 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
       --------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

       --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-----------------------------------------------------------------------
  0+ 5       0.0071      1.03  VQ        |         |         |         |
  0+10       0.0328      3.74  |V  Q     |         |         |         |
  0+15       0.0671      4.98  | V   Q   |         |         |         |
  0+20       0.1091      6.11  |   V   Q |         |         |         |
  0+25       0.1551      6.67  |     V Q |         |         |         |
  0+30       0.2058      7.37  |       VQ|         |         |         |
  0+35       0.2651      8.61  |         VQ        |         |         |
  0+40       0.3371     10.46  |         |  Q      |         |         |
  0+45       0.4272     13.07  |         |      Q  |         |         |
  0+50       0.5676     20.39  |         |         | V    Q  |         |
  0+55       0.7489     26.34  |         |         |         V    Q    |
  1+ 0       0.8556     15.49  |         |         Q         |   V     |
  1+ 5       0.9190      9.20  |         | Q       |         |      V  |
  1+10       0.9490      4.36  |    Q    |         |         |       V |
  1+15       0.9663      2.51  |  Q      |         |         |        V|
  1+20       0.9767      1.52  | Q       |         |         |        V|
  1+25       0.9830      0.91  |Q        |         |         |        V|
  1+30       0.9864      0.49  Q         |         |         |        V|
```

```
                              EX1HR100YR
   1+35       0.9874      0.14  Q         |         |         |        V|
   1+40       0.9876      0.04  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                          EX3HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX3100.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.80                    8.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.80                   20.15

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.800(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.800(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  89.0      0.141     0.000        0.141       1.000      0.141
                                                  Sum (F) =   0.141
Area averaged mean soil loss (F) (In/Hr) =  0.141
Minimum soil loss rate ((In/Hr)) =  0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX3HR100YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.281	0.141	(0.253)	0.139
2	0.17	1.30	0.281	0.141	(0.253)	0.139
3	0.25	1.10	0.238	0.141	(0.214)	0.096
4	0.33	1.50	0.324	0.141	(0.292)	0.183
5	0.42	1.50	0.324	0.141	(0.292)	0.183
6	0.50	1.80	0.389	0.141	(0.350)	0.247
7	0.58	1.50	0.324	0.141	(0.292)	0.183
8	0.67	1.80	0.389	0.141	(0.350)	0.247
9	0.75	1.80	0.389	0.141	(0.350)	0.247
10	0.83	1.50	0.324	0.141	(0.292)	0.183
11	0.92	1.60	0.346	0.141	(0.311)	0.204
12	1.00	1.80	0.389	0.141	(0.350)	0.247
13	1.08	2.20	0.475	0.141	(0.428)	0.334
14	1.17	2.20	0.475	0.141	(0.428)	0.334
15	1.25	2.20	0.475	0.141	(0.428)	0.334
16	1.33	2.00	0.432	0.141	(0.389)	0.291
17	1.42	2.60	0.562	0.141	(0.505)	0.420
18	1.50	2.70	0.583	0.141	(0.525)	0.442
19	1.58	2.40	0.518	0.141	(0.467)	0.377
20	1.67	2.70	0.583	0.141	(0.525)	0.442
21	1.75	3.30	0.713	0.141	(0.641)	0.571
22	1.83	3.10	0.670	0.141	(0.603)	0.528
23	1.92	2.90	0.626	0.141	(0.564)	0.485
24	2.00	3.00	0.648	0.141	(0.583)	0.507
25	2.08	3.10	0.670	0.141	(0.603)	0.528
26	2.17	4.20	0.907	0.141	(0.816)	0.766
27	2.25	5.00	1.080	0.141	(0.972)	0.939
28	2.33	3.50	0.756	0.141	(0.680)	0.615
29	2.42	6.80	1.469	0.141	(1.322)	1.327
30	2.50	7.30	1.577	0.141	(1.419)	1.435
31	2.58	8.20	1.771	0.141	(1.594)	1.630
32	2.67	5.90	1.274	0.141	(1.147)	1.133
33	2.75	2.00	0.432	0.141	(0.389)	0.291
34	2.83	1.80	0.389	0.141	(0.350)	0.247
35	2.92	1.80	0.389	0.141	(0.350)	0.247
36	3.00	0.60	0.130	(0.141)	0.117	0.013

(Loss Rate Not Used)

Sum = 100.0 Sum = 16.5

Flood volume = Effective rainfall 1.38(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 1.3(Ac.Ft)
Total soil loss = 0.42(In)
Total soil loss = 0.394(Ac.Ft)
Total rainfall = 1.80(In)
Flood volume = 55999.8 Cubic Feet
Total soil loss = 17157.8 Cubic Feet

Peak flow rate of this hydrograph = 15.714(CFS)

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

EX3HR100YR

```
      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0         5.0       10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5     0.0020      0.29  Q         |         |         |         |
  0+10     0.0092      1.05  V Q       |         |         |         |
  0+15     0.0176      1.21  V Q       |         |         |         |
  0+20     0.0263      1.27  V Q       |         |         |         |
  0+25     0.0382      1.73  |V Q      |         |         |         |
  0+30     0.0522      2.02  |V  Q     |         |         |         |
  0+35     0.0681      2.32  | V Q     |         |         |         |
  0+40     0.0837      2.26  | V Q     |         |         |         |
  0+45     0.1014      2.58  |  V Q    |         |         |         |
  0+50     0.1190      2.55  |  V Q    |         |         |         |
  0+55     0.1347      2.29  |   Q     |         |         |         |
  1+ 0     0.1513      2.41  |   Q     |         |         |         |
  1+ 5     0.1708      2.83  |    Q    |         |         |         |
  1+10     0.1940      3.37  |     Q   |         |         |         |
  1+15     0.2185      3.56  |     VQ  |         |         |         |
  1+20     0.2430      3.55  |      Q  |         |         |         |
  1+25     0.2681      3.64  |      QV |         |         |         |
  1+30     0.2980      4.34  |       QV|         |         |         |
  1+35     0.3293      4.55  |        QV         |         |         |
  1+40     0.3601      4.47  |       Q |V        |         |         |
  1+45     0.3948      5.05  |         Q V       |         |         |
  1+50     0.4345      5.77  |         |Q V      |         |         |
  1+55     0.4739      5.72  |         |Q  V     |         |         |
  2+ 0     0.5124      5.59  |         |Q   V    |         |         |
  2+ 5     0.5517      5.71  |         |Q     V  |         |         |
  2+10     0.5955      6.36  |         | Q     V |         |         |
  2+15     0.6511      8.06  |         |     Q   V         |         |
  2+20     0.7116      8.78  |         |      Q  | V       |         |
  2+25     0.7737      9.03  |         |       Q |   V     |         |
  2+30     0.8619     12.80  |         |         |    QV   |         |
  2+35     0.9650     14.97  |         |         |        QV         |
  2+40     1.0732     15.71  |         |         |         |Q V      |
  2+45     1.1557     11.98  |         |         |  Q      |    V    |
  2+50     1.2026      6.81  |         |  Q      |         |      V  |
  2+55     1.2361      4.88  |        Q|         |         |       V |
  3+ 0     1.2605      3.54  |      Q  |         |         |        V|
  3+ 5     1.2727      1.77  |  Q      |         |         |        V|
  3+10     1.2792      0.94  |Q        |         |         |        V|
  3+15     1.2827      0.51  |Q        |         |         |        V|
  3+20     1.2844      0.25  Q         |         |         |        V|
  3+25     1.2851      0.10  Q         |         |         |        V|
  3+30     1.2854      0.05  Q         |         |         |        V|
  3+35     1.2856      0.02  Q         |         |         |        V|
  3+40     1.2856      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

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                              EX6HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX6100.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.10                  12.32

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            2.50                  27.99

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    2.500(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.500(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%      F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  89.0      0.141     0.000        0.141       1.000      0.141
                                                  Sum (F) =   0.141
Area averaged mean soil loss (F) (In/Hr) =  0.141
Minimum soil loss rate ((In/Hr)) =  0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX6HR100YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.150	(0.141)	0.135	0.015
2	0.17	0.60	0.180	0.141	(0.162)	0.039
3	0.25	0.60	0.180	0.141	(0.162)	0.039
4	0.33	0.60	0.180	0.141	(0.162)	0.039
5	0.42	0.60	0.180	0.141	(0.162)	0.039
6	0.50	0.70	0.210	0.141	(0.189)	0.069
7	0.58	0.70	0.210	0.141	(0.189)	0.069
8	0.67	0.70	0.210	0.141	(0.189)	0.069
9	0.75	0.70	0.210	0.141	(0.189)	0.069
10	0.83	0.70	0.210	0.141	(0.189)	0.069
11	0.92	0.70	0.210	0.141	(0.189)	0.069
12	1.00	0.80	0.240	0.141	(0.216)	0.099
13	1.08	0.80	0.240	0.141	(0.216)	0.099
14	1.17	0.80	0.240	0.141	(0.216)	0.099
15	1.25	0.80	0.240	0.141	(0.216)	0.099
16	1.33	0.80	0.240	0.141	(0.216)	0.099
17	1.42	0.80	0.240	0.141	(0.216)	0.099
18	1.50	0.80	0.240	0.141	(0.216)	0.099
19	1.58	0.80	0.240	0.141	(0.216)	0.099
20	1.67	0.80	0.240	0.141	(0.216)	0.099
21	1.75	0.80	0.240	0.141	(0.216)	0.099
22	1.83	0.80	0.240	0.141	(0.216)	0.099
23	1.92	0.80	0.240	0.141	(0.216)	0.099
24	2.00	0.90	0.270	0.141	(0.243)	0.129
25	2.08	0.80	0.240	0.141	(0.216)	0.099
26	2.17	0.90	0.270	0.141	(0.243)	0.129
27	2.25	0.90	0.270	0.141	(0.243)	0.129
28	2.33	0.90	0.270	0.141	(0.243)	0.129
29	2.42	0.90	0.270	0.141	(0.243)	0.129
30	2.50	0.90	0.270	0.141	(0.243)	0.129
31	2.58	0.90	0.270	0.141	(0.243)	0.129
32	2.67	0.90	0.270	0.141	(0.243)	0.129
33	2.75	1.00	0.300	0.141	(0.270)	0.159
34	2.83	1.00	0.300	0.141	(0.270)	0.159
35	2.92	1.00	0.300	0.141	(0.270)	0.159
36	3.00	1.00	0.300	0.141	(0.270)	0.159
37	3.08	1.00	0.300	0.141	(0.270)	0.159
38	3.17	1.10	0.330	0.141	(0.297)	0.189
39	3.25	1.10	0.330	0.141	(0.297)	0.189
40	3.33	1.10	0.330	0.141	(0.297)	0.189
41	3.42	1.20	0.360	0.141	(0.324)	0.219
42	3.50	1.30	0.390	0.141	(0.351)	0.249
43	3.58	1.40	0.420	0.141	(0.378)	0.279
44	3.67	1.40	0.420	0.141	(0.378)	0.279
45	3.75	1.50	0.450	0.141	(0.405)	0.309
46	3.83	1.50	0.450	0.141	(0.405)	0.309
47	3.92	1.60	0.480	0.141	(0.432)	0.339
48	4.00	1.60	0.480	0.141	(0.432)	0.339
49	4.08	1.70	0.510	0.141	(0.459)	0.369
50	4.17	1.80	0.540	0.141	(0.486)	0.399
51	4.25	1.90	0.570	0.141	(0.513)	0.429
52	4.33	2.00	0.600	0.141	(0.540)	0.459
53	4.42	2.10	0.630	0.141	(0.567)	0.489

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                                              EX6HR100YR
54   4.50     2.10      0.630           0.141    (  0.567)        0.489
55   4.58     2.20      0.660           0.141    (  0.594)        0.519
56   4.67     2.30      0.690           0.141    (  0.621)        0.549
57   4.75     2.40      0.720           0.141    (  0.648)        0.579
58   4.83     2.40      0.720           0.141    (  0.648)        0.579
59   4.92     2.50      0.750           0.141    (  0.675)        0.609
60   5.00     2.60      0.780           0.141    (  0.702)        0.639
61   5.08     3.10      0.930           0.141    (  0.837)        0.789
62   5.17     3.60      1.080           0.141    (  0.972)        0.939
63   5.25     3.90      1.170           0.141    (  1.053)        1.029
64   5.33     4.20      1.260           0.141    (  1.134)        1.119
65   5.42     4.70      1.410           0.141    (  1.269)        1.269
66   5.50     5.60      1.680           0.141    (  1.512)        1.539
67   5.58     1.90      0.570           0.141    (  0.513)        0.429
68   5.67     0.90      0.270           0.141    (  0.243)        0.129
69   5.75     0.60      0.180           0.141    (  0.162)        0.039
70   5.83     0.50      0.150        (  0.141)        0.135        0.015
71   5.92     0.30      0.090        (  0.141)        0.081        0.009
72   6.00     0.20      0.060        (  0.141)        0.054        0.006
                      (Loss Rate Not Used)
   Sum =     100.0                                     Sum =    20.0
      Flood volume = Effective rainfall      1.66(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       1.6(Ac.Ft)
      Total soil loss =      0.84(In)
      Total soil loss =     0.779(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =       67669.6 Cubic Feet
      Total soil loss =       33939.3 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     13.877(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q          |         |         |         |
  0+10       0.0013      0.16  Q          |         |         |         |
  0+15       0.0035      0.32  Q          |         |         |         |
  0+20       0.0061      0.37  Q          |         |         |         |
  0+25       0.0088      0.40  Q          |         |         |         |
  0+30       0.0121      0.48  Q          |         |         |         |
  0+35       0.0166      0.65  VQ         |         |         |         |
  0+40       0.0215      0.71  VQ         |         |         |         |
  0+45       0.0266      0.74  VQ         |         |         |         |
  0+50       0.0318      0.75  VQ         |         |         |         |
  0+55       0.0370      0.76  VQ         |         |         |         |
  1+ 0       0.0427      0.83   |Q        |         |         |         |
  1+ 5       0.0496      1.00   |Q        |         |         |         |
  1+10       0.0569      1.05   |VQ       |         |         |         |
  1+15       0.0643      1.08   |VQ       |         |         |         |
  1+20       0.0718      1.09   |VQ       |         |         |         |
  1+25       0.0794      1.10   | Q       |         |         |         |
  1+30       0.0870      1.11   | Q       |         |         |         |
  1+35       0.0947      1.11   | Q       |         |         |         |
  1+40       0.1024      1.11   | Q       |         |         |         |
  1+45       0.1100      1.11   | Q       |         |         |         |
  1+50       0.1177      1.11   | QV      |         |         |         |
  1+55       0.1254      1.11   | QV      |         |         |         |
  2+ 0       0.1335      1.18   | QV      |         |         |         |
  2+ 5       0.1422      1.28   | QV      |         |         |         |
  2+10       0.1507      1.23   | QV      |         |         |         |
  2+15       0.1601      1.36   | Q V     |         |         |         |
  2+20       0.1698      1.41   | Q V     |         |         |         |
  2+25       0.1796      1.43   | Q V     |         |         |         |
  2+30       0.1895      1.44   | Q V     |         |         |         |
  2+35       0.1995      1.44   | Q  V    |         |         |         |
  2+40       0.2094      1.45   | Q  V    |         |         |         |
  2+45       0.2199      1.51   |  Q V    |         |         |         |
  2+50       0.2314      1.68   |  Q V    |         |         |         |
  2+55       0.2433      1.73   |  Q  V   |         |         |         |
  3+ 0       0.2554      1.76   |  Q  V   |         |         |         |
  3+ 5       0.2676      1.77   |  Q  V   |         |         |         |
  3+10       0.2803      1.84   |  Q   V  |         |         |         |
  3+15       0.2942      2.01   |   Q  V  |         |         |         |
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                                               EX6HR100YR
    3+20       0.3084       2.07  |   Q  V  |         |         |         |
    3+25       0.3233       2.16  |   Q   V |         |         |         |
    3+30       0.3398       2.40  |   Q   V |         |         |         |
    3+35       0.3583       2.69  |    Q   V|         |         |         |
    3+40       0.3785       2.93  |    Q   V|         |         |         |
    3+45       0.3998       3.09  |     Q   V         |         |         |
    3+50       0.4225       3.31  |     Q   V         |         |         |
    3+55       0.4463       3.45  |     Q   |V        |         |         |
    4+ 0       0.4715       3.66  |      Q  | V       |         |         |
    4+ 5       0.4976       3.80  |      Q  | V       |         |         |
    4+10       0.5256       4.06  |       Q |  V      |         |         |
    4+15       0.5557       4.37  |       Q |   V     |         |         |
    4+20       0.5879       4.68  |        Q|    V    |         |         |
    4+25       0.6224       5.01  |         Q     V   |         |         |
    4+30       0.6588       5.28  |         Q     V   |         |         |
    4+35       0.6963       5.45  |         Q      V  |         |         |
    4+40       0.7358       5.73  |         |Q      V |         |         |
    4+45       0.7774       6.04  |         | Q       V         |         |
    4+50       0.8208       6.31  |         | Q       |V        |         |
    4+55       0.8654       6.47  |         | Q       | V       |         |
    5+ 0       0.9119       6.75  |         |  Q      |  V      |         |
    5+ 5       0.9623       7.31  |         |   Q     |   V     |         |
    5+10       1.0211       8.54  |         |      Q  |     V   |         |
    5+15       1.0891       9.87  |         |        Q|       V |         |
    5+20       1.1646      10.96  |         |         |Q       V|         |
    5+25       1.2482      12.14  |         |         |   Q     |  V      |
    5+30       1.3437      13.88  |         |         |      Q  |    V    |
    5+35       1.4367      13.49  |         |         |     Q   |      V  |
    5+40       1.4886       7.55  |         |    Q    |         |       V |
    5+45       1.5167       4.08  |       Q |         |         |        V|
    5+50       1.5327       2.31  |   Q     |         |         |        V|
    5+55       1.5422       1.38  | Q       |         |         |        V|
    6+ 0       1.5479       0.83  |Q        |         |         |        V|
    6+ 5       1.5512       0.48  Q         |         |         |        V|
    6+10       1.5528       0.23  Q         |         |         |        V|
    6+15       1.5532       0.07  Q         |         |         |        V|
    6+20       1.5534       0.02  Q         |         |         |        V|
    6+25       1.5534       0.01  Q         |         |         |        V|
    6+30       1.5535       0.00  Q         |         |         |        V|
    6+35       1.5535       0.00  Q         |         |         |        V|
    6+40       1.5535       0.00  Q         |         |         |        V|
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                                EX24HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.72                 19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            4.30                 48.15

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    4.300(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  89.0      0.141     0.000        0.141       1.000      0.141
                                                  Sum (F) =   0.141
Area averaged mean soil loss (F) (In/Hr) =  0.141
Minimum soil loss rate ((In/Hr)) =  0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
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EX24HR100YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.034	(0.251)	0.031	0.003
2	0.17	0.07	0.034	(0.250)	0.031	0.003
3	0.25	0.07	0.034	(0.249)	0.031	0.003
4	0.33	0.10	0.052	(0.248)	0.046	0.005
5	0.42	0.10	0.052	(0.247)	0.046	0.005
6	0.50	0.10	0.052	(0.246)	0.046	0.005
7	0.58	0.10	0.052	(0.245)	0.046	0.005
8	0.67	0.10	0.052	(0.244)	0.046	0.005
9	0.75	0.10	0.052	(0.243)	0.046	0.005
10	0.83	0.13	0.069	(0.242)	0.062	0.007
11	0.92	0.13	0.069	(0.241)	0.062	0.007
12	1.00	0.13	0.069	(0.240)	0.062	0.007
13	1.08	0.10	0.052	(0.239)	0.046	0.005
14	1.17	0.10	0.052	(0.238)	0.046	0.005
15	1.25	0.10	0.052	(0.237)	0.046	0.005
16	1.33	0.10	0.052	(0.236)	0.046	0.005
17	1.42	0.10	0.052	(0.235)	0.046	0.005
18	1.50	0.10	0.052	(0.234)	0.046	0.005
19	1.58	0.10	0.052	(0.234)	0.046	0.005
20	1.67	0.10	0.052	(0.233)	0.046	0.005
21	1.75	0.10	0.052	(0.232)	0.046	0.005
22	1.83	0.13	0.069	(0.231)	0.062	0.007
23	1.92	0.13	0.069	(0.230)	0.062	0.007
24	2.00	0.13	0.069	(0.229)	0.062	0.007
25	2.08	0.13	0.069	(0.228)	0.062	0.007
26	2.17	0.13	0.069	(0.227)	0.062	0.007
27	2.25	0.13	0.069	(0.226)	0.062	0.007
28	2.33	0.13	0.069	(0.225)	0.062	0.007
29	2.42	0.13	0.069	(0.224)	0.062	0.007
30	2.50	0.13	0.069	(0.223)	0.062	0.007
31	2.58	0.17	0.086	(0.222)	0.077	0.009
32	2.67	0.17	0.086	(0.221)	0.077	0.009
33	2.75	0.17	0.086	(0.221)	0.077	0.009
34	2.83	0.17	0.086	(0.220)	0.077	0.009
35	2.92	0.17	0.086	(0.219)	0.077	0.009
36	3.00	0.17	0.086	(0.218)	0.077	0.009
37	3.08	0.17	0.086	(0.217)	0.077	0.009
38	3.17	0.17	0.086	(0.216)	0.077	0.009
39	3.25	0.17	0.086	(0.215)	0.077	0.009
40	3.33	0.17	0.086	(0.214)	0.077	0.009
41	3.42	0.17	0.086	(0.213)	0.077	0.009
42	3.50	0.17	0.086	(0.212)	0.077	0.009
43	3.58	0.17	0.086	(0.212)	0.077	0.009
44	3.67	0.17	0.086	(0.211)	0.077	0.009
45	3.75	0.17	0.086	(0.210)	0.077	0.009
46	3.83	0.20	0.103	(0.209)	0.093	0.010
47	3.92	0.20	0.103	(0.208)	0.093	0.010
48	4.00	0.20	0.103	(0.207)	0.093	0.010
49	4.08	0.20	0.103	(0.206)	0.093	0.010
50	4.17	0.20	0.103	(0.205)	0.093	0.010
51	4.25	0.20	0.103	(0.205)	0.093	0.010
52	4.33	0.23	0.120	(0.204)	0.108	0.012
53	4.42	0.23	0.120	(0.203)	0.108	0.012

54	4.50	0.23	0.120	(0.202)	0.108	0.012
55	4.58	0.23	0.120	(0.201)	0.108	0.012
56	4.67	0.23	0.120	(0.200)	0.108	0.012
57	4.75	0.23	0.120	(0.199)	0.108	0.012
58	4.83	0.27	0.138	(0.198)	0.124	0.014
59	4.92	0.27	0.138	(0.198)	0.124	0.014
60	5.00	0.27	0.138	(0.197)	0.124	0.014
61	5.08	0.20	0.103	(0.196)	0.093	0.010
62	5.17	0.20	0.103	(0.195)	0.093	0.010
63	5.25	0.20	0.103	(0.194)	0.093	0.010
64	5.33	0.23	0.120	(0.193)	0.108	0.012
65	5.42	0.23	0.120	(0.193)	0.108	0.012
66	5.50	0.23	0.120	(0.192)	0.108	0.012
67	5.58	0.27	0.138	(0.191)	0.124	0.014
68	5.67	0.27	0.138	(0.190)	0.124	0.014
69	5.75	0.27	0.138	(0.189)	0.124	0.014
70	5.83	0.27	0.138	(0.188)	0.124	0.014
71	5.92	0.27	0.138	(0.187)	0.124	0.014
72	6.00	0.27	0.138	(0.187)	0.124	0.014
73	6.08	0.30	0.155	(0.186)	0.139	0.015
74	6.17	0.30	0.155	(0.185)	0.139	0.015
75	6.25	0.30	0.155	(0.184)	0.139	0.015
76	6.33	0.30	0.155	(0.183)	0.139	0.015
77	6.42	0.30	0.155	(0.183)	0.139	0.015
78	6.50	0.30	0.155	(0.182)	0.139	0.015
79	6.58	0.33	0.172	(0.181)	0.155	0.017
80	6.67	0.33	0.172	(0.180)	0.155	0.017
81	6.75	0.33	0.172	(0.179)	0.155	0.017
82	6.83	0.33	0.172	(0.178)	0.155	0.017
83	6.92	0.33	0.172	(0.178)	0.155	0.017
84	7.00	0.33	0.172	(0.177)	0.155	0.017
85	7.08	0.33	0.172	(0.176)	0.155	0.017
86	7.17	0.33	0.172	(0.175)	0.155	0.017
87	7.25	0.33	0.172	(0.174)	0.155	0.017
88	7.33	0.37	0.189	(0.174)	0.170	0.019
89	7.42	0.37	0.189	(0.173)	0.170	0.019
90	7.50	0.37	0.189	(0.172)	0.170	0.019
91	7.58	0.40	0.206	0.171	(0.186)	0.035
92	7.67	0.40	0.206	0.170	(0.186)	0.036
93	7.75	0.40	0.206	0.170	(0.186)	0.037
94	7.83	0.43	0.224	0.169	(0.201)	0.055
95	7.92	0.43	0.224	0.168	(0.201)	0.055
96	8.00	0.43	0.224	0.167	(0.201)	0.056
97	8.08	0.50	0.258	0.167	(0.232)	0.091
98	8.17	0.50	0.258	0.166	(0.232)	0.092
99	8.25	0.50	0.258	0.165	(0.232)	0.093
100	8.33	0.50	0.258	0.164	(0.232)	0.094
101	8.42	0.50	0.258	0.163	(0.232)	0.095
102	8.50	0.50	0.258	0.163	(0.232)	0.095
103	8.58	0.53	0.275	0.162	(0.248)	0.113
104	8.67	0.53	0.275	0.161	(0.248)	0.114
105	8.75	0.53	0.275	0.160	(0.248)	0.115
106	8.83	0.57	0.292	0.160	(0.263)	0.133
107	8.92	0.57	0.292	0.159	(0.263)	0.133
108	9.00	0.57	0.292	0.158	(0.263)	0.134
109	9.08	0.63	0.327	0.157	(0.294)	0.169
110	9.17	0.63	0.327	0.157	(0.294)	0.170
111	9.25	0.63	0.327	0.156	(0.294)	0.171
112	9.33	0.67	0.344	0.155	(0.310)	0.189
113	9.42	0.67	0.344	0.154	(0.310)	0.190
114	9.50	0.67	0.344	0.154	(0.310)	0.190
115	9.58	0.70	0.361	0.153	(0.325)	0.208
116	9.67	0.70	0.361	0.152	(0.325)	0.209
117	9.75	0.70	0.361	0.151	(0.325)	0.210
118	9.83	0.73	0.378	0.151	(0.341)	0.228
119	9.92	0.73	0.378	0.150	(0.341)	0.228
120	10.00	0.73	0.378	0.149	(0.341)	0.229
121	10.08	0.50	0.258	0.149	(0.232)	0.109
122	10.17	0.50	0.258	0.148	(0.232)	0.110
123	10.25	0.50	0.258	0.147	(0.232)	0.111
124	10.33	0.50	0.258	0.146	(0.232)	0.112
125	10.42	0.50	0.258	0.146	(0.232)	0.112
126	10.50	0.50	0.258	0.145	(0.232)	0.113
127	10.58	0.67	0.344	0.144	(0.310)	0.200
128	10.67	0.67	0.344	0.144	(0.310)	0.200
129	10.75	0.67	0.344	0.143	(0.310)	0.201
130	10.83	0.67	0.344	0.142	(0.310)	0.202
131	10.92	0.67	0.344	0.142	(0.310)	0.202
132	11.00	0.67	0.344	0.141	(0.310)	0.203

133	11.08	0.63	0.327	0.140	(0.294)	0.187
134	11.17	0.63	0.327	0.139	(0.294)	0.187
135	11.25	0.63	0.327	0.139	(0.294)	0.188
136	11.33	0.63	0.327	0.138	(0.294)	0.189
137	11.42	0.63	0.327	0.137	(0.294)	0.189
138	11.50	0.63	0.327	0.137	(0.294)	0.190
139	11.58	0.57	0.292	0.136	(0.263)	0.156
140	11.67	0.57	0.292	0.135	(0.263)	0.157
141	11.75	0.57	0.292	0.135	(0.263)	0.158
142	11.83	0.60	0.310	0.134	(0.279)	0.176
143	11.92	0.60	0.310	0.133	(0.279)	0.176
144	12.00	0.60	0.310	0.133	(0.279)	0.177
145	12.08	0.83	0.430	0.132	(0.387)	0.298
146	12.17	0.83	0.430	0.131	(0.387)	0.299
147	12.25	0.83	0.430	0.131	(0.387)	0.299
148	12.33	0.87	0.447	0.130	(0.402)	0.317
149	12.42	0.87	0.447	0.129	(0.402)	0.318
150	12.50	0.87	0.447	0.129	(0.402)	0.318
151	12.58	0.93	0.482	0.128	(0.433)	0.354
152	12.67	0.93	0.482	0.127	(0.433)	0.354
153	12.75	0.93	0.482	0.127	(0.433)	0.355
154	12.83	0.97	0.499	0.126	(0.449)	0.373
155	12.92	0.97	0.499	0.126	(0.449)	0.373
156	13.00	0.97	0.499	0.125	(0.449)	0.374
157	13.08	1.13	0.585	0.124	(0.526)	0.461
158	13.17	1.13	0.585	0.124	(0.526)	0.461
159	13.25	1.13	0.585	0.123	(0.526)	0.462
160	13.33	1.13	0.585	0.122	(0.526)	0.462
161	13.42	1.13	0.585	0.122	(0.526)	0.463
162	13.50	1.13	0.585	0.121	(0.526)	0.464
163	13.58	0.77	0.396	0.120	(0.356)	0.275
164	13.67	0.77	0.396	0.120	(0.356)	0.276
165	13.75	0.77	0.396	0.119	(0.356)	0.276
166	13.83	0.77	0.396	0.119	(0.356)	0.277
167	13.92	0.77	0.396	0.118	(0.356)	0.278
168	14.00	0.77	0.396	0.117	(0.356)	0.278
169	14.08	0.90	0.464	0.117	(0.418)	0.348
170	14.17	0.90	0.464	0.116	(0.418)	0.348
171	14.25	0.90	0.464	0.116	(0.418)	0.349
172	14.33	0.87	0.447	0.115	(0.402)	0.332
173	14.42	0.87	0.447	0.114	(0.402)	0.333
174	14.50	0.87	0.447	0.114	(0.402)	0.333
175	14.58	0.87	0.447	0.113	(0.402)	0.334
176	14.67	0.87	0.447	0.113	(0.402)	0.334
177	14.75	0.87	0.447	0.112	(0.402)	0.335
178	14.83	0.83	0.430	0.112	(0.387)	0.318
179	14.92	0.83	0.430	0.111	(0.387)	0.319
180	15.00	0.83	0.430	0.110	(0.387)	0.320
181	15.08	0.80	0.413	0.110	(0.372)	0.303
182	15.17	0.80	0.413	0.109	(0.372)	0.303
183	15.25	0.80	0.413	0.109	(0.372)	0.304
184	15.33	0.77	0.396	0.108	(0.356)	0.287
185	15.42	0.77	0.396	0.108	(0.356)	0.288
186	15.50	0.77	0.396	0.107	(0.356)	0.289
187	15.58	0.63	0.327	0.107	(0.294)	0.220
188	15.67	0.63	0.327	0.106	(0.294)	0.221
189	15.75	0.63	0.327	0.105	(0.294)	0.221
190	15.83	0.63	0.327	0.105	(0.294)	0.222
191	15.92	0.63	0.327	0.104	(0.294)	0.222
192	16.00	0.63	0.327	0.104	(0.294)	0.223
193	16.08	0.13	0.069	(0.103)	0.062	0.007
194	16.17	0.13	0.069	(0.103)	0.062	0.007
195	16.25	0.13	0.069	(0.102)	0.062	0.007
196	16.33	0.13	0.069	(0.102)	0.062	0.007
197	16.42	0.13	0.069	(0.101)	0.062	0.007
198	16.50	0.13	0.069	(0.101)	0.062	0.007
199	16.58	0.10	0.052	(0.100)	0.046	0.005
200	16.67	0.10	0.052	(0.100)	0.046	0.005
201	16.75	0.10	0.052	(0.099)	0.046	0.005
202	16.83	0.10	0.052	(0.099)	0.046	0.005
203	16.92	0.10	0.052	(0.098)	0.046	0.005
204	17.00	0.10	0.052	(0.098)	0.046	0.005
205	17.08	0.17	0.086	(0.097)	0.077	0.009
206	17.17	0.17	0.086	(0.097)	0.077	0.009
207	17.25	0.17	0.086	(0.096)	0.077	0.009
208	17.33	0.17	0.086	(0.096)	0.077	0.009
209	17.42	0.17	0.086	(0.095)	0.077	0.009
210	17.50	0.17	0.086	(0.095)	0.077	0.009
211	17.58	0.17	0.086	(0.094)	0.077	0.009

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212	17.67	0.17	0.086	(0.094)	0.077	0.009
213	17.75	0.17	0.086	(0.093)	0.077	0.009
214	17.83	0.13	0.069	(0.093)	0.062	0.007
215	17.92	0.13	0.069	(0.092)	0.062	0.007
216	18.00	0.13	0.069	(0.092)	0.062	0.007
217	18.08	0.13	0.069	(0.092)	0.062	0.007
218	18.17	0.13	0.069	(0.091)	0.062	0.007
219	18.25	0.13	0.069	(0.091)	0.062	0.007
220	18.33	0.13	0.069	(0.090)	0.062	0.007
221	18.42	0.13	0.069	(0.090)	0.062	0.007
222	18.50	0.13	0.069	(0.089)	0.062	0.007
223	18.58	0.10	0.052	(0.089)	0.046	0.005
224	18.67	0.10	0.052	(0.088)	0.046	0.005
225	18.75	0.10	0.052	(0.088)	0.046	0.005
226	18.83	0.07	0.034	(0.088)	0.031	0.003
227	18.92	0.07	0.034	(0.087)	0.031	0.003
228	19.00	0.07	0.034	(0.087)	0.031	0.003
229	19.08	0.10	0.052	(0.086)	0.046	0.005
230	19.17	0.10	0.052	(0.086)	0.046	0.005
231	19.25	0.10	0.052	(0.086)	0.046	0.005
232	19.33	0.13	0.069	(0.085)	0.062	0.007
233	19.42	0.13	0.069	(0.085)	0.062	0.007
234	19.50	0.13	0.069	(0.084)	0.062	0.007
235	19.58	0.10	0.052	(0.084)	0.046	0.005
236	19.67	0.10	0.052	(0.084)	0.046	0.005
237	19.75	0.10	0.052	(0.083)	0.046	0.005
238	19.83	0.07	0.034	(0.083)	0.031	0.003
239	19.92	0.07	0.034	(0.082)	0.031	0.003
240	20.00	0.07	0.034	(0.082)	0.031	0.003
241	20.08	0.10	0.052	(0.082)	0.046	0.005
242	20.17	0.10	0.052	(0.081)	0.046	0.005
243	20.25	0.10	0.052	(0.081)	0.046	0.005
244	20.33	0.10	0.052	(0.081)	0.046	0.005
245	20.42	0.10	0.052	(0.080)	0.046	0.005
246	20.50	0.10	0.052	(0.080)	0.046	0.005
247	20.58	0.10	0.052	(0.080)	0.046	0.005
248	20.67	0.10	0.052	(0.079)	0.046	0.005
249	20.75	0.10	0.052	(0.079)	0.046	0.005
250	20.83	0.07	0.034	(0.079)	0.031	0.003
251	20.92	0.07	0.034	(0.078)	0.031	0.003
252	21.00	0.07	0.034	(0.078)	0.031	0.003
253	21.08	0.10	0.052	(0.078)	0.046	0.005
254	21.17	0.10	0.052	(0.077)	0.046	0.005
255	21.25	0.10	0.052	(0.077)	0.046	0.005
256	21.33	0.07	0.034	(0.077)	0.031	0.003
257	21.42	0.07	0.034	(0.077)	0.031	0.003
258	21.50	0.07	0.034	(0.076)	0.031	0.003
259	21.58	0.10	0.052	(0.076)	0.046	0.005
260	21.67	0.10	0.052	(0.076)	0.046	0.005
261	21.75	0.10	0.052	(0.075)	0.046	0.005
262	21.83	0.07	0.034	(0.075)	0.031	0.003
263	21.92	0.07	0.034	(0.075)	0.031	0.003
264	22.00	0.07	0.034	(0.075)	0.031	0.003
265	22.08	0.10	0.052	(0.074)	0.046	0.005
266	22.17	0.10	0.052	(0.074)	0.046	0.005
267	22.25	0.10	0.052	(0.074)	0.046	0.005
268	22.33	0.07	0.034	(0.074)	0.031	0.003
269	22.42	0.07	0.034	(0.073)	0.031	0.003
270	22.50	0.07	0.034	(0.073)	0.031	0.003
271	22.58	0.07	0.034	(0.073)	0.031	0.003
272	22.67	0.07	0.034	(0.073)	0.031	0.003
273	22.75	0.07	0.034	(0.073)	0.031	0.003
274	22.83	0.07	0.034	(0.072)	0.031	0.003
275	22.92	0.07	0.034	(0.072)	0.031	0.003
276	23.00	0.07	0.034	(0.072)	0.031	0.003
277	23.08	0.07	0.034	(0.072)	0.031	0.003
278	23.17	0.07	0.034	(0.072)	0.031	0.003
279	23.25	0.07	0.034	(0.072)	0.031	0.003
280	23.33	0.07	0.034	(0.071)	0.031	0.003
281	23.42	0.07	0.034	(0.071)	0.031	0.003
282	23.50	0.07	0.034	(0.071)	0.031	0.003
283	23.58	0.07	0.034	(0.071)	0.031	0.003
284	23.67	0.07	0.034	(0.071)	0.031	0.003
285	23.75	0.07	0.034	(0.071)	0.031	0.003
286	23.83	0.07	0.034	(0.071)	0.031	0.003
287	23.92	0.07	0.034	(0.071)	0.031	0.003
288	24.00	0.07	0.034	(0.071)	0.031	0.003

(Loss Rate Not Used)

Sum = 100.0 Sum = 25.0

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                                       EX24HR100YR
Flood volume = Effective rainfall      2.08(In)
 times area      11.2(Ac.)/[(In)/(Ft.)] =       1.9(Ac.Ft)
Total soil loss =      2.22(In)
Total soil loss =     2.071(Ac.Ft)
Total rainfall =      4.30(In)
Flood volume =       84572.3 Cubic Feet
Total soil loss =       90197.8 Cubic Feet
--------------------------------------------------------------------
 Peak flow rate of this hydrograph =      5.191(CFS)
--------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    24 - H O U R   S T O R M
               R u n o f f      H y d r o g r a p h
--------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

--------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0000      0.01  Q         |         |         |         |
  0+10       0.0002      0.03  Q         |         |         |         |
  0+15       0.0004      0.03  Q         |         |         |         |
  0+20       0.0007      0.04  Q         |         |         |         |
  0+25       0.0011      0.05  Q         |         |         |         |
  0+30       0.0014      0.05  Q         |         |         |         |
  0+35       0.0018      0.06  Q         |         |         |         |
  0+40       0.0022      0.06  Q         |         |         |         |
  0+45       0.0026      0.06  Q         |         |         |         |
  0+50       0.0030      0.06  Q         |         |         |         |
  0+55       0.0035      0.07  Q         |         |         |         |
  1+ 0       0.0040      0.07  Q         |         |         |         |
  1+ 5       0.0045      0.07  Q         |         |         |         |
  1+10       0.0050      0.06  Q         |         |         |         |
  1+15       0.0054      0.06  Q         |         |         |         |
  1+20       0.0058      0.06  Q         |         |         |         |
  1+25       0.0062      0.06  Q         |         |         |         |
  1+30       0.0066      0.06  Q         |         |         |         |
  1+35       0.0070      0.06  Q         |         |         |         |
  1+40       0.0074      0.06  Q         |         |         |         |
  1+45       0.0078      0.06  Q         |         |         |         |
  1+50       0.0082      0.06  Q         |         |         |         |
  1+55       0.0087      0.07  Q         |         |         |         |
  2+ 0       0.0092      0.07  Q         |         |         |         |
  2+ 5       0.0098      0.08  Q         |         |         |         |
  2+10       0.0103      0.08  Q         |         |         |         |
  2+15       0.0108      0.08  Q         |         |         |         |
  2+20       0.0113      0.08  Q         |         |         |         |
  2+25       0.0119      0.08  Q         |         |         |         |
  2+30       0.0124      0.08  Q         |         |         |         |
  2+35       0.0130      0.08  Q         |         |         |         |
  2+40       0.0136      0.09  Q         |         |         |         |
  2+45       0.0142      0.09  Q         |         |         |         |
  2+50       0.0149      0.10  Q         |         |         |         |
  2+55       0.0156      0.10  Q         |         |         |         |
  3+ 0       0.0162      0.10  Q         |         |         |         |
  3+ 5       0.0169      0.10  Q         |         |         |         |
  3+10       0.0176      0.10  Q         |         |         |         |
  3+15       0.0182      0.10  Q         |         |         |         |
  3+20       0.0189      0.10  Q         |         |         |         |
  3+25       0.0196      0.10  Q         |         |         |         |
  3+30       0.0202      0.10  Q         |         |         |         |
  3+35       0.0209      0.10  Q         |         |         |         |
  3+40       0.0216      0.10  Q         |         |         |         |
  3+45       0.0222      0.10  Q         |         |         |         |
  3+50       0.0229      0.10  Q         |         |         |         |
  3+55       0.0237      0.11  Q         |         |         |         |
  4+ 0       0.0245      0.11  Q         |         |         |         |
  4+ 5       0.0253      0.11  Q         |         |         |         |
  4+10       0.0261      0.12  Q         |         |         |         |
  4+15       0.0269      0.12  Q         |         |         |         |
  4+20       0.0277      0.12  Q         |         |         |         |
  4+25       0.0286      0.13  Q         |         |         |         |
  4+30       0.0295      0.13  Q         |         |         |         |
  4+35       0.0304      0.13  Q         |         |         |         |
  4+40       0.0313      0.13  Q         |         |         |         |
  4+45       0.0323      0.14  Q         |         |         |         |
  4+50       0.0332      0.14  Q         |         |         |         |
  4+55       0.0342      0.15  Q         |         |         |         |
  5+ 0       0.0353      0.15  Q         |         |         |         |
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                                            EX24HR100YR
 5+ 5       0.0363      0.15  Q         |         |         |         |
 5+10       0.0372      0.13  Q         |         |         |         |
 5+15       0.0380      0.12  Q         |         |         |         |
 5+20       0.0389      0.12  Q         |         |         |         |
 5+25       0.0398      0.13  Q         |         |         |         |
 5+30       0.0407      0.13  Q         |         |         |         |
 5+35       0.0417      0.14  Q         |         |         |         |
 5+40       0.0427      0.15  Q         |         |         |         |
 5+45       0.0437      0.15  Q         |         |         |         |
 5+50       0.0448      0.15  Q         |         |         |         |
 5+55       0.0458      0.15  Q         |         |         |         |
 6+ 0       0.0469      0.15  Q         |         |         |         |
 6+ 5       0.0480      0.16  Q         |         |         |         |
 6+10       0.0492      0.17  QV        |         |         |         |
 6+15       0.0503      0.17  QV        |         |         |         |
 6+20       0.0515      0.17  QV        |         |         |         |
 6+25       0.0527      0.17  QV        |         |         |         |
 6+30       0.0539      0.17  QV        |         |         |         |
 6+35       0.0551      0.18  QV        |         |         |         |
 6+40       0.0564      0.19  QV        |         |         |         |
 6+45       0.0578      0.19  QV        |         |         |         |
 6+50       0.0591      0.19  QV        |         |         |         |
 6+55       0.0604      0.19  QV        |         |         |         |
 7+ 0       0.0617      0.19  QV        |         |         |         |
 7+ 5       0.0631      0.19  QV        |         |         |         |
 7+10       0.0644      0.19  QV        |         |         |         |
 7+15       0.0657      0.19  QV        |         |         |         |
 7+20       0.0671      0.20  QV        |         |         |         |
 7+25       0.0685      0.21  QV        |         |         |         |
 7+30       0.0700      0.21  QV        |         |         |         |
 7+35       0.0717      0.25  QV        |         |         |         |
 7+40       0.0740      0.34  |Q        |         |         |         |
 7+45       0.0766      0.37  |Q        |         |         |         |
 7+50       0.0795      0.43  |Q        |         |         |         |
 7+55       0.0832      0.54  |VQ       |         |         |         |
 8+ 0       0.0872      0.58  |VQ       |         |         |         |
 8+ 5       0.0919      0.68  |VQ       |         |         |         |
 8+10       0.0980      0.89  | VQ      |         |         |         |
 8+15       0.1046      0.96  | VQ      |         |         |         |
 8+20       0.1115      1.00  | V Q     |         |         |         |
 8+25       0.1186      1.03  | V Q     |         |         |         |
 8+30       0.1258      1.05  | V Q     |         |         |         |
 8+35       0.1334      1.10  | V Q     |         |         |         |
 8+40       0.1417      1.21  | V Q     |         |         |         |
 8+45       0.1503      1.25  |  VQ     |         |         |         |
 8+50       0.1593      1.31  |  V Q    |         |         |         |
 8+55       0.1691      1.42  |  V Q    |         |         |         |
 9+ 0       0.1792      1.46  |  V Q    |         |         |         |
 9+ 5       0.1899      1.56  |  V  Q   |         |         |         |
 9+10       0.2021      1.77  |   V  Q  |         |         |         |
 9+15       0.2148      1.84  |   V  Q  |         |         |         |
 9+20       0.2280      1.92  |   V  Q  |         |         |         |
 9+25       0.2420      2.04  |   V   Q |         |         |         |
 9+30       0.2564      2.09  |    V  Q |         |         |         |
 9+35       0.2712      2.15  |    V  Q |         |         |         |
 9+40       0.2868      2.27  |    V   Q|         |         |         |
 9+45       0.3028      2.31  |     V  Q|         |         |         |
 9+50       0.3191      2.38  |     V  Q|         |         |         |
 9+55       0.3363      2.49  |     V  Q|         |         |         |
10+ 0       0.3537      2.53  |      V  Q         |         |         |
10+ 5       0.3696      2.31  |      V Q|         |         |         |
10+10       0.3811      1.67  |     QV   |         |         |         |
10+15       0.3912      1.47  |    Q  V |         |         |         |
10+20       0.4007      1.38  |    Q  V |         |         |         |
10+25       0.4099      1.34  |    Q  V |         |         |         |
10+30       0.4189      1.31  |    Q  V |         |         |         |
10+35       0.4291      1.47  |    Q  V |         |         |         |
10+40       0.4424      1.94  |      Q V|         |         |         |
10+45       0.4568      2.09  |       QV|         |         |         |
10+50       0.4718      2.17  |       QV|         |         |         |
10+55       0.4870      2.22  |       Q V         |         |         |
11+ 0       0.5025      2.25  |       Q V         |         |         |
11+ 5       0.5179      2.24  |       Q V         |         |         |
11+10       0.5328      2.16  |       Q V         |         |         |
11+15       0.5476      2.14  |       Q |V        |         |         |
11+20       0.5623      2.14  |       Q |V        |         |         |
11+25       0.5770      2.14  |       Q |V        |         |         |
11+30       0.5918      2.14  |       Q | V       |         |         |
11+35       0.6061      2.07  |       Q | V       |         |         |
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                                            EX24HR100YR
11+40       0.6191      1.89  |      Q  | V       |         |         |
11+45       0.6317      1.84  |      Q  |  V      |         |         |
11+50       0.6445      1.85  |      Q  |  V      |         |         |
11+55       0.6578      1.94  |      Q  |  V      |         |         |
12+ 0       0.6714      1.97  |      Q  |  V      |         |         |
12+ 5       0.6867      2.23  |       Q |   V     |         |         |
12+10       0.7067      2.90  |         |Q  V     |         |         |
12+15       0.7282      3.13  |         | Q  V    |         |         |
12+20       0.7508      3.27  |         |  Q V    |         |         |
12+25       0.7744      3.43  |         |  Q V    |         |         |
12+30       0.7985      3.50  |         |   Q V   |         |         |
12+35       0.8234      3.62  |         |   Q V   |         |         |
12+40       0.8499      3.84  |         |    Q V  |         |         |
12+45       0.8769      3.92  |         |    Q  V |         |         |
12+50       0.9044      4.00  |         |    Q  V |         |         |
12+55       0.9327      4.11  |         |     Q  V|         |         |
13+ 0       0.9614      4.16  |         |     Q  V|         |         |
13+ 5       0.9915      4.37  |         |      Q  V         |         |
13+10       1.0250      4.86  |         |        Q|V        |         |
13+15       1.0596      5.03  |         |         QV        |         |
13+20       1.0948      5.11  |         |         Q V       |         |
13+25       1.1303      5.16  |         |         Q  V      |         |
13+30       1.1661      5.19  |         |         Q   V     |         |
13+35       1.1992      4.82  |         |        Q|   V     |         |
13+40       1.2255      3.81  |         |    Q    |    V    |         |
13+45       1.2494      3.48  |         |  Q      |    V    |         |
13+50       1.2724      3.33  |         |  Q      |     V   |         |
13+55       1.2948      3.25  |         |  Q      |     V   |         |
14+ 0       1.3168      3.20  |         | Q       |      V  |         |
14+ 5       1.3397      3.32  |         |  Q      |      V  |         |
14+10       1.3650      3.68  |         |   Q     |       V |         |
14+15       1.3911      3.79  |         |    Q    |       V |         |
14+20       1.4174      3.82  |         |    Q    |        V|         |
14+25       1.4433      3.76  |         |    Q    |        V|         |
14+30       1.4692      3.76  |         |    Q    |         V         |
14+35       1.4951      3.77  |         |    Q    |         V         |
14+40       1.5211      3.77  |         |    Q    |         |V        |
14+45       1.5472      3.78  |         |    Q    |         |V        |
14+50       1.5730      3.75  |         |   Q     |         | V       |
14+55       1.5981      3.66  |         |   Q     |         | V       |
15+ 0       1.6232      3.63  |         |   Q     |         |  V      |
15+ 5       1.6479      3.59  |         |   Q     |         |  V      |
15+10       1.6719      3.49  |         |  Q      |         |   V     |
15+15       1.6958      3.46  |         |  Q      |         |   V     |
15+20       1.7193      3.42  |         |  Q      |         |    V    |
15+25       1.7422      3.32  |         |  Q      |         |    V    |
15+30       1.7648      3.29  |         |  Q      |         |     V   |
15+35       1.7864      3.13  |         | Q       |         |     V   |
15+40       1.8054      2.75  |         |Q        |         |      V  |
15+45       1.8235      2.63  |         Q         |         |      V  |
15+50       1.8412      2.58  |         Q         |         |      V  |
15+55       1.8588      2.55  |         Q         |         |       V |
16+ 0       1.8762      2.53  |         Q         |         |       V |
16+ 5       1.8905      2.07  |       Q |         |         |       V |
16+10       1.8967      0.89  |  Q      |         |         |        V|
16+15       1.9001      0.50  |Q        |         |         |        V|
16+20       1.9023      0.32  |Q        |         |         |        V|
16+25       1.9039      0.22  Q         |         |         |        V|
16+30       1.9050      0.16  Q         |         |         |        V|
16+35       1.9058      0.12  Q         |         |         |        V|
16+40       1.9063      0.08  Q         |         |         |        V|
16+45       1.9068      0.06  Q         |         |         |        V|
16+50       1.9072      0.06  Q         |         |         |        V|
16+55       1.9076      0.06  Q         |         |         |        V|
17+ 0       1.9080      0.06  Q         |         |         |        V|
17+ 5       1.9084      0.07  Q         |         |         |        V|
17+10       1.9090      0.08  Q         |         |         |        V|
17+15       1.9096      0.09  Q         |         |         |        V|
17+20       1.9103      0.09  Q         |         |         |        V|
17+25       1.9109      0.09  Q         |         |         |        V|
17+30       1.9116      0.10  Q         |         |         |        V|
17+35       1.9123      0.10  Q         |         |         |        V|
17+40       1.9129      0.10  Q         |         |         |        V|
17+45       1.9136      0.10  Q         |         |         |        V|
17+50       1.9142      0.09  Q         |         |         |        V|
17+55       1.9148      0.08  Q         |         |         |        V|
18+ 0       1.9154      0.08  Q         |         |         |        V|
18+ 5       1.9159      0.08  Q         |         |         |        V|
18+10       1.9165      0.08  Q         |         |         |        V|
```

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  18+15       1.9170      0.08  Q          |         |         |        V|
  18+20       1.9176      0.08  Q          |         |         |        V|
  18+25       1.9181      0.08  Q          |         |         |        V|
  18+30       1.9186      0.08  Q          |         |         |        V|
  18+35       1.9191      0.07  Q          |         |         |        V|
  18+40       1.9196      0.06  Q          |         |         |        V|
  18+45       1.9200      0.06  Q          |         |         |        V|
  18+50       1.9204      0.06  Q          |         |         |        V|
  18+55       1.9207      0.05  Q          |         |         |        V|
  19+ 0       1.9210      0.04  Q          |         |         |        V|
  19+ 5       1.9213      0.04  Q          |         |         |        V|
  19+10       1.9217      0.05  Q          |         |         |        V|
  19+15       1.9221      0.06  Q          |         |         |        V|
  19+20       1.9225      0.06  Q          |         |         |        V|
  19+25       1.9230      0.07  Q          |         |         |        V|
  19+30       1.9235      0.07  Q          |         |         |        V|
  19+35       1.9240      0.07  Q          |         |         |        V|
  19+40       1.9244      0.06  Q          |         |         |        V|
  19+45       1.9248      0.06  Q          |         |         |        V|
  19+50       1.9252      0.06  Q          |         |         |        V|
  19+55       1.9255      0.05  Q          |         |         |        V|
  20+ 0       1.9258      0.04  Q          |         |         |        V|
  20+ 5       1.9261      0.04  Q          |         |         |        V|
  20+10       1.9265      0.05  Q          |         |         |        V|
  20+15       1.9269      0.06  Q          |         |         |        V|
  20+20       1.9273      0.06  Q          |         |         |        V|
  20+25       1.9277      0.06  Q          |         |         |        V|
  20+30       1.9281      0.06  Q          |         |         |        V|
  20+35       1.9285      0.06  Q          |         |         |        V|
  20+40       1.9289      0.06  Q          |         |         |        V|
  20+45       1.9293      0.06  Q          |         |         |        V|
  20+50       1.9296      0.05  Q          |         |         |        V|
  20+55       1.9299      0.05  Q          |         |         |        V|
  21+ 0       1.9302      0.04  Q          |         |         |        V|
  21+ 5       1.9305      0.04  Q          |         |         |        V|
  21+10       1.9309      0.05  Q          |         |         |        V|
  21+15       1.9313      0.06  Q          |         |         |        V|
  21+20       1.9317      0.05  Q          |         |         |        V|
  21+25       1.9320      0.04  Q          |         |         |        V|
  21+30       1.9322      0.04  Q          |         |         |        V|
  21+35       1.9326      0.04  Q          |         |         |        V|
  21+40       1.9329      0.05  Q          |         |         |        V|
  21+45       1.9333      0.06  Q          |         |         |        V|
  21+50       1.9337      0.05  Q          |         |         |        V|
  21+55       1.9340      0.04  Q          |         |         |        V|
  22+ 0       1.9343      0.04  Q          |         |         |        V|
  22+ 5       1.9346      0.04  Q          |         |         |        V|
  22+10       1.9349      0.05  Q          |         |         |        V|
  22+15       1.9353      0.06  Q          |         |         |        V|
  22+20       1.9357      0.05  Q          |         |         |        V|
  22+25       1.9360      0.04  Q          |         |         |        V|
  22+30       1.9363      0.04  Q          |         |         |        V|
  22+35       1.9365      0.04  Q          |         |         |        V|
  22+40       1.9368      0.04  Q          |         |         |        V|
  22+45       1.9371      0.04  Q          |         |         |        V|
  22+50       1.9374      0.04  Q          |         |         |        V|
  22+55       1.9376      0.04  Q          |         |         |        V|
  23+ 0       1.9379      0.04  Q          |         |         |        V|
  23+ 5       1.9382      0.04  Q          |         |         |        V|
  23+10       1.9384      0.04  Q          |         |         |        V|
  23+15       1.9387      0.04  Q          |         |         |        V|
  23+20       1.9390      0.04  Q          |         |         |        V|
  23+25       1.9392      0.04  Q          |         |         |        V|
  23+30       1.9395      0.04  Q          |         |         |        V|
  23+35       1.9398      0.04  Q          |         |         |        V|
  23+40       1.9400      0.04  Q          |         |         |        V|
  23+45       1.9403      0.04  Q          |         |         |        V|
  23+50       1.9406      0.04  Q          |         |         |        V|
  23+55       1.9408      0.04  Q          |         |         |        V|
  24+ 0       1.9411      0.04  Q          |         |         |        V|
  24+ 5       1.9413      0.03  Q          |         |         |        V|
  24+10       1.9414      0.01  Q          |         |         |        V|
  24+15       1.9415      0.01  Q          |         |         |        V|
  24+20       1.9415      0.00  Q          |         |         |        V|
  24+25       1.9415      0.00  Q          |         |         |        V|
  24+30       1.9415      0.00  Q          |         |         |        V|
  24+35       1.9415      0.00  Q          |         |         |        V|
  24+40       1.9415      0.00  Q          |         |         |         V
-----------------------------------------------------------------------
```

BASIN B

2 YEAR

EX1HR2YR

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX12.out


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.48                    4.16

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.20                   10.40

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.480(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.480(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00          0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  70.0      0.362     0.000        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                                EX1HR2YR
        ----------------------------------------------------------------------

                        U n i t   H y d r o g r a p h
                                VALLEY S-Curve
        --------------------------------------------------------------------
                        Unit Hydrograph Data
        ---------------------------------------------------------------------
        Unit time period   Time % of lag   Distribution   Unit Hydrograph
            (hrs)                           Graph %           (CFS)
        ---------------------------------------------------------------------
            1   0.083        107.972         21.629             1.889
            2   0.167        215.945         48.795             4.261
            3   0.250        323.917         14.549             1.271
            4   0.333        431.890          6.648             0.581
            5   0.417        539.862          3.694             0.323
            6   0.500        647.835          2.331             0.204
            7   0.583        755.807          1.373             0.120
            8   0.667        863.780          0.982             0.086
                                      Sum = 100.000   Sum=      8.733
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |    Low       (In/Hr)
   1   0.08     4.40      0.253       (  0.362)       0.228        0.025
   2   0.17     4.50      0.259       (  0.362)       0.233        0.026
   3   0.25     5.40      0.311       (  0.362)       0.280        0.031
   4   0.33     5.40      0.311       (  0.362)       0.280        0.031
   5   0.42     5.70      0.328       (  0.362)       0.295        0.033
   6   0.50     6.40      0.369       (  0.362)       0.332        0.037
   7   0.58     7.90      0.455          0.362    (  0.410)        0.093
   8   0.67     9.10      0.524          0.362    (  0.472)        0.162
   9   0.75    12.80      0.737          0.362    (  0.663)        0.375
  10   0.83    25.60      1.474          0.362    (  1.327)        1.112
  11   0.92     7.90      0.455          0.362    (  0.410)        0.093
  12   1.00     4.90      0.282       (  0.362)       0.254        0.028
                 (Loss Rate Not Used)
     Sum =     100.0                                       Sum =     2.0
        Flood volume = Effective rainfall      0.17(In)
         times area       8.7(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
        Total soil loss =      0.31(In)
        Total soil loss =     0.223(Ac.Ft)
        Total rainfall =      0.48(In)
        Flood volume =        5366.0 Cubic Feet
        Total soil loss =        9730.7 Cubic Feet
        --------------------------------------------------------------------
         Peak flow rate of this hydrograph =      5.534(CFS)
        --------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                            1 - H O U R    S T O R M
                       R u n o f f      H y d r o g r a p h
        --------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft    Q(CFS)  0        2.5       5.0       7.5      10.0
  -----------------------------------------------------------------------
    0+ 5       0.0003      0.05  Q         |         |         |         |
    0+10       0.0014      0.16  Q         |         |         |         |
    0+15       0.0028      0.20  Q         |         |         |         |
    0+20       0.0044      0.24  QV        |         |         |         |
    0+25       0.0062      0.26  |QV       |         |         |         |
    0+30       0.0082      0.28  |QV       |         |         |         |
    0+35       0.0110      0.41  |Q V      |         |         |         |
    0+40       0.0164      0.79  |  Q V    |         |         |         |
    0+45       0.0272      1.56  |     Q V |         |         |         |
    0+50       0.0546      3.99  |         |    Q V  |         |         |
    0+55       0.0928      5.53  |         |         | Q       V         |
    1+ 0       0.1076      2.16  |       Q |         |         |   V     |
    1+ 5       0.1149      1.05  |   Q     |         |         |      V  |
    1+10       0.1187      0.55  | Q       |         |         |       V |
    1+15       0.1210      0.33  |Q        |         |         |        V|
    1+20       0.1223      0.19  Q         |         |         |        V|
    1+25       0.1231      0.11  Q         |         |         |        V|
    1+30       0.1232      0.01  Q         |         |         |        V|
    1+35       0.1232      0.00  Q         |         |         |         V
```

```
                                   EX3HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66           0.80                   6.93

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66           1.80                  15.60

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    0.800(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    0.800(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  70.0      0.362     0.000        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX3HR2YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.125	(0.362)	0.112	0.012
2	0.17	1.30	0.125	(0.362)	0.112	0.012
3	0.25	1.10	0.106	(0.362)	0.095	0.011
4	0.33	1.50	0.144	(0.362)	0.130	0.014
5	0.42	1.50	0.144	(0.362)	0.130	0.014
6	0.50	1.80	0.173	(0.362)	0.156	0.017
7	0.58	1.50	0.144	(0.362)	0.130	0.014
8	0.67	1.80	0.173	(0.362)	0.156	0.017
9	0.75	1.80	0.173	(0.362)	0.156	0.017
10	0.83	1.50	0.144	(0.362)	0.130	0.014
11	0.92	1.60	0.154	(0.362)	0.138	0.015
12	1.00	1.80	0.173	(0.362)	0.156	0.017
13	1.08	2.20	0.211	(0.362)	0.190	0.021
14	1.17	2.20	0.211	(0.362)	0.190	0.021
15	1.25	2.20	0.211	(0.362)	0.190	0.021
16	1.33	2.00	0.192	(0.362)	0.173	0.019
17	1.42	2.60	0.250	(0.362)	0.225	0.025
18	1.50	2.70	0.259	(0.362)	0.233	0.026
19	1.58	2.40	0.230	(0.362)	0.207	0.023
20	1.67	2.70	0.259	(0.362)	0.233	0.026
21	1.75	3.30	0.317	(0.362)	0.285	0.032
22	1.83	3.10	0.298	(0.362)	0.268	0.030
23	1.92	2.90	0.278	(0.362)	0.251	0.028
24	2.00	3.00	0.288	(0.362)	0.259	0.029
25	2.08	3.10	0.298	(0.362)	0.268	0.030
26	2.17	4.20	0.403	0.362	(0.363)	0.041
27	2.25	5.00	0.480	0.362	(0.432)	0.118
28	2.33	3.50	0.336	(0.362)	0.302	0.034
29	2.42	6.80	0.653	0.362	(0.587)	0.291
30	2.50	7.30	0.701	0.362	(0.631)	0.339
31	2.58	8.20	0.787	0.362	(0.708)	0.425
32	2.67	5.90	0.566	0.362	(0.510)	0.204
33	2.75	2.00	0.192	(0.362)	0.173	0.019
34	2.83	1.80	0.173	(0.362)	0.156	0.017
35	2.92	1.80	0.173	(0.362)	0.156	0.017
36	3.00	0.60	0.058	(0.362)	0.052	0.006

(Loss Rate Not Used)

Sum = 100.0 Sum = 2.0

Flood volume = Effective rainfall 0.17(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.63(In)
Total soil loss = 0.456(Ac.Ft)
Total rainfall = 0.80(In)
Flood volume = 5292.7 Cubic Feet
Total soil loss = 19869.6 Cubic Feet

Peak flow rate of this hydrograph = 2.841(CFS)

++

3 - H O U R   S T O R M

R u n o f f   H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

```
                                              EX3HR2YR
      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------
  0+ 5      0.0002      0.02  Q         |         |         |         |
  0+10      0.0007      0.08  Q         |         |         |         |
  0+15      0.0013      0.09  Q         |         |         |         |
  0+20      0.0020      0.10  Q         |         |         |         |
  0+25      0.0027      0.11  Q         |         |         |         |
  0+30      0.0036      0.13  QV        |         |         |         |
  0+35      0.0045      0.13  QV        |         |         |         |
  0+40      0.0055      0.13  QV        |         |         |         |
  0+45      0.0064      0.14  Q V       |         |         |         |
  0+50      0.0074      0.14  Q V       |         |         |         |
  0+55      0.0083      0.13  Q V       |         |         |         |
  1+ 0      0.0093      0.14  Q  V      |         |         |         |
  1+ 5      0.0104      0.15  Q  V      |         |         |         |
  1+10      0.0115      0.17  Q  V      |         |         |         |
  1+15      0.0128      0.18  Q   V     |         |         |         |
  1+20      0.0140      0.18  Q   V     |         |         |         |
  1+25      0.0152      0.18  Q    V    |         |         |         |
  1+30      0.0167      0.21  Q    V    |         |         |         |
  1+35      0.0181      0.21  Q    V    |         |         |         |
  1+40      0.0196      0.21  Q     V   |         |         |         |
  1+45      0.0212      0.23  Q     V   |         |         |         |
  1+50      0.0229      0.26  |Q     V  |         |         |         |
  1+55      0.0247      0.25  |Q      V |         |         |         |
  2+ 0      0.0264      0.25  Q       V |         |         |         |
  2+ 5      0.0281      0.25  |Q       V|         |         |         |
  2+10      0.0300      0.28  |Q       V|         |         |         |
  2+15      0.0333      0.47  |Q        V         |         |         |
  2+20      0.0378      0.66  | Q       | V       |         |         |
  2+25      0.0439      0.89  |  Q      |   V     |         |         |
  2+30      0.0578      2.02  |      Q  |        V|         |         |
  2+35      0.0763      2.69  |         Q         |    V    |         |
  2+40      0.0959      2.84  |         |Q        |         |V        |
  2+45      0.1080      1.76  |      Q  |         |         |    V    |
  2+50      0.1136      0.80  |  Q      |         |         |      V  |
  2+55      0.1170      0.49  |Q        |         |         |       V |
  3+ 0      0.1193      0.34  |Q        |         |         |        V|
  3+ 5      0.1206      0.18  Q         |         |         |        V|
  3+10      0.1212      0.09  Q         |         |         |        V|
  3+15      0.1214      0.03  Q         |         |         |        V|
  3+20      0.1215      0.01  Q         |         |         |        V|
  3+25      0.1215      0.00  Q         |         |         |        V|
  3+30      0.1215      0.00  Q         |         |         |        V|
  3+35      0.1215      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

EX6HR2YR

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX62.out

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.10                    9.53

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            2.50                   21.66

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.100(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.100(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  70.0      0.362     0.000        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX6HR2YR

U n i t H y d r o g r a p h

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.066	(0.362)	0.059	0.007
2	0.17	0.60	0.079	(0.362)	0.071	0.008
3	0.25	0.60	0.079	(0.362)	0.071	0.008
4	0.33	0.60	0.079	(0.362)	0.071	0.008
5	0.42	0.60	0.079	(0.362)	0.071	0.008
6	0.50	0.70	0.092	(0.362)	0.083	0.009
7	0.58	0.70	0.092	(0.362)	0.083	0.009
8	0.67	0.70	0.092	(0.362)	0.083	0.009
9	0.75	0.70	0.092	(0.362)	0.083	0.009
10	0.83	0.70	0.092	(0.362)	0.083	0.009
11	0.92	0.70	0.092	(0.362)	0.083	0.009
12	1.00	0.80	0.106	(0.362)	0.095	0.011
13	1.08	0.80	0.106	(0.362)	0.095	0.011
14	1.17	0.80	0.106	(0.362)	0.095	0.011
15	1.25	0.80	0.106	(0.362)	0.095	0.011
16	1.33	0.80	0.106	(0.362)	0.095	0.011
17	1.42	0.80	0.106	(0.362)	0.095	0.011
18	1.50	0.80	0.106	(0.362)	0.095	0.011
19	1.58	0.80	0.106	(0.362)	0.095	0.011
20	1.67	0.80	0.106	(0.362)	0.095	0.011
21	1.75	0.80	0.106	(0.362)	0.095	0.011
22	1.83	0.80	0.106	(0.362)	0.095	0.011
23	1.92	0.80	0.106	(0.362)	0.095	0.011
24	2.00	0.90	0.119	(0.362)	0.107	0.012
25	2.08	0.80	0.106	(0.362)	0.095	0.011
26	2.17	0.90	0.119	(0.362)	0.107	0.012
27	2.25	0.90	0.119	(0.362)	0.107	0.012
28	2.33	0.90	0.119	(0.362)	0.107	0.012
29	2.42	0.90	0.119	(0.362)	0.107	0.012
30	2.50	0.90	0.119	(0.362)	0.107	0.012
31	2.58	0.90	0.119	(0.362)	0.107	0.012
32	2.67	0.90	0.119	(0.362)	0.107	0.012
33	2.75	1.00	0.132	(0.362)	0.119	0.013
34	2.83	1.00	0.132	(0.362)	0.119	0.013
35	2.92	1.00	0.132	(0.362)	0.119	0.013
36	3.00	1.00	0.132	(0.362)	0.119	0.013
37	3.08	1.00	0.132	(0.362)	0.119	0.013
38	3.17	1.10	0.145	(0.362)	0.131	0.015
39	3.25	1.10	0.145	(0.362)	0.131	0.015
40	3.33	1.10	0.145	(0.362)	0.131	0.015
41	3.42	1.20	0.158	(0.362)	0.143	0.016
42	3.50	1.30	0.172	(0.362)	0.154	0.017
43	3.58	1.40	0.185	(0.362)	0.166	0.018
44	3.67	1.40	0.185	(0.362)	0.166	0.018
45	3.75	1.50	0.198	(0.362)	0.178	0.020
46	3.83	1.50	0.198	(0.362)	0.178	0.020
47	3.92	1.60	0.211	(0.362)	0.190	0.021
48	4.00	1.60	0.211	(0.362)	0.190	0.021
49	4.08	1.70	0.224	(0.362)	0.202	0.022
50	4.17	1.80	0.238	(0.362)	0.214	0.024
51	4.25	1.90	0.251	(0.362)	0.226	0.025
52	4.33	2.00	0.264	(0.362)	0.238	0.026
53	4.42	2.10	0.277	(0.362)	0.249	0.028
54	4.50	2.10	0.277	(0.362)	0.249	0.028

```
55   4.58     2.20      0.290        (  0.362)       0.261        0.029
56   4.67     2.30      0.304        (  0.362)       0.273        0.030
57   4.75     2.40      0.317        (  0.362)       0.285        0.032
58   4.83     2.40      0.317        (  0.362)       0.285        0.032
59   4.92     2.50      0.330        (  0.362)       0.297        0.033
60   5.00     2.60      0.343        (  0.362)       0.309        0.034
61   5.08     3.10      0.409           0.362    (  0.368)        0.047
62   5.17     3.60      0.475           0.362    (  0.428)        0.113
63   5.25     3.90      0.515           0.362    (  0.463)        0.153
64   5.33     4.20      0.554           0.362    (  0.499)        0.192
65   5.42     4.70      0.620           0.362    (  0.558)        0.258
66   5.50     5.60      0.739           0.362    (  0.665)        0.377
67   5.58     1.90      0.251        (  0.362)       0.226        0.025
68   5.67     0.90      0.119        (  0.362)       0.107        0.012
69   5.75     0.60      0.079        (  0.362)       0.071        0.008
70   5.83     0.50      0.066        (  0.362)       0.059        0.007
71   5.92     0.30      0.040        (  0.362)       0.036        0.004
72   6.00     0.20      0.026        (  0.362)       0.024        0.003
                (Loss Rate Not Used)
   Sum =     100.0                                    Sum =     2.1
      Flood volume = Effective rainfall      0.18(In)
       times area       8.7(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      0.92(In)
      Total soil loss =     0.666(Ac.Ft)
      Total rainfall =      1.10(In)
      Flood volume =        5582.4 Cubic Feet
      Total soil loss =       29015.9 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      2.201(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q         |         |         |         |
  0+10       0.0004      0.04  Q         |         |         |         |
  0+15       0.0008      0.06  Q         |         |         |         |
  0+20       0.0012      0.06  Q         |         |         |         |
  0+25       0.0017      0.07  Q         |         |         |         |
  0+30       0.0021      0.07  Q         |         |         |         |
  0+35       0.0027      0.08  Q         |         |         |         |
  0+40       0.0032      0.08  QV        |         |         |         |
  0+45       0.0038      0.08  QV        |         |         |         |
  0+50       0.0043      0.08  QV        |         |         |         |
  0+55       0.0049      0.08  QV        |         |         |         |
  1+ 0       0.0054      0.08  QV        |         |         |         |
  1+ 5       0.0060      0.09  QV        |         |         |         |
  1+10       0.0067      0.09  Q V       |         |         |         |
  1+15       0.0073      0.09  Q V       |         |         |         |
  1+20       0.0079      0.09  Q V       |         |         |         |
  1+25       0.0086      0.09  Q V       |         |         |         |
  1+30       0.0092      0.09  Q V       |         |         |         |
  1+35       0.0098      0.09  Q  V      |         |         |         |
  1+40       0.0105      0.09  Q  V      |         |         |         |
  1+45       0.0111      0.09  Q  V      |         |         |         |
  1+50       0.0117      0.09  Q  V      |         |         |         |
  1+55       0.0124      0.09  Q  V      |         |         |         |
  2+ 0       0.0130      0.09  Q   V     |         |         |         |
  2+ 5       0.0137      0.10  Q   V     |         |         |         |
  2+10       0.0144      0.10  Q   V     |         |         |         |
  2+15       0.0151      0.10  Q   V     |         |         |         |
  2+20       0.0158      0.10  Q   V     |         |         |         |
  2+25       0.0165      0.10  Q    V    |         |         |         |
  2+30       0.0172      0.10  Q    V    |         |         |         |
  2+35       0.0179      0.10  Q    V    |         |         |         |
  2+40       0.0186      0.10  Q    V    |         |         |         |
  2+45       0.0194      0.11  Q     V   |         |         |         |
  2+50       0.0201      0.11  Q     V   |         |         |         |
  2+55       0.0209      0.11  Q     V   |         |         |         |
  3+ 0       0.0217      0.11  Q     V   |         |         |         |
  3+ 5       0.0225      0.11  Q      V  |         |         |         |
  3+10       0.0233      0.12  Q      V  |         |         |         |
  3+15       0.0241      0.12  Q      V  |         |         |         |
  3+20       0.0250      0.13  Q      V  |         |         |         |
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                                                EX6HR2YR
    3+25       0.0259      0.13  Q       V |         |         |         |
    3+30       0.0268      0.14  Q       V |         |         |         |
    3+35       0.0278      0.15  Q       V |         |         |         |
    3+40       0.0289      0.16  Q        V|         |         |         |
    3+45       0.0300      0.16  Q        V|         |         |         |
    3+50       0.0312      0.17  Q        V|         |         |         |
    3+55       0.0324      0.17  Q         V         |         |         |
    4+ 0       0.0336      0.18  Q         V         |         |         |
    4+ 5       0.0349      0.18  Q         V         |         |         |
    4+10       0.0362      0.19  Q         |V        |         |         |
    4+15       0.0376      0.20  Q         |V        |         |         |
    4+20       0.0391      0.22  Q         | V       |         |         |
    4+25       0.0407      0.23  Q         | V       |         |         |
    4+30       0.0423      0.24  Q         |  V      |         |         |
    4+35       0.0439      0.24  Q         |  V      |         |         |
    4+40       0.0457      0.25  |Q        |   V     |         |         |
    4+45       0.0475      0.26  |Q        |   V     |         |         |
    4+50       0.0493      0.27  |Q        |    V    |         |         |
    4+55       0.0512      0.28  |Q        |    V    |         |         |
    5+ 0       0.0532      0.29  |Q        |     V   |         |         |
    5+ 5       0.0554      0.32  |Q        |      V  |         |         |
    5+10       0.0588      0.50  | Q       |       V |         |         |
    5+15       0.0649      0.87  |  Q      |         V         |         |
    5+20       0.0732      1.21  |   Q     |         | V       |         |
    5+25       0.0842      1.60  |     Q   |         |     V   |         |
    5+30       0.0994      2.20  |       Q |         |         |V        |
    5+35       0.1143      2.18  |       Q |         |         |    V    |
    5+40       0.1203      0.87  |  Q      |         |         |      V  |
    5+45       0.1236      0.47  |Q        |         |         |       V |
    5+50       0.1255      0.29  |Q        |         |         |        V|
    5+55       0.1268      0.18  Q         |         |         |        V|
    6+ 0       0.1276      0.11  Q         |         |         |        V|
    6+ 5       0.1280      0.06  Q         |         |         |        V|
    6+10       0.1281      0.01  Q         |         |         |        V|
    6+15       0.1281      0.01  Q         |         |         |        V|
    6+20       0.1281      0.00  Q         |         |         |        V|
    6+25       0.1281      0.00  Q         |         |         |        V|
    6+30       0.1282      0.00  Q         |         |         |        V|
    6+35       0.1282      0.00  Q         |         |         |        V|
----------------------------------------------------------------------
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                              EX24HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.72                   14.90

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            4.30                   37.26

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    1.720(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.720(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  70.0      0.362     0.000        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX24HR2YR

U n i t   H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.014	(0.642)	0.012	0.001
2	0.17	0.07	0.014	(0.639)	0.012	0.001
3	0.25	0.07	0.014	(0.637)	0.012	0.001
4	0.33	0.10	0.021	(0.634)	0.019	0.002
5	0.42	0.10	0.021	(0.632)	0.019	0.002
6	0.50	0.10	0.021	(0.629)	0.019	0.002
7	0.58	0.10	0.021	(0.627)	0.019	0.002
8	0.67	0.10	0.021	(0.624)	0.019	0.002
9	0.75	0.10	0.021	(0.622)	0.019	0.002
10	0.83	0.13	0.028	(0.620)	0.025	0.003
11	0.92	0.13	0.028	(0.617)	0.025	0.003
12	1.00	0.13	0.028	(0.615)	0.025	0.003
13	1.08	0.10	0.021	(0.612)	0.019	0.002
14	1.17	0.10	0.021	(0.610)	0.019	0.002
15	1.25	0.10	0.021	(0.607)	0.019	0.002
16	1.33	0.10	0.021	(0.605)	0.019	0.002
17	1.42	0.10	0.021	(0.603)	0.019	0.002
18	1.50	0.10	0.021	(0.600)	0.019	0.002
19	1.58	0.10	0.021	(0.598)	0.019	0.002
20	1.67	0.10	0.021	(0.595)	0.019	0.002
21	1.75	0.10	0.021	(0.593)	0.019	0.002
22	1.83	0.13	0.028	(0.591)	0.025	0.003
23	1.92	0.13	0.028	(0.588)	0.025	0.003
24	2.00	0.13	0.028	(0.586)	0.025	0.003
25	2.08	0.13	0.028	(0.583)	0.025	0.003
26	2.17	0.13	0.028	(0.581)	0.025	0.003
27	2.25	0.13	0.028	(0.579)	0.025	0.003
28	2.33	0.13	0.028	(0.576)	0.025	0.003
29	2.42	0.13	0.028	(0.574)	0.025	0.003
30	2.50	0.13	0.028	(0.572)	0.025	0.003
31	2.58	0.17	0.034	(0.569)	0.031	0.003
32	2.67	0.17	0.034	(0.567)	0.031	0.003
33	2.75	0.17	0.034	(0.565)	0.031	0.003
34	2.83	0.17	0.034	(0.562)	0.031	0.003
35	2.92	0.17	0.034	(0.560)	0.031	0.003
36	3.00	0.17	0.034	(0.558)	0.031	0.003
37	3.08	0.17	0.034	(0.555)	0.031	0.003
38	3.17	0.17	0.034	(0.553)	0.031	0.003
39	3.25	0.17	0.034	(0.551)	0.031	0.003
40	3.33	0.17	0.034	(0.549)	0.031	0.003
41	3.42	0.17	0.034	(0.546)	0.031	0.003
42	3.50	0.17	0.034	(0.544)	0.031	0.003
43	3.58	0.17	0.034	(0.542)	0.031	0.003
44	3.67	0.17	0.034	(0.539)	0.031	0.003
45	3.75	0.17	0.034	(0.537)	0.031	0.003
46	3.83	0.20	0.041	(0.535)	0.037	0.004
47	3.92	0.20	0.041	(0.533)	0.037	0.004
48	4.00	0.20	0.041	(0.530)	0.037	0.004
49	4.08	0.20	0.041	(0.528)	0.037	0.004
50	4.17	0.20	0.041	(0.526)	0.037	0.004
51	4.25	0.20	0.041	(0.524)	0.037	0.004
52	4.33	0.23	0.048	(0.521)	0.043	0.005
53	4.42	0.23	0.048	(0.519)	0.043	0.005
54	4.50	0.23	0.048	(0.517)	0.043	0.005

55	4.58	0.23	0.048	(0.515)	0.043	0.005
56	4.67	0.23	0.048	(0.513)	0.043	0.005
57	4.75	0.23	0.048	(0.510)	0.043	0.005
58	4.83	0.27	0.055	(0.508)	0.050	0.006
59	4.92	0.27	0.055	(0.506)	0.050	0.006
60	5.00	0.27	0.055	(0.504)	0.050	0.006
61	5.08	0.20	0.041	(0.502)	0.037	0.004
62	5.17	0.20	0.041	(0.499)	0.037	0.004
63	5.25	0.20	0.041	(0.497)	0.037	0.004
64	5.33	0.23	0.048	(0.495)	0.043	0.005
65	5.42	0.23	0.048	(0.493)	0.043	0.005
66	5.50	0.23	0.048	(0.491)	0.043	0.005
67	5.58	0.27	0.055	(0.489)	0.050	0.006
68	5.67	0.27	0.055	(0.486)	0.050	0.006
69	5.75	0.27	0.055	(0.484)	0.050	0.006
70	5.83	0.27	0.055	(0.482)	0.050	0.006
71	5.92	0.27	0.055	(0.480)	0.050	0.006
72	6.00	0.27	0.055	(0.478)	0.050	0.006
73	6.08	0.30	0.062	(0.476)	0.056	0.006
74	6.17	0.30	0.062	(0.474)	0.056	0.006
75	6.25	0.30	0.062	(0.471)	0.056	0.006
76	6.33	0.30	0.062	(0.469)	0.056	0.006
77	6.42	0.30	0.062	(0.467)	0.056	0.006
78	6.50	0.30	0.062	(0.465)	0.056	0.006
79	6.58	0.33	0.069	(0.463)	0.062	0.007
80	6.67	0.33	0.069	(0.461)	0.062	0.007
81	6.75	0.33	0.069	(0.459)	0.062	0.007
82	6.83	0.33	0.069	(0.457)	0.062	0.007
83	6.92	0.33	0.069	(0.455)	0.062	0.007
84	7.00	0.33	0.069	(0.453)	0.062	0.007
85	7.08	0.33	0.069	(0.451)	0.062	0.007
86	7.17	0.33	0.069	(0.449)	0.062	0.007
87	7.25	0.33	0.069	(0.447)	0.062	0.007
88	7.33	0.37	0.076	(0.445)	0.068	0.008
89	7.42	0.37	0.076	(0.442)	0.068	0.008
90	7.50	0.37	0.076	(0.440)	0.068	0.008
91	7.58	0.40	0.083	(0.438)	0.074	0.008
92	7.67	0.40	0.083	(0.436)	0.074	0.008
93	7.75	0.40	0.083	(0.434)	0.074	0.008
94	7.83	0.43	0.089	(0.432)	0.080	0.009
95	7.92	0.43	0.089	(0.430)	0.080	0.009
96	8.00	0.43	0.089	(0.428)	0.080	0.009
97	8.08	0.50	0.103	(0.426)	0.093	0.010
98	8.17	0.50	0.103	(0.424)	0.093	0.010
99	8.25	0.50	0.103	(0.422)	0.093	0.010
100	8.33	0.50	0.103	(0.420)	0.093	0.010
101	8.42	0.50	0.103	(0.419)	0.093	0.010
102	8.50	0.50	0.103	(0.417)	0.093	0.010
103	8.58	0.53	0.110	(0.415)	0.099	0.011
104	8.67	0.53	0.110	(0.413)	0.099	0.011
105	8.75	0.53	0.110	(0.411)	0.099	0.011
106	8.83	0.57	0.117	(0.409)	0.105	0.012
107	8.92	0.57	0.117	(0.407)	0.105	0.012
108	9.00	0.57	0.117	(0.405)	0.105	0.012
109	9.08	0.63	0.131	(0.403)	0.118	0.013
110	9.17	0.63	0.131	(0.401)	0.118	0.013
111	9.25	0.63	0.131	(0.399)	0.118	0.013
112	9.33	0.67	0.138	(0.397)	0.124	0.014
113	9.42	0.67	0.138	(0.395)	0.124	0.014
114	9.50	0.67	0.138	(0.393)	0.124	0.014
115	9.58	0.70	0.144	(0.392)	0.130	0.014
116	9.67	0.70	0.144	(0.390)	0.130	0.014
117	9.75	0.70	0.144	(0.388)	0.130	0.014
118	9.83	0.73	0.151	(0.386)	0.136	0.015
119	9.92	0.73	0.151	(0.384)	0.136	0.015
120	10.00	0.73	0.151	(0.382)	0.136	0.015
121	10.08	0.50	0.103	(0.380)	0.093	0.010
122	10.17	0.50	0.103	(0.379)	0.093	0.010
123	10.25	0.50	0.103	(0.377)	0.093	0.010
124	10.33	0.50	0.103	(0.375)	0.093	0.010
125	10.42	0.50	0.103	(0.373)	0.093	0.010
126	10.50	0.50	0.103	(0.371)	0.093	0.010
127	10.58	0.67	0.138	(0.369)	0.124	0.014
128	10.67	0.67	0.138	(0.368)	0.124	0.014
129	10.75	0.67	0.138	(0.366)	0.124	0.014
130	10.83	0.67	0.138	(0.364)	0.124	0.014
131	10.92	0.67	0.138	(0.362)	0.124	0.014
132	11.00	0.67	0.138	(0.360)	0.124	0.014
133	11.08	0.63	0.131	(0.359)	0.118	0.013

134	11.17	0.63	0.131	(0.357)	0.118	0.013
135	11.25	0.63	0.131	(0.355)	0.118	0.013
136	11.33	0.63	0.131	(0.353)	0.118	0.013
137	11.42	0.63	0.131	(0.352)	0.118	0.013
138	11.50	0.63	0.131	(0.350)	0.118	0.013
139	11.58	0.57	0.117	(0.348)	0.105	0.012
140	11.67	0.57	0.117	(0.346)	0.105	0.012
141	11.75	0.57	0.117	(0.345)	0.105	0.012
142	11.83	0.60	0.124	(0.343)	0.111	0.012
143	11.92	0.60	0.124	(0.341)	0.111	0.012
144	12.00	0.60	0.124	(0.340)	0.111	0.012
145	12.08	0.83	0.172	(0.338)	0.155	0.017
146	12.17	0.83	0.172	(0.336)	0.155	0.017
147	12.25	0.83	0.172	(0.335)	0.155	0.017
148	12.33	0.87	0.179	(0.333)	0.161	0.018
149	12.42	0.87	0.179	(0.331)	0.161	0.018
150	12.50	0.87	0.179	(0.330)	0.161	0.018
151	12.58	0.93	0.193	(0.328)	0.173	0.019
152	12.67	0.93	0.193	(0.326)	0.173	0.019
153	12.75	0.93	0.193	(0.325)	0.173	0.019
154	12.83	0.97	0.200	(0.323)	0.180	0.020
155	12.92	0.97	0.200	(0.321)	0.180	0.020
156	13.00	0.97	0.200	(0.320)	0.180	0.020
157	13.08	1.13	0.234	(0.318)	0.211	0.023
158	13.17	1.13	0.234	(0.316)	0.211	0.023
159	13.25	1.13	0.234	(0.315)	0.211	0.023
160	13.33	1.13	0.234	(0.313)	0.211	0.023
161	13.42	1.13	0.234	(0.312)	0.211	0.023
162	13.50	1.13	0.234	(0.310)	0.211	0.023
163	13.58	0.77	0.158	(0.308)	0.142	0.016
164	13.67	0.77	0.158	(0.307)	0.142	0.016
165	13.75	0.77	0.158	(0.305)	0.142	0.016
166	13.83	0.77	0.158	(0.304)	0.142	0.016
167	13.92	0.77	0.158	(0.302)	0.142	0.016
168	14.00	0.77	0.158	(0.301)	0.142	0.016
169	14.08	0.90	0.186	(0.299)	0.167	0.019
170	14.17	0.90	0.186	(0.298)	0.167	0.019
171	14.25	0.90	0.186	(0.296)	0.167	0.019
172	14.33	0.87	0.179	(0.295)	0.161	0.018
173	14.42	0.87	0.179	(0.293)	0.161	0.018
174	14.50	0.87	0.179	(0.292)	0.161	0.018
175	14.58	0.87	0.179	(0.290)	0.161	0.018
176	14.67	0.87	0.179	(0.289)	0.161	0.018
177	14.75	0.87	0.179	(0.287)	0.161	0.018
178	14.83	0.83	0.172	(0.286)	0.155	0.017
179	14.92	0.83	0.172	(0.284)	0.155	0.017
180	15.00	0.83	0.172	(0.283)	0.155	0.017
181	15.08	0.80	0.165	(0.281)	0.149	0.017
182	15.17	0.80	0.165	(0.280)	0.149	0.017
183	15.25	0.80	0.165	(0.278)	0.149	0.017
184	15.33	0.77	0.158	(0.277)	0.142	0.016
185	15.42	0.77	0.158	(0.276)	0.142	0.016
186	15.50	0.77	0.158	(0.274)	0.142	0.016
187	15.58	0.63	0.131	(0.273)	0.118	0.013
188	15.67	0.63	0.131	(0.271)	0.118	0.013
189	15.75	0.63	0.131	(0.270)	0.118	0.013
190	15.83	0.63	0.131	(0.269)	0.118	0.013
191	15.92	0.63	0.131	(0.267)	0.118	0.013
192	16.00	0.63	0.131	(0.266)	0.118	0.013
193	16.08	0.13	0.028	(0.264)	0.025	0.003
194	16.17	0.13	0.028	(0.263)	0.025	0.003
195	16.25	0.13	0.028	(0.262)	0.025	0.003
196	16.33	0.13	0.028	(0.260)	0.025	0.003
197	16.42	0.13	0.028	(0.259)	0.025	0.003
198	16.50	0.13	0.028	(0.258)	0.025	0.003
199	16.58	0.10	0.021	(0.256)	0.019	0.002
200	16.67	0.10	0.021	(0.255)	0.019	0.002
201	16.75	0.10	0.021	(0.254)	0.019	0.002
202	16.83	0.10	0.021	(0.253)	0.019	0.002
203	16.92	0.10	0.021	(0.251)	0.019	0.002
204	17.00	0.10	0.021	(0.250)	0.019	0.002
205	17.08	0.17	0.034	(0.249)	0.031	0.003
206	17.17	0.17	0.034	(0.248)	0.031	0.003
207	17.25	0.17	0.034	(0.246)	0.031	0.003
208	17.33	0.17	0.034	(0.245)	0.031	0.003
209	17.42	0.17	0.034	(0.244)	0.031	0.003
210	17.50	0.17	0.034	(0.243)	0.031	0.003
211	17.58	0.17	0.034	(0.241)	0.031	0.003
212	17.67	0.17	0.034	(0.240)	0.031	0.003

213	17.75	0.17	0.034	(0.239)	0.031	0.003
214	17.83	0.13	0.028	(0.238)	0.025	0.003
215	17.92	0.13	0.028	(0.237)	0.025	0.003
216	18.00	0.13	0.028	(0.235)	0.025	0.003
217	18.08	0.13	0.028	(0.234)	0.025	0.003
218	18.17	0.13	0.028	(0.233)	0.025	0.003
219	18.25	0.13	0.028	(0.232)	0.025	0.003
220	18.33	0.13	0.028	(0.231)	0.025	0.003
221	18.42	0.13	0.028	(0.230)	0.025	0.003
222	18.50	0.13	0.028	(0.229)	0.025	0.003
223	18.58	0.10	0.021	(0.228)	0.019	0.002
224	18.67	0.10	0.021	(0.226)	0.019	0.002
225	18.75	0.10	0.021	(0.225)	0.019	0.002
226	18.83	0.07	0.014	(0.224)	0.012	0.001
227	18.92	0.07	0.014	(0.223)	0.012	0.001
228	19.00	0.07	0.014	(0.222)	0.012	0.001
229	19.08	0.10	0.021	(0.221)	0.019	0.002
230	19.17	0.10	0.021	(0.220)	0.019	0.002
231	19.25	0.10	0.021	(0.219)	0.019	0.002
232	19.33	0.13	0.028	(0.218)	0.025	0.003
233	19.42	0.13	0.028	(0.217)	0.025	0.003
234	19.50	0.13	0.028	(0.216)	0.025	0.003
235	19.58	0.10	0.021	(0.215)	0.019	0.002
236	19.67	0.10	0.021	(0.214)	0.019	0.002
237	19.75	0.10	0.021	(0.213)	0.019	0.002
238	19.83	0.07	0.014	(0.212)	0.012	0.001
239	19.92	0.07	0.014	(0.211)	0.012	0.001
240	20.00	0.07	0.014	(0.210)	0.012	0.001
241	20.08	0.10	0.021	(0.209)	0.019	0.002
242	20.17	0.10	0.021	(0.208)	0.019	0.002
243	20.25	0.10	0.021	(0.207)	0.019	0.002
244	20.33	0.10	0.021	(0.207)	0.019	0.002
245	20.42	0.10	0.021	(0.206)	0.019	0.002
246	20.50	0.10	0.021	(0.205)	0.019	0.002
247	20.58	0.10	0.021	(0.204)	0.019	0.002
248	20.67	0.10	0.021	(0.203)	0.019	0.002
249	20.75	0.10	0.021	(0.202)	0.019	0.002
250	20.83	0.07	0.014	(0.201)	0.012	0.001
251	20.92	0.07	0.014	(0.201)	0.012	0.001
252	21.00	0.07	0.014	(0.200)	0.012	0.001
253	21.08	0.10	0.021	(0.199)	0.019	0.002
254	21.17	0.10	0.021	(0.198)	0.019	0.002
255	21.25	0.10	0.021	(0.197)	0.019	0.002
256	21.33	0.07	0.014	(0.197)	0.012	0.001
257	21.42	0.07	0.014	(0.196)	0.012	0.001
258	21.50	0.07	0.014	(0.195)	0.012	0.001
259	21.58	0.10	0.021	(0.195)	0.019	0.002
260	21.67	0.10	0.021	(0.194)	0.019	0.002
261	21.75	0.10	0.021	(0.193)	0.019	0.002
262	21.83	0.07	0.014	(0.192)	0.012	0.001
263	21.92	0.07	0.014	(0.192)	0.012	0.001
264	22.00	0.07	0.014	(0.191)	0.012	0.001
265	22.08	0.10	0.021	(0.190)	0.019	0.002
266	22.17	0.10	0.021	(0.190)	0.019	0.002
267	22.25	0.10	0.021	(0.189)	0.019	0.002
268	22.33	0.07	0.014	(0.189)	0.012	0.001
269	22.42	0.07	0.014	(0.188)	0.012	0.001
270	22.50	0.07	0.014	(0.188)	0.012	0.001
271	22.58	0.07	0.014	(0.187)	0.012	0.001
272	22.67	0.07	0.014	(0.186)	0.012	0.001
273	22.75	0.07	0.014	(0.186)	0.012	0.001
274	22.83	0.07	0.014	(0.185)	0.012	0.001
275	22.92	0.07	0.014	(0.185)	0.012	0.001
276	23.00	0.07	0.014	(0.185)	0.012	0.001
277	23.08	0.07	0.014	(0.184)	0.012	0.001
278	23.17	0.07	0.014	(0.184)	0.012	0.001
279	23.25	0.07	0.014	(0.183)	0.012	0.001
280	23.33	0.07	0.014	(0.183)	0.012	0.001
281	23.42	0.07	0.014	(0.183)	0.012	0.001
282	23.50	0.07	0.014	(0.182)	0.012	0.001
283	23.58	0.07	0.014	(0.182)	0.012	0.001
284	23.67	0.07	0.014	(0.182)	0.012	0.001
285	23.75	0.07	0.014	(0.181)	0.012	0.001
286	23.83	0.07	0.014	(0.181)	0.012	0.001
287	23.92	0.07	0.014	(0.181)	0.012	0.001
288	24.00	0.07	0.014	(0.181)	0.012	0.001

(Loss Rate Not Used)

Sum = 100.0 Sum = 2.1

Flood volume = Effective rainfall 0.17(In)

```
                                             EX24HR2YR
       times area       8.7(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      1.55(In)
      Total soil loss =     1.118(Ac.Ft)
      Total rainfall =      1.72(In)
      Flood volume =        5410.0 Cubic Feet
      Total soil loss =       48689.9 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.204(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0         2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0001      0.01  Q         |         |         |         |
  0+20       0.0002      0.01  Q         |         |         |         |
  0+25       0.0003      0.02  Q         |         |         |         |
  0+30       0.0005      0.02  Q         |         |         |         |
  0+35       0.0006      0.02  Q         |         |         |         |
  0+40       0.0007      0.02  Q         |         |         |         |
  0+45       0.0008      0.02  Q         |         |         |         |
  0+50       0.0010      0.02  Q         |         |         |         |
  0+55       0.0011      0.02  Q         |         |         |         |
  1+ 0       0.0013      0.02  Q         |         |         |         |
  1+ 5       0.0014      0.02  Q         |         |         |         |
  1+10       0.0016      0.02  Q         |         |         |         |
  1+15       0.0017      0.02  Q         |         |         |         |
  1+20       0.0018      0.02  Q         |         |         |         |
  1+25       0.0019      0.02  Q         |         |         |         |
  1+30       0.0021      0.02  Q         |         |         |         |
  1+35       0.0022      0.02  Q         |         |         |         |
  1+40       0.0023      0.02  Q         |         |         |         |
  1+45       0.0024      0.02  Q         |         |         |         |
  1+50       0.0026      0.02  Q         |         |         |         |
  1+55       0.0027      0.02  Q         |         |         |         |
  2+ 0       0.0029      0.02  Q         |         |         |         |
  2+ 5       0.0030      0.02  Q         |         |         |         |
  2+10       0.0032      0.02  QV        |         |         |         |
  2+15       0.0034      0.02  QV        |         |         |         |
  2+20       0.0035      0.02  QV        |         |         |         |
  2+25       0.0037      0.02  QV        |         |         |         |
  2+30       0.0039      0.02  QV        |         |         |         |
  2+35       0.0040      0.03  QV        |         |         |         |
  2+40       0.0042      0.03  QV        |         |         |         |
  2+45       0.0044      0.03  QV        |         |         |         |
  2+50       0.0046      0.03  QV        |         |         |         |
  2+55       0.0048      0.03  QV        |         |         |         |
  3+ 0       0.0051      0.03  QV        |         |         |         |
  3+ 5       0.0053      0.03  QV        |         |         |         |
  3+10       0.0055      0.03  QV        |         |         |         |
  3+15       0.0057      0.03  QV        |         |         |         |
  3+20       0.0059      0.03  QV        |         |         |         |
  3+25       0.0061      0.03  QV        |         |         |         |
  3+30       0.0063      0.03  Q V       |         |         |         |
  3+35       0.0065      0.03  Q V       |         |         |         |
  3+40       0.0067      0.03  Q V       |         |         |         |
  3+45       0.0069      0.03  Q V       |         |         |         |
  3+50       0.0071      0.03  Q V       |         |         |         |
  3+55       0.0074      0.03  Q V       |         |         |         |
  4+ 0       0.0076      0.04  Q V       |         |         |         |
  4+ 5       0.0079      0.04  Q V       |         |         |         |
  4+10       0.0081      0.04  Q V       |         |         |         |
  4+15       0.0083      0.04  Q V       |         |         |         |
  4+20       0.0086      0.04  Q V       |         |         |         |
  4+25       0.0089      0.04  Q V       |         |         |         |
  4+30       0.0092      0.04  Q V       |         |         |         |
  4+35       0.0095      0.04  Q  V      |         |         |         |
  4+40       0.0097      0.04  Q  V      |         |         |         |
  4+45       0.0100      0.04  Q  V      |         |         |         |
  4+50       0.0103      0.04  Q  V      |         |         |         |
  4+55       0.0106      0.05  Q  V      |         |         |         |
  5+ 0       0.0110      0.05  Q  V      |         |         |         |
  5+ 5       0.0113      0.04  Q  V      |         |         |         |
```

```
                                             EX24HR2YR
 5+10       0.0116      0.04  Q  V      |         |         |         |
 5+15       0.0118      0.04  Q  V      |         |         |         |
 5+20       0.0121      0.04  Q  V      |         |         |         |
 5+25       0.0124      0.04  Q  V      |         |         |         |
 5+30       0.0126      0.04  Q   V     |         |         |         |
 5+35       0.0129      0.04  Q   V     |         |         |         |
 5+40       0.0133      0.05  Q   V     |         |         |         |
 5+45       0.0136      0.05  Q   V     |         |         |         |
 5+50       0.0139      0.05  Q   V     |         |         |         |
 5+55       0.0142      0.05  Q   V     |         |         |         |
 6+ 0       0.0146      0.05  Q   V     |         |         |         |
 6+ 5       0.0149      0.05  Q   V     |         |         |         |
 6+10       0.0153      0.05  Q   V     |         |         |         |
 6+15       0.0156      0.05  Q    V    |         |         |         |
 6+20       0.0160      0.05  Q    V    |         |         |         |
 6+25       0.0164      0.05  Q    V    |         |         |         |
 6+30       0.0167      0.05  Q    V    |         |         |         |
 6+35       0.0171      0.06  Q    V    |         |         |         |
 6+40       0.0175      0.06  Q    V    |         |         |         |
 6+45       0.0179      0.06  Q    V    |         |         |         |
 6+50       0.0183      0.06  Q    V    |         |         |         |
 6+55       0.0188      0.06  Q     V   |         |         |         |
 7+ 0       0.0192      0.06  Q     V   |         |         |         |
 7+ 5       0.0196      0.06  Q     V   |         |         |         |
 7+10       0.0200      0.06  Q     V   |         |         |         |
 7+15       0.0204      0.06  Q     V   |         |         |         |
 7+20       0.0208      0.06  Q     V   |         |         |         |
 7+25       0.0213      0.06  Q     V   |         |         |         |
 7+30       0.0217      0.07  Q     V   |         |         |         |
 7+35       0.0222      0.07  Q      V  |         |         |         |
 7+40       0.0227      0.07  Q      V  |         |         |         |
 7+45       0.0232      0.07  Q      V  |         |         |         |
 7+50       0.0237      0.07  Q      V  |         |         |         |
 7+55       0.0242      0.08  Q      V  |         |         |         |
 8+ 0       0.0247      0.08  Q      V  |         |         |         |
 8+ 5       0.0253      0.08  Q       V |         |         |         |
 8+10       0.0259      0.09  Q       V |         |         |         |
 8+15       0.0265      0.09  Q       V |         |         |         |
 8+20       0.0271      0.09  Q       V |         |         |         |
 8+25       0.0277      0.09  Q       V |         |         |         |
 8+30       0.0283      0.09  Q        V|         |         |         |
 8+35       0.0290      0.09  Q        V|         |         |         |
 8+40       0.0296      0.09  Q        V|         |         |         |
 8+45       0.0303      0.10  Q        V|         |         |         |
 8+50       0.0309      0.10  Q        V|         |         |         |
 8+55       0.0316      0.10  Q         V         |         |         |
 9+ 0       0.0323      0.10  Q         V         |         |         |
 9+ 5       0.0330      0.10  Q         V         |         |         |
 9+10       0.0338      0.11  Q         V         |         |         |
 9+15       0.0346      0.11  Q         |V        |         |         |
 9+20       0.0354      0.11  Q         |V        |         |         |
 9+25       0.0362      0.12  Q         |V        |         |         |
 9+30       0.0370      0.12  Q         |V        |         |         |
 9+35       0.0378      0.12  Q         | V       |         |         |
 9+40       0.0387      0.12  Q         | V       |         |         |
 9+45       0.0395      0.13  Q         | V       |         |         |
 9+50       0.0404      0.13  Q         |  V      |         |         |
 9+55       0.0413      0.13  Q         |  V      |         |         |
10+ 0       0.0422      0.13  Q         |  V      |         |         |
10+ 5       0.0431      0.12  Q         |  V      |         |         |
10+10       0.0438      0.10  Q         |   V     |         |         |
10+15       0.0444      0.10  Q         |   V     |         |         |
10+20       0.0451      0.09  Q         |   V     |         |         |
10+25       0.0457      0.09  Q         |   V     |         |         |
10+30       0.0463      0.09  Q         |   V     |         |         |
10+35       0.0470      0.10  Q         |    V    |         |         |
10+40       0.0478      0.11  Q         |    V    |         |         |
10+45       0.0486      0.12  Q         |    V    |         |         |
10+50       0.0494      0.12  Q         |    V    |         |         |
10+55       0.0502      0.12  Q         |     V   |         |         |
11+ 0       0.0510      0.12  Q         |     V   |         |         |
11+ 5       0.0518      0.12  Q         |     V   |         |         |
11+10       0.0526      0.12  Q         |     V   |         |         |
11+15       0.0534      0.12  Q         |      V  |         |         |
11+20       0.0542      0.11  Q         |      V  |         |         |
11+25       0.0550      0.11  Q         |      V  |         |         |
11+30       0.0558      0.11  Q         |      V  |         |         |
11+35       0.0566      0.11  Q         |       V |         |         |
11+40       0.0573      0.11  Q         |       V |         |         |
                                              Page 7
```

Attachment: Appendix C - Hydrology Report (2340 : PA16-0039 Plot Plan)

```
                                             EX24HR2YR
11+45       0.0580      0.10  Q         |       V |         |         |
11+50       0.0587      0.10  Q         |       V |         |         |
11+55       0.0595      0.11  Q         |        V|         |         |
12+ 0       0.0602      0.11  Q         |        V|         |         |
12+ 5       0.0610      0.12  Q         |        V|         |         |
12+10       0.0619      0.14  Q         |        V|         |         |
12+15       0.0629      0.14  Q         |         V         |         |
12+20       0.0640      0.15  Q         |         V         |         |
12+25       0.0650      0.15  Q         |         V         |         |
12+30       0.0661      0.15  Q         |         |V        |         |
12+35       0.0672      0.16  Q         |         |V        |         |
12+40       0.0683      0.16  Q         |         |V        |         |
12+45       0.0694      0.17  Q         |         | V       |         |
12+50       0.0706      0.17  Q         |         | V       |         |
12+55       0.0718      0.17  Q         |         |  V      |         |
13+ 0       0.0730      0.17  Q         |         |  V      |         |
13+ 5       0.0742      0.18  Q         |         |  V      |         |
13+10       0.0756      0.20  Q         |         |   V     |         |
13+15       0.0769      0.20  Q         |         |   V     |         |
13+20       0.0783      0.20  Q         |         |    V    |         |
13+25       0.0797      0.20  Q         |         |    V    |         |
13+30       0.0811      0.20  Q         |         |     V   |         |
13+35       0.0824      0.19  Q         |         |     V   |         |
13+40       0.0835      0.16  Q         |         |     V   |         |
13+45       0.0845      0.15  Q         |         |      V  |         |
13+50       0.0855      0.14  Q         |         |      V  |         |
13+55       0.0865      0.14  Q         |         |      V  |         |
14+ 0       0.0875      0.14  Q         |         |       V |         |
14+ 5       0.0885      0.14  Q         |         |       V |         |
14+10       0.0895      0.16  Q         |         |       V |         |
14+15       0.0906      0.16  Q         |         |        V|         |
14+20       0.0917      0.16  Q         |         |        V|         |
14+25       0.0928      0.16  Q         |         |        V|         |
14+30       0.0939      0.16  Q         |         |         V         |
14+35       0.0950      0.16  Q         |         |         V         |
14+40       0.0960      0.16  Q         |         |         V         |
14+45       0.0971      0.16  Q         |         |         |V        |
14+50       0.0982      0.16  Q         |         |         |V        |
14+55       0.0992      0.15  Q         |         |         |V        |
15+ 0       0.1003      0.15  Q         |         |         | V       |
15+ 5       0.1013      0.15  Q         |         |         | V       |
15+10       0.1023      0.15  Q         |         |         | V       |
15+15       0.1033      0.15  Q         |         |         |  V      |
15+20       0.1043      0.14  Q         |         |         |  V      |
15+25       0.1053      0.14  Q         |         |         |  V      |
15+30       0.1062      0.14  Q         |         |         |   V     |
15+35       0.1071      0.13  Q         |         |         |   V     |
15+40       0.1080      0.12  Q         |         |         |   V     |
15+45       0.1088      0.12  Q         |         |         |    V    |
15+50       0.1096      0.12  Q         |         |         |    V    |
15+55       0.1104      0.12  Q         |         |         |    V    |
16+ 0       0.1112      0.11  Q         |         |         |    V    |
16+ 5       0.1118      0.09  Q         |         |         |     V   |
16+10       0.1122      0.05  Q         |         |         |     V   |
16+15       0.1124      0.04  Q         |         |         |     V   |
16+20       0.1127      0.03  Q         |         |         |     V   |
16+25       0.1128      0.03  Q         |         |         |     V   |
16+30       0.1130      0.03  Q         |         |         |     V   |
16+35       0.1132      0.02  Q         |         |         |     V   |
16+40       0.1133      0.02  Q         |         |         |     V   |
16+45       0.1135      0.02  Q         |         |         |     V   |
16+50       0.1136      0.02  Q         |         |         |     V   |
16+55       0.1137      0.02  Q         |         |         |     V   |
17+ 0       0.1138      0.02  Q         |         |         |     V   |
17+ 5       0.1140      0.02  Q         |         |         |     V   |
17+10       0.1142      0.03  Q         |         |         |     V   |
17+15       0.1144      0.03  Q         |         |         |     V   |
17+20       0.1146      0.03  Q         |         |         |     V   |
17+25       0.1148      0.03  Q         |         |         |     V   |
17+30       0.1150      0.03  Q         |         |         |      V  |
17+35       0.1152      0.03  Q         |         |         |      V  |
17+40       0.1154      0.03  Q         |         |         |      V  |
17+45       0.1156      0.03  Q         |         |         |      V  |
17+50       0.1158      0.03  Q         |         |         |      V  |
17+55       0.1160      0.03  Q         |         |         |      V  |
18+ 0       0.1161      0.02  Q         |         |         |      V  |
18+ 5       0.1163      0.02  Q         |         |         |      V  |
18+10       0.1165      0.02  Q         |         |         |      V  |
18+15       0.1166      0.02  Q         |         |         |      V  |
```

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   18+20       0.1168      0.02  Q         |         |         |      V  |
   18+25       0.1170      0.02  Q         |         |         |      V  |
   18+30       0.1171      0.02  Q         |         |         |      V  |
   18+35       0.1173      0.02  Q         |         |         |      V  |
   18+40       0.1174      0.02  Q         |         |         |      V  |
   18+45       0.1176      0.02  Q         |         |         |      V  |
   18+50       0.1177      0.02  Q         |         |         |      V  |
   18+55       0.1178      0.01  Q         |         |         |      V  |
   19+ 0       0.1179      0.01  Q         |         |         |      V  |
   19+ 5       0.1180      0.01  Q         |         |         |      V  |
   19+10       0.1181      0.02  Q         |         |         |       V |
   19+15       0.1182      0.02  Q         |         |         |       V |
   19+20       0.1183      0.02  Q         |         |         |       V |
   19+25       0.1185      0.02  Q         |         |         |       V |
   19+30       0.1186      0.02  Q         |         |         |       V |
   19+35       0.1188      0.02  Q         |         |         |       V |
   19+40       0.1189      0.02  Q         |         |         |       V |
   19+45       0.1190      0.02  Q         |         |         |       V |
   19+50       0.1192      0.02  Q         |         |         |       V |
   19+55       0.1193      0.01  Q         |         |         |       V |
   20+ 0       0.1194      0.01  Q         |         |         |       V |
   20+ 5       0.1194      0.01  Q         |         |         |       V |
   20+10       0.1196      0.02  Q         |         |         |       V |
   20+15       0.1197      0.02  Q         |         |         |       V |
   20+20       0.1198      0.02  Q         |         |         |       V |
   20+25       0.1199      0.02  Q         |         |         |       V |
   20+30       0.1200      0.02  Q         |         |         |       V |
   20+35       0.1202      0.02  Q         |         |         |       V |
   20+40       0.1203      0.02  Q         |         |         |       V |
   20+45       0.1204      0.02  Q         |         |         |       V |
   20+50       0.1205      0.02  Q         |         |         |       V |
   20+55       0.1206      0.01  Q         |         |         |       V |
   21+ 0       0.1207      0.01  Q         |         |         |       V |
   21+ 5       0.1208      0.01  Q         |         |         |       V |
   21+10       0.1209      0.02  Q         |         |         |       V |
   21+15       0.1210      0.02  Q         |         |         |       V |
   21+20       0.1212      0.02  Q         |         |         |        V|
   21+25       0.1213      0.01  Q         |         |         |        V|
   21+30       0.1213      0.01  Q         |         |         |        V|
   21+35       0.1214      0.01  Q         |         |         |        V|
   21+40       0.1216      0.02  Q         |         |         |        V|
   21+45       0.1217      0.02  Q         |         |         |        V|
   21+50       0.1218      0.02  Q         |         |         |        V|
   21+55       0.1219      0.01  Q         |         |         |        V|
   22+ 0       0.1220      0.01  Q         |         |         |        V|
   22+ 5       0.1221      0.01  Q         |         |         |        V|
   22+10       0.1222      0.02  Q         |         |         |        V|
   22+15       0.1223      0.02  Q         |         |         |        V|
   22+20       0.1224      0.02  Q         |         |         |        V|
   22+25       0.1225      0.01  Q         |         |         |        V|
   22+30       0.1226      0.01  Q         |         |         |        V|
   22+35       0.1227      0.01  Q         |         |         |        V|
   22+40       0.1228      0.01  Q         |         |         |        V|
   22+45       0.1228      0.01  Q         |         |         |        V|
   22+50       0.1229      0.01  Q         |         |         |        V|
   22+55       0.1230      0.01  Q         |         |         |        V|
   23+ 0       0.1231      0.01  Q         |         |         |        V|
   23+ 5       0.1232      0.01  Q         |         |         |        V|
   23+10       0.1233      0.01  Q         |         |         |        V|
   23+15       0.1233      0.01  Q         |         |         |        V|
   23+20       0.1234      0.01  Q         |         |         |        V|
   23+25       0.1235      0.01  Q         |         |         |        V|
   23+30       0.1236      0.01  Q         |         |         |        V|
   23+35       0.1237      0.01  Q         |         |         |        V|
   23+40       0.1237      0.01  Q         |         |         |        V|
   23+45       0.1238      0.01  Q         |         |         |        V|
   23+50       0.1239      0.01  Q         |         |         |        V|
   23+55       0.1240      0.01  Q         |         |         |        V|
   24+ 0       0.1241      0.01  Q         |         |         |        V|
   24+ 5       0.1241      0.01  Q         |         |         |        V|
   24+10       0.1242      0.00  Q         |         |         |        V|
   24+15       0.1242      0.00  Q         |         |         |        V|
   24+20       0.1242      0.00  Q         |         |         |        V|
   24+25       0.1242      0.00  Q         |         |         |        V|
   24+30       0.1242      0.00  Q         |         |         |        V|
   24+35       0.1242      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

5 YEAR

```
                              EX1HR5YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX15.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.48                    4.16

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.20                   10.40

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.649(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.649(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  70.0      0.362     0.000        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
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                          EX1HR5YR
----------------------------------------------------------------------

                U n i t   H y d r o g r a p h
                        VALLEY S-Curve
--------------------------------------------------------------------
                Unit Hydrograph Data
---------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                            Graph %           (CFS)
---------------------------------------------------------------------
    1   0.083        107.972         21.629             1.889
    2   0.167        215.945         48.795             4.261
    3   0.250        323.917         14.549             1.271
    4   0.333        431.890          6.648             0.581
    5   0.417        539.862          3.694             0.323
    6   0.500        647.835          2.331             0.204
    7   0.583        755.807          1.373             0.120
    8   0.667        863.780          0.982             0.086
                              Sum = 100.000   Sum=      8.733
-----------------------------------------------------------------------


The following loss rate calculations reflect use of the minimum calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
     (Hr.)  Percent   (In/Hr)         Max    |    Low        (In/Hr)
 1   0.08     4.40      0.342       (  0.362)       0.308         0.034
 2   0.17     4.50      0.350       (  0.362)       0.315         0.035
 3   0.25     5.40      0.420          0.362    (  0.378)         0.058
 4   0.33     5.40      0.420          0.362    (  0.378)         0.058
 5   0.42     5.70      0.444          0.362    (  0.399)         0.082
 6   0.50     6.40      0.498          0.362    (  0.448)         0.136
 7   0.58     7.90      0.615          0.362    (  0.553)         0.253
 8   0.67     9.10      0.708          0.362    (  0.637)         0.346
 9   0.75    12.80      0.996          0.362    (  0.897)         0.634
10   0.83    25.60      1.992          0.362    (  1.793)         1.630
11   0.92     7.90      0.615          0.362    (  0.553)         0.253
12   1.00     4.90      0.381       (  0.362)       0.343         0.038
               (Loss Rate Not Used)
   Sum =     100.0                                Sum =     3.6
      Flood volume = Effective rainfall      0.30(In)
       times area       8.7(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      0.35(In)
      Total soil loss =     0.254(Ac.Ft)
      Total rainfall =      0.65(In)
      Flood volume =        9327.2 Cubic Feet
      Total soil loss =       11073.5 Cubic Feet
--------------------------------------------------------------------
       Peak flow rate of this hydrograph =      8.560(CFS)
--------------------------------------------------------------------
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                     1 - H O U R    S T O R M
                 R u n o f f     H y d r o g r a p h
--------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

--------------------------------------------------------------------
Time(h+m) Volume Ac.Ft    Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0004       0.06  Q          |         |         |         |
  0+10       0.0019       0.21  Q          |         |         |         |
  0+15       0.0040       0.30  VQ         |         |         |         |
  0+20       0.0069       0.42  |Q         |         |         |         |
  0+25       0.0104       0.51  |VQ        |         |         |         |
  0+30       0.0154       0.73  | Q        |         |         |         |
  0+35       0.0239       1.23  |   Q      |         |         |         |
  0+40       0.0376       1.99  |      Q   |         |         |         |
  0+45       0.0591       3.12  |          |VQ       |         |         |
  0+50       0.1035       6.44  |          |        V|     Q   |         |
  0+55       0.1625       8.56  |          |         |         V   Q     |
  1+ 0       0.1885       3.78  |          |    Q    |         |    V    |
  1+ 5       0.2005       1.75  |     Q    |         |         |       V |
  1+10       0.2068       0.91  |  Q       |         |         |        V|
  1+15       0.2105       0.54  | Q        |         |         |         V|
  1+20       0.2127       0.31  |Q         |         |         |         V|
  1+25       0.2139       0.18  Q          |         |         |         V|
  1+30       0.2141       0.03  Q          |         |         |         V|
  1+35       0.2141       0.00  Q          |         |         |          V
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                              EX3HR5YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.80                    6.93

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.80                   15.60

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.034(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.034(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  70.0      0.362     0.000        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
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EX3HR5YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.161	(0.362)	0.145	0.016
2	0.17	1.30	0.161	(0.362)	0.145	0.016
3	0.25	1.10	0.137	(0.362)	0.123	0.014
4	0.33	1.50	0.186	(0.362)	0.168	0.019
5	0.42	1.50	0.186	(0.362)	0.168	0.019
6	0.50	1.80	0.223	(0.362)	0.201	0.022
7	0.58	1.50	0.186	(0.362)	0.168	0.019
8	0.67	1.80	0.223	(0.362)	0.201	0.022
9	0.75	1.80	0.223	(0.362)	0.201	0.022
10	0.83	1.50	0.186	(0.362)	0.168	0.019
11	0.92	1.60	0.199	(0.362)	0.179	0.020
12	1.00	1.80	0.223	(0.362)	0.201	0.022
13	1.08	2.20	0.273	(0.362)	0.246	0.027
14	1.17	2.20	0.273	(0.362)	0.246	0.027
15	1.25	2.20	0.273	(0.362)	0.246	0.027
16	1.33	2.00	0.248	(0.362)	0.223	0.025
17	1.42	2.60	0.323	(0.362)	0.290	0.032
18	1.50	2.70	0.335	(0.362)	0.302	0.034
19	1.58	2.40	0.298	(0.362)	0.268	0.030
20	1.67	2.70	0.335	(0.362)	0.302	0.034
21	1.75	3.30	0.410	0.362	(0.369)	0.048
22	1.83	3.10	0.385	(0.362)	0.346	0.038
23	1.92	2.90	0.360	(0.362)	0.324	0.036
24	2.00	3.00	0.372	(0.362)	0.335	0.037
25	2.08	3.10	0.385	(0.362)	0.346	0.038
26	2.17	4.20	0.521	0.362	(0.469)	0.159
27	2.25	5.00	0.621	0.362	(0.558)	0.259
28	2.33	3.50	0.434	0.362	(0.391)	0.072
29	2.42	6.80	0.844	0.362	(0.760)	0.482
30	2.50	7.30	0.906	0.362	(0.815)	0.544
31	2.58	8.20	1.018	0.362	(0.916)	0.656
32	2.67	5.90	0.732	0.362	(0.659)	0.370
33	2.75	2.00	0.248	(0.362)	0.223	0.025
34	2.83	1.80	0.223	(0.362)	0.201	0.022
35	2.92	1.80	0.223	(0.362)	0.201	0.022
36	3.00	0.60	0.074	(0.362)	0.067	0.007

(Loss Rate Not Used)

Sum = 100.0 Sum = 3.3

Flood volume = Effective rainfall 0.27(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 0.76(In)
Total soil loss = 0.549(Ac.Ft)
Total rainfall = 1.03(In)
Flood volume = 8602.2 Cubic Feet
Total soil loss = 23927.1 Cubic Feet

Peak flow rate of this hydrograph = 4.565(CFS)

3 - HOUR STORM
Runoff Hydrograph

Hydrograph in 5 Minute intervals ((CFS))

```
                                              EX3HR5YR
      -------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0         2.5       5.0       7.5      10.0
----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0009      0.10  Q         |         |         |         |
  0+15       0.0017      0.12  Q         |         |         |         |
  0+20       0.0025      0.12  Q         |         |         |         |
  0+25       0.0035      0.15  Q         |         |         |         |
  0+30       0.0047      0.16  Q         |         |         |         |
  0+35       0.0059      0.17  QV        |         |         |         |
  0+40       0.0070      0.17  QV        |         |         |         |
  0+45       0.0083      0.19  QV        |         |         |         |
  0+50       0.0096      0.18  QV        |         |         |         |
  0+55       0.0108      0.17  Q V       |         |         |         |
  1+ 0       0.0120      0.18  Q V       |         |         |         |
  1+ 5       0.0134      0.20  Q V       |         |         |         |
  1+10       0.0149      0.22  Q  V      |         |         |         |
  1+15       0.0165      0.23  Q  V      |         |         |         |
  1+20       0.0181      0.23  Q  V      |         |         |         |
  1+25       0.0197      0.23  Q  V      |         |         |         |
  1+30       0.0215      0.27  |Q  V     |         |         |         |
  1+35       0.0234      0.27  |Q  V     |         |         |         |
  1+40       0.0253      0.27  |Q   V    |         |         |         |
  1+45       0.0274      0.31  |Q   V    |         |         |         |
  1+50       0.0299      0.36  |Q    V   |         |         |         |
  1+55       0.0322      0.33  |Q    V   |         |         |         |
  2+ 0       0.0344      0.32  |Q    V   |         |         |         |
  2+ 5       0.0367      0.33  |Q     V  |         |         |         |
  2+10       0.0406      0.56  | Q     V |         |         |         |
  2+15       0.0493      1.27  |    Q   V|         |         |         |
  2+20       0.0596      1.49  |    Q    | V       |         |         |
  2+25       0.0711      1.67  |     Q   |   V     |         |         |
  2+30       0.0944      3.39  |         |  Q     V|         |         |
  2+35       0.1243      4.34  |         |      Q  |    V    |         |
  2+40       0.1557      4.56  |         |       Q |         |V        |
  2+45       0.1763      2.99  |         |Q        |         |    V    |
  2+50       0.1853      1.30  |    Q    |         |         |      V  |
  2+55       0.1906      0.77  |  Q      |         |         |       V |
  3+ 0       0.1941      0.51  | Q       |         |         |        V|
  3+ 5       0.1960      0.28  |Q        |         |         |        V|
  3+10       0.1970      0.14  Q         |         |         |        V|
  3+15       0.1973      0.05  Q         |         |         |        V|
  3+20       0.1974      0.01  Q         |         |         |        V|
  3+25       0.1975      0.01  Q         |         |         |        V|
  3+30       0.1975      0.00  Q         |         |         |        V|
  3+35       0.1975      0.00  Q         |         |         |        V|
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EX6HR5YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 06/28/16 File: EX65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.10                    9.53

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            2.50                   21.66

STORM EVENT (YEAR) =     5.00
Area Averaged 2-Year Rainfall =     1.100(In)
Area Averaged 100-Year Rainfall =     2.500(In)

Point rain (area averaged) =     1.428(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =     1.428(In)

Sub-Area Data:
Area(Ac.)          Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%      F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  70.0      0.362     0.000        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX6HR5YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.086	(0.362)	0.077	0.009
2	0.17	0.60	0.103	(0.362)	0.093	0.010
3	0.25	0.60	0.103	(0.362)	0.093	0.010
4	0.33	0.60	0.103	(0.362)	0.093	0.010
5	0.42	0.60	0.103	(0.362)	0.093	0.010
6	0.50	0.70	0.120	(0.362)	0.108	0.012
7	0.58	0.70	0.120	(0.362)	0.108	0.012
8	0.67	0.70	0.120	(0.362)	0.108	0.012
9	0.75	0.70	0.120	(0.362)	0.108	0.012
10	0.83	0.70	0.120	(0.362)	0.108	0.012
11	0.92	0.70	0.120	(0.362)	0.108	0.012
12	1.00	0.80	0.137	(0.362)	0.123	0.014
13	1.08	0.80	0.137	(0.362)	0.123	0.014
14	1.17	0.80	0.137	(0.362)	0.123	0.014
15	1.25	0.80	0.137	(0.362)	0.123	0.014
16	1.33	0.80	0.137	(0.362)	0.123	0.014
17	1.42	0.80	0.137	(0.362)	0.123	0.014
18	1.50	0.80	0.137	(0.362)	0.123	0.014
19	1.58	0.80	0.137	(0.362)	0.123	0.014
20	1.67	0.80	0.137	(0.362)	0.123	0.014
21	1.75	0.80	0.137	(0.362)	0.123	0.014
22	1.83	0.80	0.137	(0.362)	0.123	0.014
23	1.92	0.80	0.137	(0.362)	0.123	0.014
24	2.00	0.90	0.154	(0.362)	0.139	0.015
25	2.08	0.80	0.137	(0.362)	0.123	0.014
26	2.17	0.90	0.154	(0.362)	0.139	0.015
27	2.25	0.90	0.154	(0.362)	0.139	0.015
28	2.33	0.90	0.154	(0.362)	0.139	0.015
29	2.42	0.90	0.154	(0.362)	0.139	0.015
30	2.50	0.90	0.154	(0.362)	0.139	0.015
31	2.58	0.90	0.154	(0.362)	0.139	0.015
32	2.67	0.90	0.154	(0.362)	0.139	0.015
33	2.75	1.00	0.171	(0.362)	0.154	0.017
34	2.83	1.00	0.171	(0.362)	0.154	0.017
35	2.92	1.00	0.171	(0.362)	0.154	0.017
36	3.00	1.00	0.171	(0.362)	0.154	0.017
37	3.08	1.00	0.171	(0.362)	0.154	0.017
38	3.17	1.10	0.188	(0.362)	0.170	0.019
39	3.25	1.10	0.188	(0.362)	0.170	0.019
40	3.33	1.10	0.188	(0.362)	0.170	0.019
41	3.42	1.20	0.206	(0.362)	0.185	0.021
42	3.50	1.30	0.223	(0.362)	0.200	0.022
43	3.58	1.40	0.240	(0.362)	0.216	0.024
44	3.67	1.40	0.240	(0.362)	0.216	0.024
45	3.75	1.50	0.257	(0.362)	0.231	0.026
46	3.83	1.50	0.257	(0.362)	0.231	0.026
47	3.92	1.60	0.274	(0.362)	0.247	0.027
48	4.00	1.60	0.274	(0.362)	0.247	0.027
49	4.08	1.70	0.291	(0.362)	0.262	0.029
50	4.17	1.80	0.308	(0.362)	0.278	0.031
51	4.25	1.90	0.326	(0.362)	0.293	0.033
52	4.33	2.00	0.343	(0.362)	0.308	0.034
53	4.42	2.10	0.360	(0.362)	0.324	0.036
54	4.50	2.10	0.360	(0.362)	0.324	0.036

```
55   4.58     2.20      0.377       (  0.362)       0.339        0.038
56   4.67     2.30      0.394       (  0.362)       0.355        0.039
57   4.75     2.40      0.411          0.362    (  0.370)        0.049
58   4.83     2.40      0.411          0.362    (  0.370)        0.049
59   4.92     2.50      0.428          0.362    (  0.386)        0.066
60   5.00     2.60      0.445          0.362    (  0.401)        0.083
61   5.08     3.10      0.531          0.362    (  0.478)        0.169
62   5.17     3.60      0.617          0.362    (  0.555)        0.255
63   5.25     3.90      0.668          0.362    (  0.601)        0.306
64   5.33     4.20      0.720          0.362    (  0.648)        0.358
65   5.42     4.70      0.805          0.362    (  0.725)        0.443
66   5.50     5.60      0.960          0.362    (  0.864)        0.598
67   5.58     1.90      0.326       (  0.362)       0.293        0.033
68   5.67     0.90      0.154       (  0.362)       0.139        0.015
69   5.75     0.60      0.103       (  0.362)       0.093        0.010
70   5.83     0.50      0.086       (  0.362)       0.077        0.009
71   5.92     0.30      0.051       (  0.362)       0.046        0.005
72   6.00     0.20      0.034       (  0.362)       0.031        0.003
               (Loss Rate Not Used)
   Sum =     100.0                                 Sum =     3.5
      Flood volume = Effective rainfall      0.29(In)
       times area       8.7(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      1.14(In)
      Total soil loss =     0.821(Ac.Ft)
      Total rainfall =      1.43(In)
      Flood volume =        9150.0 Cubic Feet
      Total soil loss =       35762.2 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      3.784(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q          |         |         |         |
  0+10       0.0005      0.06  Q          |         |         |         |
  0+15       0.0010      0.07  Q          |         |         |         |
  0+20       0.0016      0.08  Q          |         |         |         |
  0+25       0.0022      0.09  Q          |         |         |         |
  0+30       0.0028      0.09  Q          |         |         |         |
  0+35       0.0035      0.10  Q          |         |         |         |
  0+40       0.0042      0.10  Q          |         |         |         |
  0+45       0.0049      0.10  Q          |         |         |         |
  0+50       0.0056      0.10  QV         |         |         |         |
  0+55       0.0063      0.10  QV         |         |         |         |
  1+ 0       0.0071      0.11  QV         |         |         |         |
  1+ 5       0.0079      0.12  QV         |         |         |         |
  1+10       0.0087      0.12  QV         |         |         |         |
  1+15       0.0095      0.12  QV         |         |         |         |
  1+20       0.0103      0.12  QV         |         |         |         |
  1+25       0.0111      0.12  Q V        |         |         |         |
  1+30       0.0119      0.12  Q V        |         |         |         |
  1+35       0.0128      0.12  Q V        |         |         |         |
  1+40       0.0136      0.12  Q V        |         |         |         |
  1+45       0.0144      0.12  Q V        |         |         |         |
  1+50       0.0152      0.12  Q V        |         |         |         |
  1+55       0.0161      0.12  Q  V       |         |         |         |
  2+ 0       0.0169      0.12  Q  V       |         |         |         |
  2+ 5       0.0178      0.13  Q  V       |         |         |         |
  2+10       0.0187      0.13  Q  V       |         |         |         |
  2+15       0.0196      0.13  Q  V       |         |         |         |
  2+20       0.0205      0.13  Q  V       |         |         |         |
  2+25       0.0214      0.13  Q   V      |         |         |         |
  2+30       0.0223      0.13  Q   V      |         |         |         |
  2+35       0.0232      0.13  Q   V      |         |         |         |
  2+40       0.0242      0.13  Q   V      |         |         |         |
  2+45       0.0251      0.14  Q   V      |         |         |         |
  2+50       0.0261      0.15  Q   V      |         |         |         |
  2+55       0.0271      0.15  Q    V     |         |         |         |
  3+ 0       0.0282      0.15  Q    V     |         |         |         |
  3+ 5       0.0292      0.15  Q    V     |         |         |         |
  3+10       0.0302      0.15  Q    V     |         |         |         |
  3+15       0.0313      0.16  Q    V     |         |         |         |
  3+20       0.0325      0.16  Q     V    |         |         |         |
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                                                EX6HR5YR
    3+25       0.0336      0.17  Q     V   |         |         |         |
    3+30       0.0348      0.18  Q     V   |         |         |         |
    3+35       0.0361      0.19  Q     V   |         |         |         |
    3+40       0.0375      0.20  Q      V  |         |         |         |
    3+45       0.0390      0.21  Q      V  |         |         |         |
    3+50       0.0405      0.22  Q      V  |         |         |         |
    3+55       0.0420      0.22  Q       V |         |         |         |
    4+ 0       0.0436      0.23  Q       V |         |         |         |
    4+ 5       0.0453      0.24  Q       V |         |         |         |
    4+10       0.0470      0.25  |Q      V |         |         |         |
    4+15       0.0488      0.27  |Q       V|         |         |         |
    4+20       0.0508      0.28  |Q       V|         |         |         |
    4+25       0.0528      0.29  |Q        V         |         |         |
    4+30       0.0549      0.31  |Q        V         |         |         |
    4+35       0.0570      0.31  |Q        V         |         |         |
    4+40       0.0593      0.33  |Q        |V        |         |         |
    4+45       0.0617      0.36  |Q        |V        |         |         |
    4+50       0.0645      0.40  |Q        | V       |         |         |
    4+55       0.0676      0.45  |Q        | V       |         |         |
    5+ 0       0.0714      0.56  | Q       |  V      |         |         |
    5+ 5       0.0771      0.82  |  Q      |   V     |         |         |
    5+10       0.0866      1.38  |    Q    |     V   |         |         |
    5+15       0.1002      1.97  |      Q  |        V|         |         |
    5+20       0.1171      2.45  |        Q|         | V       |         |
    5+25       0.1376      2.98  |         |Q        |     V   |         |
    5+30       0.1637      3.78  |         |    Q    |         |V        |
    5+35       0.1882      3.56  |         |   Q     |         |    V    |
    5+40       0.1979      1.41  |    Q    |         |         |      V  |
    5+45       0.2030      0.75  | Q       |         |         |       V |
    5+50       0.2061      0.45  |Q        |         |         |        V|
    5+55       0.2081      0.28  |Q        |         |         |        V|
    6+ 0       0.2092      0.17  Q         |         |         |        V|
    6+ 5       0.2098      0.09  Q         |         |         |        V|
    6+10       0.2099      0.02  Q         |         |         |        V|
    6+15       0.2100      0.01  Q         |         |         |        V|
    6+20       0.2100      0.00  Q         |         |         |        V|
    6+25       0.2100      0.00  Q         |         |         |        V|
    6+30       0.2101      0.00  Q         |         |         |        V|
    6+35       0.2101      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
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EX24HR5YR

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66             1.72                14.90

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66             4.30                37.26

STORM EVENT (YEAR) =     5.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    2.324(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.324(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  70.0      0.362     0.000        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX24HR5YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.019	(0.642)	0.017	0.002
2	0.17	0.07	0.019	(0.639)	0.017	0.002
3	0.25	0.07	0.019	(0.637)	0.017	0.002
4	0.33	0.10	0.028	(0.634)	0.025	0.003
5	0.42	0.10	0.028	(0.632)	0.025	0.003
6	0.50	0.10	0.028	(0.629)	0.025	0.003
7	0.58	0.10	0.028	(0.627)	0.025	0.003
8	0.67	0.10	0.028	(0.624)	0.025	0.003
9	0.75	0.10	0.028	(0.622)	0.025	0.003
10	0.83	0.13	0.037	(0.620)	0.033	0.004
11	0.92	0.13	0.037	(0.617)	0.033	0.004
12	1.00	0.13	0.037	(0.615)	0.033	0.004
13	1.08	0.10	0.028	(0.612)	0.025	0.003
14	1.17	0.10	0.028	(0.610)	0.025	0.003
15	1.25	0.10	0.028	(0.607)	0.025	0.003
16	1.33	0.10	0.028	(0.605)	0.025	0.003
17	1.42	0.10	0.028	(0.603)	0.025	0.003
18	1.50	0.10	0.028	(0.600)	0.025	0.003
19	1.58	0.10	0.028	(0.598)	0.025	0.003
20	1.67	0.10	0.028	(0.595)	0.025	0.003
21	1.75	0.10	0.028	(0.593)	0.025	0.003
22	1.83	0.13	0.037	(0.591)	0.033	0.004
23	1.92	0.13	0.037	(0.588)	0.033	0.004
24	2.00	0.13	0.037	(0.586)	0.033	0.004
25	2.08	0.13	0.037	(0.583)	0.033	0.004
26	2.17	0.13	0.037	(0.581)	0.033	0.004
27	2.25	0.13	0.037	(0.579)	0.033	0.004
28	2.33	0.13	0.037	(0.576)	0.033	0.004
29	2.42	0.13	0.037	(0.574)	0.033	0.004
30	2.50	0.13	0.037	(0.572)	0.033	0.004
31	2.58	0.17	0.046	(0.569)	0.042	0.005
32	2.67	0.17	0.046	(0.567)	0.042	0.005
33	2.75	0.17	0.046	(0.565)	0.042	0.005
34	2.83	0.17	0.046	(0.562)	0.042	0.005
35	2.92	0.17	0.046	(0.560)	0.042	0.005
36	3.00	0.17	0.046	(0.558)	0.042	0.005
37	3.08	0.17	0.046	(0.555)	0.042	0.005
38	3.17	0.17	0.046	(0.553)	0.042	0.005
39	3.25	0.17	0.046	(0.551)	0.042	0.005
40	3.33	0.17	0.046	(0.549)	0.042	0.005
41	3.42	0.17	0.046	(0.546)	0.042	0.005
42	3.50	0.17	0.046	(0.544)	0.042	0.005
43	3.58	0.17	0.046	(0.542)	0.042	0.005
44	3.67	0.17	0.046	(0.539)	0.042	0.005
45	3.75	0.17	0.046	(0.537)	0.042	0.005
46	3.83	0.20	0.056	(0.535)	0.050	0.006
47	3.92	0.20	0.056	(0.533)	0.050	0.006
48	4.00	0.20	0.056	(0.530)	0.050	0.006
49	4.08	0.20	0.056	(0.528)	0.050	0.006
50	4.17	0.20	0.056	(0.526)	0.050	0.006
51	4.25	0.20	0.056	(0.524)	0.050	0.006
52	4.33	0.23	0.065	(0.521)	0.059	0.007
53	4.42	0.23	0.065	(0.519)	0.059	0.007
54	4.50	0.23	0.065	(0.517)	0.059	0.007

EX24HR5YR

55	4.58	0.23	0.065	(0.515)	0.059	0.007
56	4.67	0.23	0.065	(0.513)	0.059	0.007
57	4.75	0.23	0.065	(0.510)	0.059	0.007
58	4.83	0.27	0.074	(0.508)	0.067	0.007
59	4.92	0.27	0.074	(0.506)	0.067	0.007
60	5.00	0.27	0.074	(0.504)	0.067	0.007
61	5.08	0.20	0.056	(0.502)	0.050	0.006
62	5.17	0.20	0.056	(0.499)	0.050	0.006
63	5.25	0.20	0.056	(0.497)	0.050	0.006
64	5.33	0.23	0.065	(0.495)	0.059	0.007
65	5.42	0.23	0.065	(0.493)	0.059	0.007
66	5.50	0.23	0.065	(0.491)	0.059	0.007
67	5.58	0.27	0.074	(0.489)	0.067	0.007
68	5.67	0.27	0.074	(0.486)	0.067	0.007
69	5.75	0.27	0.074	(0.484)	0.067	0.007
70	5.83	0.27	0.074	(0.482)	0.067	0.007
71	5.92	0.27	0.074	(0.480)	0.067	0.007
72	6.00	0.27	0.074	(0.478)	0.067	0.007
73	6.08	0.30	0.084	(0.476)	0.075	0.008
74	6.17	0.30	0.084	(0.474)	0.075	0.008
75	6.25	0.30	0.084	(0.471)	0.075	0.008
76	6.33	0.30	0.084	(0.469)	0.075	0.008
77	6.42	0.30	0.084	(0.467)	0.075	0.008
78	6.50	0.30	0.084	(0.465)	0.075	0.008
79	6.58	0.33	0.093	(0.463)	0.084	0.009
80	6.67	0.33	0.093	(0.461)	0.084	0.009
81	6.75	0.33	0.093	(0.459)	0.084	0.009
82	6.83	0.33	0.093	(0.457)	0.084	0.009
83	6.92	0.33	0.093	(0.455)	0.084	0.009
84	7.00	0.33	0.093	(0.453)	0.084	0.009
85	7.08	0.33	0.093	(0.451)	0.084	0.009
86	7.17	0.33	0.093	(0.449)	0.084	0.009
87	7.25	0.33	0.093	(0.447)	0.084	0.009
88	7.33	0.37	0.102	(0.445)	0.092	0.010
89	7.42	0.37	0.102	(0.442)	0.092	0.010
90	7.50	0.37	0.102	(0.440)	0.092	0.010
91	7.58	0.40	0.112	(0.438)	0.100	0.011
92	7.67	0.40	0.112	(0.436)	0.100	0.011
93	7.75	0.40	0.112	(0.434)	0.100	0.011
94	7.83	0.43	0.121	(0.432)	0.109	0.012
95	7.92	0.43	0.121	(0.430)	0.109	0.012
96	8.00	0.43	0.121	(0.428)	0.109	0.012
97	8.08	0.50	0.139	(0.426)	0.126	0.014
98	8.17	0.50	0.139	(0.424)	0.126	0.014
99	8.25	0.50	0.139	(0.422)	0.126	0.014
100	8.33	0.50	0.139	(0.420)	0.126	0.014
101	8.42	0.50	0.139	(0.419)	0.126	0.014
102	8.50	0.50	0.139	(0.417)	0.126	0.014
103	8.58	0.53	0.149	(0.415)	0.134	0.015
104	8.67	0.53	0.149	(0.413)	0.134	0.015
105	8.75	0.53	0.149	(0.411)	0.134	0.015
106	8.83	0.57	0.158	(0.409)	0.142	0.016
107	8.92	0.57	0.158	(0.407)	0.142	0.016
108	9.00	0.57	0.158	(0.405)	0.142	0.016
109	9.08	0.63	0.177	(0.403)	0.159	0.018
110	9.17	0.63	0.177	(0.401)	0.159	0.018
111	9.25	0.63	0.177	(0.399)	0.159	0.018
112	9.33	0.67	0.186	(0.397)	0.167	0.019
113	9.42	0.67	0.186	(0.395)	0.167	0.019
114	9.50	0.67	0.186	(0.393)	0.167	0.019
115	9.58	0.70	0.195	(0.392)	0.176	0.020
116	9.67	0.70	0.195	(0.390)	0.176	0.020
117	9.75	0.70	0.195	(0.388)	0.176	0.020
118	9.83	0.73	0.205	(0.386)	0.184	0.020
119	9.92	0.73	0.205	(0.384)	0.184	0.020
120	10.00	0.73	0.205	(0.382)	0.184	0.020
121	10.08	0.50	0.139	(0.380)	0.126	0.014
122	10.17	0.50	0.139	(0.379)	0.126	0.014
123	10.25	0.50	0.139	(0.377)	0.126	0.014
124	10.33	0.50	0.139	(0.375)	0.126	0.014
125	10.42	0.50	0.139	(0.373)	0.126	0.014
126	10.50	0.50	0.139	(0.371)	0.126	0.014
127	10.58	0.67	0.186	(0.369)	0.167	0.019
128	10.67	0.67	0.186	(0.368)	0.167	0.019
129	10.75	0.67	0.186	(0.366)	0.167	0.019
130	10.83	0.67	0.186	(0.364)	0.167	0.019
131	10.92	0.67	0.186	(0.362)	0.167	0.019
132	11.00	0.67	0.186	(0.360)	0.167	0.019
133	11.08	0.63	0.177	(0.359)	0.159	0.018

134	11.17	0.63	0.177	(0.357)	0.159	0.018
135	11.25	0.63	0.177	(0.355)	0.159	0.018
136	11.33	0.63	0.177	(0.353)	0.159	0.018
137	11.42	0.63	0.177	(0.352)	0.159	0.018
138	11.50	0.63	0.177	(0.350)	0.159	0.018
139	11.58	0.57	0.158	(0.348)	0.142	0.016
140	11.67	0.57	0.158	(0.346)	0.142	0.016
141	11.75	0.57	0.158	(0.345)	0.142	0.016
142	11.83	0.60	0.167	(0.343)	0.151	0.017
143	11.92	0.60	0.167	(0.341)	0.151	0.017
144	12.00	0.60	0.167	(0.340)	0.151	0.017
145	12.08	0.83	0.232	(0.338)	0.209	0.023
146	12.17	0.83	0.232	(0.336)	0.209	0.023
147	12.25	0.83	0.232	(0.335)	0.209	0.023
148	12.33	0.87	0.242	(0.333)	0.218	0.024
149	12.42	0.87	0.242	(0.331)	0.218	0.024
150	12.50	0.87	0.242	(0.330)	0.218	0.024
151	12.58	0.93	0.260	(0.328)	0.234	0.026
152	12.67	0.93	0.260	(0.326)	0.234	0.026
153	12.75	0.93	0.260	(0.325)	0.234	0.026
154	12.83	0.97	0.270	(0.323)	0.243	0.027
155	12.92	0.97	0.270	(0.321)	0.243	0.027
156	13.00	0.97	0.270	(0.320)	0.243	0.027
157	13.08	1.13	0.316	(0.318)	0.284	0.032
158	13.17	1.13	0.316	(0.316)	0.284	0.032
159	13.25	1.13	0.316	(0.315)	0.284	0.032
160	13.33	1.13	0.316	(0.313)	0.284	0.032
161	13.42	1.13	0.316	(0.312)	0.284	0.032
162	13.50	1.13	0.316	(0.310)	0.284	0.032
163	13.58	0.77	0.214	(0.308)	0.192	0.021
164	13.67	0.77	0.214	(0.307)	0.192	0.021
165	13.75	0.77	0.214	(0.305)	0.192	0.021
166	13.83	0.77	0.214	(0.304)	0.192	0.021
167	13.92	0.77	0.214	(0.302)	0.192	0.021
168	14.00	0.77	0.214	(0.301)	0.192	0.021
169	14.08	0.90	0.251	(0.299)	0.226	0.025
170	14.17	0.90	0.251	(0.298)	0.226	0.025
171	14.25	0.90	0.251	(0.296)	0.226	0.025
172	14.33	0.87	0.242	(0.295)	0.218	0.024
173	14.42	0.87	0.242	(0.293)	0.218	0.024
174	14.50	0.87	0.242	(0.292)	0.218	0.024
175	14.58	0.87	0.242	(0.290)	0.218	0.024
176	14.67	0.87	0.242	(0.289)	0.218	0.024
177	14.75	0.87	0.242	(0.287)	0.218	0.024
178	14.83	0.83	0.232	(0.286)	0.209	0.023
179	14.92	0.83	0.232	(0.284)	0.209	0.023
180	15.00	0.83	0.232	(0.283)	0.209	0.023
181	15.08	0.80	0.223	(0.281)	0.201	0.022
182	15.17	0.80	0.223	(0.280)	0.201	0.022
183	15.25	0.80	0.223	(0.278)	0.201	0.022
184	15.33	0.77	0.214	(0.277)	0.192	0.021
185	15.42	0.77	0.214	(0.276)	0.192	0.021
186	15.50	0.77	0.214	(0.274)	0.192	0.021
187	15.58	0.63	0.177	(0.273)	0.159	0.018
188	15.67	0.63	0.177	(0.271)	0.159	0.018
189	15.75	0.63	0.177	(0.270)	0.159	0.018
190	15.83	0.63	0.177	(0.269)	0.159	0.018
191	15.92	0.63	0.177	(0.267)	0.159	0.018
192	16.00	0.63	0.177	(0.266)	0.159	0.018
193	16.08	0.13	0.037	(0.264)	0.033	0.004
194	16.17	0.13	0.037	(0.263)	0.033	0.004
195	16.25	0.13	0.037	(0.262)	0.033	0.004
196	16.33	0.13	0.037	(0.260)	0.033	0.004
197	16.42	0.13	0.037	(0.259)	0.033	0.004
198	16.50	0.13	0.037	(0.258)	0.033	0.004
199	16.58	0.10	0.028	(0.256)	0.025	0.003
200	16.67	0.10	0.028	(0.255)	0.025	0.003
201	16.75	0.10	0.028	(0.254)	0.025	0.003
202	16.83	0.10	0.028	(0.253)	0.025	0.003
203	16.92	0.10	0.028	(0.251)	0.025	0.003
204	17.00	0.10	0.028	(0.250)	0.025	0.003
205	17.08	0.17	0.046	(0.249)	0.042	0.005
206	17.17	0.17	0.046	(0.248)	0.042	0.005
207	17.25	0.17	0.046	(0.246)	0.042	0.005
208	17.33	0.17	0.046	(0.245)	0.042	0.005
209	17.42	0.17	0.046	(0.244)	0.042	0.005
210	17.50	0.17	0.046	(0.243)	0.042	0.005
211	17.58	0.17	0.046	(0.241)	0.042	0.005
212	17.67	0.17	0.046	(0.240)	0.042	0.005

213	17.75	0.17	0.046	(0.239)	0.042	0.005
214	17.83	0.13	0.037	(0.238)	0.033	0.004
215	17.92	0.13	0.037	(0.237)	0.033	0.004
216	18.00	0.13	0.037	(0.235)	0.033	0.004
217	18.08	0.13	0.037	(0.234)	0.033	0.004
218	18.17	0.13	0.037	(0.233)	0.033	0.004
219	18.25	0.13	0.037	(0.232)	0.033	0.004
220	18.33	0.13	0.037	(0.231)	0.033	0.004
221	18.42	0.13	0.037	(0.230)	0.033	0.004
222	18.50	0.13	0.037	(0.229)	0.033	0.004
223	18.58	0.10	0.028	(0.228)	0.025	0.003
224	18.67	0.10	0.028	(0.226)	0.025	0.003
225	18.75	0.10	0.028	(0.225)	0.025	0.003
226	18.83	0.07	0.019	(0.224)	0.017	0.002
227	18.92	0.07	0.019	(0.223)	0.017	0.002
228	19.00	0.07	0.019	(0.222)	0.017	0.002
229	19.08	0.10	0.028	(0.221)	0.025	0.003
230	19.17	0.10	0.028	(0.220)	0.025	0.003
231	19.25	0.10	0.028	(0.219)	0.025	0.003
232	19.33	0.13	0.037	(0.218)	0.033	0.004
233	19.42	0.13	0.037	(0.217)	0.033	0.004
234	19.50	0.13	0.037	(0.216)	0.033	0.004
235	19.58	0.10	0.028	(0.215)	0.025	0.003
236	19.67	0.10	0.028	(0.214)	0.025	0.003
237	19.75	0.10	0.028	(0.213)	0.025	0.003
238	19.83	0.07	0.019	(0.212)	0.017	0.002
239	19.92	0.07	0.019	(0.211)	0.017	0.002
240	20.00	0.07	0.019	(0.210)	0.017	0.002
241	20.08	0.10	0.028	(0.209)	0.025	0.003
242	20.17	0.10	0.028	(0.208)	0.025	0.003
243	20.25	0.10	0.028	(0.207)	0.025	0.003
244	20.33	0.10	0.028	(0.207)	0.025	0.003
245	20.42	0.10	0.028	(0.206)	0.025	0.003
246	20.50	0.10	0.028	(0.205)	0.025	0.003
247	20.58	0.10	0.028	(0.204)	0.025	0.003
248	20.67	0.10	0.028	(0.203)	0.025	0.003
249	20.75	0.10	0.028	(0.202)	0.025	0.003
250	20.83	0.07	0.019	(0.201)	0.017	0.002
251	20.92	0.07	0.019	(0.201)	0.017	0.002
252	21.00	0.07	0.019	(0.200)	0.017	0.002
253	21.08	0.10	0.028	(0.199)	0.025	0.003
254	21.17	0.10	0.028	(0.198)	0.025	0.003
255	21.25	0.10	0.028	(0.197)	0.025	0.003
256	21.33	0.07	0.019	(0.197)	0.017	0.002
257	21.42	0.07	0.019	(0.196)	0.017	0.002
258	21.50	0.07	0.019	(0.195)	0.017	0.002
259	21.58	0.10	0.028	(0.195)	0.025	0.003
260	21.67	0.10	0.028	(0.194)	0.025	0.003
261	21.75	0.10	0.028	(0.193)	0.025	0.003
262	21.83	0.07	0.019	(0.192)	0.017	0.002
263	21.92	0.07	0.019	(0.192)	0.017	0.002
264	22.00	0.07	0.019	(0.191)	0.017	0.002
265	22.08	0.10	0.028	(0.190)	0.025	0.003
266	22.17	0.10	0.028	(0.190)	0.025	0.003
267	22.25	0.10	0.028	(0.189)	0.025	0.003
268	22.33	0.07	0.019	(0.189)	0.017	0.002
269	22.42	0.07	0.019	(0.188)	0.017	0.002
270	22.50	0.07	0.019	(0.188)	0.017	0.002
271	22.58	0.07	0.019	(0.187)	0.017	0.002
272	22.67	0.07	0.019	(0.186)	0.017	0.002
273	22.75	0.07	0.019	(0.186)	0.017	0.002
274	22.83	0.07	0.019	(0.185)	0.017	0.002
275	22.92	0.07	0.019	(0.185)	0.017	0.002
276	23.00	0.07	0.019	(0.185)	0.017	0.002
277	23.08	0.07	0.019	(0.184)	0.017	0.002
278	23.17	0.07	0.019	(0.184)	0.017	0.002
279	23.25	0.07	0.019	(0.183)	0.017	0.002
280	23.33	0.07	0.019	(0.183)	0.017	0.002
281	23.42	0.07	0.019	(0.183)	0.017	0.002
282	23.50	0.07	0.019	(0.182)	0.017	0.002
283	23.58	0.07	0.019	(0.182)	0.017	0.002
284	23.67	0.07	0.019	(0.182)	0.017	0.002
285	23.75	0.07	0.019	(0.181)	0.017	0.002
286	23.83	0.07	0.019	(0.181)	0.017	0.002
287	23.92	0.07	0.019	(0.181)	0.017	0.002
288	24.00	0.07	0.019	(0.181)	0.017	0.002

(Loss Rate Not Used)

Sum = 100.0 Sum = 2.8

Flood volume = Effective rainfall 0.23(In)

```
                                                    EX24HR5YR
       times area       8.7(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      2.09(In)
      Total soil loss =     1.510(Ac.Ft)
      Total rainfall =      2.32(In)
      Flood volume =        7310.7 Cubic Feet
      Total soil loss =       65796.4 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      0.275(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0002      0.01  Q         |         |         |         |
  0+20       0.0003      0.02  Q         |         |         |         |
  0+25       0.0005      0.02  Q         |         |         |         |
  0+30       0.0006      0.02  Q         |         |         |         |
  0+35       0.0008      0.02  Q         |         |         |         |
  0+40       0.0009      0.02  Q         |         |         |         |
  0+45       0.0011      0.02  Q         |         |         |         |
  0+50       0.0013      0.03  Q         |         |         |         |
  0+55       0.0015      0.03  Q         |         |         |         |
  1+ 0       0.0017      0.03  Q         |         |         |         |
  1+ 5       0.0019      0.03  Q         |         |         |         |
  1+10       0.0021      0.03  Q         |         |         |         |
  1+15       0.0023      0.03  Q         |         |         |         |
  1+20       0.0024      0.02  Q         |         |         |         |
  1+25       0.0026      0.02  Q         |         |         |         |
  1+30       0.0028      0.02  Q         |         |         |         |
  1+35       0.0030      0.02  Q         |         |         |         |
  1+40       0.0031      0.02  Q         |         |         |         |
  1+45       0.0033      0.02  Q         |         |         |         |
  1+50       0.0035      0.03  Q         |         |         |         |
  1+55       0.0037      0.03  Q         |         |         |         |
  2+ 0       0.0039      0.03  Q         |         |         |         |
  2+ 5       0.0041      0.03  Q         |         |         |         |
  2+10       0.0043      0.03  QV        |         |         |         |
  2+15       0.0046      0.03  QV        |         |         |         |
  2+20       0.0048      0.03  QV        |         |         |         |
  2+25       0.0050      0.03  QV        |         |         |         |
  2+30       0.0052      0.03  QV        |         |         |         |
  2+35       0.0055      0.03  QV        |         |         |         |
  2+40       0.0057      0.04  QV        |         |         |         |
  2+45       0.0060      0.04  QV        |         |         |         |
  2+50       0.0063      0.04  QV        |         |         |         |
  2+55       0.0065      0.04  QV        |         |         |         |
  3+ 0       0.0068      0.04  QV        |         |         |         |
  3+ 5       0.0071      0.04  QV        |         |         |         |
  3+10       0.0074      0.04  QV        |         |         |         |
  3+15       0.0077      0.04  QV        |         |         |         |
  3+20       0.0079      0.04  QV        |         |         |         |
  3+25       0.0082      0.04  QV        |         |         |         |
  3+30       0.0085      0.04  Q V       |         |         |         |
  3+35       0.0088      0.04  Q V       |         |         |         |
  3+40       0.0091      0.04  Q V       |         |         |         |
  3+45       0.0093      0.04  Q V       |         |         |         |
  3+50       0.0096      0.04  Q V       |         |         |         |
  3+55       0.0100      0.05  Q V       |         |         |         |
  4+ 0       0.0103      0.05  Q V       |         |         |         |
  4+ 5       0.0106      0.05  Q V       |         |         |         |
  4+10       0.0109      0.05  Q V       |         |         |         |
  4+15       0.0113      0.05  Q V       |         |         |         |
  4+20       0.0116      0.05  Q V       |         |         |         |
  4+25       0.0120      0.05  Q V       |         |         |         |
  4+30       0.0124      0.06  Q V       |         |         |         |
  4+35       0.0128      0.06  Q  V      |         |         |         |
  4+40       0.0132      0.06  Q  V      |         |         |         |
  4+45       0.0136      0.06  Q  V      |         |         |         |
  4+50       0.0140      0.06  Q  V      |         |         |         |
  4+55       0.0144      0.06  Q  V      |         |         |         |
  5+ 0       0.0148      0.06  Q  V      |         |         |         |
  5+ 5       0.0152      0.06  Q  V      |         |         |         |
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EX24HR5YR

5+10	0.0156	0.05	Q V | | | |
5+15	0.0160	0.05	Q V | | | |
5+20	0.0163	0.05	Q V | | | |
5+25	0.0167	0.06	Q V | | | |
5+30	0.0171	0.06	Q V | | | |
5+35	0.0175	0.06	Q V | | | |
5+40	0.0179	0.06	Q V | | | |
5+45	0.0184	0.06	Q V | | | |
5+50	0.0188	0.06	Q V | | | |
5+55	0.0192	0.06	Q V | | | |
6+ 0	0.0197	0.06	Q V | | | |
6+ 5	0.0201	0.07	Q V | | | |
6+10	0.0206	0.07	Q V | | | |
6+15	0.0211	0.07	Q V | | | |
6+20	0.0216	0.07	Q V | | | |
6+25	0.0221	0.07	Q V | | | |
6+30	0.0226	0.07	Q V | | | |
6+35	0.0231	0.07	Q V | | | |
6+40	0.0237	0.08	Q V | | | |
6+45	0.0242	0.08	Q V | | | |
6+50	0.0248	0.08	Q V | | | |
6+55	0.0253	0.08	Q V | | | |
7+ 0	0.0259	0.08	Q V | | | |
7+ 5	0.0265	0.08	Q V | | | |
7+10	0.0270	0.08	Q V | | | |
7+15	0.0276	0.08	Q V | | | |
7+20	0.0282	0.08	Q V | | | |
7+25	0.0288	0.09	Q V | | | |
7+30	0.0294	0.09	Q V | | | |
7+35	0.0300	0.09	Q V | | | |
7+40	0.0306	0.09	Q V | | | |
7+45	0.0313	0.10	Q V | | | |
7+50	0.0320	0.10	Q V | | | |
7+55	0.0327	0.10	Q V | | | |
8+ 0	0.0334	0.10	Q V | | | |
8+ 5	0.0341	0.11	Q V | | | |
8+10	0.0350	0.12	Q V | | | |
8+15	0.0358	0.12	Q V | | | |
8+20	0.0366	0.12	Q V | | | |
8+25	0.0374	0.12	Q V | | | |
8+30	0.0383	0.12	Q V| | | |
8+35	0.0391	0.12	Q V| | | |
8+40	0.0400	0.13	Q V| | | |
8+45	0.0409	0.13	Q V| | | |
8+50	0.0418	0.13	Q V| | | |
8+55	0.0427	0.14	Q V | | |
9+ 0	0.0437	0.14	Q V | | |
9+ 5	0.0446	0.14	Q V | | |
9+10	0.0457	0.15	Q V | | |
9+15	0.0467	0.15	Q |V | | |
9+20	0.0478	0.15	Q |V | | |
9+25	0.0489	0.16	Q |V | | |
9+30	0.0500	0.16	Q |V | | |
9+35	0.0511	0.16	Q | V | | |
9+40	0.0523	0.17	Q | V | | |
9+45	0.0534	0.17	Q | V | | |
9+50	0.0546	0.17	Q | V | | |
9+55	0.0558	0.18	Q | V | | |
10+ 0	0.0570	0.18	Q | V | | |
10+ 5	0.0582	0.17	Q | V | | |
10+10	0.0591	0.14	Q | V | | |
10+15	0.0600	0.13	Q | V | | |
10+20	0.0609	0.13	Q | V | | |
10+25	0.0618	0.12	Q | V | | |
10+30	0.0626	0.12	Q | V | | |
10+35	0.0635	0.13	Q | V | | |
10+40	0.0645	0.15	Q | V | | |
10+45	0.0656	0.16	Q | V | | |
10+50	0.0667	0.16	Q | V | | |
10+55	0.0678	0.16	Q | V | | |
11+ 0	0.0689	0.16	Q | V | | |
11+ 5	0.0700	0.16	Q | V | | |
11+10	0.0711	0.16	Q | V | | |
11+15	0.0722	0.16	Q | V | | |
11+20	0.0733	0.16	Q | V | | |
11+25	0.0743	0.15	Q | V | | |
11+30	0.0754	0.15	Q | V | | |
11+35	0.0764	0.15	Q | V | | |
11+40	0.0774	0.14	Q | V | | |

```
                                             EX24HR5YR
11+45       0.0784      0.14  Q         |       V |         |         |
11+50       0.0793      0.14  Q         |       V |         |         |
11+55       0.0803      0.14  Q         |        V|         |         |
12+ 0       0.0813      0.15  Q         |        V|         |         |
12+ 5       0.0824      0.16  Q         |        V|         |         |
12+10       0.0837      0.19  Q         |        V|         |         |
12+15       0.0851      0.19  Q         |         V         |         |
12+20       0.0864      0.20  Q         |         V         |         |
12+25       0.0878      0.21  Q         |         V         |         |
12+30       0.0893      0.21  Q         |         |V        |         |
12+35       0.0908      0.21  Q         |         |V        |         |
12+40       0.0923      0.22  Q         |         |V        |         |
12+45       0.0938      0.22  Q         |         | V       |         |
12+50       0.0954      0.23  Q         |         | V       |         |
12+55       0.0970      0.23  Q         |         |  V      |         |
13+ 0       0.0986      0.23  Q         |         |  V      |         |
13+ 5       0.1003      0.24  Q         |         |  V      |         |
13+10       0.1021      0.26  |Q        |         |   V     |         |
13+15       0.1040      0.27  |Q        |         |   V     |         |
13+20       0.1058      0.27  |Q        |         |    V    |         |
13+25       0.1077      0.27  |Q        |         |    V    |         |
13+30       0.1096      0.28  |Q        |         |     V   |         |
13+35       0.1114      0.26  |Q        |         |     V   |         |
13+40       0.1129      0.21  Q         |         |     V   |         |
13+45       0.1142      0.20  Q         |         |      V  |         |
13+50       0.1156      0.19  Q         |         |      V  |         |
13+55       0.1169      0.19  Q         |         |      V  |         |
14+ 0       0.1182      0.19  Q         |         |       V |         |
14+ 5       0.1195      0.19  Q         |         |       V |         |
14+10       0.1210      0.21  Q         |         |       V |         |
14+15       0.1225      0.21  Q         |         |        V|         |
14+20       0.1239      0.21  Q         |         |        V|         |
14+25       0.1254      0.21  Q         |         |        V|         |
14+30       0.1269      0.21  Q         |         |         V         |
14+35       0.1283      0.21  Q         |         |         V         |
14+40       0.1298      0.21  Q         |         |         V         |
14+45       0.1312      0.21  Q         |         |         |V        |
14+50       0.1327      0.21  Q         |         |         |V        |
14+55       0.1341      0.21  Q         |         |         |V        |
15+ 0       0.1355      0.20  Q         |         |         | V       |
15+ 5       0.1369      0.20  Q         |         |         | V       |
15+10       0.1382      0.20  Q         |         |         | V       |
15+15       0.1396      0.20  Q         |         |         |  V      |
15+20       0.1409      0.19  Q         |         |         |  V      |
15+25       0.1422      0.19  Q         |         |         |  V      |
15+30       0.1435      0.19  Q         |         |         |   V     |
15+35       0.1448      0.18  Q         |         |         |   V     |
15+40       0.1459      0.16  Q         |         |         |   V     |
15+45       0.1470      0.16  Q         |         |         |    V    |
15+50       0.1481      0.16  Q         |         |         |    V    |
15+55       0.1492      0.16  Q         |         |         |    V    |
16+ 0       0.1502      0.16  Q         |         |         |    V    |
16+ 5       0.1511      0.13  Q         |         |         |     V   |
16+10       0.1516      0.07  Q         |         |         |     V   |
16+15       0.1519      0.05  Q         |         |         |     V   |
16+20       0.1522      0.04  Q         |         |         |     V   |
16+25       0.1525      0.04  Q         |         |         |     V   |
16+30       0.1527      0.04  Q         |         |         |     V   |
16+35       0.1530      0.03  Q         |         |         |     V   |
16+40       0.1531      0.03  Q         |         |         |     V   |
16+45       0.1533      0.03  Q         |         |         |     V   |
16+50       0.1535      0.03  Q         |         |         |     V   |
16+55       0.1537      0.02  Q         |         |         |     V   |
17+ 0       0.1538      0.02  Q         |         |         |     V   |
17+ 5       0.1540      0.03  Q         |         |         |     V   |
17+10       0.1543      0.04  Q         |         |         |     V   |
17+15       0.1545      0.04  Q         |         |         |     V   |
17+20       0.1548      0.04  Q         |         |         |     V   |
17+25       0.1551      0.04  Q         |         |         |     V   |
17+30       0.1554      0.04  Q         |         |         |      V  |
17+35       0.1556      0.04  Q         |         |         |      V  |
17+40       0.1559      0.04  Q         |         |         |      V  |
17+45       0.1562      0.04  Q         |         |         |      V  |
17+50       0.1565      0.04  Q         |         |         |      V  |
17+55       0.1567      0.03  Q         |         |         |      V  |
18+ 0       0.1569      0.03  Q         |         |         |      V  |
18+ 5       0.1572      0.03  Q         |         |         |      V  |
18+10       0.1574      0.03  Q         |         |         |      V  |
18+15       0.1576      0.03  Q         |         |         |      V  |
```

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18+20       0.1578      0.03  Q         |         |         |      V  |
18+25       0.1581      0.03  Q         |         |         |      V  |
18+30       0.1583      0.03  Q         |         |         |      V  |
18+35       0.1585      0.03  Q         |         |         |      V  |
18+40       0.1587      0.03  Q         |         |         |      V  |
18+45       0.1589      0.03  Q         |         |         |      V  |
18+50       0.1590      0.02  Q         |         |         |      V  |
18+55       0.1592      0.02  Q         |         |         |      V  |
19+ 0       0.1593      0.02  Q         |         |         |      V  |
19+ 5       0.1594      0.02  Q         |         |         |      V  |
19+10       0.1596      0.02  Q         |         |         |       V |
19+15       0.1597      0.02  Q         |         |         |       V |
19+20       0.1599      0.03  Q         |         |         |       V |
19+25       0.1601      0.03  Q         |         |         |       V |
19+30       0.1603      0.03  Q         |         |         |       V |
19+35       0.1605      0.03  Q         |         |         |       V |
19+40       0.1607      0.03  Q         |         |         |       V |
19+45       0.1609      0.03  Q         |         |         |       V |
19+50       0.1610      0.02  Q         |         |         |       V |
19+55       0.1612      0.02  Q         |         |         |       V |
20+ 0       0.1613      0.02  Q         |         |         |       V |
20+ 5       0.1614      0.02  Q         |         |         |       V |
20+10       0.1616      0.02  Q         |         |         |       V |
20+15       0.1617      0.02  Q         |         |         |       V |
20+20       0.1619      0.02  Q         |         |         |       V |
20+25       0.1621      0.02  Q         |         |         |       V |
20+30       0.1622      0.02  Q         |         |         |       V |
20+35       0.1624      0.02  Q         |         |         |       V |
20+40       0.1626      0.02  Q         |         |         |       V |
20+45       0.1627      0.02  Q         |         |         |       V |
20+50       0.1629      0.02  Q         |         |         |       V |
20+55       0.1630      0.02  Q         |         |         |       V |
21+ 0       0.1631      0.02  Q         |         |         |       V |
21+ 5       0.1633      0.02  Q         |         |         |       V |
21+10       0.1634      0.02  Q         |         |         |       V |
21+15       0.1636      0.02  Q         |         |         |       V |
21+20       0.1637      0.02  Q         |         |         |        V|
21+25       0.1639      0.02  Q         |         |         |        V|
21+30       0.1640      0.02  Q         |         |         |        V|
21+35       0.1641      0.02  Q         |         |         |        V|
21+40       0.1643      0.02  Q         |         |         |        V|
21+45       0.1644      0.02  Q         |         |         |        V|
21+50       0.1646      0.02  Q         |         |         |        V|
21+55       0.1647      0.02  Q         |         |         |        V|
22+ 0       0.1648      0.02  Q         |         |         |        V|
22+ 5       0.1649      0.02  Q         |         |         |        V|
22+10       0.1651      0.02  Q         |         |         |        V|
22+15       0.1653      0.02  Q         |         |         |        V|
22+20       0.1654      0.02  Q         |         |         |        V|
22+25       0.1655      0.02  Q         |         |         |        V|
22+30       0.1657      0.02  Q         |         |         |        V|
22+35       0.1658      0.02  Q         |         |         |        V|
22+40       0.1659      0.02  Q         |         |         |        V|
22+45       0.1660      0.02  Q         |         |         |        V|
22+50       0.1661      0.02  Q         |         |         |        V|
22+55       0.1662      0.02  Q         |         |         |        V|
23+ 0       0.1663      0.02  Q         |         |         |        V|
23+ 5       0.1664      0.02  Q         |         |         |        V|
23+10       0.1666      0.02  Q         |         |         |        V|
23+15       0.1667      0.02  Q         |         |         |        V|
23+20       0.1668      0.02  Q         |         |         |        V|
23+25       0.1669      0.02  Q         |         |         |        V|
23+30       0.1670      0.02  Q         |         |         |        V|
23+35       0.1671      0.02  Q         |         |         |        V|
23+40       0.1672      0.02  Q         |         |         |        V|
23+45       0.1673      0.02  Q         |         |         |        V|
23+50       0.1675      0.02  Q         |         |         |        V|
23+55       0.1676      0.02  Q         |         |         |        V|
24+ 0       0.1677      0.02  Q         |         |         |        V|
24+ 5       0.1678      0.01  Q         |         |         |        V|
24+10       0.1678      0.00  Q         |         |         |        V|
24+15       0.1678      0.00  Q         |         |         |        V|
24+20       0.1678      0.00  Q         |         |         |        V|
24+25       0.1678      0.00  Q         |         |         |        V|
24+30       0.1678      0.00  Q         |         |         |        V|
24+35       0.1678      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

10 YEAR

```
                             EX1HR10YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.48                    4.16

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.20                   10.40

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.776(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.776(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  85.0      0.187     0.000        0.187       1.000      0.187
                                                  Sum (F) =   0.187
Area averaged mean soil loss (F) (In/Hr) =  0.187
Minimum soil loss rate ((In/Hr)) =  0.094
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                        EX1HR10YR
      ----------------------------------------------------------------------

                      U n i t   H y d r o g r a p h
                              VALLEY S-Curve
      --------------------------------------------------------------------
                      Unit Hydrograph Data
      ---------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                              Graph %          (CFS)
      ---------------------------------------------------------------------
          1   0.083        107.972         21.629             1.889
          2   0.167        215.945         48.795             4.261
          3   0.250        323.917         14.549             1.271
          4   0.333        431.890          6.648             0.581
          5   0.417        539.862          3.694             0.323
          6   0.500        647.835          2.331             0.204
          7   0.583        755.807          1.373             0.120
          8   0.667        863.780          0.982             0.086
                                     Sum = 100.000    Sum=        8.733
----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |    Low       (In/Hr)
   1   0.08     4.40      0.410          0.187     (  0.369)       0.223
   2   0.17     4.50      0.419          0.187     (  0.377)       0.232
   3   0.25     5.40      0.503          0.187     (  0.453)       0.316
   4   0.33     5.40      0.503          0.187     (  0.453)       0.316
   5   0.42     5.70      0.531          0.187     (  0.478)       0.344
   6   0.50     6.40      0.596          0.187     (  0.536)       0.409
   7   0.58     7.90      0.736          0.187     (  0.662)       0.549
   8   0.67     9.10      0.848          0.187     (  0.763)       0.661
   9   0.75    12.80      1.192          0.187     (  1.073)       1.005
  10   0.83    25.60      2.384          0.187     (  2.146)       2.197
  11   0.92     7.90      0.736          0.187     (  0.662)       0.549
  12   1.00     4.90      0.456          0.187     (  0.411)       0.269
                (Loss Rate Not Used)
     Sum =     100.0                                     Sum =     7.1
        Flood volume = Effective rainfall      0.59(In)
         times area       8.7(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
        Total soil loss =      0.19(In)
        Total soil loss =     0.135(Ac.Ft)
        Total rainfall =      0.78(In)
        Flood volume =       18531.2 Cubic Feet
        Total soil loss =        5881.9 Cubic Feet
      --------------------------------------------------------------------
         Peak flow rate of this hydrograph =     12.395(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft    Q(CFS)  0        5.0      10.0      15.0      20.0
  -----------------------------------------------------------------------
    0+ 5       0.0029      0.42  Q         |         |         |         |
    0+10       0.0125      1.39  |VQ       |         |         |         |
    0+15       0.0253      1.87  | VQ      |         |         |         |
    0+20       0.0417      2.37  |  VQ     |         |         |         |
    0+25       0.0596      2.61  |    Q    |         |         |         |
    0+30       0.0799      2.94  |    Q V  |         |         |         |
    0+35       0.1045      3.58  |      Q V|         |         |         |
    0+40       0.1357      4.52  |        Q| V       |         |         |
    0+45       0.1762      5.88  |         |Q    V   |         |         |
    0+50       0.2441      9.86  |         |        Q|  V      |         |
    0+55       0.3295     12.40  |         |         |   Q     V         |
    1+ 0       0.3751      6.63  |         |  Q      |         |    V    |
    1+ 5       0.4005      3.68  |      Q  |         |         |      V  |
    1+10       0.4122      1.70  |  Q      |         |         |       V |
    1+15       0.4188      0.96  |Q        |         |         |        V|
    1+20       0.4226      0.55  |Q        |         |         |        V|
    1+25       0.4247      0.31  Q         |         |         |        V|
    1+30       0.4253      0.08  Q         |         |         |        V|
    1+35       0.4254      0.02  Q         |         |         |         V
```

```
                                   EX3HR10YR
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.80                    6.93

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.80                   15.60

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.211(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.211(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  85.0      0.187     0.000        0.187       1.000      0.187
                                                  Sum (F) =   0.187
Area averaged mean soil loss (F) (In/Hr) =  0.187
Minimum soil loss rate ((In/Hr)) =  0.094
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX3HR10YR

U n i t   H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	1.30	0.189	(0.187)	0.170	0.019
2	0.17	1.30	0.189	(0.187)	0.170	0.019
3	0.25	1.10	0.160	(0.187)	0.144	0.016
4	0.33	1.50	0.218	0.187	(0.196)	0.031
5	0.42	1.50	0.218	0.187	(0.196)	0.031
6	0.50	1.80	0.262	0.187	(0.235)	0.075
7	0.58	1.50	0.218	0.187	(0.196)	0.031
8	0.67	1.80	0.262	0.187	(0.235)	0.075
9	0.75	1.80	0.262	0.187	(0.235)	0.075
10	0.83	1.50	0.218	0.187	(0.196)	0.031
11	0.92	1.60	0.233	0.187	(0.209)	0.046
12	1.00	1.80	0.262	0.187	(0.235)	0.075
13	1.08	2.20	0.320	0.187	(0.288)	0.133
14	1.17	2.20	0.320	0.187	(0.288)	0.133
15	1.25	2.20	0.320	0.187	(0.288)	0.133
16	1.33	2.00	0.291	0.187	(0.262)	0.104
17	1.42	2.60	0.378	0.187	(0.340)	0.191
18	1.50	2.70	0.392	0.187	(0.353)	0.205
19	1.58	2.40	0.349	0.187	(0.314)	0.162
20	1.67	2.70	0.392	0.187	(0.353)	0.205
21	1.75	3.30	0.480	0.187	(0.432)	0.293
22	1.83	3.10	0.451	0.187	(0.406)	0.264
23	1.92	2.90	0.422	0.187	(0.379)	0.235
24	2.00	3.00	0.436	0.187	(0.392)	0.249
25	2.08	3.10	0.451	0.187	(0.406)	0.264
26	2.17	4.20	0.611	0.187	(0.549)	0.424
27	2.25	5.00	0.727	0.187	(0.654)	0.540
28	2.33	3.50	0.509	0.187	(0.458)	0.322
29	2.42	6.80	0.988	0.187	(0.890)	0.801
30	2.50	7.30	1.061	0.187	(0.955)	0.874
31	2.58	8.20	1.192	0.187	(1.073)	1.005
32	2.67	5.90	0.858	0.187	(0.772)	0.671
33	2.75	2.00	0.291	0.187	(0.262)	0.104
34	2.83	1.80	0.262	0.187	(0.235)	0.075
35	2.92	1.80	0.262	0.187	(0.235)	0.075
36	3.00	0.60	0.087	(0.187)	0.078	0.009

(Loss Rate Not Used)

Sum = 100.0   Sum = 8.0

Flood volume = Effective rainfall 0.67(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)
Total soil loss = 0.55(In)
Total soil loss = 0.394(Ac.Ft)
Total rainfall = 1.21(In)
Flood volume = 20942.5 Cubic Feet
Total soil loss = 17159.6 Cubic Feet

Peak flow rate of this hydrograph = 7.416(CFS)

++

3 - H O U R   S T O R M
R u n o f f   H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

```
                                                EX3HR10YR
        --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0         2.5       5.0       7.5      10.0
  -----------------------------------------------------------------------
    0+ 5       0.0002      0.04  Q         |         |         |         |
    0+10       0.0010      0.12  Q         |         |         |         |
    0+15       0.0020      0.13  Q         |         |         |         |
    0+20       0.0031      0.16  Q         |         |         |         |
    0+25       0.0047      0.23  Q         |         |         |         |
    0+30       0.0070      0.33  VQ        |         |         |         |
    0+35       0.0100      0.45  VQ        |         |         |         |
    0+40       0.0128      0.40  |Q        |         |         |         |
    0+45       0.0167      0.56  |VQ       |         |         |         |
    0+50       0.0203      0.53  |VQ       |         |         |         |
    0+55       0.0230      0.39  |Q        |         |         |         |
    1+ 0       0.0261      0.46  |QV       |         |         |         |
    1+ 5       0.0309      0.69  | Q       |         |         |         |
    1+10       0.0376      0.98  |  Q      |         |         |         |
    1+15       0.0450      1.07  |  VQ     |         |         |         |
    1+20       0.0522      1.05  |   Q     |         |         |         |
    1+25       0.0599      1.12  |   Q     |         |         |         |
    1+30       0.0702      1.49  |    Q    |         |         |         |
    1+35       0.0810      1.58  |     Q   |         |         |         |
    1+40       0.0916      1.54  |     QV  |         |         |         |
    1+45       0.1045      1.86  |      QV |         |         |         |
    1+50       0.1198      2.23  |       QV|         |         |         |
    1+55       0.1349      2.18  |       Q |V        |         |         |
    2+ 0       0.1495      2.12  |       Q | V       |         |         |
    2+ 5       0.1645      2.18  |       Q |  V      |         |         |
    2+10       0.1821      2.56  |         Q    V    |         |         |
    2+15       0.2062      3.49  |         |  Q   V  |         |         |
    2+20       0.2322      3.79  |         |    Q   V|         |         |
    2+25       0.2598      4.01  |         |     Q   |V        |         |
    2+30       0.3014      6.03  |         |         |   QV    |         |
    2+35       0.3506      7.15  |         |         |       QV|         |
    2+40       0.4016      7.42  |         |         |        Q|  V      |
    2+45       0.4379      5.27  |         |         |Q        |     V   |
    2+50       0.4555      2.55  |         Q         |         |      V  |
    2+55       0.4665      1.61  |     Q   |         |         |       V |
    3+ 0       0.4740      1.08  |   Q     |         |         |        V|
    3+ 5       0.4777      0.54  | Q       |         |         |        V|
    3+10       0.4796      0.27  |Q        |         |         |        V|
    3+15       0.4804      0.11  Q         |         |         |        V|
    3+20       0.4806      0.04  Q         |         |         |        V|
    3+25       0.4807      0.02  Q         |         |         |        V|
    3+30       0.4808      0.01  Q         |         |         |        V|
    3+35       0.4808      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

EX6HR10YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 06/28/16 File: EX610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.10                  9.53

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            2.50                 21.66

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.676(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.676(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  85.0      0.187     0.000        0.187       1.000      0.187
                                                  Sum (F) =   0.187
Area averaged mean soil loss (F) (In/Hr) =  0.187
Minimum soil loss rate ((In/Hr)) =  0.094
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX6HR10YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	0.50	0.101	(0.187)	0.090	0.010
2	0.17	0.60	0.121	(0.187)	0.109	0.012
3	0.25	0.60	0.121	(0.187)	0.109	0.012
4	0.33	0.60	0.121	(0.187)	0.109	0.012
5	0.42	0.60	0.121	(0.187)	0.109	0.012
6	0.50	0.70	0.141	(0.187)	0.127	0.014
7	0.58	0.70	0.141	(0.187)	0.127	0.014
8	0.67	0.70	0.141	(0.187)	0.127	0.014
9	0.75	0.70	0.141	(0.187)	0.127	0.014
10	0.83	0.70	0.141	(0.187)	0.127	0.014
11	0.92	0.70	0.141	(0.187)	0.127	0.014
12	1.00	0.80	0.161	(0.187)	0.145	0.016
13	1.08	0.80	0.161	(0.187)	0.145	0.016
14	1.17	0.80	0.161	(0.187)	0.145	0.016
15	1.25	0.80	0.161	(0.187)	0.145	0.016
16	1.33	0.80	0.161	(0.187)	0.145	0.016
17	1.42	0.80	0.161	(0.187)	0.145	0.016
18	1.50	0.80	0.161	(0.187)	0.145	0.016
19	1.58	0.80	0.161	(0.187)	0.145	0.016
20	1.67	0.80	0.161	(0.187)	0.145	0.016
21	1.75	0.80	0.161	(0.187)	0.145	0.016
22	1.83	0.80	0.161	(0.187)	0.145	0.016
23	1.92	0.80	0.161	(0.187)	0.145	0.016
24	2.00	0.90	0.181	(0.187)	0.163	0.018
25	2.08	0.80	0.161	(0.187)	0.145	0.016
26	2.17	0.90	0.181	(0.187)	0.163	0.018
27	2.25	0.90	0.181	(0.187)	0.163	0.018
28	2.33	0.90	0.181	(0.187)	0.163	0.018
29	2.42	0.90	0.181	(0.187)	0.163	0.018
30	2.50	0.90	0.181	(0.187)	0.163	0.018
31	2.58	0.90	0.181	(0.187)	0.163	0.018
32	2.67	0.90	0.181	(0.187)	0.163	0.018
33	2.75	1.00	0.201	(0.187)	0.181	0.020
34	2.83	1.00	0.201	(0.187)	0.181	0.020
35	2.92	1.00	0.201	(0.187)	0.181	0.020
36	3.00	1.00	0.201	(0.187)	0.181	0.020
37	3.08	1.00	0.201	(0.187)	0.181	0.020
38	3.17	1.10	0.221	0.187	(0.199)	0.034
39	3.25	1.10	0.221	0.187	(0.199)	0.034
40	3.33	1.10	0.221	0.187	(0.199)	0.034
41	3.42	1.20	0.241	0.187	(0.217)	0.054
42	3.50	1.30	0.261	0.187	(0.235)	0.074
43	3.58	1.40	0.282	0.187	(0.253)	0.095
44	3.67	1.40	0.282	0.187	(0.253)	0.095
45	3.75	1.50	0.302	0.187	(0.271)	0.115
46	3.83	1.50	0.302	0.187	(0.271)	0.115
47	3.92	1.60	0.322	0.187	(0.290)	0.135
48	4.00	1.60	0.322	0.187	(0.290)	0.135
49	4.08	1.70	0.342	0.187	(0.308)	0.155
50	4.17	1.80	0.362	0.187	(0.326)	0.175
51	4.25	1.90	0.382	0.187	(0.344)	0.195
52	4.33	2.00	0.402	0.187	(0.362)	0.215
53	4.42	2.10	0.422	0.187	(0.380)	0.235
54	4.50	2.10	0.422	0.187	(0.380)	0.235

EX6HR10YR

55	4.58	2.20	0.442	0.187	(0.398)	0.255
56	4.67	2.30	0.463	0.187	(0.416)	0.276
57	4.75	2.40	0.483	0.187	(0.434)	0.296
58	4.83	2.40	0.483	0.187	(0.434)	0.296
59	4.92	2.50	0.503	0.187	(0.452)	0.316
60	5.00	2.60	0.523	0.187	(0.471)	0.336
61	5.08	3.10	0.623	0.187	(0.561)	0.436
62	5.17	3.60	0.724	0.187	(0.652)	0.537
63	5.25	3.90	0.784	0.187	(0.706)	0.597
64	5.33	4.20	0.845	0.187	(0.760)	0.658
65	5.42	4.70	0.945	0.187	(0.851)	0.758
66	5.50	5.60	1.126	0.187	(1.014)	0.939
67	5.58	1.90	0.382	0.187	(0.344)	0.195
68	5.67	0.90	0.181	(0.187)	0.163	0.018
69	5.75	0.60	0.121	(0.187)	0.109	0.012
70	5.83	0.50	0.101	(0.187)	0.090	0.010
71	5.92	0.30	0.060	(0.187)	0.054	0.006
72	6.00	0.20	0.040	(0.187)	0.036	0.004

```
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     8.7
      Flood volume = Effective rainfall      0.72(In)
       times area       8.7(Ac.)/[(In)/(Ft.)] =       0.5(Ac.Ft)
      Total soil loss =      0.95(In)
      Total soil loss =     0.688(Ac.Ft)
      Total rainfall =      1.68(In)
      Flood volume =      22733.0 Cubic Feet
      Total soil loss =       29981.3 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      6.520(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q         |         |         |         |
  0+10       0.0006      0.07  Q         |         |         |         |
  0+15       0.0012      0.09  Q         |         |         |         |
  0+20       0.0018      0.10  Q         |         |         |         |
  0+25       0.0025      0.10  Q         |         |         |         |
  0+30       0.0033      0.11  Q         |         |         |         |
  0+35       0.0041      0.12  Q         |         |         |         |
  0+40       0.0049      0.12  Q         |         |         |         |
  0+45       0.0057      0.12  Q         |         |         |         |
  0+50       0.0066      0.12  Q         |         |         |         |
  0+55       0.0074      0.12  Q         |         |         |         |
  1+ 0       0.0083      0.13  Q         |         |         |         |
  1+ 5       0.0092      0.14  Q         |         |         |         |
  1+10       0.0102      0.14  Q         |         |         |         |
  1+15       0.0111      0.14  Q         |         |         |         |
  1+20       0.0121      0.14  Q         |         |         |         |
  1+25       0.0131      0.14  QV        |         |         |         |
  1+30       0.0140      0.14  QV        |         |         |         |
  1+35       0.0150      0.14  QV        |         |         |         |
  1+40       0.0160      0.14  QV        |         |         |         |
  1+45       0.0169      0.14  QV        |         |         |         |
  1+50       0.0179      0.14  QV        |         |         |         |
  1+55       0.0189      0.14  QV        |         |         |         |
  2+ 0       0.0199      0.14  QV        |         |         |         |
  2+ 5       0.0209      0.15  QV        |         |         |         |
  2+10       0.0219      0.15  QV        |         |         |         |
  2+15       0.0230      0.15  QV        |         |         |         |
  2+20       0.0240      0.16  QV        |         |         |         |
  2+25       0.0251      0.16  QV        |         |         |         |
  2+30       0.0262      0.16  Q V       |         |         |         |
  2+35       0.0273      0.16  Q V       |         |         |         |
  2+40       0.0284      0.16  Q V       |         |         |         |
  2+45       0.0295      0.16  Q V       |         |         |         |
  2+50       0.0307      0.17  Q V       |         |         |         |
  2+55       0.0319      0.17  Q V       |         |         |         |
  3+ 0       0.0331      0.17  Q V       |         |         |         |
  3+ 5       0.0343      0.17  Q V       |         |         |         |
  3+10       0.0356      0.20  Q V       |         |         |         |
  3+15       0.0375      0.26  |QV       |         |         |         |
  3+20       0.0394      0.28  |Q V      |         |         |         |
```

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                                                EX6HR10YR
    3+25       0.0416      0.33  |Q V      |         |         |         |
    3+30       0.0448      0.45  |Q V      |         |         |         |
    3+35       0.0490      0.61  | QV      |         |         |         |
    3+40       0.0540      0.73  | Q V     |         |         |         |
    3+45       0.0596      0.81  |  QV     |         |         |         |
    3+50       0.0660      0.92  |  Q V    |         |         |         |
    3+55       0.0728      1.00  |  Q V    |         |         |         |
    4+ 0       0.0805      1.11  |   Q V   |         |         |         |
    4+ 5       0.0886      1.18  |   Q V   |         |         |         |
    4+10       0.0977      1.32  |    Q V  |         |         |         |
    4+15       0.1079      1.48  |    Q  V |         |         |         |
    4+20       0.1192      1.65  |     Q  V|         |         |         |
    4+25       0.1317      1.82  |      Q  V         |         |         |
    4+30       0.1451      1.95  |      Q  |V        |         |         |
    4+35       0.1592      2.04  |       Q | V       |         |         |
    4+40       0.1742      2.19  |       Q |  V      |         |         |
    4+45       0.1904      2.35  |        Q|   V     |         |         |
    4+50       0.2076      2.48  |        Q|    V    |         |         |
    4+55       0.2253      2.57  |         Q      V  |         |         |
    5+ 0       0.2440      2.72  |         Q       V |         |         |
    5+ 5       0.2649      3.03  |         | Q       V         |         |
    5+10       0.2903      3.70  |         |   Q     | V       |         |
    5+15       0.3205      4.39  |         |      Q  |   V     |         |
    5+20       0.3547      4.96  |         |        Q|      V  |         |
    5+25       0.3931      5.58  |         |         | Q       V         |
    5+30       0.4380      6.52  |         |         |     Q   |  V      |
    5+35       0.4801      6.10  |         |         |   Q     |     V   |
    5+40       0.5003      2.94  |         |Q        |         |       V |
    5+45       0.5099      1.39  |    Q    |         |         |        V|
    5+50       0.5153      0.79  |  Q      |         |         |        V|
    5+55       0.5186      0.48  |Q        |         |         |        V|
    6+ 0       0.5205      0.28  |Q        |         |         |        V|
    6+ 5       0.5215      0.14  Q         |         |         |        V|
    6+10       0.5218      0.03  Q         |         |         |        V|
    6+15       0.5218      0.01  Q         |         |         |        V|
    6+20       0.5219      0.00  Q         |         |         |        V|
    6+25       0.5219      0.00  Q         |         |         |        V|
    6+30       0.5219      0.00  Q         |         |         |        V|
    6+35       0.5219      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                                    EX24HR10YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
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Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.72                   14.90

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            4.30                   37.26

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    2.781(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.781(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  85.0      0.187     0.000        0.187       1.000      0.187
                                                  Sum (F) =   0.187
Area averaged mean soil loss (F) (In/Hr) =  0.187
Minimum soil loss rate ((In/Hr)) =  0.094
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
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EX24HR10YR

U n i t   H y d r o g r a p h

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.022	(0.331)	0.020	0.002
2	0.17	0.07	0.022	(0.330)	0.020	0.002
3	0.25	0.07	0.022	(0.329)	0.020	0.002
4	0.33	0.10	0.033	(0.328)	0.030	0.003
5	0.42	0.10	0.033	(0.326)	0.030	0.003
6	0.50	0.10	0.033	(0.325)	0.030	0.003
7	0.58	0.10	0.033	(0.324)	0.030	0.003
8	0.67	0.10	0.033	(0.323)	0.030	0.003
9	0.75	0.10	0.033	(0.321)	0.030	0.003
10	0.83	0.13	0.045	(0.320)	0.040	0.004
11	0.92	0.13	0.045	(0.319)	0.040	0.004
12	1.00	0.13	0.045	(0.318)	0.040	0.004
13	1.08	0.10	0.033	(0.316)	0.030	0.003
14	1.17	0.10	0.033	(0.315)	0.030	0.003
15	1.25	0.10	0.033	(0.314)	0.030	0.003
16	1.33	0.10	0.033	(0.313)	0.030	0.003
17	1.42	0.10	0.033	(0.311)	0.030	0.003
18	1.50	0.10	0.033	(0.310)	0.030	0.003
19	1.58	0.10	0.033	(0.309)	0.030	0.003
20	1.67	0.10	0.033	(0.308)	0.030	0.003
21	1.75	0.10	0.033	(0.306)	0.030	0.003
22	1.83	0.13	0.045	(0.305)	0.040	0.004
23	1.92	0.13	0.045	(0.304)	0.040	0.004
24	2.00	0.13	0.045	(0.303)	0.040	0.004
25	2.08	0.13	0.045	(0.301)	0.040	0.004
26	2.17	0.13	0.045	(0.300)	0.040	0.004
27	2.25	0.13	0.045	(0.299)	0.040	0.004
28	2.33	0.13	0.045	(0.298)	0.040	0.004
29	2.42	0.13	0.045	(0.297)	0.040	0.004
30	2.50	0.13	0.045	(0.295)	0.040	0.004
31	2.58	0.17	0.056	(0.294)	0.050	0.006
32	2.67	0.17	0.056	(0.293)	0.050	0.006
33	2.75	0.17	0.056	(0.292)	0.050	0.006
34	2.83	0.17	0.056	(0.291)	0.050	0.006
35	2.92	0.17	0.056	(0.289)	0.050	0.006
36	3.00	0.17	0.056	(0.288)	0.050	0.006
37	3.08	0.17	0.056	(0.287)	0.050	0.006
38	3.17	0.17	0.056	(0.286)	0.050	0.006
39	3.25	0.17	0.056	(0.285)	0.050	0.006
40	3.33	0.17	0.056	(0.283)	0.050	0.006
41	3.42	0.17	0.056	(0.282)	0.050	0.006
42	3.50	0.17	0.056	(0.281)	0.050	0.006
43	3.58	0.17	0.056	(0.280)	0.050	0.006
44	3.67	0.17	0.056	(0.279)	0.050	0.006
45	3.75	0.17	0.056	(0.277)	0.050	0.006
46	3.83	0.20	0.067	(0.276)	0.060	0.007
47	3.92	0.20	0.067	(0.275)	0.060	0.007
48	4.00	0.20	0.067	(0.274)	0.060	0.007
49	4.08	0.20	0.067	(0.273)	0.060	0.007
50	4.17	0.20	0.067	(0.272)	0.060	0.007
51	4.25	0.20	0.067	(0.270)	0.060	0.007
52	4.33	0.23	0.078	(0.269)	0.070	0.008
53	4.42	0.23	0.078	(0.268)	0.070	0.008
54	4.50	0.23	0.078	(0.267)	0.070	0.008

55	4.58	0.23	0.078	(0.266)	0.070	0.008
56	4.67	0.23	0.078	(0.265)	0.070	0.008
57	4.75	0.23	0.078	(0.264)	0.070	0.008
58	4.83	0.27	0.089	(0.262)	0.080	0.009
59	4.92	0.27	0.089	(0.261)	0.080	0.009
60	5.00	0.27	0.089	(0.260)	0.080	0.009
61	5.08	0.20	0.067	(0.259)	0.060	0.007
62	5.17	0.20	0.067	(0.258)	0.060	0.007
63	5.25	0.20	0.067	(0.257)	0.060	0.007
64	5.33	0.23	0.078	(0.256)	0.070	0.008
65	5.42	0.23	0.078	(0.255)	0.070	0.008
66	5.50	0.23	0.078	(0.253)	0.070	0.008
67	5.58	0.27	0.089	(0.252)	0.080	0.009
68	5.67	0.27	0.089	(0.251)	0.080	0.009
69	5.75	0.27	0.089	(0.250)	0.080	0.009
70	5.83	0.27	0.089	(0.249)	0.080	0.009
71	5.92	0.27	0.089	(0.248)	0.080	0.009
72	6.00	0.27	0.089	(0.247)	0.080	0.009
73	6.08	0.30	0.100	(0.246)	0.090	0.010
74	6.17	0.30	0.100	(0.245)	0.090	0.010
75	6.25	0.30	0.100	(0.244)	0.090	0.010
76	6.33	0.30	0.100	(0.242)	0.090	0.010
77	6.42	0.30	0.100	(0.241)	0.090	0.010
78	6.50	0.30	0.100	(0.240)	0.090	0.010
79	6.58	0.33	0.111	(0.239)	0.100	0.011
80	6.67	0.33	0.111	(0.238)	0.100	0.011
81	6.75	0.33	0.111	(0.237)	0.100	0.011
82	6.83	0.33	0.111	(0.236)	0.100	0.011
83	6.92	0.33	0.111	(0.235)	0.100	0.011
84	7.00	0.33	0.111	(0.234)	0.100	0.011
85	7.08	0.33	0.111	(0.233)	0.100	0.011
86	7.17	0.33	0.111	(0.232)	0.100	0.011
87	7.25	0.33	0.111	(0.231)	0.100	0.011
88	7.33	0.37	0.122	(0.230)	0.110	0.012
89	7.42	0.37	0.122	(0.229)	0.110	0.012
90	7.50	0.37	0.122	(0.228)	0.110	0.012
91	7.58	0.40	0.134	(0.226)	0.120	0.013
92	7.67	0.40	0.134	(0.225)	0.120	0.013
93	7.75	0.40	0.134	(0.224)	0.120	0.013
94	7.83	0.43	0.145	(0.223)	0.130	0.014
95	7.92	0.43	0.145	(0.222)	0.130	0.014
96	8.00	0.43	0.145	(0.221)	0.130	0.014
97	8.08	0.50	0.167	(0.220)	0.150	0.017
98	8.17	0.50	0.167	(0.219)	0.150	0.017
99	8.25	0.50	0.167	(0.218)	0.150	0.017
100	8.33	0.50	0.167	(0.217)	0.150	0.017
101	8.42	0.50	0.167	(0.216)	0.150	0.017
102	8.50	0.50	0.167	(0.215)	0.150	0.017
103	8.58	0.53	0.178	(0.214)	0.160	0.018
104	8.67	0.53	0.178	(0.213)	0.160	0.018
105	8.75	0.53	0.178	(0.212)	0.160	0.018
106	8.83	0.57	0.189	(0.211)	0.170	0.019
107	8.92	0.57	0.189	(0.210)	0.170	0.019
108	9.00	0.57	0.189	(0.209)	0.170	0.019
109	9.08	0.63	0.211	(0.208)	0.190	0.021
110	9.17	0.63	0.211	(0.207)	0.190	0.021
111	9.25	0.63	0.211	(0.206)	0.190	0.021
112	9.33	0.67	0.223	(0.205)	0.200	0.022
113	9.42	0.67	0.223	(0.204)	0.200	0.022
114	9.50	0.67	0.223	(0.203)	0.200	0.022
115	9.58	0.70	0.234	0.202	(0.210)	0.031
116	9.67	0.70	0.234	0.201	(0.210)	0.032
117	9.75	0.70	0.234	0.200	(0.210)	0.033
118	9.83	0.73	0.245	0.199	(0.220)	0.045
119	9.92	0.73	0.245	0.198	(0.220)	0.046
120	10.00	0.73	0.245	0.197	(0.220)	0.047
121	10.08	0.50	0.167	(0.197)	0.150	0.017
122	10.17	0.50	0.167	(0.196)	0.150	0.017
123	10.25	0.50	0.167	(0.195)	0.150	0.017
124	10.33	0.50	0.167	(0.194)	0.150	0.017
125	10.42	0.50	0.167	(0.193)	0.150	0.017
126	10.50	0.50	0.167	(0.192)	0.150	0.017
127	10.58	0.67	0.223	0.191	(0.200)	0.032
128	10.67	0.67	0.223	0.190	(0.200)	0.033
129	10.75	0.67	0.223	0.189	(0.200)	0.034
130	10.83	0.67	0.223	0.188	(0.200)	0.034
131	10.92	0.67	0.223	0.187	(0.200)	0.035
132	11.00	0.67	0.223	0.186	(0.200)	0.036
133	11.08	0.63	0.211	0.185	(0.190)	0.026

134	11.17	0.63	0.211	0.184	(0.190)	0.027
135	11.25	0.63	0.211	0.183	(0.190)	0.028
136	11.33	0.63	0.211	0.183	(0.190)	0.029
137	11.42	0.63	0.211	0.182	(0.190)	0.030
138	11.50	0.63	0.211	0.181	(0.190)	0.031
139	11.58	0.57	0.189	(0.180)	0.170	0.019
140	11.67	0.57	0.189	(0.179)	0.170	0.019
141	11.75	0.57	0.189	(0.178)	0.170	0.019
142	11.83	0.60	0.200	0.177	(0.180)	0.023
143	11.92	0.60	0.200	0.176	(0.180)	0.024
144	12.00	0.60	0.200	0.175	(0.180)	0.025
145	12.08	0.83	0.278	0.175	(0.250)	0.104
146	12.17	0.83	0.278	0.174	(0.250)	0.104
147	12.25	0.83	0.278	0.173	(0.250)	0.105
148	12.33	0.87	0.289	0.172	(0.260)	0.117
149	12.42	0.87	0.289	0.171	(0.260)	0.118
150	12.50	0.87	0.289	0.170	(0.260)	0.119
151	12.58	0.93	0.312	0.169	(0.280)	0.142
152	12.67	0.93	0.312	0.169	(0.280)	0.143
153	12.75	0.93	0.312	0.168	(0.280)	0.144
154	12.83	0.97	0.323	0.167	(0.290)	0.156
155	12.92	0.97	0.323	0.166	(0.290)	0.157
156	13.00	0.97	0.323	0.165	(0.290)	0.158
157	13.08	1.13	0.378	0.164	(0.340)	0.214
158	13.17	1.13	0.378	0.163	(0.340)	0.215
159	13.25	1.13	0.378	0.163	(0.340)	0.216
160	13.33	1.13	0.378	0.162	(0.340)	0.216
161	13.42	1.13	0.378	0.161	(0.340)	0.217
162	13.50	1.13	0.378	0.160	(0.340)	0.218
163	13.58	0.77	0.256	0.159	(0.230)	0.097
164	13.67	0.77	0.256	0.159	(0.230)	0.097
165	13.75	0.77	0.256	0.158	(0.230)	0.098
166	13.83	0.77	0.256	0.157	(0.230)	0.099
167	13.92	0.77	0.256	0.156	(0.230)	0.100
168	14.00	0.77	0.256	0.155	(0.230)	0.101
169	14.08	0.90	0.300	0.155	(0.270)	0.146
170	14.17	0.90	0.300	0.154	(0.270)	0.147
171	14.25	0.90	0.300	0.153	(0.270)	0.147
172	14.33	0.87	0.289	0.152	(0.260)	0.137
173	14.42	0.87	0.289	0.151	(0.260)	0.138
174	14.50	0.87	0.289	0.151	(0.260)	0.139
175	14.58	0.87	0.289	0.150	(0.260)	0.139
176	14.67	0.87	0.289	0.149	(0.260)	0.140
177	14.75	0.87	0.289	0.148	(0.260)	0.141
178	14.83	0.83	0.278	0.148	(0.250)	0.131
179	14.92	0.83	0.278	0.147	(0.250)	0.131
180	15.00	0.83	0.278	0.146	(0.250)	0.132
181	15.08	0.80	0.267	0.145	(0.240)	0.122
182	15.17	0.80	0.267	0.145	(0.240)	0.122
183	15.25	0.80	0.267	0.144	(0.240)	0.123
184	15.33	0.77	0.256	0.143	(0.230)	0.113
185	15.42	0.77	0.256	0.142	(0.230)	0.114
186	15.50	0.77	0.256	0.142	(0.230)	0.114
187	15.58	0.63	0.211	0.141	(0.190)	0.070
188	15.67	0.63	0.211	0.140	(0.190)	0.071
189	15.75	0.63	0.211	0.139	(0.190)	0.072
190	15.83	0.63	0.211	0.139	(0.190)	0.073
191	15.92	0.63	0.211	0.138	(0.190)	0.073
192	16.00	0.63	0.211	0.137	(0.190)	0.074
193	16.08	0.13	0.045	(0.137)	0.040	0.004
194	16.17	0.13	0.045	(0.136)	0.040	0.004
195	16.25	0.13	0.045	(0.135)	0.040	0.004
196	16.33	0.13	0.045	(0.135)	0.040	0.004
197	16.42	0.13	0.045	(0.134)	0.040	0.004
198	16.50	0.13	0.045	(0.133)	0.040	0.004
199	16.58	0.10	0.033	(0.132)	0.030	0.003
200	16.67	0.10	0.033	(0.132)	0.030	0.003
201	16.75	0.10	0.033	(0.131)	0.030	0.003
202	16.83	0.10	0.033	(0.130)	0.030	0.003
203	16.92	0.10	0.033	(0.130)	0.030	0.003
204	17.00	0.10	0.033	(0.129)	0.030	0.003
205	17.08	0.17	0.056	(0.129)	0.050	0.006
206	17.17	0.17	0.056	(0.128)	0.050	0.006
207	17.25	0.17	0.056	(0.127)	0.050	0.006
208	17.33	0.17	0.056	(0.127)	0.050	0.006
209	17.42	0.17	0.056	(0.126)	0.050	0.006
210	17.50	0.17	0.056	(0.125)	0.050	0.006
211	17.58	0.17	0.056	(0.125)	0.050	0.006
212	17.67	0.17	0.056	(0.124)	0.050	0.006

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213	17.75	0.17	0.056	(0.123)	0.050	0.006
214	17.83	0.13	0.045	(0.123)	0.040	0.004
215	17.92	0.13	0.045	(0.122)	0.040	0.004
216	18.00	0.13	0.045	(0.122)	0.040	0.004
217	18.08	0.13	0.045	(0.121)	0.040	0.004
218	18.17	0.13	0.045	(0.120)	0.040	0.004
219	18.25	0.13	0.045	(0.120)	0.040	0.004
220	18.33	0.13	0.045	(0.119)	0.040	0.004
221	18.42	0.13	0.045	(0.119)	0.040	0.004
222	18.50	0.13	0.045	(0.118)	0.040	0.004
223	18.58	0.10	0.033	(0.118)	0.030	0.003
224	18.67	0.10	0.033	(0.117)	0.030	0.003
225	18.75	0.10	0.033	(0.116)	0.030	0.003
226	18.83	0.07	0.022	(0.116)	0.020	0.002
227	18.92	0.07	0.022	(0.115)	0.020	0.002
228	19.00	0.07	0.022	(0.115)	0.020	0.002
229	19.08	0.10	0.033	(0.114)	0.030	0.003
230	19.17	0.10	0.033	(0.114)	0.030	0.003
231	19.25	0.10	0.033	(0.113)	0.030	0.003
232	19.33	0.13	0.045	(0.113)	0.040	0.004
233	19.42	0.13	0.045	(0.112)	0.040	0.004
234	19.50	0.13	0.045	(0.112)	0.040	0.004
235	19.58	0.10	0.033	(0.111)	0.030	0.003
236	19.67	0.10	0.033	(0.111)	0.030	0.003
237	19.75	0.10	0.033	(0.110)	0.030	0.003
238	19.83	0.07	0.022	(0.110)	0.020	0.002
239	19.92	0.07	0.022	(0.109)	0.020	0.002
240	20.00	0.07	0.022	(0.109)	0.020	0.002
241	20.08	0.10	0.033	(0.108)	0.030	0.003
242	20.17	0.10	0.033	(0.108)	0.030	0.003
243	20.25	0.10	0.033	(0.107)	0.030	0.003
244	20.33	0.10	0.033	(0.107)	0.030	0.003
245	20.42	0.10	0.033	(0.106)	0.030	0.003
246	20.50	0.10	0.033	(0.106)	0.030	0.003
247	20.58	0.10	0.033	(0.105)	0.030	0.003
248	20.67	0.10	0.033	(0.105)	0.030	0.003
249	20.75	0.10	0.033	(0.104)	0.030	0.003
250	20.83	0.07	0.022	(0.104)	0.020	0.002
251	20.92	0.07	0.022	(0.104)	0.020	0.002
252	21.00	0.07	0.022	(0.103)	0.020	0.002
253	21.08	0.10	0.033	(0.103)	0.030	0.003
254	21.17	0.10	0.033	(0.102)	0.030	0.003
255	21.25	0.10	0.033	(0.102)	0.030	0.003
256	21.33	0.07	0.022	(0.102)	0.020	0.002
257	21.42	0.07	0.022	(0.101)	0.020	0.002
258	21.50	0.07	0.022	(0.101)	0.020	0.002
259	21.58	0.10	0.033	(0.100)	0.030	0.003
260	21.67	0.10	0.033	(0.100)	0.030	0.003
261	21.75	0.10	0.033	(0.100)	0.030	0.003
262	21.83	0.07	0.022	(0.099)	0.020	0.002
263	21.92	0.07	0.022	(0.099)	0.020	0.002
264	22.00	0.07	0.022	(0.099)	0.020	0.002
265	22.08	0.10	0.033	(0.098)	0.030	0.003
266	22.17	0.10	0.033	(0.098)	0.030	0.003
267	22.25	0.10	0.033	(0.098)	0.030	0.003
268	22.33	0.07	0.022	(0.097)	0.020	0.002
269	22.42	0.07	0.022	(0.097)	0.020	0.002
270	22.50	0.07	0.022	(0.097)	0.020	0.002
271	22.58	0.07	0.022	(0.097)	0.020	0.002
272	22.67	0.07	0.022	(0.096)	0.020	0.002
273	22.75	0.07	0.022	(0.096)	0.020	0.002
274	22.83	0.07	0.022	(0.096)	0.020	0.002
275	22.92	0.07	0.022	(0.096)	0.020	0.002
276	23.00	0.07	0.022	(0.095)	0.020	0.002
277	23.08	0.07	0.022	(0.095)	0.020	0.002
278	23.17	0.07	0.022	(0.095)	0.020	0.002
279	23.25	0.07	0.022	(0.095)	0.020	0.002
280	23.33	0.07	0.022	(0.095)	0.020	0.002
281	23.42	0.07	0.022	(0.094)	0.020	0.002
282	23.50	0.07	0.022	(0.094)	0.020	0.002
283	23.58	0.07	0.022	(0.094)	0.020	0.002
284	23.67	0.07	0.022	(0.094)	0.020	0.002
285	23.75	0.07	0.022	(0.094)	0.020	0.002
286	23.83	0.07	0.022	(0.094)	0.020	0.002
287	23.92	0.07	0.022	(0.094)	0.020	0.002
288	24.00	0.07	0.022	(0.094)	0.020	0.002

(Loss Rate Not Used)

Sum = 100.0 Sum = 8.4

Flood volume = Effective rainfall 0.70(In)

```
                                   EX24HR10YR
  times area       8.7(Ac.)/[(In)/(Ft.)] =       0.5(Ac.Ft)
 Total soil loss =      2.08(In)
 Total soil loss =     1.500(Ac.Ft)
 Total rainfall =      2.78(In)
 Flood volume =       22143.1 Cubic Feet
 Total soil loss =       65342.5 Cubic Feet
 --------------------------------------------------------------------
  Peak flow rate of this hydrograph =      1.884(CFS)
 --------------------------------------------------------------------
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                     24 - H O U R   S T O R M
                R u n o f f      H y d r o g r a p h
 --------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

 --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0002      0.02  Q         |         |         |         |
  0+20       0.0004      0.02  Q         |         |         |         |
  0+25       0.0005      0.03  Q         |         |         |         |
  0+30       0.0007      0.03  Q         |         |         |         |
  0+35       0.0009      0.03  Q         |         |         |         |
  0+40       0.0011      0.03  Q         |         |         |         |
  0+45       0.0013      0.03  Q         |         |         |         |
  0+50       0.0015      0.03  Q         |         |         |         |
  0+55       0.0018      0.04  Q         |         |         |         |
  1+ 0       0.0020      0.04  Q         |         |         |         |
  1+ 5       0.0023      0.04  Q         |         |         |         |
  1+10       0.0025      0.03  Q         |         |         |         |
  1+15       0.0027      0.03  Q         |         |         |         |
  1+20       0.0029      0.03  Q         |         |         |         |
  1+25       0.0031      0.03  Q         |         |         |         |
  1+30       0.0033      0.03  Q         |         |         |         |
  1+35       0.0035      0.03  Q         |         |         |         |
  1+40       0.0037      0.03  Q         |         |         |         |
  1+45       0.0039      0.03  Q         |         |         |         |
  1+50       0.0042      0.03  Q         |         |         |         |
  1+55       0.0044      0.04  Q         |         |         |         |
  2+ 0       0.0047      0.04  Q         |         |         |         |
  2+ 5       0.0049      0.04  Q         |         |         |         |
  2+10       0.0052      0.04  Q         |         |         |         |
  2+15       0.0055      0.04  Q         |         |         |         |
  2+20       0.0057      0.04  Q         |         |         |         |
  2+25       0.0060      0.04  Q         |         |         |         |
  2+30       0.0063      0.04  Q         |         |         |         |
  2+35       0.0065      0.04  Q         |         |         |         |
  2+40       0.0069      0.05  Q         |         |         |         |
  2+45       0.0072      0.05  Q         |         |         |         |
  2+50       0.0075      0.05  Q         |         |         |         |
  2+55       0.0078      0.05  Q         |         |         |         |
  3+ 0       0.0082      0.05  Q         |         |         |         |
  3+ 5       0.0085      0.05  Q         |         |         |         |
  3+10       0.0088      0.05  Q         |         |         |         |
  3+15       0.0092      0.05  Q         |         |         |         |
  3+20       0.0095      0.05  Q         |         |         |         |
  3+25       0.0098      0.05  Q         |         |         |         |
  3+30       0.0102      0.05  Q         |         |         |         |
  3+35       0.0105      0.05  Q         |         |         |         |
  3+40       0.0108      0.05  Q         |         |         |         |
  3+45       0.0112      0.05  Q         |         |         |         |
  3+50       0.0115      0.05  Q         |         |         |         |
  3+55       0.0119      0.06  Q         |         |         |         |
  4+ 0       0.0123      0.06  Q         |         |         |         |
  4+ 5       0.0127      0.06  Q         |         |         |         |
  4+10       0.0131      0.06  QV        |         |         |         |
  4+15       0.0135      0.06  QV        |         |         |         |
  4+20       0.0139      0.06  QV        |         |         |         |
  4+25       0.0144      0.07  QV        |         |         |         |
  4+30       0.0148      0.07  QV        |         |         |         |
  4+35       0.0153      0.07  QV        |         |         |         |
  4+40       0.0158      0.07  QV        |         |         |         |
  4+45       0.0162      0.07  QV        |         |         |         |
  4+50       0.0167      0.07  QV        |         |         |         |
  4+55       0.0172      0.07  QV        |         |         |         |
  5+ 0       0.0177      0.08  QV        |         |         |         |
  5+ 5       0.0182      0.07  QV        |         |         |         |
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 5+10       0.0187      0.06  QV        |         |         |         |
 5+15       0.0191      0.06  QV        |         |         |         |
 5+20       0.0195      0.06  QV        |         |         |         |
 5+25       0.0200      0.07  QV        |         |         |         |
 5+30       0.0204      0.07  QV        |         |         |         |
 5+35       0.0209      0.07  QV        |         |         |         |
 5+40       0.0214      0.07  QV        |         |         |         |
 5+45       0.0220      0.08  QV        |         |         |         |
 5+50       0.0225      0.08  QV        |         |         |         |
 5+55       0.0230      0.08  QV        |         |         |         |
 6+ 0       0.0236      0.08  QV        |         |         |         |
 6+ 5       0.0241      0.08  QV        |         |         |         |
 6+10       0.0247      0.08  QV        |         |         |         |
 6+15       0.0253      0.09  QV        |         |         |         |
 6+20       0.0259      0.09  Q V       |         |         |         |
 6+25       0.0265      0.09  Q V       |         |         |         |
 6+30       0.0271      0.09  Q V       |         |         |         |
 6+35       0.0277      0.09  Q V       |         |         |         |
 6+40       0.0283      0.09  Q V       |         |         |         |
 6+45       0.0290      0.10  Q V       |         |         |         |
 6+50       0.0297      0.10  Q V       |         |         |         |
 6+55       0.0303      0.10  Q V       |         |         |         |
 7+ 0       0.0310      0.10  Q V       |         |         |         |
 7+ 5       0.0317      0.10  Q V       |         |         |         |
 7+10       0.0323      0.10  Q V       |         |         |         |
 7+15       0.0330      0.10  Q V       |         |         |         |
 7+20       0.0337      0.10  Q V       |         |         |         |
 7+25       0.0344      0.10  Q V       |         |         |         |
 7+30       0.0351      0.11  Q V       |         |         |         |
 7+35       0.0359      0.11  Q V       |         |         |         |
 7+40       0.0367      0.11  Q V       |         |         |         |
 7+45       0.0375      0.11  Q V       |         |         |         |
 7+50       0.0383      0.12  Q  V      |         |         |         |
 7+55       0.0391      0.12  Q  V      |         |         |         |
 8+ 0       0.0400      0.12  Q  V      |         |         |         |
 8+ 5       0.0409      0.13  Q  V      |         |         |         |
 8+10       0.0418      0.14  Q  V      |         |         |         |
 8+15       0.0428      0.14  Q  V      |         |         |         |
 8+20       0.0438      0.14  Q  V      |         |         |         |
 8+25       0.0448      0.14  Q  V      |         |         |         |
 8+30       0.0458      0.15  Q  V      |         |         |         |
 8+35       0.0468      0.15  Q  V      |         |         |         |
 8+40       0.0479      0.15  Q  V      |         |         |         |
 8+45       0.0489      0.15  Q  V      |         |         |         |
 8+50       0.0500      0.16  Q  V      |         |         |         |
 8+55       0.0511      0.16  Q   V     |         |         |         |
 9+ 0       0.0523      0.16  Q   V     |         |         |         |
 9+ 5       0.0534      0.17  Q   V     |         |         |         |
 9+10       0.0546      0.18  Q   V     |         |         |         |
 9+15       0.0559      0.18  Q   V     |         |         |         |
 9+20       0.0572      0.19  Q   V     |         |         |         |
 9+25       0.0585      0.19  Q   V     |         |         |         |
 9+30       0.0598      0.19  Q   V     |         |         |         |
 9+35       0.0613      0.21  Q   V     |         |         |         |
 9+40       0.0630      0.25  |Q  V     |         |         |         |
 9+45       0.0648      0.27  |Q   V    |         |         |         |
 9+50       0.0669      0.30  |Q   V    |         |         |         |
 9+55       0.0694      0.36  |Q   V    |         |         |         |
10+ 0       0.0721      0.39  |Q   V    |         |         |         |
10+ 5       0.0744      0.34  |Q   V    |         |         |         |
10+10       0.0759      0.22  Q    V    |         |         |         |
10+15       0.0772      0.18  Q     V   |         |         |         |
10+20       0.0783      0.17  Q     V   |         |         |         |
10+25       0.0794      0.16  Q     V   |         |         |         |
10+30       0.0805      0.15  Q     V   |         |         |         |
10+35       0.0817      0.18  Q     V   |         |         |         |
10+40       0.0833      0.24  Q     V   |         |         |         |
10+45       0.0852      0.26  |Q    V   |         |         |         |
10+50       0.0871      0.28  |Q    V   |         |         |         |
10+55       0.0891      0.29  |Q     V  |         |         |         |
11+ 0       0.0912      0.30  |Q     V  |         |         |         |
11+ 5       0.0932      0.29  |Q     V  |         |         |         |
11+10       0.0949      0.25  |Q     V  |         |         |         |
11+15       0.0966      0.25  Q      V  |         |         |         |
11+20       0.0983      0.25  Q      V  |         |         |         |
11+25       0.1001      0.25  |Q     V  |         |         |         |
11+30       0.1019      0.26  |Q      V |         |         |         |
11+35       0.1035      0.24  Q       V |         |         |         |
11+40       0.1049      0.19  Q       V |         |         |         |
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11+45       0.1061      0.18  Q       V |         |         |         |
11+50       0.1073      0.18  Q       V |         |         |         |
11+55       0.1087      0.20  Q       V |         |         |         |
12+ 0       0.1101      0.21  Q       V |         |         |         |
12+ 5       0.1126      0.36  |Q      V |         |         |         |
12+10       0.1174      0.70  | Q      V|         |         |         |
12+15       0.1230      0.81  |  Q     V|         |         |         |
12+20       0.1290      0.88  |  Q      V         |         |         |
12+25       0.1357      0.96  |  Q      V         |         |         |
12+30       0.1425      1.00  |  Q      |V        |         |         |
12+35       0.1499      1.06  |   Q     |V        |         |         |
12+40       0.1580      1.18  |   Q     | V       |         |         |
12+45       0.1663      1.21  |   Q     |  V      |         |         |
12+50       0.1750      1.26  |    Q    |  V      |         |         |
12+55       0.1841      1.32  |    Q    |   V     |         |         |
13+ 0       0.1934      1.35  |    Q    |    V    |         |         |
13+ 5       0.2035      1.47  |    Q    |     V   |         |         |
13+10       0.2153      1.72  |     Q   |     V   |         |         |
13+15       0.2277      1.80  |      Q  |      V  |         |         |
13+20       0.2404      1.84  |      Q  |       V |         |         |
13+25       0.2532      1.87  |      Q  |        V|         |         |
13+30       0.2662      1.88  |      Q  |         V         |         |
13+35       0.2777      1.67  |     Q   |         |V        |         |
13+40       0.2857      1.16  |   Q     |         | V       |         |
13+45       0.2926      1.01  |   Q     |         |  V      |         |
13+50       0.2991      0.94  |  Q      |         |  V      |         |
13+55       0.3054      0.91  |  Q      |         |   V     |         |
14+ 0       0.3115      0.89  |  Q      |         |   V     |         |
14+ 5       0.3182      0.97  |  Q      |         |    V    |         |
14+10       0.3262      1.16  |   Q     |         |    V    |         |
14+15       0.3346      1.22  |   Q     |         |     V   |         |
14+20       0.3431      1.23  |   Q     |         |     V   |         |
14+25       0.3514      1.21  |   Q     |         |      V  |         |
14+30       0.3597      1.21  |   Q     |         |       V |         |
14+35       0.3680      1.21  |   Q     |         |       V |         |
14+40       0.3764      1.22  |   Q     |         |        V|         |
14+45       0.3849      1.22  |   Q     |         |         V         |
14+50       0.3932      1.21  |   Q     |         |         V         |
14+55       0.4012      1.17  |   Q     |         |         |V        |
15+ 0       0.4092      1.16  |   Q     |         |         | V       |
15+ 5       0.4171      1.14  |   Q     |         |         | V       |
15+10       0.4246      1.09  |   Q     |         |         |  V      |
15+15       0.4321      1.08  |   Q     |         |         |  V      |
15+20       0.4394      1.06  |   Q     |         |         |   V     |
15+25       0.4464      1.02  |   Q     |         |         |    V    |
15+30       0.4533      1.01  |   Q     |         |         |    V    |
15+35       0.4597      0.92  |  Q      |         |         |     V   |
15+40       0.4647      0.73  | Q       |         |         |     V   |
15+45       0.4694      0.68  | Q       |         |         |     V   |
15+50       0.4739      0.66  | Q       |         |         |      V  |
15+55       0.4784      0.65  | Q       |         |         |      V  |
16+ 0       0.4829      0.65  | Q       |         |         |      V  |
16+ 5       0.4864      0.52  | Q       |         |         |       V |
16+10       0.4879      0.22  Q         |         |         |       V |
16+15       0.4888      0.13  Q         |         |         |       V |
16+20       0.4894      0.09  Q         |         |         |       V |
16+25       0.4899      0.07  Q         |         |         |       V |
16+30       0.4902      0.05  Q         |         |         |       V |
16+35       0.4905      0.04  Q         |         |         |       V |
16+40       0.4908      0.03  Q         |         |         |       V |
16+45       0.4910      0.03  Q         |         |         |       V |
16+50       0.4912      0.03  Q         |         |         |       V |
16+55       0.4914      0.03  Q         |         |         |       V |
17+ 0       0.4916      0.03  Q         |         |         |       V |
17+ 5       0.4918      0.03  Q         |         |         |       V |
17+10       0.4921      0.04  Q         |         |         |       V |
17+15       0.4924      0.05  Q         |         |         |       V |
17+20       0.4927      0.05  Q         |         |         |       V |
17+25       0.4931      0.05  Q         |         |         |       V |
17+30       0.4934      0.05  Q         |         |         |       V |
17+35       0.4937      0.05  Q         |         |         |       V |
17+40       0.4941      0.05  Q         |         |         |       V |
17+45       0.4944      0.05  Q         |         |         |       V |
17+50       0.4947      0.05  Q         |         |         |       V |
17+55       0.4950      0.04  Q         |         |         |       V |
18+ 0       0.4953      0.04  Q         |         |         |       V |
18+ 5       0.4956      0.04  Q         |         |         |       V |
18+10       0.4958      0.04  Q         |         |         |        V|
18+15       0.4961      0.04  Q         |         |         |        V|
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 18+20      0.4964      0.04  Q         |         |         |        V|
 18+25      0.4966      0.04  Q         |         |         |        V|
 18+30      0.4969      0.04  Q         |         |         |        V|
 18+35      0.4972      0.04  Q         |         |         |        V|
 18+40      0.4974      0.03  Q         |         |         |        V|
 18+45      0.4976      0.03  Q         |         |         |        V|
 18+50      0.4978      0.03  Q         |         |         |        V|
 18+55      0.4979      0.02  Q         |         |         |        V|
 19+ 0      0.4981      0.02  Q         |         |         |        V|
 19+ 5      0.4982      0.02  Q         |         |         |        V|
 19+10      0.4984      0.03  Q         |         |         |        V|
 19+15      0.4986      0.03  Q         |         |         |        V|
 19+20      0.4988      0.03  Q         |         |         |        V|
 19+25      0.4991      0.04  Q         |         |         |        V|
 19+30      0.4993      0.04  Q         |         |         |        V|
 19+35      0.4996      0.04  Q         |         |         |        V|
 19+40      0.4998      0.03  Q         |         |         |        V|
 19+45      0.5000      0.03  Q         |         |         |        V|
 19+50      0.5002      0.03  Q         |         |         |        V|
 19+55      0.5004      0.02  Q         |         |         |        V|
 20+ 0      0.5005      0.02  Q         |         |         |        V|
 20+ 5      0.5007      0.02  Q         |         |         |        V|
 20+10      0.5008      0.03  Q         |         |         |        V|
 20+15      0.5010      0.03  Q         |         |         |        V|
 20+20      0.5012      0.03  Q         |         |         |        V|
 20+25      0.5014      0.03  Q         |         |         |        V|
 20+30      0.5016      0.03  Q         |         |         |        V|
 20+35      0.5018      0.03  Q         |         |         |        V|
 20+40      0.5020      0.03  Q         |         |         |        V|
 20+45      0.5022      0.03  Q         |         |         |        V|
 20+50      0.5024      0.03  Q         |         |         |        V|
 20+55      0.5026      0.02  Q         |         |         |        V|
 21+ 0      0.5027      0.02  Q         |         |         |        V|
 21+ 5      0.5029      0.02  Q         |         |         |        V|
 21+10      0.5031      0.03  Q         |         |         |        V|
 21+15      0.5032      0.03  Q         |         |         |        V|
 21+20      0.5034      0.03  Q         |         |         |        V|
 21+25      0.5036      0.02  Q         |         |         |        V|
 21+30      0.5037      0.02  Q         |         |         |        V|
 21+35      0.5039      0.02  Q         |         |         |        V|
 21+40      0.5041      0.03  Q         |         |         |        V|
 21+45      0.5042      0.03  Q         |         |         |        V|
 21+50      0.5044      0.03  Q         |         |         |        V|
 21+55      0.5046      0.02  Q         |         |         |        V|
 22+ 0      0.5047      0.02  Q         |         |         |        V|
 22+ 5      0.5049      0.02  Q         |         |         |        V|
 22+10      0.5051      0.03  Q         |         |         |        V|
 22+15      0.5053      0.03  Q         |         |         |        V|
 22+20      0.5054      0.03  Q         |         |         |        V|
 22+25      0.5056      0.02  Q         |         |         |        V|
 22+30      0.5057      0.02  Q         |         |         |        V|
 22+35      0.5059      0.02  Q         |         |         |        V|
 22+40      0.5060      0.02  Q         |         |         |        V|
 22+45      0.5061      0.02  Q         |         |         |        V|
 22+50      0.5063      0.02  Q         |         |         |        V|
 22+55      0.5064      0.02  Q         |         |         |        V|
 23+ 0      0.5065      0.02  Q         |         |         |        V|
 23+ 5      0.5067      0.02  Q         |         |         |        V|
 23+10      0.5068      0.02  Q         |         |         |        V|
 23+15      0.5069      0.02  Q         |         |         |        V|
 23+20      0.5071      0.02  Q         |         |         |        V|
 23+25      0.5072      0.02  Q         |         |         |        V|
 23+30      0.5073      0.02  Q         |         |         |        V|
 23+35      0.5075      0.02  Q         |         |         |        V|
 23+40      0.5076      0.02  Q         |         |         |        V|
 23+45      0.5077      0.02  Q         |         |         |        V|
 23+50      0.5079      0.02  Q         |         |         |        V|
 23+55      0.5080      0.02  Q         |         |         |        V|
 24+ 0      0.5081      0.02  Q         |         |         |        V|
 24+ 5      0.5083      0.02  Q         |         |         |        V|
 24+10      0.5083      0.01  Q         |         |         |        V|
 24+15      0.5083      0.00  Q         |         |         |        V|
 24+20      0.5083      0.00  Q         |         |         |        V|
 24+25      0.5083      0.00  Q         |         |         |        V|
 24+30      0.5083      0.00  Q         |         |         |        V|
 24+35      0.5083      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

100 YEAR

```
                                EX1HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.48                    4.16

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.20                   10.40

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    1.200(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.200(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%      F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  85.0      0.187     0.000        0.187       1.000      0.187
                                                  Sum (F) =   0.187
Area averaged mean soil loss (F) (In/Hr) =  0.187
Minimum soil loss rate ((In/Hr)) =  0.094
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                   EX1HR100YR
        ----------------------------------------------------------------------

                        U n i t   H y d r o g r a p h
                                VALLEY S-Curve
        --------------------------------------------------------------------
                        Unit Hydrograph Data
        ---------------------------------------------------------------------
        Unit time period   Time % of lag   Distribution   Unit Hydrograph
            (hrs)                            Graph %           (CFS)
        ---------------------------------------------------------------------
            1   0.083        107.972         21.629              1.889
            2   0.167        215.945         48.795              4.261
            3   0.250        323.917         14.549              1.271
            4   0.333        431.890          6.648              0.581
            5   0.417        539.862          3.694              0.323
            6   0.500        647.835          2.331              0.204
            7   0.583        755.807          1.373              0.120
            8   0.667        863.780          0.982              0.086
                                     Sum = 100.000   Sum=        8.733
----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)          Max    |    Low        (In/Hr)
   1   0.08     4.40      0.634           0.187     (  0.570)        0.447
   2   0.17     4.50      0.648           0.187     (  0.583)        0.461
   3   0.25     5.40      0.778           0.187     (  0.700)        0.591
   4   0.33     5.40      0.778           0.187     (  0.700)        0.591
   5   0.42     5.70      0.821           0.187     (  0.739)        0.634
   6   0.50     6.40      0.922           0.187     (  0.829)        0.735
   7   0.58     7.90      1.138           0.187     (  1.024)        0.951
   8   0.67     9.10      1.310           0.187     (  1.179)        1.123
   9   0.75    12.80      1.843           0.187     (  1.659)        1.656
  10   0.83    25.60      3.686           0.187     (  3.317)        3.499
  11   0.92     7.90      1.138           0.187     (  1.024)        0.951
  12   1.00     4.90      0.706           0.187     (  0.635)        0.519
                 (Loss Rate Not Used)
     Sum =     100.0                                         Sum =    12.2
        Flood volume = Effective rainfall      1.01(In)
         times area       8.7(Ac.)/[(In)/(Ft.)] =       0.7(Ac.Ft)
        Total soil loss =      0.19(In)
        Total soil loss =     0.135(Ac.Ft)
        Total rainfall =      1.20(In)
        Flood volume =       31859.9 Cubic Feet
        Total soil loss =        5881.9 Cubic Feet
        --------------------------------------------------------------------
         Peak flow rate of this hydrograph =     20.055(CFS)
        --------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                             1 - H O U R    S T O R M
                         R u n o f f      H y d r o g r a p h
        --------------------------------------------------------------------
                      Hydrograph in   5   Minute intervals ((CFS))

        --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
  -----------------------------------------------------------------------
    0+ 5       0.0058      0.84  VQ        |         |         |         |
    0+10       0.0249      2.77  |V Q      |         |         |         |
    0+15       0.0501      3.65  | V Q     |         |         |         |
    0+20       0.0809      4.48  |   VQ    |         |         |         |
    0+25       0.1145      4.88  |     Q   |         |         |         |
    0+30       0.1518      5.42  |      QV |         |         |         |
    0+35       0.1960      6.41  |       Q V         |         |         |
    0+40       0.2503      7.88  |         Q  V      |         |         |
    0+45       0.3191      9.99  |         |  Q   V  |         |         |
    0+50       0.4303     16.14  |         |         |Q V      |         |
    0+55       0.5684     20.05  |         |         |     Q   |V        |
    1+ 0       0.6451     11.14  |         |   Q     |         |    V    |
    1+ 5       0.6891      6.39  |       Q |         |         |      V  |
    1+10       0.7090      2.89  |  Q      |         |         |       V |
    1+15       0.7202      1.62  | Q       |         |         |        V|
    1+20       0.7265      0.92  |Q        |         |         |        V|
    1+25       0.7301      0.52  Q         |         |         |        V|
    1+30       0.7311      0.14  Q         |         |         |        V|
    1+35       0.7314      0.04  Q         |         |         |         V
```

```
                          EX3HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.80                    6.93

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.80                   15.60

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.800(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.800(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  85.0      0.187     0.000        0.187       1.000      0.187
                                                  Sum (F) =   0.187
Area averaged mean soil loss (F) (In/Hr) =  0.187
Minimum soil loss rate ((In/Hr)) =  0.094
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX3HR100YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.281	0.187	(0.253)	0.094
2	0.17	1.30	0.281	0.187	(0.253)	0.094
3	0.25	1.10	0.238	0.187	(0.214)	0.051
4	0.33	1.50	0.324	0.187	(0.292)	0.137
5	0.42	1.50	0.324	0.187	(0.292)	0.137
6	0.50	1.80	0.389	0.187	(0.350)	0.202
7	0.58	1.50	0.324	0.187	(0.292)	0.137
8	0.67	1.80	0.389	0.187	(0.350)	0.202
9	0.75	1.80	0.389	0.187	(0.350)	0.202
10	0.83	1.50	0.324	0.187	(0.292)	0.137
11	0.92	1.60	0.346	0.187	(0.311)	0.159
12	1.00	1.80	0.389	0.187	(0.350)	0.202
13	1.08	2.20	0.475	0.187	(0.428)	0.288
14	1.17	2.20	0.475	0.187	(0.428)	0.288
15	1.25	2.20	0.475	0.187	(0.428)	0.288
16	1.33	2.00	0.432	0.187	(0.389)	0.245
17	1.42	2.60	0.562	0.187	(0.505)	0.375
18	1.50	2.70	0.583	0.187	(0.525)	0.396
19	1.58	2.40	0.518	0.187	(0.467)	0.331
20	1.67	2.70	0.583	0.187	(0.525)	0.396
21	1.75	3.30	0.713	0.187	(0.641)	0.526
22	1.83	3.10	0.670	0.187	(0.603)	0.483
23	1.92	2.90	0.626	0.187	(0.564)	0.439
24	2.00	3.00	0.648	0.187	(0.583)	0.461
25	2.08	3.10	0.670	0.187	(0.603)	0.483
26	2.17	4.20	0.907	0.187	(0.816)	0.720
27	2.25	5.00	1.080	0.187	(0.972)	0.893
28	2.33	3.50	0.756	0.187	(0.680)	0.569
29	2.42	6.80	1.469	0.187	(1.322)	1.282
30	2.50	7.30	1.577	0.187	(1.419)	1.390
31	2.58	8.20	1.771	0.187	(1.594)	1.584
32	2.67	5.90	1.274	0.187	(1.147)	1.087
33	2.75	2.00	0.432	0.187	(0.389)	0.245
34	2.83	1.80	0.389	0.187	(0.350)	0.202
35	2.92	1.80	0.389	0.187	(0.350)	0.202
36	3.00	0.60	0.130	(0.187)	0.117	0.013

(Loss Rate Not Used)

Sum = 100.0 Sum = 14.9

Flood volume = Effective rainfall 1.24(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.9(Ac.Ft)
Total soil loss = 0.56(In)
Total soil loss = 0.401(Ac.Ft)
Total rainfall = 1.80(In)
Flood volume = 39153.7 Cubic Feet
Total soil loss = 17461.2 Cubic Feet

Peak flow rate of this hydrograph = 11.813(CFS)

+++

3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

```
                                               EX3HR100YR
        --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
  -----------------------------------------------------------------------
    0+ 5       0.0012      0.18  Q         |         |         |         |
    0+10       0.0052      0.58  VQ        |         |         |         |
    0+15       0.0094      0.61  VQ        |         |         |         |
    0+20       0.0139      0.65  VQ        |         |         |         |
    0+25       0.0207      0.99  VQ        |         |         |         |
    0+30       0.0291      1.22  |VQ       |         |         |         |
    0+35       0.0389      1.42  |VQ       |         |         |         |
    0+40       0.0484      1.38  | Q       |         |         |         |
    0+45       0.0595      1.62  | VQ      |         |         |         |
    0+50       0.0703      1.57  |  Q      |         |         |         |
    0+55       0.0798      1.37  | QV      |         |         |         |
    1+ 0       0.0899      1.48  | Q V     |         |         |         |
    1+ 5       0.1025      1.83  |  QV     |         |         |         |
    1+10       0.1180      2.24  |   QV    |         |         |         |
    1+15       0.1343      2.38  |   QV    |         |         |         |
    1+20       0.1506      2.36  |   Q V   |         |         |         |
    1+25       0.1674      2.45  |   Q  V  |         |         |         |
    1+30       0.1882      3.01  |     Q V |         |         |         |
    1+35       0.2098      3.14  |     Q  V|         |         |         |
    1+40       0.2310      3.08  |     Q   V         |         |         |
    1+45       0.2556      3.56  |      Q  |V        |         |         |
    1+50       0.2839      4.11  |       Q | V       |         |         |
    1+55       0.3117      4.04  |       Q |  V      |         |         |
    2+ 0       0.3388      3.94  |      Q  |    V    |         |         |
    2+ 5       0.3666      4.04  |       Q |     V   |         |         |
    2+10       0.3983      4.60  |        Q|      V  |         |         |
    2+15       0.4394      5.98  |         |Q       V|         |         |
    2+20       0.4837      6.42  |         | Q       |V        |         |
    2+25       0.5301      6.75  |         |  Q      |  V      |         |
    2+30       0.5973      9.76  |         |        Q|     V   |         |
    2+35       0.6759     11.41  |         |         | Q       V         |
    2+40       0.7572     11.81  |         |         |  Q      |  V      |
    2+45       0.8166      8.62  |         |      Q  |         |     V   |
    2+50       0.8482      4.58  |        Q|         |         |      V  |
    2+55       0.8701      3.18  |     Q   |         |         |       V |
    3+ 0       0.8855      2.23  |   Q     |         |         |        V|
    3+ 5       0.8926      1.04  | Q       |         |         |        V|
    3+10       0.8962      0.52  |Q        |         |         |        V|
    3+15       0.8978      0.24  Q         |         |         |        V|
    3+20       0.8984      0.09  Q         |         |         |        V|
    3+25       0.8987      0.04  Q         |         |         |        V|
    3+30       0.8988      0.02  Q         |         |         |        V|
    3+35       0.8988      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

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                                 EX6HR100YR
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX6100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.10                   9.53

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            2.50                  21.66

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    2.500(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.500(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  85.0      0.187     0.000        0.187       1.000      0.187
                                                  Sum (F) =   0.187
Area averaged mean soil loss (F) (In/Hr) =  0.187
Minimum soil loss rate ((In/Hr)) =  0.094
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
```

EX6HR100YR
U n i t   H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.150	(0.187)	0.135	0.015
2	0.17	0.60	0.180	(0.187)	0.162	0.018
3	0.25	0.60	0.180	(0.187)	0.162	0.018
4	0.33	0.60	0.180	(0.187)	0.162	0.018
5	0.42	0.60	0.180	(0.187)	0.162	0.018
6	0.50	0.70	0.210	0.187	(0.189)	0.023
7	0.58	0.70	0.210	0.187	(0.189)	0.023
8	0.67	0.70	0.210	0.187	(0.189)	0.023
9	0.75	0.70	0.210	0.187	(0.189)	0.023
10	0.83	0.70	0.210	0.187	(0.189)	0.023
11	0.92	0.70	0.210	0.187	(0.189)	0.023
12	1.00	0.80	0.240	0.187	(0.216)	0.053
13	1.08	0.80	0.240	0.187	(0.216)	0.053
14	1.17	0.80	0.240	0.187	(0.216)	0.053
15	1.25	0.80	0.240	0.187	(0.216)	0.053
16	1.33	0.80	0.240	0.187	(0.216)	0.053
17	1.42	0.80	0.240	0.187	(0.216)	0.053
18	1.50	0.80	0.240	0.187	(0.216)	0.053
19	1.58	0.80	0.240	0.187	(0.216)	0.053
20	1.67	0.80	0.240	0.187	(0.216)	0.053
21	1.75	0.80	0.240	0.187	(0.216)	0.053
22	1.83	0.80	0.240	0.187	(0.216)	0.053
23	1.92	0.80	0.240	0.187	(0.216)	0.053
24	2.00	0.90	0.270	0.187	(0.243)	0.083
25	2.08	0.80	0.240	0.187	(0.216)	0.053
26	2.17	0.90	0.270	0.187	(0.243)	0.083
27	2.25	0.90	0.270	0.187	(0.243)	0.083
28	2.33	0.90	0.270	0.187	(0.243)	0.083
29	2.42	0.90	0.270	0.187	(0.243)	0.083
30	2.50	0.90	0.270	0.187	(0.243)	0.083
31	2.58	0.90	0.270	0.187	(0.243)	0.083
32	2.67	0.90	0.270	0.187	(0.243)	0.083
33	2.75	1.00	0.300	0.187	(0.270)	0.113
34	2.83	1.00	0.300	0.187	(0.270)	0.113
35	2.92	1.00	0.300	0.187	(0.270)	0.113
36	3.00	1.00	0.300	0.187	(0.270)	0.113
37	3.08	1.00	0.300	0.187	(0.270)	0.113
38	3.17	1.10	0.330	0.187	(0.297)	0.143
39	3.25	1.10	0.330	0.187	(0.297)	0.143
40	3.33	1.10	0.330	0.187	(0.297)	0.143
41	3.42	1.20	0.360	0.187	(0.324)	0.173
42	3.50	1.30	0.390	0.187	(0.351)	0.203
43	3.58	1.40	0.420	0.187	(0.378)	0.233
44	3.67	1.40	0.420	0.187	(0.378)	0.233
45	3.75	1.50	0.450	0.187	(0.405)	0.263
46	3.83	1.50	0.450	0.187	(0.405)	0.263
47	3.92	1.60	0.480	0.187	(0.432)	0.293
48	4.00	1.60	0.480	0.187	(0.432)	0.293
49	4.08	1.70	0.510	0.187	(0.459)	0.323
50	4.17	1.80	0.540	0.187	(0.486)	0.353
51	4.25	1.90	0.570	0.187	(0.513)	0.383
52	4.33	2.00	0.600	0.187	(0.540)	0.413
53	4.42	2.10	0.630	0.187	(0.567)	0.443
54	4.50	2.10	0.630	0.187	(0.567)	0.443

```
55   4.58     2.20      0.660          0.187    (  0.594)        0.473
56   4.67     2.30      0.690          0.187    (  0.621)        0.503
57   4.75     2.40      0.720          0.187    (  0.648)        0.533
58   4.83     2.40      0.720          0.187    (  0.648)        0.533
59   4.92     2.50      0.750          0.187    (  0.675)        0.563
60   5.00     2.60      0.780          0.187    (  0.702)        0.593
61   5.08     3.10      0.930          0.187    (  0.837)        0.743
62   5.17     3.60      1.080          0.187    (  0.972)        0.893
63   5.25     3.90      1.170          0.187    (  1.053)        0.983
64   5.33     4.20      1.260          0.187    (  1.134)        1.073
65   5.42     4.70      1.410          0.187    (  1.269)        1.223
66   5.50     5.60      1.680          0.187    (  1.512)        1.493
67   5.58     1.90      0.570          0.187    (  0.513)        0.383
68   5.67     0.90      0.270          0.187    (  0.243)        0.083
69   5.75     0.60      0.180       (  0.187)       0.162        0.018
70   5.83     0.50      0.150       (  0.187)       0.135        0.015
71   5.92     0.30      0.090       (  0.187)       0.081        0.009
72   6.00     0.20      0.060       (  0.187)       0.054        0.006
               (Loss Rate Not Used)
   Sum =     100.0                                 Sum =    17.0
      Flood volume = Effective rainfall      1.42(In)
       times area       8.7(Ac.)/[(In)/(Ft.)] =       1.0(Ac.Ft)
      Total soil loss =      1.08(In)
      Total soil loss =     0.782(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =      44568.0 Cubic Feet
      Total soil loss =       34064.5 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     10.529(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           6 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0009      0.10  Q         |         |         |         |
  0+15       0.0018      0.13  Q         |         |         |         |
  0+20       0.0027      0.14  Q         |         |         |         |
  0+25       0.0038      0.15  Q         |         |         |         |
  0+30       0.0049      0.16  Q         |         |         |         |
  0+35       0.0062      0.19  Q         |         |         |         |
  0+40       0.0075      0.19  Q         |         |         |         |
  0+45       0.0089      0.20  Q         |         |         |         |
  0+50       0.0102      0.20  Q         |         |         |         |
  0+55       0.0116      0.20  Q         |         |         |         |
  1+ 0       0.0134      0.26  Q         |         |         |         |
  1+ 5       0.0160      0.39  Q         |         |         |         |
  1+10       0.0190      0.42  Q         |         |         |         |
  1+15       0.0220      0.44  Q         |         |         |         |
  1+20       0.0251      0.45  Q         |         |         |         |
  1+25       0.0282      0.46  QV        |         |         |         |
  1+30       0.0314      0.46  QV        |         |         |         |
  1+35       0.0346      0.46  QV        |         |         |         |
  1+40       0.0378      0.46  QV        |         |         |         |
  1+45       0.0410      0.46  QV        |         |         |         |
  1+50       0.0442      0.46  QV        |         |         |         |
  1+55       0.0474      0.46  QV        |         |         |         |
  2+ 0       0.0509      0.52   |Q       |         |         |         |
  2+ 5       0.0550      0.59   |QV      |         |         |         |
  2+10       0.0588      0.56   |QV      |         |         |         |
  2+15       0.0634      0.67   |QV      |         |         |         |
  2+20       0.0682      0.70   |QV      |         |         |         |
  2+25       0.0731      0.71   |QV      |         |         |         |
  2+30       0.0780      0.72   |Q V     |         |         |         |
  2+35       0.0830      0.72   |Q V     |         |         |         |
  2+40       0.0880      0.72   |Q V     |         |         |         |
  2+45       0.0934      0.78   |Q V     |         |         |         |
  2+50       0.0996      0.91   |Q V     |         |         |         |
  2+55       0.1062      0.95   |Q  V    |         |         |         |
  3+ 0       0.1128      0.97   |Q  V    |         |         |         |
  3+ 5       0.1195      0.97   |Q  V    |         |         |         |
  3+10       0.1267      1.04   | Q V    |         |         |         |
  3+15       0.1347      1.17   | Q  V   |         |         |         |
  3+20       0.1431      1.21   | Q  V   |         |         |         |
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                                               EX6HR100YR
    3+25       0.1519      1.28  | Q  V    |         |         |         |
    3+30       0.1621      1.48  | Q   V   |         |         |         |
    3+35       0.1738      1.71  |  Q  V   |         |         |         |
    3+40       0.1869      1.89  |  Q   V  |         |         |         |
    3+45       0.2008      2.02  |   Q  V  |         |         |         |
    3+50       0.2158      2.18  |   Q   V |         |         |         |
    3+55       0.2316      2.29  |   Q    V|         |         |         |
    4+ 0       0.2485      2.45  |   Q    V|         |         |         |
    4+ 5       0.2661      2.56  |    Q    V         |         |         |
    4+10       0.2852      2.77  |    Q    |V        |         |         |
    4+15       0.3059      3.01  |     Q   |V        |         |         |
    4+20       0.3284      3.26  |     Q   | V       |         |         |
    4+25       0.3526      3.51  |      Q  |  V      |         |         |
    4+30       0.3781      3.71  |      Q  |   V     |         |         |
    4+35       0.4046      3.84  |      Q  |    V    |         |         |
    4+40       0.4326      4.07  |       Q |     V   |         |         |
    4+45       0.4623      4.31  |       Q |       V |         |         |
    4+50       0.4934      4.51  |        Q|        V|         |         |
    4+55       0.5253      4.64  |        Q|         V         |         |
    5+ 0       0.5588      4.86  |        Q|         |V        |         |
    5+ 5       0.5955      5.33  |         Q         |  V      |         |
    5+10       0.6390      6.32  |         | Q       |   V     |         |
    5+15       0.6896      7.35  |         |   Q     |     V   |         |
    5+20       0.7461      8.20  |         |     Q   |        V|         |
    5+25       0.8089      9.13  |         |       Q |         |V        |
    5+30       0.8815     10.53  |         |         |Q        |   V     |
    5+35       0.9497      9.91  |         |        Q|         |      V  |
    5+40       0.9849      5.12  |         Q         |         |       V |
    5+45       1.0025      2.55  |    Q    |         |         |        V|
    5+50       1.0120      1.38  | Q       |         |         |        V|
    5+55       1.0176      0.82  |Q        |         |         |        V|
    6+ 0       1.0208      0.47  Q         |         |         |        V|
    6+ 5       1.0225      0.24  Q         |         |         |        V|
    6+10       1.0229      0.06  Q         |         |         |        V|
    6+15       1.0231      0.02  Q         |         |         |        V|
    6+20       1.0231      0.01  Q         |         |         |        V|
    6+25       1.0231      0.00  Q         |         |         |        V|
    6+30       1.0231      0.00  Q         |         |         |        V|
    6+35       1.0231      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
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                              EX24HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.72                  14.90

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            4.30                  37.26

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    4.300(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  85.0      0.187     0.000        0.187       1.000      0.187
                                                  Sum (F) =   0.187
Area averaged mean soil loss (F) (In/Hr) =  0.187
Minimum soil loss rate ((In/Hr)) =  0.094
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
---------------------------------------------------------------------
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EX24HR100YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.034	(0.331)	0.031	0.003
2	0.17	0.07	0.034	(0.330)	0.031	0.003
3	0.25	0.07	0.034	(0.329)	0.031	0.003
4	0.33	0.10	0.052	(0.328)	0.046	0.005
5	0.42	0.10	0.052	(0.326)	0.046	0.005
6	0.50	0.10	0.052	(0.325)	0.046	0.005
7	0.58	0.10	0.052	(0.324)	0.046	0.005
8	0.67	0.10	0.052	(0.323)	0.046	0.005
9	0.75	0.10	0.052	(0.321)	0.046	0.005
10	0.83	0.13	0.069	(0.320)	0.062	0.007
11	0.92	0.13	0.069	(0.319)	0.062	0.007
12	1.00	0.13	0.069	(0.318)	0.062	0.007
13	1.08	0.10	0.052	(0.316)	0.046	0.005
14	1.17	0.10	0.052	(0.315)	0.046	0.005
15	1.25	0.10	0.052	(0.314)	0.046	0.005
16	1.33	0.10	0.052	(0.313)	0.046	0.005
17	1.42	0.10	0.052	(0.311)	0.046	0.005
18	1.50	0.10	0.052	(0.310)	0.046	0.005
19	1.58	0.10	0.052	(0.309)	0.046	0.005
20	1.67	0.10	0.052	(0.308)	0.046	0.005
21	1.75	0.10	0.052	(0.306)	0.046	0.005
22	1.83	0.13	0.069	(0.305)	0.062	0.007
23	1.92	0.13	0.069	(0.304)	0.062	0.007
24	2.00	0.13	0.069	(0.303)	0.062	0.007
25	2.08	0.13	0.069	(0.301)	0.062	0.007
26	2.17	0.13	0.069	(0.300)	0.062	0.007
27	2.25	0.13	0.069	(0.299)	0.062	0.007
28	2.33	0.13	0.069	(0.298)	0.062	0.007
29	2.42	0.13	0.069	(0.297)	0.062	0.007
30	2.50	0.13	0.069	(0.295)	0.062	0.007
31	2.58	0.17	0.086	(0.294)	0.077	0.009
32	2.67	0.17	0.086	(0.293)	0.077	0.009
33	2.75	0.17	0.086	(0.292)	0.077	0.009
34	2.83	0.17	0.086	(0.291)	0.077	0.009
35	2.92	0.17	0.086	(0.289)	0.077	0.009
36	3.00	0.17	0.086	(0.288)	0.077	0.009
37	3.08	0.17	0.086	(0.287)	0.077	0.009
38	3.17	0.17	0.086	(0.286)	0.077	0.009
39	3.25	0.17	0.086	(0.285)	0.077	0.009
40	3.33	0.17	0.086	(0.283)	0.077	0.009
41	3.42	0.17	0.086	(0.282)	0.077	0.009
42	3.50	0.17	0.086	(0.281)	0.077	0.009
43	3.58	0.17	0.086	(0.280)	0.077	0.009
44	3.67	0.17	0.086	(0.279)	0.077	0.009
45	3.75	0.17	0.086	(0.277)	0.077	0.009
46	3.83	0.20	0.103	(0.276)	0.093	0.010
47	3.92	0.20	0.103	(0.275)	0.093	0.010
48	4.00	0.20	0.103	(0.274)	0.093	0.010
49	4.08	0.20	0.103	(0.273)	0.093	0.010
50	4.17	0.20	0.103	(0.272)	0.093	0.010
51	4.25	0.20	0.103	(0.270)	0.093	0.010
52	4.33	0.23	0.120	(0.269)	0.108	0.012
53	4.42	0.23	0.120	(0.268)	0.108	0.012
54	4.50	0.23	0.120	(0.267)	0.108	0.012

55	4.58	0.23	0.120	(0.266)	0.108	0.012
56	4.67	0.23	0.120	(0.265)	0.108	0.012
57	4.75	0.23	0.120	(0.264)	0.108	0.012
58	4.83	0.27	0.138	(0.262)	0.124	0.014
59	4.92	0.27	0.138	(0.261)	0.124	0.014
60	5.00	0.27	0.138	(0.260)	0.124	0.014
61	5.08	0.20	0.103	(0.259)	0.093	0.010
62	5.17	0.20	0.103	(0.258)	0.093	0.010
63	5.25	0.20	0.103	(0.257)	0.093	0.010
64	5.33	0.23	0.120	(0.256)	0.108	0.012
65	5.42	0.23	0.120	(0.255)	0.108	0.012
66	5.50	0.23	0.120	(0.253)	0.108	0.012
67	5.58	0.27	0.138	(0.252)	0.124	0.014
68	5.67	0.27	0.138	(0.251)	0.124	0.014
69	5.75	0.27	0.138	(0.250)	0.124	0.014
70	5.83	0.27	0.138	(0.249)	0.124	0.014
71	5.92	0.27	0.138	(0.248)	0.124	0.014
72	6.00	0.27	0.138	(0.247)	0.124	0.014
73	6.08	0.30	0.155	(0.246)	0.139	0.015
74	6.17	0.30	0.155	(0.245)	0.139	0.015
75	6.25	0.30	0.155	(0.244)	0.139	0.015
76	6.33	0.30	0.155	(0.242)	0.139	0.015
77	6.42	0.30	0.155	(0.241)	0.139	0.015
78	6.50	0.30	0.155	(0.240)	0.139	0.015
79	6.58	0.33	0.172	(0.239)	0.155	0.017
80	6.67	0.33	0.172	(0.238)	0.155	0.017
81	6.75	0.33	0.172	(0.237)	0.155	0.017
82	6.83	0.33	0.172	(0.236)	0.155	0.017
83	6.92	0.33	0.172	(0.235)	0.155	0.017
84	7.00	0.33	0.172	(0.234)	0.155	0.017
85	7.08	0.33	0.172	(0.233)	0.155	0.017
86	7.17	0.33	0.172	(0.232)	0.155	0.017
87	7.25	0.33	0.172	(0.231)	0.155	0.017
88	7.33	0.37	0.189	(0.230)	0.170	0.019
89	7.42	0.37	0.189	(0.229)	0.170	0.019
90	7.50	0.37	0.189	(0.228)	0.170	0.019
91	7.58	0.40	0.206	(0.226)	0.186	0.021
92	7.67	0.40	0.206	(0.225)	0.186	0.021
93	7.75	0.40	0.206	(0.224)	0.186	0.021
94	7.83	0.43	0.224	(0.223)	0.201	0.022
95	7.92	0.43	0.224	(0.222)	0.201	0.022
96	8.00	0.43	0.224	(0.221)	0.201	0.022
97	8.08	0.50	0.258	0.220	(0.232)	0.038
98	8.17	0.50	0.258	0.219	(0.232)	0.039
99	8.25	0.50	0.258	0.218	(0.232)	0.040
100	8.33	0.50	0.258	0.217	(0.232)	0.041
101	8.42	0.50	0.258	0.216	(0.232)	0.042
102	8.50	0.50	0.258	0.215	(0.232)	0.043
103	8.58	0.53	0.275	0.214	(0.248)	0.061
104	8.67	0.53	0.275	0.213	(0.248)	0.062
105	8.75	0.53	0.275	0.212	(0.248)	0.063
106	8.83	0.57	0.292	0.211	(0.263)	0.081
107	8.92	0.57	0.292	0.210	(0.263)	0.082
108	9.00	0.57	0.292	0.209	(0.263)	0.083
109	9.08	0.63	0.327	0.208	(0.294)	0.119
110	9.17	0.63	0.327	0.207	(0.294)	0.120
111	9.25	0.63	0.327	0.206	(0.294)	0.121
112	9.33	0.67	0.344	0.205	(0.310)	0.139
113	9.42	0.67	0.344	0.204	(0.310)	0.140
114	9.50	0.67	0.344	0.203	(0.310)	0.141
115	9.58	0.70	0.361	0.202	(0.325)	0.159
116	9.67	0.70	0.361	0.201	(0.325)	0.160
117	9.75	0.70	0.361	0.200	(0.325)	0.161
118	9.83	0.73	0.378	0.199	(0.341)	0.179
119	9.92	0.73	0.378	0.198	(0.341)	0.180
120	10.00	0.73	0.378	0.197	(0.341)	0.181
121	10.08	0.50	0.258	0.197	(0.232)	0.061
122	10.17	0.50	0.258	0.196	(0.232)	0.062
123	10.25	0.50	0.258	0.195	(0.232)	0.063
124	10.33	0.50	0.258	0.194	(0.232)	0.064
125	10.42	0.50	0.258	0.193	(0.232)	0.065
126	10.50	0.50	0.258	0.192	(0.232)	0.066
127	10.58	0.67	0.344	0.191	(0.310)	0.153
128	10.67	0.67	0.344	0.190	(0.310)	0.154
129	10.75	0.67	0.344	0.189	(0.310)	0.155
130	10.83	0.67	0.344	0.188	(0.310)	0.156
131	10.92	0.67	0.344	0.187	(0.310)	0.157
132	11.00	0.67	0.344	0.186	(0.310)	0.158
133	11.08	0.63	0.327	0.185	(0.294)	0.141

134	11.17	0.63	0.327	0.184	(0.294)	0.142
135	11.25	0.63	0.327	0.183	(0.294)	0.143
136	11.33	0.63	0.327	0.183	(0.294)	0.144
137	11.42	0.63	0.327	0.182	(0.294)	0.145
138	11.50	0.63	0.327	0.181	(0.294)	0.146
139	11.58	0.57	0.292	0.180	(0.263)	0.113
140	11.67	0.57	0.292	0.179	(0.263)	0.113
141	11.75	0.57	0.292	0.178	(0.263)	0.114
142	11.83	0.60	0.310	0.177	(0.279)	0.132
143	11.92	0.60	0.310	0.176	(0.279)	0.133
144	12.00	0.60	0.310	0.175	(0.279)	0.134
145	12.08	0.83	0.430	0.175	(0.387)	0.255
146	12.17	0.83	0.430	0.174	(0.387)	0.256
147	12.25	0.83	0.430	0.173	(0.387)	0.257
148	12.33	0.87	0.447	0.172	(0.402)	0.275
149	12.42	0.87	0.447	0.171	(0.402)	0.276
150	12.50	0.87	0.447	0.170	(0.402)	0.277
151	12.58	0.93	0.482	0.169	(0.433)	0.312
152	12.67	0.93	0.482	0.169	(0.433)	0.313
153	12.75	0.93	0.482	0.168	(0.433)	0.314
154	12.83	0.97	0.499	0.167	(0.449)	0.332
155	12.92	0.97	0.499	0.166	(0.449)	0.333
156	13.00	0.97	0.499	0.165	(0.449)	0.334
157	13.08	1.13	0.585	0.164	(0.526)	0.420
158	13.17	1.13	0.585	0.163	(0.526)	0.421
159	13.25	1.13	0.585	0.163	(0.526)	0.422
160	13.33	1.13	0.585	0.162	(0.526)	0.423
161	13.42	1.13	0.585	0.161	(0.526)	0.424
162	13.50	1.13	0.585	0.160	(0.526)	0.425
163	13.58	0.77	0.396	0.159	(0.356)	0.236
164	13.67	0.77	0.396	0.159	(0.356)	0.237
165	13.75	0.77	0.396	0.158	(0.356)	0.238
166	13.83	0.77	0.396	0.157	(0.356)	0.239
167	13.92	0.77	0.396	0.156	(0.356)	0.239
168	14.00	0.77	0.396	0.155	(0.356)	0.240
169	14.08	0.90	0.464	0.155	(0.418)	0.310
170	14.17	0.90	0.464	0.154	(0.418)	0.311
171	14.25	0.90	0.464	0.153	(0.418)	0.311
172	14.33	0.87	0.447	0.152	(0.402)	0.295
173	14.42	0.87	0.447	0.151	(0.402)	0.296
174	14.50	0.87	0.447	0.151	(0.402)	0.297
175	14.58	0.87	0.447	0.150	(0.402)	0.297
176	14.67	0.87	0.447	0.149	(0.402)	0.298
177	14.75	0.87	0.447	0.148	(0.402)	0.299
178	14.83	0.83	0.430	0.148	(0.387)	0.282
179	14.92	0.83	0.430	0.147	(0.387)	0.283
180	15.00	0.83	0.430	0.146	(0.387)	0.284
181	15.08	0.80	0.413	0.145	(0.372)	0.267
182	15.17	0.80	0.413	0.145	(0.372)	0.268
183	15.25	0.80	0.413	0.144	(0.372)	0.269
184	15.33	0.77	0.396	0.143	(0.356)	0.253
185	15.42	0.77	0.396	0.142	(0.356)	0.253
186	15.50	0.77	0.396	0.142	(0.356)	0.254
187	15.58	0.63	0.327	0.141	(0.294)	0.186
188	15.67	0.63	0.327	0.140	(0.294)	0.187
189	15.75	0.63	0.327	0.139	(0.294)	0.187
190	15.83	0.63	0.327	0.139	(0.294)	0.188
191	15.92	0.63	0.327	0.138	(0.294)	0.189
192	16.00	0.63	0.327	0.137	(0.294)	0.189
193	16.08	0.13	0.069	(0.137)	0.062	0.007
194	16.17	0.13	0.069	(0.136)	0.062	0.007
195	16.25	0.13	0.069	(0.135)	0.062	0.007
196	16.33	0.13	0.069	(0.135)	0.062	0.007
197	16.42	0.13	0.069	(0.134)	0.062	0.007
198	16.50	0.13	0.069	(0.133)	0.062	0.007
199	16.58	0.10	0.052	(0.132)	0.046	0.005
200	16.67	0.10	0.052	(0.132)	0.046	0.005
201	16.75	0.10	0.052	(0.131)	0.046	0.005
202	16.83	0.10	0.052	(0.130)	0.046	0.005
203	16.92	0.10	0.052	(0.130)	0.046	0.005
204	17.00	0.10	0.052	(0.129)	0.046	0.005
205	17.08	0.17	0.086	(0.129)	0.077	0.009
206	17.17	0.17	0.086	(0.128)	0.077	0.009
207	17.25	0.17	0.086	(0.127)	0.077	0.009
208	17.33	0.17	0.086	(0.127)	0.077	0.009
209	17.42	0.17	0.086	(0.126)	0.077	0.009
210	17.50	0.17	0.086	(0.125)	0.077	0.009
211	17.58	0.17	0.086	(0.125)	0.077	0.009
212	17.67	0.17	0.086	(0.124)	0.077	0.009

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213	17.75	0.17	0.086	(0.123)	0.077	0.009
214	17.83	0.13	0.069	(0.123)	0.062	0.007
215	17.92	0.13	0.069	(0.122)	0.062	0.007
216	18.00	0.13	0.069	(0.122)	0.062	0.007
217	18.08	0.13	0.069	(0.121)	0.062	0.007
218	18.17	0.13	0.069	(0.120)	0.062	0.007
219	18.25	0.13	0.069	(0.120)	0.062	0.007
220	18.33	0.13	0.069	(0.119)	0.062	0.007
221	18.42	0.13	0.069	(0.119)	0.062	0.007
222	18.50	0.13	0.069	(0.118)	0.062	0.007
223	18.58	0.10	0.052	(0.118)	0.046	0.005
224	18.67	0.10	0.052	(0.117)	0.046	0.005
225	18.75	0.10	0.052	(0.116)	0.046	0.005
226	18.83	0.07	0.034	(0.116)	0.031	0.003
227	18.92	0.07	0.034	(0.115)	0.031	0.003
228	19.00	0.07	0.034	(0.115)	0.031	0.003
229	19.08	0.10	0.052	(0.114)	0.046	0.005
230	19.17	0.10	0.052	(0.114)	0.046	0.005
231	19.25	0.10	0.052	(0.113)	0.046	0.005
232	19.33	0.13	0.069	(0.113)	0.062	0.007
233	19.42	0.13	0.069	(0.112)	0.062	0.007
234	19.50	0.13	0.069	(0.112)	0.062	0.007
235	19.58	0.10	0.052	(0.111)	0.046	0.005
236	19.67	0.10	0.052	(0.111)	0.046	0.005
237	19.75	0.10	0.052	(0.110)	0.046	0.005
238	19.83	0.07	0.034	(0.110)	0.031	0.003
239	19.92	0.07	0.034	(0.109)	0.031	0.003
240	20.00	0.07	0.034	(0.109)	0.031	0.003
241	20.08	0.10	0.052	(0.108)	0.046	0.005
242	20.17	0.10	0.052	(0.108)	0.046	0.005
243	20.25	0.10	0.052	(0.107)	0.046	0.005
244	20.33	0.10	0.052	(0.107)	0.046	0.005
245	20.42	0.10	0.052	(0.106)	0.046	0.005
246	20.50	0.10	0.052	(0.106)	0.046	0.005
247	20.58	0.10	0.052	(0.105)	0.046	0.005
248	20.67	0.10	0.052	(0.105)	0.046	0.005
249	20.75	0.10	0.052	(0.104)	0.046	0.005
250	20.83	0.07	0.034	(0.104)	0.031	0.003
251	20.92	0.07	0.034	(0.104)	0.031	0.003
252	21.00	0.07	0.034	(0.103)	0.031	0.003
253	21.08	0.10	0.052	(0.103)	0.046	0.005
254	21.17	0.10	0.052	(0.102)	0.046	0.005
255	21.25	0.10	0.052	(0.102)	0.046	0.005
256	21.33	0.07	0.034	(0.102)	0.031	0.003
257	21.42	0.07	0.034	(0.101)	0.031	0.003
258	21.50	0.07	0.034	(0.101)	0.031	0.003
259	21.58	0.10	0.052	(0.100)	0.046	0.005
260	21.67	0.10	0.052	(0.100)	0.046	0.005
261	21.75	0.10	0.052	(0.100)	0.046	0.005
262	21.83	0.07	0.034	(0.099)	0.031	0.003
263	21.92	0.07	0.034	(0.099)	0.031	0.003
264	22.00	0.07	0.034	(0.099)	0.031	0.003
265	22.08	0.10	0.052	(0.098)	0.046	0.005
266	22.17	0.10	0.052	(0.098)	0.046	0.005
267	22.25	0.10	0.052	(0.098)	0.046	0.005
268	22.33	0.07	0.034	(0.097)	0.031	0.003
269	22.42	0.07	0.034	(0.097)	0.031	0.003
270	22.50	0.07	0.034	(0.097)	0.031	0.003
271	22.58	0.07	0.034	(0.097)	0.031	0.003
272	22.67	0.07	0.034	(0.096)	0.031	0.003
273	22.75	0.07	0.034	(0.096)	0.031	0.003
274	22.83	0.07	0.034	(0.096)	0.031	0.003
275	22.92	0.07	0.034	(0.096)	0.031	0.003
276	23.00	0.07	0.034	(0.095)	0.031	0.003
277	23.08	0.07	0.034	(0.095)	0.031	0.003
278	23.17	0.07	0.034	(0.095)	0.031	0.003
279	23.25	0.07	0.034	(0.095)	0.031	0.003
280	23.33	0.07	0.034	(0.095)	0.031	0.003
281	23.42	0.07	0.034	(0.094)	0.031	0.003
282	23.50	0.07	0.034	(0.094)	0.031	0.003
283	23.58	0.07	0.034	(0.094)	0.031	0.003
284	23.67	0.07	0.034	(0.094)	0.031	0.003
285	23.75	0.07	0.034	(0.094)	0.031	0.003
286	23.83	0.07	0.034	(0.094)	0.031	0.003
287	23.92	0.07	0.034	(0.094)	0.031	0.003
288	24.00	0.07	0.034	(0.094)	0.031	0.003

(Loss Rate Not Used)

Sum = 100.0 Sum = 20.7

Flood volume = Effective rainfall 1.72(In)

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                                        EX24HR100YR
       times area       8.7(Ac.)/[(In)/(Ft.)] =       1.2(Ac.Ft)
      Total soil loss =      2.58(In)
      Total soil loss =     1.859(Ac.Ft)
      Total rainfall =      4.30(In)
      Flood volume =       54250.5 Cubic Feet
      Total soil loss =      80999.2 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      3.682(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
--------------------------------------------------------------------
  0+ 5       0.0000      0.01  Q         |         |         |         |
  0+10       0.0002      0.02  Q         |         |         |         |
  0+15       0.0004      0.03  Q         |         |         |         |
  0+20       0.0006      0.03  Q         |         |         |         |
  0+25       0.0008      0.04  Q         |         |         |         |
  0+30       0.0011      0.04  Q         |         |         |         |
  0+35       0.0014      0.04  Q         |         |         |         |
  0+40       0.0017      0.04  Q         |         |         |         |
  0+45       0.0021      0.04  Q         |         |         |         |
  0+50       0.0024      0.05  Q         |         |         |         |
  0+55       0.0028      0.06  Q         |         |         |         |
  1+ 0       0.0032      0.06  Q         |         |         |         |
  1+ 5       0.0035      0.06  Q         |         |         |         |
  1+10       0.0039      0.05  Q         |         |         |         |
  1+15       0.0042      0.05  Q         |         |         |         |
  1+20       0.0045      0.05  Q         |         |         |         |
  1+25       0.0048      0.05  Q         |         |         |         |
  1+30       0.0052      0.05  Q         |         |         |         |
  1+35       0.0055      0.05  Q         |         |         |         |
  1+40       0.0058      0.05  Q         |         |         |         |
  1+45       0.0061      0.05  Q         |         |         |         |
  1+50       0.0064      0.05  Q         |         |         |         |
  1+55       0.0068      0.06  Q         |         |         |         |
  2+ 0       0.0072      0.06  Q         |         |         |         |
  2+ 5       0.0076      0.06  Q         |         |         |         |
  2+10       0.0080      0.06  Q         |         |         |         |
  2+15       0.0084      0.06  Q         |         |         |         |
  2+20       0.0088      0.06  Q         |         |         |         |
  2+25       0.0093      0.06  Q         |         |         |         |
  2+30       0.0097      0.06  Q         |         |         |         |
  2+35       0.0101      0.06  Q         |         |         |         |
  2+40       0.0106      0.07  Q         |         |         |         |
  2+45       0.0111      0.07  Q         |         |         |         |
  2+50       0.0116      0.07  Q         |         |         |         |
  2+55       0.0121      0.07  Q         |         |         |         |
  3+ 0       0.0126      0.07  Q         |         |         |         |
  3+ 5       0.0131      0.07  Q         |         |         |         |
  3+10       0.0137      0.08  Q         |         |         |         |
  3+15       0.0142      0.08  Q         |         |         |         |
  3+20       0.0147      0.08  Q         |         |         |         |
  3+25       0.0152      0.08  Q         |         |         |         |
  3+30       0.0157      0.08  Q         |         |         |         |
  3+35       0.0163      0.08  Q         |         |         |         |
  3+40       0.0168      0.08  Q         |         |         |         |
  3+45       0.0173      0.08  Q         |         |         |         |
  3+50       0.0178      0.08  Q         |         |         |         |
  3+55       0.0184      0.09  Q         |         |         |         |
  4+ 0       0.0190      0.09  Q         |         |         |         |
  4+ 5       0.0196      0.09  Q         |         |         |         |
  4+10       0.0203      0.09  Q         |         |         |         |
  4+15       0.0209      0.09  Q         |         |         |         |
  4+20       0.0215      0.09  Q         |         |         |         |
  4+25       0.0222      0.10  Q         |         |         |         |
  4+30       0.0229      0.10  Q         |         |         |         |
  4+35       0.0236      0.10  Q         |         |         |         |
  4+40       0.0244      0.10  Q         |         |         |         |
  4+45       0.0251      0.10  Q         |         |         |         |
  4+50       0.0258      0.11  Q         |         |         |         |
  4+55       0.0266      0.12  Q         |         |         |         |
  5+ 0       0.0274      0.12  Q         |         |         |         |
  5+ 5       0.0282      0.11  Q         |         |         |         |
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                                                          EX24HR100YR
 5+10       0.0289      0.10  Q         |         |         |         |
 5+15       0.0295      0.09  Q         |         |         |         |
 5+20       0.0302      0.10  Q         |         |         |         |
 5+25       0.0309      0.10  Q         |         |         |         |
 5+30       0.0316      0.10  QV        |         |         |         |
 5+35       0.0323      0.11  QV        |         |         |         |
 5+40       0.0331      0.12  QV        |         |         |         |
 5+45       0.0339      0.12  QV        |         |         |         |
 5+50       0.0348      0.12  QV        |         |         |         |
 5+55       0.0356      0.12  QV        |         |         |         |
 6+ 0       0.0364      0.12  QV        |         |         |         |
 6+ 5       0.0373      0.12  QV        |         |         |         |
 6+10       0.0382      0.13  QV        |         |         |         |
 6+15       0.0391      0.13  QV        |         |         |         |
 6+20       0.0400      0.13  QV        |         |         |         |
 6+25       0.0409      0.13  QV        |         |         |         |
 6+30       0.0419      0.13  QV        |         |         |         |
 6+35       0.0428      0.14  QV        |         |         |         |
 6+40       0.0438      0.15  QV        |         |         |         |
 6+45       0.0448      0.15  QV        |         |         |         |
 6+50       0.0459      0.15  QV        |         |         |         |
 6+55       0.0469      0.15  QV        |         |         |         |
 7+ 0       0.0479      0.15  QV        |         |         |         |
 7+ 5       0.0490      0.15  QV        |         |         |         |
 7+10       0.0500      0.15  QV        |         |         |         |
 7+15       0.0510      0.15  QV        |         |         |         |
 7+20       0.0521      0.15  QV        |         |         |         |
 7+25       0.0532      0.16  QV        |         |         |         |
 7+30       0.0543      0.16  QV        |         |         |         |
 7+35       0.0555      0.17  QV        |         |         |         |
 7+40       0.0567      0.18  QV        |         |         |         |
 7+45       0.0579      0.18  QV        |         |         |         |
 7+50       0.0592      0.18  QV        |         |         |         |
 7+55       0.0605      0.19  QV        |         |         |         |
 8+ 0       0.0618      0.19  QV        |         |         |         |
 8+ 5       0.0633      0.22  Q V       |         |         |         |
 8+10       0.0653      0.29  |QV       |         |         |         |
 8+15       0.0675      0.32  |QV       |         |         |         |
 8+20       0.0698      0.33  |QV       |         |         |         |
 8+25       0.0722      0.35  |QV       |         |         |         |
 8+30       0.0747      0.36  |QV       |         |         |         |
 8+35       0.0774      0.40  |QV       |         |         |         |
 8+40       0.0808      0.49  |QV       |         |         |         |
 8+45       0.0843      0.52  | Q       |         |         |         |
 8+50       0.0882      0.57  | Q       |         |         |         |
 8+55       0.0928      0.65  | Q       |         |         |         |
 9+ 0       0.0975      0.69  | QV      |         |         |         |
 9+ 5       0.1028      0.77  |  Q      |         |         |         |
 9+10       0.1093      0.94  |  Q      |         |         |         |
 9+15       0.1161      0.99  |  Q      |         |         |         |
 9+20       0.1234      1.06  |  VQ     |         |         |         |
 9+25       0.1313      1.15  |   Q     |         |         |         |
 9+30       0.1395      1.19  |   Q     |         |         |         |
 9+35       0.1481      1.24  |   Q     |         |         |         |
 9+40       0.1573      1.33  |    Q    |         |         |         |
 9+45       0.1667      1.37  |    Q    |         |         |         |
 9+50       0.1765      1.42  |    Q    |         |         |         |
 9+55       0.1868      1.51  |     Q   |         |         |         |
10+ 0       0.1975      1.54  |     Q   |         |         |         |
10+ 5       0.2067      1.34  |    QV   |         |         |         |
10+10       0.2124      0.84  |  Q  V   |         |         |         |
10+15       0.2172      0.70  | Q   V   |         |         |         |
10+20       0.2216      0.64  | Q    V  |         |         |         |
10+25       0.2258      0.61  | Q    V  |         |         |         |
10+30       0.2299      0.59  | Q    V  |         |         |         |
10+35       0.2350      0.75  | Q    V  |         |         |         |
10+40       0.2427      1.11  |   Q  V  |         |         |         |
10+45       0.2512      1.23  |   Q   V |         |         |         |
10+50       0.2600      1.29  |    Q  V |         |         |         |
10+55       0.2692      1.32  |    Q  V |         |         |         |
11+ 0       0.2785      1.35  |    Q  V |         |         |         |
11+ 5       0.2877      1.34  |    Q   V|         |         |         |
11+10       0.2965      1.28  |    Q   V|         |         |         |
11+15       0.3052      1.26  |    Q   V|         |         |         |
11+20       0.3138      1.26  |    Q    V         |         |         |
11+25       0.3226      1.26  |    Q    V         |         |         |
11+30       0.3313      1.27  |    Q    V         |         |         |
11+35       0.3396      1.21  |   Q     V         |         |         |
11+40       0.3470      1.07  |   Q     |V        |         |         |
                                                             Page 7
```

Attachment: Appendix C - Hydrology Report (2340 : PA16-0039 Plot Plan)

```
                                            EX24HR100YR
11+45       0.3541      1.03  |   Q     |V        |         |         |
11+50       0.3613      1.05  |   Q     |V        |         |         |
11+55       0.3691      1.12  |   Q     |V        |         |         |
12+ 0       0.3770      1.15  |   Q     | V       |         |         |
12+ 5       0.3865      1.39  |    Q    | V       |         |         |
12+10       0.3997      1.91  |      Q  | V       |         |         |
12+15       0.4140      2.07  |       Q |  V      |         |         |
12+20       0.4290      2.19  |       Q |  V      |         |         |
12+25       0.4449      2.31  |        Q|   V     |         |         |
12+30       0.4612      2.36  |        Q|   V     |         |         |
12+35       0.4781      2.46  |        Q|    V    |         |         |
12+40       0.4962      2.63  |         Q    V    |         |         |
12+45       0.5147      2.68  |         Q     V   |         |         |
12+50       0.5336      2.75  |         Q      V  |         |         |
12+55       0.5532      2.84  |         |Q     V  |         |         |
13+ 0       0.5730      2.88  |         |Q      V |         |         |
13+ 5       0.5941      3.06  |         | Q      V|         |         |
13+10       0.6178      3.44  |         |  Q     V|         |         |
13+15       0.6423      3.56  |         |   Q    V         |         |
13+20       0.6672      3.62  |         |   Q     |V        |         |
13+25       0.6924      3.66  |         |   Q     | V       |         |
13+30       0.7178      3.68  |         |   Q     |  V      |         |
13+35       0.7408      3.34  |         |  Q      |  V      |         |
13+40       0.7584      2.55  |         Q         |   V     |         |
13+45       0.7743      2.32  |        Q|         |   V     |         |
13+50       0.7896      2.21  |       Q |         |    V    |         |
13+55       0.8044      2.16  |       Q |         |    V    |         |
14+ 0       0.8191      2.13  |       Q |         |     V   |         |
14+ 5       0.8345      2.24  |       Q |         |     V   |         |
14+10       0.8519      2.53  |         Q         |      V  |         |
14+15       0.8700      2.62  |         Q         |      V  |         |
14+20       0.8881      2.64  |         Q         |       V |         |
14+25       0.9060      2.59  |         Q         |        V|         |
14+30       0.9238      2.59  |         Q         |        V|         |
14+35       0.9417      2.60  |         Q         |         V         |
14+40       0.9596      2.60  |         Q         |         V         |
14+45       0.9776      2.61  |         Q         |         |V        |
14+50       0.9953      2.58  |         Q         |         |V        |
14+55       1.0126      2.51  |         Q         |         | V       |
15+ 0       1.0298      2.49  |        Q|         |         |  V      |
15+ 5       1.0467      2.46  |        Q|         |         |  V      |
15+10       1.0631      2.39  |        Q|         |         |   V     |
15+15       1.0794      2.37  |        Q|         |         |   V     |
15+20       1.0955      2.33  |        Q|         |         |    V    |
15+25       1.1110      2.26  |        Q|         |         |    V    |
15+30       1.1264      2.24  |       Q |         |         |     V   |
15+35       1.1409      2.10  |       Q |         |         |     V   |
15+40       1.1533      1.81  |      Q  |         |         |      V  |
15+45       1.1652      1.72  |     Q   |         |         |      V  |
15+50       1.1768      1.69  |     Q   |         |         |      V  |
15+55       1.1883      1.67  |     Q   |         |         |       V |
16+ 0       1.1997      1.66  |     Q   |         |         |       V |
16+ 5       1.2088      1.31  |    Q    |         |         |       V |
16+10       1.2124      0.53  | Q       |         |         |       V |
16+15       1.2145      0.30  |Q        |         |         |        V|
16+20       1.2158      0.19  Q         |         |         |        V|
16+25       1.2167      0.13  Q         |         |         |        V|
16+30       1.2174      0.10  Q         |         |         |        V|
16+35       1.2179      0.07  Q         |         |         |        V|
16+40       1.2183      0.05  Q         |         |         |        V|
16+45       1.2186      0.05  Q         |         |         |        V|
16+50       1.2189      0.05  Q         |         |         |        V|
16+55       1.2192      0.05  Q         |         |         |        V|
17+ 0       1.2195      0.05  Q         |         |         |        V|
17+ 5       1.2199      0.05  Q         |         |         |        V|
17+10       1.2203      0.07  Q         |         |         |        V|
17+15       1.2208      0.07  Q         |         |         |        V|
17+20       1.2213      0.07  Q         |         |         |        V|
17+25       1.2218      0.07  Q         |         |         |        V|
17+30       1.2223      0.07  Q         |         |         |        V|
17+35       1.2229      0.07  Q         |         |         |        V|
17+40       1.2234      0.08  Q         |         |         |        V|
17+45       1.2239      0.08  Q         |         |         |        V|
17+50       1.2244      0.07  Q         |         |         |        V|
17+55       1.2248      0.06  Q         |         |         |        V|
18+ 0       1.2253      0.06  Q         |         |         |        V|
18+ 5       1.2257      0.06  Q         |         |         |        V|
18+10       1.2261      0.06  Q         |         |         |        V|
18+15       1.2265      0.06  Q         |         |         |        V|
                                              Page 8
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   18+20       1.2269       0.06  Q          |         |         |        V|
   18+25       1.2274       0.06  Q          |         |         |        V|
   18+30       1.2278       0.06  Q          |         |         |        V|
   18+35       1.2282       0.06  Q          |         |         |        V|
   18+40       1.2285       0.05  Q          |         |         |        V|
   18+45       1.2288       0.05  Q          |         |         |        V|
   18+50       1.2291       0.04  Q          |         |         |        V|
   18+55       1.2294       0.04  Q          |         |         |        V|
   19+ 0       1.2296       0.03  Q          |         |         |        V|
   19+ 5       1.2298       0.03  Q          |         |         |        V|
   19+10       1.2301       0.04  Q          |         |         |        V|
   19+15       1.2304       0.04  Q          |         |         |        V|
   19+20       1.2307       0.05  Q          |         |         |        V|
   19+25       1.2311       0.05  Q          |         |         |        V|
   19+30       1.2315       0.06  Q          |         |         |        V|
   19+35       1.2319       0.06  Q          |         |         |        V|
   19+40       1.2322       0.05  Q          |         |         |        V|
   19+45       1.2326       0.05  Q          |         |         |        V|
   19+50       1.2328       0.04  Q          |         |         |        V|
   19+55       1.2331       0.04  Q          |         |         |        V|
   20+ 0       1.2333       0.03  Q          |         |         |        V|
   20+ 5       1.2336       0.03  Q          |         |         |        V|
   20+10       1.2338       0.04  Q          |         |         |        V|
   20+15       1.2341       0.04  Q          |         |         |        V|
   20+20       1.2344       0.04  Q          |         |         |        V|
   20+25       1.2347       0.04  Q          |         |         |        V|
   20+30       1.2351       0.04  Q          |         |         |        V|
   20+35       1.2354       0.04  Q          |         |         |        V|
   20+40       1.2357       0.05  Q          |         |         |        V|
   20+45       1.2360       0.05  Q          |         |         |        V|
   20+50       1.2363       0.04  Q          |         |         |        V|
   20+55       1.2365       0.03  Q          |         |         |        V|
   21+ 0       1.2367       0.03  Q          |         |         |        V|
   21+ 5       1.2370       0.03  Q          |         |         |        V|
   21+10       1.2373       0.04  Q          |         |         |        V|
   21+15       1.2376       0.04  Q          |         |         |        V|
   21+20       1.2378       0.04  Q          |         |         |        V|
   21+25       1.2381       0.03  Q          |         |         |        V|
   21+30       1.2383       0.03  Q          |         |         |        V|
   21+35       1.2385       0.03  Q          |         |         |        V|
   21+40       1.2388       0.04  Q          |         |         |        V|
   21+45       1.2391       0.04  Q          |         |         |        V|
   21+50       1.2394       0.04  Q          |         |         |        V|
   21+55       1.2396       0.03  Q          |         |         |        V|
   22+ 0       1.2398       0.03  Q          |         |         |        V|
   22+ 5       1.2401       0.03  Q          |         |         |        V|
   22+10       1.2404       0.04  Q          |         |         |        V|
   22+15       1.2407       0.04  Q          |         |         |        V|
   22+20       1.2409       0.04  Q          |         |         |        V|
   22+25       1.2412       0.03  Q          |         |         |        V|
   22+30       1.2414       0.03  Q          |         |         |        V|
   22+35       1.2416       0.03  Q          |         |         |        V|
   22+40       1.2418       0.03  Q          |         |         |        V|
   22+45       1.2420       0.03  Q          |         |         |        V|
   22+50       1.2422       0.03  Q          |         |         |        V|
   22+55       1.2424       0.03  Q          |         |         |        V|
   23+ 0       1.2426       0.03  Q          |         |         |        V|
   23+ 5       1.2429       0.03  Q          |         |         |        V|
   23+10       1.2431       0.03  Q          |         |         |        V|
   23+15       1.2433       0.03  Q          |         |         |        V|
   23+20       1.2435       0.03  Q          |         |         |        V|
   23+25       1.2437       0.03  Q          |         |         |        V|
   23+30       1.2439       0.03  Q          |         |         |        V|
   23+35       1.2441       0.03  Q          |         |         |        V|
   23+40       1.2443       0.03  Q          |         |         |        V|
   23+45       1.2445       0.03  Q          |         |         |        V|
   23+50       1.2447       0.03  Q          |         |         |        V|
   23+55       1.2449       0.03  Q          |         |         |        V|
   24+ 0       1.2451       0.03  Q          |         |         |        V|
   24+ 5       1.2453       0.02  Q          |         |         |        V|
   24+10       1.2454       0.01  Q          |         |         |        V|
   24+15       1.2454       0.00  Q          |         |         |        V|
   24+20       1.2454       0.00  Q          |         |         |        V|
   24+25       1.2454       0.00  Q          |         |         |        V|
   24+30       1.2454       0.00  Q          |         |         |        V|
   24+35       1.2454       0.00  Q          |         |         |         V
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EX24HR100YR

RATIONAL METHOD

BASIN A

10 YEAR

```
                              EX10

                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
        Rational Hydrology Study        Date: 09/08/16  File:EX10.out
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6313

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.480(In.)
100 year, 1 hour precipitation =  1.200(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.776(In/Hr)
Slope of intensity duration curve = 0.4800




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   761.000(Ft.)
Top (of initial area) elevation =  1563.800(Ft.)
Bottom (of initial area) elevation =  1559.600(Ft.)
Difference in elevation =     4.200(Ft.)
Slope =    0.00552  s(percent)=      0.55
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   21.304 min.
Rainfall intensity =      1.276(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.737
Decimal fraction soil group A = 0.180
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.820
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  82.58
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      6.117(CFS)
Total initial stream area =        6.501(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        3.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
______________________________________________________________________
Estimated mean flow rate at midpoint of channel =      8.180(CFS)
Depth of flow =   0.284(Ft.), Average velocity =   1.230(Ft/s)
        ******* Irregular Channel Data ***********
-----------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1             0.00             0.40
        2            33.00             0.00
        3            66.00             0.40
Manning's 'N' friction factor =   0.030
-----------------------------------------------------------------
Sub-Channel flow  =      8.180(CFS)
  '     '          flow top width =      46.840(Ft.)
  '     '     velocity=    1.230(Ft/s)
  '     '         area =      6.648(Sq.Ft)
  '     '         Froude number =     0.575
```

```
Upstream point elevation =  1559.600(Ft.)
Downstream point elevation =  1557.000(Ft.)
Flow length =   312.000(Ft.)
Travel time  =    4.23 min.
Time of concentration =   25.53 min.
Depth of flow =   0.284(Ft.)
Average velocity =   1.230(Ft/s)
Total irregular channel flow =     8.180(CFS)
Irregular channel normal depth above invert elev. =   0.284(Ft.)
Average velocity of channel(s) =   1.230(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.733
Decimal fraction soil group A = 0.140
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.860
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  83.34
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.170(In/Hr) for a    10.0 year storm
Subarea runoff =      4.027(CFS) for      4.696(Ac.)
Total runoff =     10.144(CFS)  Total area =      11.197(Ac.)
Depth of flow =   0.308(Ft.), Average velocity =   1.298(Ft/s)
End of computations, total study area =           11.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  82.9
```

100 YEAR

```
                                  EX100

                    Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
        Rational Hydrology Study        Date: 09/08/16  File:EX10.out
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6313

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.480(In.)
100 year, 1 hour precipitation =  1.200(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.200(In/Hr)
Slope of intensity duration curve = 0.4800




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       1.000 to Point/Station       2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   761.000(Ft.)
Top (of initial area) elevation =  1563.800(Ft.)
Bottom (of initial area) elevation =  1559.600(Ft.)
Difference in elevation =     4.200(Ft.)
Slope =    0.00552  s(percent)=       0.55
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   21.304 min.
Rainfall intensity =      1.973(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.788
Decimal fraction soil group A = 0.180
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.820
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  82.58
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     10.101(CFS)
Total initial stream area =        6.501(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       2.000 to Point/Station       3.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
______________________________________________________________________
Estimated mean flow rate at midpoint of channel =     13.503(CFS)
Depth of flow =   0.343(Ft.), Average velocity =   1.395(Ft/s)
        ******* Irregular Channel Data ***********
-----------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1             0.00             0.40
        2            33.00             0.00
        3            66.00             0.40
Manning's 'N' friction factor =   0.030
-----------------------------------------------------------------
Sub-Channel flow  =     13.503(CFS)
  '     '        flow top width =     56.527(Ft.)
  '     '    velocity=    1.395(Ft/s)
  '     '        area =      9.683(Sq.Ft)
  '     '        Froude number =     0.594
```

EX100

```
Upstream point elevation =  1559.600(Ft.)
Downstream point elevation =  1557.000(Ft.)
Flow length =   312.000(Ft.)
Travel time  =    3.73 min.
Time of concentration =   25.03 min.
Depth of flow =   0.343(Ft.)
Average velocity =   1.395(Ft/s)
Total irregular channel flow =    13.503(CFS)
Irregular channel normal depth above invert elev. =   0.343(Ft.)
Average velocity of channel(s) =   1.395(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.785
Decimal fraction soil group A = 0.140
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.860
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  83.34
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.826(In/Hr) for a   100.0 year storm
Subarea runoff =      6.733(CFS) for      4.696(Ac.)
Total runoff =     16.834(CFS)  Total area =      11.197(Ac.)
Depth of flow =   0.372(Ft.), Average velocity =   1.474(Ft/s)
End of computations, total study area =           11.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  82.9
```

BASIN B

10 YEAR

```
                                     EX10

                  Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
        Rational Hydrology Study        Date: 09/08/16  File:EX10.out
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6313

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.480(In.)
100 year, 1 hour precipitation =  1.200(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.776(In/Hr)
Slope of intensity duration curve = 0.4800




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   848.000(Ft.)
Top (of initial area) elevation =  1563.600(Ft.)
Bottom (of initial area) elevation =  1557.000(Ft.)
Difference in elevation =     6.600(Ft.)
Slope =    0.00778  s(percent)=       0.78
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   20.768 min.
Rainfall intensity =      1.292(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.689
Decimal fraction soil group A = 0.470
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.530
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  77.07
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      7.706(CFS)
Total initial stream area =        8.665(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            8.66 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  77.1
```

100 YEAR

```
                           EX100

            Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
        Rational Hydrology Study        Date: 09/08/16  File:EX10.out
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6313

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.480(In.)
100 year, 1 hour precipitation =  1.200(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.200(In/Hr)
Slope of intensity duration curve = 0.4800




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   848.000(Ft.)
Top (of initial area) elevation =  1563.600(Ft.)
Bottom (of initial area) elevation =  1557.000(Ft.)
Difference in elevation =     6.600(Ft.)
Slope =    0.00778  s(percent)=       0.78
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   20.768 min.
Rainfall intensity =      1.997(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.751
Decimal fraction soil group A = 0.470
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.530
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  77.07
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     12.991(CFS)
Total initial stream area =        8.665(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            8.66 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  77.1
```

ATTACHMENT 4

PROPOSED HYDROLOGY CALCULATIONS WITHOUT DETENTION – HYDROGRAPH METHOD

Proposed Area Calculations

Basin No.	Pervious areas A Soil 32 SF	Pervious areas C Soil 69 SF	Total Area Pervious only SF	Total Area Pervious only Acres	Impervious Bldg & roads SF	Impervious Bldg & roads Acres	Total Area ALL SF	Total Area ALL Acres	Percent Impervious	Runoff Index Composite
A-1	38,263	162,609	200,872	4.611	286,885	6.586	487,757	11.197	59%	62
B-1	72,974	92,789	165,763	3.805	211,699	4.860	377,462	8.665	56%	53

PR1HR2YR

U n i t   H y d r o g r a p h   A n a l y s i s

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.48                    5.37

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.20                   13.44

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.480(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.480(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  42.0      0.650     0.590        0.305       1.000      0.305
                                                 Sum (F) =   0.305
Area averaged mean soil loss (F) (In/Hr) =  0.305
Minimum soil loss rate ((In/Hr)) =  0.153
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                        PR1HR2YR
        ----------------------------------------------------------------------

                         U n i t   H y d r o g r a p h
                                 VALLEY S-Curve
        --------------------------------------------------------------------
                         Unit Hydrograph Data
        ---------------------------------------------------------------------
        Unit time period   Time % of lag   Distribution   Unit Hydrograph
            (hrs)                             Graph %          (CFS)
        ---------------------------------------------------------------------
            1   0.083        241.878         49.815             5.621
            2   0.167        483.756         40.562             4.577
            3   0.250        725.634          7.289             0.823
            4   0.333        967.512          2.334             0.263
                                      Sum = 100.000   Sum=      11.284
 -----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     4.40     0.253        (  0.305)      0.108         0.145
   2   0.17     4.50     0.259        (  0.305)      0.111         0.148
   3   0.25     5.40     0.311        (  0.305)      0.133         0.178
   4   0.33     5.40     0.311        (  0.305)      0.133         0.178
   5   0.42     5.70     0.328        (  0.305)      0.141         0.188
   6   0.50     6.40     0.369        (  0.305)      0.158         0.211
   7   0.58     7.90     0.455        (  0.305)      0.195         0.260
   8   0.67     9.10     0.524        (  0.305)      0.224         0.300
   9   0.75    12.80     0.737           0.305    (  0.316)        0.432
  10   0.83    25.60     1.474           0.305    (  0.631)        1.169
  11   0.92     7.90     0.455        (  0.305)      0.195         0.260
  12   1.00     4.90     0.282        (  0.305)      0.121         0.161
                (Loss Rate Not Used)
     Sum =     100.0                                   Sum =     3.6
        Flood volume = Effective rainfall      0.30(In)
         times area      11.2(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
        Total soil loss =      0.18(In)
        Total soil loss =     0.166(Ac.Ft)
        Total rainfall =      0.48(In)
        Flood volume =       12298.1 Cubic Feet
        Total soil loss =        7209.5 Cubic Feet
        --------------------------------------------------------------------
         Peak flow rate of this hydrograph =      8.871(CFS)
        --------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                             1 - H O U R   S T O R M
                        R u n o f f     H y d r o g r a p h
        --------------------------------------------------------------------
                     Hydrograph in   5   Minute intervals ((CFS))

        --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
  -----------------------------------------------------------------------
    0+ 5       0.0056      0.82  V  Q      |         |         |         |
    0+10       0.0159      1.50  | V  Q    |         |         |         |
    0+15       0.0283      1.80  |   V  Q  |         |         |         |
    0+20       0.0419      1.98  |    V Q  |         |         |         |
    0+25       0.0561      2.06  |      VQ |         |         |         |
    0+30       0.0715      2.24  |       Q V         |         |         |
    0+35       0.0896      2.63  |         Q V       |         |         |
    0+40       0.1110      3.10  |         | Q  V    |         |         |
    0+45       0.1390      4.07  |         |     Q  V|         |         |
    0+50       0.2001      8.87  |         |         |       V |    Q    |
    0+55       0.2501      7.25  |         |         |        Q|    V    |
    1+ 0       0.2720      3.18  |         | Q       |         |       V |
    1+ 5       0.2806      1.26  |    Q    |         |         |        V|
    1+10       0.2820      0.20  Q         |         |         |        V|
    1+15       0.2823      0.04  Q         |         |         |        V|
 -----------------------------------------------------------------------
```

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                              PR3HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.80                    8.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.80                   20.15

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    0.800(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    0.800(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  42.0      0.650     0.590        0.305       1.000      0.305
                                                  Sum (F) =   0.305
Area averaged mean soil loss (F) (In/Hr) =  0.305
Minimum soil loss rate ((In/Hr)) =  0.153
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
```

PR3HR2YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.125	(0.305)	0.053	0.071
2	0.17	1.30	0.125	(0.305)	0.053	0.071
3	0.25	1.10	0.106	(0.305)	0.045	0.060
4	0.33	1.50	0.144	(0.305)	0.062	0.082
5	0.42	1.50	0.144	(0.305)	0.062	0.082
6	0.50	1.80	0.173	(0.305)	0.074	0.099
7	0.58	1.50	0.144	(0.305)	0.062	0.082
8	0.67	1.80	0.173	(0.305)	0.074	0.099
9	0.75	1.80	0.173	(0.305)	0.074	0.099
10	0.83	1.50	0.144	(0.305)	0.062	0.082
11	0.92	1.60	0.154	(0.305)	0.066	0.088
12	1.00	1.80	0.173	(0.305)	0.074	0.099
13	1.08	2.20	0.211	(0.305)	0.090	0.121
14	1.17	2.20	0.211	(0.305)	0.090	0.121
15	1.25	2.20	0.211	(0.305)	0.090	0.121
16	1.33	2.00	0.192	(0.305)	0.082	0.110
17	1.42	2.60	0.250	(0.305)	0.107	0.143
18	1.50	2.70	0.259	(0.305)	0.111	0.148
19	1.58	2.40	0.230	(0.305)	0.099	0.132
20	1.67	2.70	0.259	(0.305)	0.111	0.148
21	1.75	3.30	0.317	(0.305)	0.136	0.181
22	1.83	3.10	0.298	(0.305)	0.127	0.170
23	1.92	2.90	0.278	(0.305)	0.119	0.159
24	2.00	3.00	0.288	(0.305)	0.123	0.165
25	2.08	3.10	0.298	(0.305)	0.127	0.170
26	2.17	4.20	0.403	(0.305)	0.173	0.231
27	2.25	5.00	0.480	(0.305)	0.205	0.275
28	2.33	3.50	0.336	(0.305)	0.144	0.192
29	2.42	6.80	0.653	(0.305)	0.279	0.373
30	2.50	7.30	0.701	(0.305)	0.300	0.401
31	2.58	8.20	0.787	0.305	(0.337)	0.482
32	2.67	5.90	0.566	(0.305)	0.242	0.324
33	2.75	2.00	0.192	(0.305)	0.082	0.110
34	2.83	1.80	0.173	(0.305)	0.074	0.099
35	2.92	1.80	0.173	(0.305)	0.074	0.099
36	3.00	0.60	0.058	(0.305)	0.025	0.033

(Loss Rate Not Used)

Sum = 100.0 Sum = 5.5

Flood volume = Effective rainfall 0.46(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)
Total soil loss = 0.34(In)
Total soil loss = 0.317(Ac.Ft)
Total rainfall = 0.80(In)
Flood volume = 18706.2 Cubic Feet
Total soil loss = 13808.3 Cubic Feet

Peak flow rate of this hydrograph = 4.905(CFS)

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0028	0.40	VQ	|	|	|	|

```
                                                PR3HR2YR
    0+10       0.0078      0.73  V Q       |         |         |         |
    0+15       0.0128      0.73  |VQ       |         |         |         |
    0+20       0.0184      0.82  |V Q      |         |         |         |
    0+25       0.0247      0.91  | VQ      |         |         |         |
    0+30       0.0317      1.02  | V Q     |         |         |         |
    0+35       0.0386      1.01  |  VQ     |         |         |         |
    0+40       0.0457      1.04  |   Q     |         |         |         |
    0+45       0.0533      1.10  |   Q     |         |         |         |
    0+50       0.0603      1.02  |   QV    |         |         |         |
    0+55       0.0671      0.98  |  Q  V   |         |         |         |
    1+ 0       0.0743      1.05  |   Q V   |         |         |         |
    1+ 5       0.0828      1.23  |   Q  V  |         |         |         |
    1+10       0.0920      1.34  |    Q  V |         |         |         |
    1+15       0.1013      1.36  |    Q   V|         |         |         |
    1+20       0.1103      1.30  |    Q    V         |         |         |
    1+25       0.1202      1.44  |    Q    |V        |         |         |
    1+30       0.1313      1.61  |     Q   | V       |         |         |
    1+35       0.1421      1.57  |     Q   |  V      |         |         |
    1+40       0.1531      1.60  |     Q   |   V     |         |         |
    1+45       0.1658      1.85  |      Q  |    V    |         |         |
    1+50       0.1792      1.94  |      Q  |     V   |         |         |
    1+55       0.1920      1.86  |      Q  |      V  |         |         |
    2+ 0       0.2047      1.84  |      Q  |        V|         |         |
    2+ 5       0.2177      1.89  |      Q  |         V         |         |
    2+10       0.2332      2.25  |        Q|         |V        |         |
    2+15       0.2524      2.78  |         |Q        |  V      |         |
    2+20       0.2701      2.57  |         Q         |    V    |         |
    2+25       0.2926      3.27  |         |  Q      |      V  |         |
    2+30       0.3215      4.19  |         |     Q   |        V|         |
    2+35       0.3553      4.91  |         |        Q|         |  V      |
    2+40       0.3860      4.46  |         |      Q  |         |    V    |
    2+45       0.4039      2.60  |         Q         |         |      V  |
    2+50       0.4139      1.45  |    Q    |         |         |       V |
    2+55       0.4221      1.18  |   Q     |         |         |        V|
    3+ 0       0.4272      0.75  | Q       |         |         |        V|
    3+ 5       0.4290      0.26  |Q        |         |         |        V|
    3+10       0.4294      0.05  Q         |         |         |        V|
    3+15       0.4294      0.01  Q         |         |         |        V|
-----------------------------------------------------------------------
```

```
                              PR6HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR62.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.10                 12.32

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            2.50                 27.99

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.100(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.100(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00          0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%      F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  42.0      0.650     0.590        0.305       1.000      0.305
                                                  Sum (F) =   0.305
Area averaged mean soil loss (F) (In/Hr) =  0.305
Minimum soil loss rate ((In/Hr)) =  0.153
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
```

PR6HR2YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.066	(0.305)	0.028	0.038
2	0.17	0.60	0.079	(0.305)	0.034	0.045
3	0.25	0.60	0.079	(0.305)	0.034	0.045
4	0.33	0.60	0.079	(0.305)	0.034	0.045
5	0.42	0.60	0.079	(0.305)	0.034	0.045
6	0.50	0.70	0.092	(0.305)	0.040	0.053
7	0.58	0.70	0.092	(0.305)	0.040	0.053
8	0.67	0.70	0.092	(0.305)	0.040	0.053
9	0.75	0.70	0.092	(0.305)	0.040	0.053
10	0.83	0.70	0.092	(0.305)	0.040	0.053
11	0.92	0.70	0.092	(0.305)	0.040	0.053
12	1.00	0.80	0.106	(0.305)	0.045	0.060
13	1.08	0.80	0.106	(0.305)	0.045	0.060
14	1.17	0.80	0.106	(0.305)	0.045	0.060
15	1.25	0.80	0.106	(0.305)	0.045	0.060
16	1.33	0.80	0.106	(0.305)	0.045	0.060
17	1.42	0.80	0.106	(0.305)	0.045	0.060
18	1.50	0.80	0.106	(0.305)	0.045	0.060
19	1.58	0.80	0.106	(0.305)	0.045	0.060
20	1.67	0.80	0.106	(0.305)	0.045	0.060
21	1.75	0.80	0.106	(0.305)	0.045	0.060
22	1.83	0.80	0.106	(0.305)	0.045	0.060
23	1.92	0.80	0.106	(0.305)	0.045	0.060
24	2.00	0.90	0.119	(0.305)	0.051	0.068
25	2.08	0.80	0.106	(0.305)	0.045	0.060
26	2.17	0.90	0.119	(0.305)	0.051	0.068
27	2.25	0.90	0.119	(0.305)	0.051	0.068
28	2.33	0.90	0.119	(0.305)	0.051	0.068
29	2.42	0.90	0.119	(0.305)	0.051	0.068
30	2.50	0.90	0.119	(0.305)	0.051	0.068
31	2.58	0.90	0.119	(0.305)	0.051	0.068
32	2.67	0.90	0.119	(0.305)	0.051	0.068
33	2.75	1.00	0.132	(0.305)	0.056	0.076
34	2.83	1.00	0.132	(0.305)	0.056	0.076
35	2.92	1.00	0.132	(0.305)	0.056	0.076
36	3.00	1.00	0.132	(0.305)	0.056	0.076
37	3.08	1.00	0.132	(0.305)	0.056	0.076
38	3.17	1.10	0.145	(0.305)	0.062	0.083
39	3.25	1.10	0.145	(0.305)	0.062	0.083
40	3.33	1.10	0.145	(0.305)	0.062	0.083
41	3.42	1.20	0.158	(0.305)	0.068	0.091
42	3.50	1.30	0.172	(0.305)	0.073	0.098
43	3.58	1.40	0.185	(0.305)	0.079	0.106
44	3.67	1.40	0.185	(0.305)	0.079	0.106
45	3.75	1.50	0.198	(0.305)	0.085	0.113
46	3.83	1.50	0.198	(0.305)	0.085	0.113
47	3.92	1.60	0.211	(0.305)	0.090	0.121
48	4.00	1.60	0.211	(0.305)	0.090	0.121
49	4.08	1.70	0.224	(0.305)	0.096	0.128
50	4.17	1.80	0.238	(0.305)	0.102	0.136
51	4.25	1.90	0.251	(0.305)	0.107	0.143
52	4.33	2.00	0.264	(0.305)	0.113	0.151
53	4.42	2.10	0.277	(0.305)	0.119	0.159
54	4.50	2.10	0.277	(0.305)	0.119	0.159
55	4.58	2.20	0.290	(0.305)	0.124	0.166
56	4.67	2.30	0.304	(0.305)	0.130	0.174
57	4.75	2.40	0.317	(0.305)	0.136	0.181
58	4.83	2.40	0.317	(0.305)	0.136	0.181

```
59   4.92     2.50      0.330       (  0.305)       0.141        0.189
60   5.00     2.60      0.343       (  0.305)       0.147        0.196
61   5.08     3.10      0.409       (  0.305)       0.175        0.234
62   5.17     3.60      0.475       (  0.305)       0.203        0.272
63   5.25     3.90      0.515       (  0.305)       0.220        0.294
64   5.33     4.20      0.554       (  0.305)       0.237        0.317
65   5.42     4.70      0.620       (  0.305)       0.266        0.355
66   5.50     5.60      0.739          0.305    (  0.316)        0.434
67   5.58     1.90      0.251       (  0.305)       0.107        0.143
68   5.67     0.90      0.119       (  0.305)       0.051        0.068
69   5.75     0.60      0.079       (  0.305)       0.034        0.045
70   5.83     0.50      0.066       (  0.305)       0.028        0.038
71   5.92     0.30      0.040       (  0.305)       0.017        0.023
72   6.00     0.20      0.026       (  0.305)       0.011        0.015
              (Loss Rate Not Used)
   Sum =     100.0                                 Sum =     7.6
      Flood volume = Effective rainfall      0.63(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       0.6(Ac.Ft)
      Total soil loss =      0.47(In)
      Total soil loss =     0.438(Ac.Ft)
      Total rainfall =      1.10(In)
      Flood volume =      25611.3 Cubic Feet
      Total soil loss =      19096.6 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      4.405(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    6 - H O U R    S T O R M
               R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0015      0.21  Q         |         |         |         |
  0+10       0.0044      0.43  VQ        |         |         |         |
  0+15       0.0078      0.49  VQ        |         |         |         |
  0+20       0.0113      0.51  V Q       |         |         |         |
  0+25       0.0148      0.51  |VQ       |         |         |         |
  0+30       0.0187      0.55  |VQ       |         |         |         |
  0+35       0.0227      0.59  |VQ       |         |         |         |
  0+40       0.0268      0.59  |VQ       |         |         |         |
  0+45       0.0309      0.60  | Q       |         |         |         |
  0+50       0.0350      0.60  | Q       |         |         |         |
  0+55       0.0391      0.60  | Q       |         |         |         |
  1+ 0       0.0435      0.64  | Q       |         |         |         |
  1+ 5       0.0482      0.67  | QV      |         |         |         |
  1+10       0.0529      0.68  | QV      |         |         |         |
  1+15       0.0575      0.68  | QV      |         |         |         |
  1+20       0.0622      0.68  | Q V     |         |         |         |
  1+25       0.0669      0.68  | Q V     |         |         |         |
  1+30       0.0716      0.68  | Q V     |         |         |         |
  1+35       0.0763      0.68  | Q  V    |         |         |         |
  1+40       0.0810      0.68  | Q  V    |         |         |         |
  1+45       0.0857      0.68  | Q  V    |         |         |         |
  1+50       0.0904      0.68  | Q   V   |         |         |         |
  1+55       0.0951      0.68  | Q   V   |         |         |         |
  2+ 0       0.1001      0.72  | Q   V   |         |         |         |
  2+ 5       0.1050      0.72  | Q    V  |         |         |         |
  2+10       0.1101      0.73  | Q    V  |         |         |         |
  2+15       0.1153      0.76  |  Q   V  |         |         |         |
  2+20       0.1206      0.77  |  Q    V |         |         |         |
  2+25       0.1259      0.77  |  Q    V |         |         |         |
  2+30       0.1312      0.77  |  Q    V |         |         |         |
  2+35       0.1364      0.77  |  Q     V|         |         |         |
  2+40       0.1417      0.77  |  Q     V|         |         |         |
  2+45       0.1473      0.81  |  Q      V         |         |         |
  2+50       0.1531      0.84  |  Q      V         |         |         |
  2+55       0.1590      0.85  |  Q      V         |         |         |
  3+ 0       0.1648      0.85  |  Q      |V        |         |         |
  3+ 5       0.1707      0.85  |  Q      |V        |         |         |
  3+10       0.1769      0.89  |  Q      | V       |         |         |
  3+15       0.1833      0.93  |  Q      | V       |         |         |
  3+20       0.1897      0.94  |  Q      | V       |         |         |
  3+25       0.1965      0.98  |  Q      |  V      |         |         |
  3+30       0.2038      1.06  |   Q     |  V      |         |         |
  3+35       0.2116      1.14  |   Q     |   V     |         |         |
  3+40       0.2198      1.18  |   Q     |   V     |         |         |
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                                                PR6HR2YR
    3+45       0.2283      1.23  |   Q     |    V    |         |         |
    3+50       0.2370      1.27  |    Q    |     V   |         |         |
    3+55       0.2461      1.32  |    Q    |     V   |         |         |
    4+ 0       0.2554      1.36  |    Q    |      V  |         |         |
    4+ 5       0.2651      1.40  |    Q    |       V |         |         |
    4+10       0.2753      1.48  |    Q    |       V |         |         |
    4+15       0.2861      1.57  |     Q   |        V|         |         |
    4+20       0.2975      1.65  |     Q   |         V         |         |
    4+25       0.3094      1.74  |     Q   |         |V        |         |
    4+30       0.3217      1.78  |      Q  |         |V        |         |
    4+35       0.3343      1.83  |      Q  |         | V       |         |
    4+40       0.3475      1.91  |      Q  |         |  V      |         |
    4+45       0.3612      1.99  |      Q  |         |   V     |         |
    4+50       0.3752      2.04  |       Q |         |    V    |         |
    4+55       0.3896      2.09  |       Q |         |     V   |         |
    5+ 0       0.4045      2.17  |       Q |         |      V  |         |
    5+ 5       0.4211      2.42  |        Q|         |       V |         |
    5+10       0.4405      2.81  |         |Q        |        V|         |
    5+15       0.4622      3.15  |         | Q       |         |V        |
    5+20       0.4857      3.42  |         |  Q      |         |  V      |
    5+25       0.5116      3.76  |         |    Q    |         |   V     |
    5+30       0.5420      4.41  |         |      Q  |         |     V   |
    5+35       0.5638      3.17  |         | Q       |         |       V |
    5+40       0.5740      1.49  |    Q    |         |         |        V|
    5+45       0.5795      0.80  |  Q      |         |         |        V|
    5+50       0.5831      0.51  | Q       |         |         |        V|
    5+55       0.5855      0.36  |Q        |         |         |        V|
    6+ 0       0.5871      0.23  Q         |         |         |        V|
    6+ 5       0.5878      0.10  Q         |         |         |        V|
    6+10       0.5879      0.02  Q         |         |         |        V|
    6+15       0.5880      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

Page 4

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                                PR24HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.72                  19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            4.30                  48.15

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    1.720(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.720(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  42.0      0.650     0.590        0.305       1.000      0.305
                                                  Sum (F) =   0.305
Area averaged mean soil loss (F) (In/Hr) =  0.305
Minimum soil loss rate ((In/Hr)) =  0.153
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
```

PR24HR2YR

U n i t   H y d r o g r a p h

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	0.07	0.014	(0.541)	0.006	0.008
2	0.17	0.07	0.014	(0.539)	0.006	0.008
3	0.25	0.07	0.014	(0.537)	0.006	0.008
4	0.33	0.10	0.021	(0.534)	0.009	0.012
5	0.42	0.10	0.021	(0.532)	0.009	0.012
6	0.50	0.10	0.021	(0.530)	0.009	0.012
7	0.58	0.10	0.021	(0.528)	0.009	0.012
8	0.67	0.10	0.021	(0.526)	0.009	0.012
9	0.75	0.10	0.021	(0.524)	0.009	0.012
10	0.83	0.13	0.028	(0.522)	0.012	0.016
11	0.92	0.13	0.028	(0.520)	0.012	0.016
12	1.00	0.13	0.028	(0.518)	0.012	0.016
13	1.08	0.10	0.021	(0.516)	0.009	0.012
14	1.17	0.10	0.021	(0.514)	0.009	0.012
15	1.25	0.10	0.021	(0.512)	0.009	0.012
16	1.33	0.10	0.021	(0.510)	0.009	0.012
17	1.42	0.10	0.021	(0.508)	0.009	0.012
18	1.50	0.10	0.021	(0.506)	0.009	0.012
19	1.58	0.10	0.021	(0.504)	0.009	0.012
20	1.67	0.10	0.021	(0.502)	0.009	0.012
21	1.75	0.10	0.021	(0.500)	0.009	0.012
22	1.83	0.13	0.028	(0.498)	0.012	0.016
23	1.92	0.13	0.028	(0.496)	0.012	0.016
24	2.00	0.13	0.028	(0.494)	0.012	0.016
25	2.08	0.13	0.028	(0.492)	0.012	0.016
26	2.17	0.13	0.028	(0.490)	0.012	0.016
27	2.25	0.13	0.028	(0.488)	0.012	0.016
28	2.33	0.13	0.028	(0.486)	0.012	0.016
29	2.42	0.13	0.028	(0.484)	0.012	0.016
30	2.50	0.13	0.028	(0.482)	0.012	0.016
31	2.58	0.17	0.034	(0.480)	0.015	0.020
32	2.67	0.17	0.034	(0.478)	0.015	0.020
33	2.75	0.17	0.034	(0.476)	0.015	0.020
34	2.83	0.17	0.034	(0.474)	0.015	0.020
35	2.92	0.17	0.034	(0.472)	0.015	0.020
36	3.00	0.17	0.034	(0.470)	0.015	0.020
37	3.08	0.17	0.034	(0.468)	0.015	0.020
38	3.17	0.17	0.034	(0.466)	0.015	0.020
39	3.25	0.17	0.034	(0.464)	0.015	0.020
40	3.33	0.17	0.034	(0.462)	0.015	0.020
41	3.42	0.17	0.034	(0.460)	0.015	0.020
42	3.50	0.17	0.034	(0.458)	0.015	0.020
43	3.58	0.17	0.034	(0.456)	0.015	0.020
44	3.67	0.17	0.034	(0.455)	0.015	0.020
45	3.75	0.17	0.034	(0.453)	0.015	0.020
46	3.83	0.20	0.041	(0.451)	0.018	0.024
47	3.92	0.20	0.041	(0.449)	0.018	0.024
48	4.00	0.20	0.041	(0.447)	0.018	0.024
49	4.08	0.20	0.041	(0.445)	0.018	0.024
50	4.17	0.20	0.041	(0.443)	0.018	0.024
51	4.25	0.20	0.041	(0.441)	0.018	0.024
52	4.33	0.23	0.048	(0.439)	0.021	0.028
53	4.42	0.23	0.048	(0.437)	0.021	0.028
54	4.50	0.23	0.048	(0.436)	0.021	0.028
55	4.58	0.23	0.048	(0.434)	0.021	0.028
56	4.67	0.23	0.048	(0.432)	0.021	0.028
57	4.75	0.23	0.048	(0.430)	0.021	0.028
58	4.83	0.27	0.055	(0.428)	0.024	0.031

59	4.92	0.27	0.055	(0.426)	0.024	0.031
60	5.00	0.27	0.055	(0.424)	0.024	0.031
61	5.08	0.20	0.041	(0.423)	0.018	0.024
62	5.17	0.20	0.041	(0.421)	0.018	0.024
63	5.25	0.20	0.041	(0.419)	0.018	0.024
64	5.33	0.23	0.048	(0.417)	0.021	0.028
65	5.42	0.23	0.048	(0.415)	0.021	0.028
66	5.50	0.23	0.048	(0.413)	0.021	0.028
67	5.58	0.27	0.055	(0.412)	0.024	0.031
68	5.67	0.27	0.055	(0.410)	0.024	0.031
69	5.75	0.27	0.055	(0.408)	0.024	0.031
70	5.83	0.27	0.055	(0.406)	0.024	0.031
71	5.92	0.27	0.055	(0.404)	0.024	0.031
72	6.00	0.27	0.055	(0.403)	0.024	0.031
73	6.08	0.30	0.062	(0.401)	0.027	0.035
74	6.17	0.30	0.062	(0.399)	0.027	0.035
75	6.25	0.30	0.062	(0.397)	0.027	0.035
76	6.33	0.30	0.062	(0.396)	0.027	0.035
77	6.42	0.30	0.062	(0.394)	0.027	0.035
78	6.50	0.30	0.062	(0.392)	0.027	0.035
79	6.58	0.33	0.069	(0.390)	0.029	0.039
80	6.67	0.33	0.069	(0.388)	0.029	0.039
81	6.75	0.33	0.069	(0.387)	0.029	0.039
82	6.83	0.33	0.069	(0.385)	0.029	0.039
83	6.92	0.33	0.069	(0.383)	0.029	0.039
84	7.00	0.33	0.069	(0.381)	0.029	0.039
85	7.08	0.33	0.069	(0.380)	0.029	0.039
86	7.17	0.33	0.069	(0.378)	0.029	0.039
87	7.25	0.33	0.069	(0.376)	0.029	0.039
88	7.33	0.37	0.076	(0.375)	0.032	0.043
89	7.42	0.37	0.076	(0.373)	0.032	0.043
90	7.50	0.37	0.076	(0.371)	0.032	0.043
91	7.58	0.40	0.083	(0.369)	0.035	0.047
92	7.67	0.40	0.083	(0.368)	0.035	0.047
93	7.75	0.40	0.083	(0.366)	0.035	0.047
94	7.83	0.43	0.089	(0.364)	0.038	0.051
95	7.92	0.43	0.089	(0.363)	0.038	0.051
96	8.00	0.43	0.089	(0.361)	0.038	0.051
97	8.08	0.50	0.103	(0.359)	0.044	0.059
98	8.17	0.50	0.103	(0.358)	0.044	0.059
99	8.25	0.50	0.103	(0.356)	0.044	0.059
100	8.33	0.50	0.103	(0.354)	0.044	0.059
101	8.42	0.50	0.103	(0.353)	0.044	0.059
102	8.50	0.50	0.103	(0.351)	0.044	0.059
103	8.58	0.53	0.110	(0.349)	0.047	0.063
104	8.67	0.53	0.110	(0.348)	0.047	0.063
105	8.75	0.53	0.110	(0.346)	0.047	0.063
106	8.83	0.57	0.117	(0.344)	0.050	0.067
107	8.92	0.57	0.117	(0.343)	0.050	0.067
108	9.00	0.57	0.117	(0.341)	0.050	0.067
109	9.08	0.63	0.131	(0.340)	0.056	0.075
110	9.17	0.63	0.131	(0.338)	0.056	0.075
111	9.25	0.63	0.131	(0.336)	0.056	0.075
112	9.33	0.67	0.138	(0.335)	0.059	0.079
113	9.42	0.67	0.138	(0.333)	0.059	0.079
114	9.50	0.67	0.138	(0.332)	0.059	0.079
115	9.58	0.70	0.144	(0.330)	0.062	0.083
116	9.67	0.70	0.144	(0.328)	0.062	0.083
117	9.75	0.70	0.144	(0.327)	0.062	0.083
118	9.83	0.73	0.151	(0.325)	0.065	0.087
119	9.92	0.73	0.151	(0.324)	0.065	0.087
120	10.00	0.73	0.151	(0.322)	0.065	0.087
121	10.08	0.50	0.103	(0.321)	0.044	0.059
122	10.17	0.50	0.103	(0.319)	0.044	0.059
123	10.25	0.50	0.103	(0.317)	0.044	0.059
124	10.33	0.50	0.103	(0.316)	0.044	0.059
125	10.42	0.50	0.103	(0.314)	0.044	0.059
126	10.50	0.50	0.103	(0.313)	0.044	0.059
127	10.58	0.67	0.138	(0.311)	0.059	0.079
128	10.67	0.67	0.138	(0.310)	0.059	0.079
129	10.75	0.67	0.138	(0.308)	0.059	0.079
130	10.83	0.67	0.138	(0.307)	0.059	0.079
131	10.92	0.67	0.138	(0.305)	0.059	0.079
132	11.00	0.67	0.138	(0.304)	0.059	0.079
133	11.08	0.63	0.131	(0.302)	0.056	0.075
134	11.17	0.63	0.131	(0.301)	0.056	0.075
135	11.25	0.63	0.131	(0.299)	0.056	0.075
136	11.33	0.63	0.131	(0.298)	0.056	0.075
137	11.42	0.63	0.131	(0.296)	0.056	0.075

138	11.50	0.63	0.131	(0.295)	0.056	0.075
139	11.58	0.57	0.117	(0.293)	0.050	0.067
140	11.67	0.57	0.117	(0.292)	0.050	0.067
141	11.75	0.57	0.117	(0.291)	0.050	0.067
142	11.83	0.60	0.124	(0.289)	0.053	0.071
143	11.92	0.60	0.124	(0.288)	0.053	0.071
144	12.00	0.60	0.124	(0.286)	0.053	0.071
145	12.08	0.83	0.172	(0.285)	0.074	0.098
146	12.17	0.83	0.172	(0.283)	0.074	0.098
147	12.25	0.83	0.172	(0.282)	0.074	0.098
148	12.33	0.87	0.179	(0.280)	0.077	0.102
149	12.42	0.87	0.179	(0.279)	0.077	0.102
150	12.50	0.87	0.179	(0.278)	0.077	0.102
151	12.58	0.93	0.193	(0.276)	0.082	0.110
152	12.67	0.93	0.193	(0.275)	0.082	0.110
153	12.75	0.93	0.193	(0.273)	0.082	0.110
154	12.83	0.97	0.200	(0.272)	0.085	0.114
155	12.92	0.97	0.200	(0.271)	0.085	0.114
156	13.00	0.97	0.200	(0.269)	0.085	0.114
157	13.08	1.13	0.234	(0.268)	0.100	0.134
158	13.17	1.13	0.234	(0.267)	0.100	0.134
159	13.25	1.13	0.234	(0.265)	0.100	0.134
160	13.33	1.13	0.234	(0.264)	0.100	0.134
161	13.42	1.13	0.234	(0.263)	0.100	0.134
162	13.50	1.13	0.234	(0.261)	0.100	0.134
163	13.58	0.77	0.158	(0.260)	0.068	0.091
164	13.67	0.77	0.158	(0.259)	0.068	0.091
165	13.75	0.77	0.158	(0.257)	0.068	0.091
166	13.83	0.77	0.158	(0.256)	0.068	0.091
167	13.92	0.77	0.158	(0.255)	0.068	0.091
168	14.00	0.77	0.158	(0.253)	0.068	0.091
169	14.08	0.90	0.186	(0.252)	0.080	0.106
170	14.17	0.90	0.186	(0.251)	0.080	0.106
171	14.25	0.90	0.186	(0.250)	0.080	0.106
172	14.33	0.87	0.179	(0.248)	0.077	0.102
173	14.42	0.87	0.179	(0.247)	0.077	0.102
174	14.50	0.87	0.179	(0.246)	0.077	0.102
175	14.58	0.87	0.179	(0.244)	0.077	0.102
176	14.67	0.87	0.179	(0.243)	0.077	0.102
177	14.75	0.87	0.179	(0.242)	0.077	0.102
178	14.83	0.83	0.172	(0.241)	0.074	0.098
179	14.92	0.83	0.172	(0.239)	0.074	0.098
180	15.00	0.83	0.172	(0.238)	0.074	0.098
181	15.08	0.80	0.165	(0.237)	0.071	0.094
182	15.17	0.80	0.165	(0.236)	0.071	0.094
183	15.25	0.80	0.165	(0.235)	0.071	0.094
184	15.33	0.77	0.158	(0.233)	0.068	0.091
185	15.42	0.77	0.158	(0.232)	0.068	0.091
186	15.50	0.77	0.158	(0.231)	0.068	0.091
187	15.58	0.63	0.131	(0.230)	0.056	0.075
188	15.67	0.63	0.131	(0.229)	0.056	0.075
189	15.75	0.63	0.131	(0.227)	0.056	0.075
190	15.83	0.63	0.131	(0.226)	0.056	0.075
191	15.92	0.63	0.131	(0.225)	0.056	0.075
192	16.00	0.63	0.131	(0.224)	0.056	0.075
193	16.08	0.13	0.028	(0.223)	0.012	0.016
194	16.17	0.13	0.028	(0.222)	0.012	0.016
195	16.25	0.13	0.028	(0.221)	0.012	0.016
196	16.33	0.13	0.028	(0.219)	0.012	0.016
197	16.42	0.13	0.028	(0.218)	0.012	0.016
198	16.50	0.13	0.028	(0.217)	0.012	0.016
199	16.58	0.10	0.021	(0.216)	0.009	0.012
200	16.67	0.10	0.021	(0.215)	0.009	0.012
201	16.75	0.10	0.021	(0.214)	0.009	0.012
202	16.83	0.10	0.021	(0.213)	0.009	0.012
203	16.92	0.10	0.021	(0.212)	0.009	0.012
204	17.00	0.10	0.021	(0.211)	0.009	0.012
205	17.08	0.17	0.034	(0.210)	0.015	0.020
206	17.17	0.17	0.034	(0.209)	0.015	0.020
207	17.25	0.17	0.034	(0.208)	0.015	0.020
208	17.33	0.17	0.034	(0.206)	0.015	0.020
209	17.42	0.17	0.034	(0.205)	0.015	0.020
210	17.50	0.17	0.034	(0.204)	0.015	0.020
211	17.58	0.17	0.034	(0.203)	0.015	0.020
212	17.67	0.17	0.034	(0.202)	0.015	0.020
213	17.75	0.17	0.034	(0.201)	0.015	0.020
214	17.83	0.13	0.028	(0.200)	0.012	0.016
215	17.92	0.13	0.028	(0.199)	0.012	0.016
216	18.00	0.13	0.028	(0.198)	0.012	0.016

217	18.08	0.13	0.028	(0.197)	0.012	0.016
218	18.17	0.13	0.028	(0.196)	0.012	0.016
219	18.25	0.13	0.028	(0.195)	0.012	0.016
220	18.33	0.13	0.028	(0.195)	0.012	0.016
221	18.42	0.13	0.028	(0.194)	0.012	0.016
222	18.50	0.13	0.028	(0.193)	0.012	0.016
223	18.58	0.10	0.021	(0.192)	0.009	0.012
224	18.67	0.10	0.021	(0.191)	0.009	0.012
225	18.75	0.10	0.021	(0.190)	0.009	0.012
226	18.83	0.07	0.014	(0.189)	0.006	0.008
227	18.92	0.07	0.014	(0.188)	0.006	0.008
228	19.00	0.07	0.014	(0.187)	0.006	0.008
229	19.08	0.10	0.021	(0.186)	0.009	0.012
230	19.17	0.10	0.021	(0.185)	0.009	0.012
231	19.25	0.10	0.021	(0.185)	0.009	0.012
232	19.33	0.13	0.028	(0.184)	0.012	0.016
233	19.42	0.13	0.028	(0.183)	0.012	0.016
234	19.50	0.13	0.028	(0.182)	0.012	0.016
235	19.58	0.10	0.021	(0.181)	0.009	0.012
236	19.67	0.10	0.021	(0.180)	0.009	0.012
237	19.75	0.10	0.021	(0.180)	0.009	0.012
238	19.83	0.07	0.014	(0.179)	0.006	0.008
239	19.92	0.07	0.014	(0.178)	0.006	0.008
240	20.00	0.07	0.014	(0.177)	0.006	0.008
241	20.08	0.10	0.021	(0.176)	0.009	0.012
242	20.17	0.10	0.021	(0.176)	0.009	0.012
243	20.25	0.10	0.021	(0.175)	0.009	0.012
244	20.33	0.10	0.021	(0.174)	0.009	0.012
245	20.42	0.10	0.021	(0.173)	0.009	0.012
246	20.50	0.10	0.021	(0.173)	0.009	0.012
247	20.58	0.10	0.021	(0.172)	0.009	0.012
248	20.67	0.10	0.021	(0.171)	0.009	0.012
249	20.75	0.10	0.021	(0.170)	0.009	0.012
250	20.83	0.07	0.014	(0.170)	0.006	0.008
251	20.92	0.07	0.014	(0.169)	0.006	0.008
252	21.00	0.07	0.014	(0.168)	0.006	0.008
253	21.08	0.10	0.021	(0.168)	0.009	0.012
254	21.17	0.10	0.021	(0.167)	0.009	0.012
255	21.25	0.10	0.021	(0.166)	0.009	0.012
256	21.33	0.07	0.014	(0.166)	0.006	0.008
257	21.42	0.07	0.014	(0.165)	0.006	0.008
258	21.50	0.07	0.014	(0.165)	0.006	0.008
259	21.58	0.10	0.021	(0.164)	0.009	0.012
260	21.67	0.10	0.021	(0.163)	0.009	0.012
261	21.75	0.10	0.021	(0.163)	0.009	0.012
262	21.83	0.07	0.014	(0.162)	0.006	0.008
263	21.92	0.07	0.014	(0.162)	0.006	0.008
264	22.00	0.07	0.014	(0.161)	0.006	0.008
265	22.08	0.10	0.021	(0.161)	0.009	0.012
266	22.17	0.10	0.021	(0.160)	0.009	0.012
267	22.25	0.10	0.021	(0.159)	0.009	0.012
268	22.33	0.07	0.014	(0.159)	0.006	0.008
269	22.42	0.07	0.014	(0.159)	0.006	0.008
270	22.50	0.07	0.014	(0.158)	0.006	0.008
271	22.58	0.07	0.014	(0.158)	0.006	0.008
272	22.67	0.07	0.014	(0.157)	0.006	0.008
273	22.75	0.07	0.014	(0.157)	0.006	0.008
274	22.83	0.07	0.014	(0.156)	0.006	0.008
275	22.92	0.07	0.014	(0.156)	0.006	0.008
276	23.00	0.07	0.014	(0.156)	0.006	0.008
277	23.08	0.07	0.014	(0.155)	0.006	0.008
278	23.17	0.07	0.014	(0.155)	0.006	0.008
279	23.25	0.07	0.014	(0.154)	0.006	0.008
280	23.33	0.07	0.014	(0.154)	0.006	0.008
281	23.42	0.07	0.014	(0.154)	0.006	0.008
282	23.50	0.07	0.014	(0.154)	0.006	0.008
283	23.58	0.07	0.014	(0.153)	0.006	0.008
284	23.67	0.07	0.014	(0.153)	0.006	0.008
285	23.75	0.07	0.014	(0.153)	0.006	0.008
286	23.83	0.07	0.014	(0.153)	0.006	0.008
287	23.92	0.07	0.014	(0.153)	0.006	0.008
288	24.00	0.07	0.014	(0.153)	0.006	0.008

(Loss Rate Not Used)

Sum = 100.0 Sum = 11.8

Flood volume = Effective rainfall 0.98(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 0.9(Ac.Ft)
Total soil loss = 0.74(In)
Total soil loss = 0.687(Ac.Ft)
Total rainfall = 1.72(In)

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                                  PR24HR2YR
     Flood volume =       39987.4 Cubic Feet
     Total soil loss =       29920.6 Cubic Feet
     --------------------------------------------------------------------
      Peak flow rate of this hydrograph =      1.511(CFS)
     --------------------------------------------------------------------
     ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                       24 - H O U R    S T O R M
                  R u n o f f     H y d r o g r a p h
     --------------------------------------------------------------------
               Hydrograph in   5   Minute intervals ((CFS))

     --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0003      0.04   Q         |         |         |         |
  0+10       0.0009      0.08   Q         |         |         |         |
  0+15       0.0015      0.09   Q         |         |         |         |
  0+20       0.0022      0.11   Q         |         |         |         |
  0+25       0.0031      0.13   Q         |         |         |         |
  0+30       0.0040      0.13   Q         |         |         |         |
  0+35       0.0049      0.13   Q         |         |         |         |
  0+40       0.0059      0.13   Q         |         |         |         |
  0+45       0.0068      0.13   Q         |         |         |         |
  0+50       0.0078      0.16   Q         |         |         |         |
  0+55       0.0090      0.17   Q         |         |         |         |
  1+ 0       0.0103      0.18   Q         |         |         |         |
  1+ 5       0.0113      0.16   Q         |         |         |         |
  1+10       0.0123      0.14   Q         |         |         |         |
  1+15       0.0132      0.13   Q         |         |         |         |
  1+20       0.0141      0.13   Q         |         |         |         |
  1+25       0.0150      0.13   Q         |         |         |         |
  1+30       0.0160      0.13   Q         |         |         |         |
  1+35       0.0169      0.13   Q         |         |         |         |
  1+40       0.0178      0.13   Q         |         |         |         |
  1+45       0.0187      0.13   Q         |         |         |         |
  1+50       0.0198      0.16   Q         |         |         |         |
  1+55       0.0210      0.17   Q         |         |         |         |
  2+ 0       0.0222      0.18   Q         |         |         |         |
  2+ 5       0.0234      0.18   QV        |         |         |         |
  2+10       0.0246      0.18   QV        |         |         |         |
  2+15       0.0259      0.18   QV        |         |         |         |
  2+20       0.0271      0.18   QV        |         |         |         |
  2+25       0.0283      0.18   QV        |         |         |         |
  2+30       0.0295      0.18   QV        |         |         |         |
  2+35       0.0309      0.20   QV        |         |         |         |
  2+40       0.0324      0.22   QV        |         |         |         |
  2+45       0.0339      0.22   QV        |         |         |         |
  2+50       0.0355      0.22   QV        |         |         |         |
  2+55       0.0370      0.22   QV        |         |         |         |
  3+ 0       0.0385      0.22   QV        |         |         |         |
  3+ 5       0.0401      0.22   QV        |         |         |         |
  3+10       0.0416      0.22   QV        |         |         |         |
  3+15       0.0431      0.22   QV        |         |         |         |
  3+20       0.0446      0.22   QV        |         |         |         |
  3+25       0.0462      0.22   Q V       |         |         |         |
  3+30       0.0477      0.22   Q V       |         |         |         |
  3+35       0.0492      0.22   Q V       |         |         |         |
  3+40       0.0508      0.22   Q V       |         |         |         |
  3+45       0.0523      0.22   Q V       |         |         |         |
  3+50       0.0540      0.24   Q V       |         |         |         |
  3+55       0.0558      0.26   |QV       |         |         |         |
  4+ 0       0.0576      0.27   |QV       |         |         |         |
  4+ 5       0.0594      0.27   |QV       |         |         |         |
  4+10       0.0613      0.27   |QV       |         |         |         |
  4+15       0.0631      0.27   |QV       |         |         |         |
  4+20       0.0651      0.29   |QV       |         |         |         |
  4+25       0.0672      0.31   |QV       |         |         |         |
  4+30       0.0694      0.31   |Q V      |         |         |         |
  4+35       0.0715      0.31   |Q V      |         |         |         |
  4+40       0.0736      0.31   |Q V      |         |         |         |
  4+45       0.0758      0.31   |Q V      |         |         |         |
  4+50       0.0781      0.33   |Q V      |         |         |         |
  4+55       0.0805      0.35   |Q V      |         |         |         |
  5+ 0       0.0829      0.35   |Q V      |         |         |         |
  5+ 5       0.0851      0.31   |Q V      |         |         |         |
  5+10       0.0870      0.28   |Q V      |         |         |         |
  5+15       0.0888      0.27   |Q V      |         |         |         |
  5+20       0.0908      0.29   |Q V      |         |         |         |
  5+25       0.0929      0.31   |Q  V     |         |         |         |
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 5+30       0.0951      0.31  |Q  V     |         |         |         |
 5+35       0.0974      0.33  |Q  V     |         |         |         |
 5+40       0.0998      0.35  |Q  V     |         |         |         |
 5+45       0.1022      0.35  |Q  V     |         |         |         |
 5+50       0.1047      0.36  |Q  V     |         |         |         |
 5+55       0.1071      0.36  |Q  V     |         |         |         |
 6+ 0       0.1096      0.36  |Q  V     |         |         |         |
 6+ 5       0.1122      0.38  |Q  V     |         |         |         |
 6+10       0.1149      0.40  |Q   V    |         |         |         |
 6+15       0.1176      0.40  |Q   V    |         |         |         |
 6+20       0.1204      0.40  |Q   V    |         |         |         |
 6+25       0.1231      0.40  |Q   V    |         |         |         |
 6+30       0.1259      0.40  |Q   V    |         |         |         |
 6+35       0.1288      0.42  |Q   V    |         |         |         |
 6+40       0.1318      0.44  |Q   V    |         |         |         |
 6+45       0.1349      0.44  |Q   V    |         |         |         |
 6+50       0.1379      0.44  |Q    V   |         |         |         |
 6+55       0.1410      0.44  |Q    V   |         |         |         |
 7+ 0       0.1441      0.44  |Q    V   |         |         |         |
 7+ 5       0.1471      0.44  |Q    V   |         |         |         |
 7+10       0.1502      0.44  |Q    V   |         |         |         |
 7+15       0.1532      0.44  |Q    V   |         |         |         |
 7+20       0.1565      0.47  |Q    V   |         |         |         |
 7+25       0.1598      0.48  |Q    V   |         |         |         |
 7+30       0.1631      0.49  |Q     V  |         |         |         |
 7+35       0.1667      0.51  | Q    V  |         |         |         |
 7+40       0.1703      0.53  | Q    V  |         |         |         |
 7+45       0.1740      0.53  | Q    V  |         |         |         |
 7+50       0.1778      0.56  | Q    V  |         |         |         |
 7+55       0.1817      0.57  | Q    V  |         |         |         |
 8+ 0       0.1857      0.58  | Q     V |         |         |         |
 8+ 5       0.1900      0.62  | Q     V |         |         |         |
 8+10       0.1945      0.66  | Q     V |         |         |         |
 8+15       0.1991      0.66  | Q     V |         |         |         |
 8+20       0.2037      0.67  | Q     V |         |         |         |
 8+25       0.2083      0.67  | Q      V|         |         |         |
 8+30       0.2129      0.67  | Q      V|         |         |         |
 8+35       0.2176      0.69  | Q      V|         |         |         |
 8+40       0.2225      0.71  | Q      V|         |         |         |
 8+45       0.2274      0.71  | Q      V|         |         |         |
 8+50       0.2324      0.73  | Q       V         |         |         |
 8+55       0.2376      0.75  |  Q      V         |         |         |
 9+ 0       0.2428      0.75  |  Q      V         |         |         |
 9+ 5       0.2483      0.80  |  Q      V         |         |         |
 9+10       0.2540      0.84  |  Q      |V        |         |         |
 9+15       0.2598      0.84  |  Q      |V        |         |         |
 9+20       0.2658      0.87  |  Q      |V        |         |         |
 9+25       0.2719      0.88  |  Q      |V        |         |         |
 9+30       0.2780      0.89  |  Q      | V       |         |         |
 9+35       0.2843      0.91  |  Q      | V       |         |         |
 9+40       0.2907      0.93  |  Q      | V       |         |         |
 9+45       0.2971      0.93  |  Q      | V       |         |         |
 9+50       0.3037      0.96  |  Q      |  V      |         |         |
 9+55       0.3104      0.97  |  Q      |  V      |         |         |
10+ 0       0.3171      0.98  |  Q      |  V      |         |         |
10+ 5       0.3228      0.82  |  Q      |   V     |         |         |
10+10       0.3276      0.70  | Q       |   V     |         |         |
10+15       0.3322      0.67  | Q       |   V     |         |         |
10+20       0.3368      0.67  | Q       |   V     |         |         |
10+25       0.3414      0.67  | Q       |   V     |         |         |
10+30       0.3460      0.67  | Q       |    V    |         |         |
10+35       0.3513      0.78  |  Q      |    V    |         |         |
10+40       0.3573      0.87  |  Q      |    V    |         |         |
10+45       0.3634      0.88  |  Q      |    V    |         |         |
10+50       0.3695      0.89  |  Q      |     V   |         |         |
10+55       0.3756      0.89  |  Q      |     V   |         |         |
11+ 0       0.3818      0.89  |  Q      |     V   |         |         |
11+ 5       0.3877      0.87  |  Q      |     V   |         |         |
11+10       0.3936      0.85  |  Q      |      V  |         |         |
11+15       0.3994      0.85  |  Q      |      V  |         |         |
11+20       0.4052      0.84  |  Q      |      V  |         |         |
11+25       0.4110      0.84  |  Q      |      V  |         |         |
11+30       0.4168      0.84  |  Q      |       V |         |         |
11+35       0.4223      0.80  |  Q      |       V |         |         |
11+40       0.4276      0.76  |  Q      |       V |         |         |
11+45       0.4328      0.76  |  Q      |       V |         |         |
11+50       0.4382      0.78  |  Q      |        V|         |         |
11+55       0.4436      0.80  |  Q      |        V|         |         |
12+ 0       0.4491      0.80  |  Q      |        V|         |         |
```

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                                             PR24HR2YR
12+ 5       0.4557      0.95  |  Q      |        V|         |         |
12+10       0.4632      1.08  |   Q     |         V         |         |
12+15       0.4708      1.10  |   Q     |         V         |         |
12+20       0.4786      1.13  |   Q     |         V         |         |
12+25       0.4865      1.15  |   Q     |         |V        |         |
12+30       0.4944      1.15  |   Q     |         |V        |         |
12+35       0.5027      1.20  |   Q     |         |V        |         |
12+40       0.5112      1.24  |   Q     |         | V       |         |
12+45       0.5198      1.24  |   Q     |         | V       |         |
12+50       0.5285      1.27  |    Q    |         |  V      |         |
12+55       0.5373      1.28  |    Q    |         |  V      |         |
13+ 0       0.5462      1.29  |    Q    |         |  V      |         |
13+ 5       0.5558      1.40  |    Q    |         |   V     |         |
13+10       0.5661      1.49  |    Q    |         |   V     |         |
13+15       0.5765      1.51  |     Q   |         |    V    |         |
13+20       0.5869      1.51  |     Q   |         |    V    |         |
13+25       0.5973      1.51  |     Q   |         |     V   |         |
13+30       0.6077      1.51  |     Q   |         |     V   |         |
13+35       0.6164      1.27  |    Q    |         |     V   |         |
13+40       0.6238      1.07  |   Q     |         |      V  |         |
13+45       0.6309      1.03  |   Q     |         |      V  |         |
13+50       0.6379      1.02  |   Q     |         |      V  |         |
13+55       0.6449      1.02  |   Q     |         |       V |         |
14+ 0       0.6520      1.02  |   Q     |         |       V |         |
14+ 5       0.6596      1.11  |   Q     |         |       V |         |
14+10       0.6678      1.18  |   Q     |         |        V|         |
14+15       0.6760      1.20  |   Q     |         |        V|         |
14+20       0.6841      1.18  |   Q     |         |        V|         |
14+25       0.6921      1.16  |   Q     |         |         V         |
14+30       0.7001      1.16  |   Q     |         |         V         |
14+35       0.7080      1.16  |   Q     |         |         V         |
14+40       0.7160      1.16  |   Q     |         |         |V        |
14+45       0.7239      1.16  |   Q     |         |         |V        |
14+50       0.7317      1.13  |   Q     |         |         |V        |
14+55       0.7394      1.12  |   Q     |         |         | V       |
15+ 0       0.7471      1.11  |   Q     |         |         | V       |
15+ 5       0.7546      1.09  |   Q     |         |         | V       |
15+10       0.7619      1.07  |   Q     |         |         |  V      |
15+15       0.7693      1.07  |   Q     |         |         |  V      |
15+20       0.7765      1.04  |   Q     |         |         |  V      |
15+25       0.7836      1.03  |   Q     |         |         |   V     |
15+30       0.7906      1.02  |   Q     |         |         |   V     |
15+35       0.7970      0.93  |  Q      |         |         |   V     |
15+40       0.8030      0.86  |  Q      |         |         |   V     |
15+45       0.8088      0.85  |  Q      |         |         |    V    |
15+50       0.8146      0.84  |  Q      |         |         |    V    |
15+55       0.8204      0.84  |  Q      |         |         |    V    |
16+ 0       0.8262      0.84  |  Q      |         |         |     V   |
16+ 5       0.8298      0.51  | Q       |         |         |     V   |
16+10       0.8314      0.24  Q         |         |         |     V   |
16+15       0.8328      0.19  Q         |         |         |     V   |
16+20       0.8340      0.18  Q         |         |         |     V   |
16+25       0.8352      0.18  Q         |         |         |     V   |
16+30       0.8364      0.18  Q         |         |         |     V   |
16+35       0.8375      0.16  Q         |         |         |     V   |
16+40       0.8385      0.14  Q         |         |         |     V   |
16+45       0.8394      0.13  Q         |         |         |     V   |
16+50       0.8403      0.13  Q         |         |         |     V   |
16+55       0.8412      0.13  Q         |         |         |     V   |
17+ 0       0.8421      0.13  Q         |         |         |     V   |
17+ 5       0.8434      0.18  Q         |         |         |     V   |
17+10       0.8448      0.21  Q         |         |         |     V   |
17+15       0.8463      0.22  Q         |         |         |     V   |
17+20       0.8479      0.22  Q         |         |         |     V   |
17+25       0.8494      0.22  Q         |         |         |      V  |
17+30       0.8509      0.22  Q         |         |         |      V  |
17+35       0.8525      0.22  Q         |         |         |      V  |
17+40       0.8540      0.22  Q         |         |         |      V  |
17+45       0.8555      0.22  Q         |         |         |      V  |
17+50       0.8569      0.20  Q         |         |         |      V  |
17+55       0.8582      0.18  Q         |         |         |      V  |
18+ 0       0.8594      0.18  Q         |         |         |      V  |
18+ 5       0.8606      0.18  Q         |         |         |      V  |
18+10       0.8618      0.18  Q         |         |         |      V  |
18+15       0.8631      0.18  Q         |         |         |      V  |
18+20       0.8643      0.18  Q         |         |         |      V  |
18+25       0.8655      0.18  Q         |         |         |      V  |
18+30       0.8667      0.18  Q         |         |         |      V  |
18+35       0.8678      0.16  Q         |         |         |      V  |
```

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  18+40       0.8688      0.14  Q          |          |          |      V   |
  18+45       0.8697      0.13  Q          |          |          |      V   |
  18+50       0.8704      0.11  Q          |          |          |      V   |
  18+55       0.8711      0.09  Q          |          |          |      V   |
  19+ 0       0.8717      0.09  Q          |          |          |      V   |
  19+ 5       0.8725      0.11  Q          |          |          |       V  |
  19+10       0.8734      0.13  Q          |          |          |       V  |
  19+15       0.8743      0.13  Q          |          |          |       V  |
  19+20       0.8753      0.16  Q          |          |          |       V  |
  19+25       0.8765      0.17  Q          |          |          |       V  |
  19+30       0.8778      0.18  Q          |          |          |       V  |
  19+35       0.8788      0.16  Q          |          |          |       V  |
  19+40       0.8798      0.14  Q          |          |          |       V  |
  19+45       0.8807      0.13  Q          |          |          |       V  |
  19+50       0.8815      0.11  Q          |          |          |       V  |
  19+55       0.8821      0.09  Q          |          |          |       V  |
  20+ 0       0.8827      0.09  Q          |          |          |       V  |
  20+ 5       0.8835      0.11  Q          |          |          |       V  |
  20+10       0.8844      0.13  Q          |          |          |       V  |
  20+15       0.8853      0.13  Q          |          |          |       V  |
  20+20       0.8862      0.13  Q          |          |          |       V  |
  20+25       0.8871      0.13  Q          |          |          |       V  |
  20+30       0.8880      0.13  Q          |          |          |       V  |
  20+35       0.8890      0.13  Q          |          |          |       V  |
  20+40       0.8899      0.13  Q          |          |          |       V  |
  20+45       0.8908      0.13  Q          |          |          |       V  |
  20+50       0.8916      0.11  Q          |          |          |       V  |
  20+55       0.8922      0.09  Q          |          |          |       V  |
  21+ 0       0.8928      0.09  Q          |          |          |       V  |
  21+ 5       0.8936      0.11  Q          |          |          |       V  |
  21+10       0.8945      0.13  Q          |          |          |       V  |
  21+15       0.8954      0.13  Q          |          |          |        V|
  21+20       0.8961      0.11  Q          |          |          |        V|
  21+25       0.8968      0.09  Q          |          |          |        V|
  21+30       0.8974      0.09  Q          |          |          |        V|
  21+35       0.8982      0.11  Q          |          |          |        V|
  21+40       0.8991      0.13  Q          |          |          |        V|
  21+45       0.9000      0.13  Q          |          |          |        V|
  21+50       0.9007      0.11  Q          |          |          |        V|
  21+55       0.9014      0.09  Q          |          |          |        V|
  22+ 0       0.9020      0.09  Q          |          |          |        V|
  22+ 5       0.9028      0.11  Q          |          |          |        V|
  22+10       0.9037      0.13  Q          |          |          |        V|
  22+15       0.9046      0.13  Q          |          |          |        V|
  22+20       0.9053      0.11  Q          |          |          |        V|
  22+25       0.9060      0.09  Q          |          |          |        V|
  22+30       0.9066      0.09  Q          |          |          |        V|
  22+35       0.9072      0.09  Q          |          |          |        V|
  22+40       0.9078      0.09  Q          |          |          |        V|
  22+45       0.9084      0.09  Q          |          |          |        V|
  22+50       0.9090      0.09  Q          |          |          |        V|
  22+55       0.9096      0.09  Q          |          |          |        V|
  23+ 0       0.9103      0.09  Q          |          |          |        V|
  23+ 5       0.9109      0.09  Q          |          |          |        V|
  23+10       0.9115      0.09  Q          |          |          |        V|
  23+15       0.9121      0.09  Q          |          |          |        V|
  23+20       0.9127      0.09  Q          |          |          |        V|
  23+25       0.9133      0.09  Q          |          |          |        V|
  23+30       0.9139      0.09  Q          |          |          |        V|
  23+35       0.9145      0.09  Q          |          |          |        V|
  23+40       0.9152      0.09  Q          |          |          |        V|
  23+45       0.9158      0.09  Q          |          |          |        V|
  23+50       0.9164      0.09  Q          |          |          |        V|
  23+55       0.9170      0.09  Q          |          |          |        V|
  24+ 0       0.9176      0.09  Q          |          |          |        V|
  24+ 5       0.9179      0.04  Q          |          |          |        V|
  24+10       0.9180      0.01  Q          |          |          |        V|
  24+15       0.9180      0.00  Q          |          |          |        V|
-----------------------------------------------------------------------
```

5 YEAR

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  09/07/16 File: PR15.out

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------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =      916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.48                  5.37

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.20                 13.44

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.649(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.649(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  42.0      0.650     0.590        0.305       1.000      0.305
                                                  Sum (F) =   0.305
Area averaged mean soil loss (F) (In/Hr) =  0.305
Minimum soil loss rate ((In/Hr)) =  0.153
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                     PR1HR5YR
----------------------------------------------------------------------

                U n i t   H y d r o g r a p h
                        VALLEY S-Curve
--------------------------------------------------------------------
                Unit Hydrograph Data
---------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                            Graph %          (CFS)
---------------------------------------------------------------------
    1   0.083        241.878         49.815              5.621
    2   0.167        483.756         40.562              4.577
    3   0.250        725.634          7.289              0.823
    4   0.333        967.512          2.334              0.263
                              Sum = 100.000   Sum=      11.284
----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)          Max    |   Low        (In/Hr)
   1   0.08     4.40     0.342        (  0.305)       0.147         0.196
   2   0.17     4.50     0.350        (  0.305)       0.150         0.200
   3   0.25     5.40     0.420        (  0.305)       0.180         0.240
   4   0.33     5.40     0.420        (  0.305)       0.180         0.240
   5   0.42     5.70     0.444        (  0.305)       0.190         0.254
   6   0.50     6.40     0.498        (  0.305)       0.213         0.285
   7   0.58     7.90     0.615        (  0.305)       0.263         0.352
   8   0.67     9.10     0.708        (  0.305)       0.303         0.405
   9   0.75    12.80     0.996           0.305     (  0.426)        0.691
  10   0.83    25.60     1.992           0.305     (  0.853)        1.687
  11   0.92     7.90     0.615        (  0.305)       0.263         0.352
  12   1.00     4.90     0.381        (  0.305)       0.163         0.218
                  (Loss Rate Not Used)
     Sum =     100.0                                    Sum =     5.1
        Flood volume = Effective rainfall      0.43(In)
         times area      11.2(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
        Total soil loss =      0.22(In)
        Total soil loss =     0.207(Ac.Ft)
        Total rainfall =      0.65(In)
        Flood volume =       17344.9 Cubic Feet
        Total soil loss =       9016.5 Cubic Feet
--------------------------------------------------------------------
         Peak flow rate of this hydrograph =     13.082(CFS)
--------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                   1 - H O U R    S T O R M
              R u n o f f      H y d r o g r a p h
--------------------------------------------------------------------
           Hydrograph in   5   Minute intervals ((CFS))

--------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
    0+ 5       0.0076      1.10  V Q        |         |         |         |
    0+10       0.0215      2.02  | V Q      |         |         |         |
    0+15       0.0383      2.43  |  VQ      |         |         |         |
    0+20       0.0567      2.67  |    Q     |         |         |         |
    0+25       0.0758      2.78  |    Q V   |         |         |         |
    0+30       0.0966      3.03  |     Q  V|         |         |         |
    0+35       0.1211      3.55  |      Q   | V       |         |         |
    0+40       0.1500      4.19  |       Q  |    V    |         |         |
    0+45       0.1920      6.11  |          | Q      V|         |         |
    0+50       0.2821     13.08  |          |         |     Q V |         |
    0+55       0.3536     10.38  |          |         Q         |    V    |
    1+ 0       0.3840      4.41  |       Q  |         |         |       V |
    1+ 5       0.3959      1.73  |  Q       |         |         |        V|
    1+10       0.3978      0.27  Q          |         |         |        V|
    1+15       0.3982      0.06  Q          |         |         |        V|
----------------------------------------------------------------------
```

```
                              PR3HR5YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.80                  8.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.80                 20.15

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.034(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.034(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00          0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  42.0      0.650     0.590        0.305       1.000      0.305
                                                  Sum (F) =   0.305
Area averaged mean soil loss (F) (In/Hr) =  0.305
Minimum soil loss rate ((In/Hr)) =  0.153
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
```

PR3HR5YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.161	(0.305)	0.069	0.092
2	0.17	1.30	0.161	(0.305)	0.069	0.092
3	0.25	1.10	0.137	(0.305)	0.058	0.078
4	0.33	1.50	0.186	(0.305)	0.080	0.106
5	0.42	1.50	0.186	(0.305)	0.080	0.106
6	0.50	1.80	0.223	(0.305)	0.096	0.128
7	0.58	1.50	0.186	(0.305)	0.080	0.106
8	0.67	1.80	0.223	(0.305)	0.096	0.128
9	0.75	1.80	0.223	(0.305)	0.096	0.128
10	0.83	1.50	0.186	(0.305)	0.080	0.106
11	0.92	1.60	0.199	(0.305)	0.085	0.114
12	1.00	1.80	0.223	(0.305)	0.096	0.128
13	1.08	2.20	0.273	(0.305)	0.117	0.156
14	1.17	2.20	0.273	(0.305)	0.117	0.156
15	1.25	2.20	0.273	(0.305)	0.117	0.156
16	1.33	2.00	0.248	(0.305)	0.106	0.142
17	1.42	2.60	0.323	(0.305)	0.138	0.185
18	1.50	2.70	0.335	(0.305)	0.143	0.192
19	1.58	2.40	0.298	(0.305)	0.127	0.170
20	1.67	2.70	0.335	(0.305)	0.143	0.192
21	1.75	3.30	0.410	(0.305)	0.175	0.234
22	1.83	3.10	0.385	(0.305)	0.165	0.220
23	1.92	2.90	0.360	(0.305)	0.154	0.206
24	2.00	3.00	0.372	(0.305)	0.159	0.213
25	2.08	3.10	0.385	(0.305)	0.165	0.220
26	2.17	4.20	0.521	(0.305)	0.223	0.298
27	2.25	5.00	0.621	(0.305)	0.266	0.355
28	2.33	3.50	0.434	(0.305)	0.186	0.248
29	2.42	6.80	0.844	0.305	(0.361)	0.539
30	2.50	7.30	0.906	0.305	(0.388)	0.601
31	2.58	8.20	1.018	0.305	(0.436)	0.713
32	2.67	5.90	0.732	0.305	(0.313)	0.427
33	2.75	2.00	0.248	(0.305)	0.106	0.142
34	2.83	1.80	0.223	(0.305)	0.096	0.128
35	2.92	1.80	0.223	(0.305)	0.096	0.128
36	3.00	0.60	0.074	(0.305)	0.032	0.043

(Loss Rate Not Used)
Sum = 100.0 Sum = 7.4

Flood volume = Effective rainfall 0.61(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 0.6(Ac.Ft)
Total soil loss = 0.42(In)
Total soil loss = 0.391(Ac.Ft)
Total rainfall = 1.03(In)
Flood volume = 24984.1 Cubic Feet
Total soil loss = 17050.0 Cubic Feet

Peak flow rate of this hydrograph = 7.269(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0036	0.52	V Q	|	|	|	|

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                                                    PR3HR5YR
    0+10       0.0101      0.94  V  Q      |         |         |         |
    0+15       0.0165      0.94  |V Q      |         |         |         |
    0+20       0.0238      1.06  |V  Q     |         |         |         |
    0+25       0.0319      1.18  | V Q     |         |         |         |
    0+30       0.0409      1.31  | V  Q    |         |         |         |
    0+35       0.0499      1.30  |  V Q    |         |         |         |
    0+40       0.0591      1.34  |   VQ    |         |         |         |
    0+45       0.0689      1.43  |   VQ    |         |         |         |
    0+50       0.0780      1.32  |    Q    |         |         |         |
    0+55       0.0867      1.27  |    QV   |         |         |         |
    1+ 0       0.0961      1.36  |    QV   |         |         |         |
    1+ 5       0.1070      1.59  |     QV  |         |         |         |
    1+10       0.1189      1.73  |     Q V |         |         |         |
    1+15       0.1310      1.76  |      Q V|         |         |         |
    1+20       0.1426      1.68  |     Q  V|         |         |         |
    1+25       0.1554      1.86  |      Q  V         |         |         |
    1+30       0.1697      2.08  |       Q |V        |         |         |
    1+35       0.1837      2.03  |       Q | V       |         |         |
    1+40       0.1979      2.06  |       Q |  V      |         |         |
    1+45       0.2143      2.39  |        Q|   V     |         |         |
    1+50       0.2316      2.51  |         Q     V   |         |         |
    1+55       0.2482      2.41  |        Q|      V  |         |         |
    2+ 0       0.2646      2.38  |        Q|       V |         |         |
    2+ 5       0.2814      2.44  |        Q|        V|         |         |
    2+10       0.3015      2.91  |         |Q        |V        |         |
    2+15       0.3263      3.60  |         |   Q     | V       |         |
    2+20       0.3492      3.33  |         |  Q      |   V     |         |
    2+25       0.3805      4.54  |         |       Q |     V   |         |
    2+30       0.4228      6.15  |         |         |   Q    V|         |
    2+35       0.4728      7.27  |         |         |        Q| V       |
    2+40       0.5162      6.30  |         |         |    Q    |     V   |
    2+45       0.5403      3.50  |         |  Q      |         |      V  |
    2+50       0.5535      1.91  |      Q  |         |         |       V |
    2+55       0.5640      1.53  |     Q   |         |         |        V|
    3+ 0       0.5707      0.97  |  Q      |         |         |        V|
    3+ 5       0.5730      0.33  |Q        |         |         |        V|
    3+10       0.5735      0.07  Q         |         |         |        V|
    3+15       0.5736      0.01  Q         |         |         |         V
-----------------------------------------------------------------------
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PR6HR5YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 09/07/16 File: PR65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format


```
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20           1.10                  12.32

100 YEAR Area rainfall data:

Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20           2.50                  27.99

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.428(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.428(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%      F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  42.0      0.650     0.590        0.305       1.000      0.305
                                                  Sum (F) =   0.305
Area averaged mean soil loss (F) (In/Hr) =  0.305
Minimum soil loss rate ((In/Hr)) =  0.153
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
```

PR6HR5YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.086	(0.305)	0.037	0.049
2	0.17	0.60	0.103	(0.305)	0.044	0.059
3	0.25	0.60	0.103	(0.305)	0.044	0.059
4	0.33	0.60	0.103	(0.305)	0.044	0.059
5	0.42	0.60	0.103	(0.305)	0.044	0.059
6	0.50	0.70	0.120	(0.305)	0.051	0.069
7	0.58	0.70	0.120	(0.305)	0.051	0.069
8	0.67	0.70	0.120	(0.305)	0.051	0.069
9	0.75	0.70	0.120	(0.305)	0.051	0.069
10	0.83	0.70	0.120	(0.305)	0.051	0.069
11	0.92	0.70	0.120	(0.305)	0.051	0.069
12	1.00	0.80	0.137	(0.305)	0.059	0.078
13	1.08	0.80	0.137	(0.305)	0.059	0.078
14	1.17	0.80	0.137	(0.305)	0.059	0.078
15	1.25	0.80	0.137	(0.305)	0.059	0.078
16	1.33	0.80	0.137	(0.305)	0.059	0.078
17	1.42	0.80	0.137	(0.305)	0.059	0.078
18	1.50	0.80	0.137	(0.305)	0.059	0.078
19	1.58	0.80	0.137	(0.305)	0.059	0.078
20	1.67	0.80	0.137	(0.305)	0.059	0.078
21	1.75	0.80	0.137	(0.305)	0.059	0.078
22	1.83	0.80	0.137	(0.305)	0.059	0.078
23	1.92	0.80	0.137	(0.305)	0.059	0.078
24	2.00	0.90	0.154	(0.305)	0.066	0.088
25	2.08	0.80	0.137	(0.305)	0.059	0.078
26	2.17	0.90	0.154	(0.305)	0.066	0.088
27	2.25	0.90	0.154	(0.305)	0.066	0.088
28	2.33	0.90	0.154	(0.305)	0.066	0.088
29	2.42	0.90	0.154	(0.305)	0.066	0.088
30	2.50	0.90	0.154	(0.305)	0.066	0.088
31	2.58	0.90	0.154	(0.305)	0.066	0.088
32	2.67	0.90	0.154	(0.305)	0.066	0.088
33	2.75	1.00	0.171	(0.305)	0.073	0.098
34	2.83	1.00	0.171	(0.305)	0.073	0.098
35	2.92	1.00	0.171	(0.305)	0.073	0.098
36	3.00	1.00	0.171	(0.305)	0.073	0.098
37	3.08	1.00	0.171	(0.305)	0.073	0.098
38	3.17	1.10	0.188	(0.305)	0.081	0.108
39	3.25	1.10	0.188	(0.305)	0.081	0.108
40	3.33	1.10	0.188	(0.305)	0.081	0.108
41	3.42	1.20	0.206	(0.305)	0.088	0.118
42	3.50	1.30	0.223	(0.305)	0.095	0.127
43	3.58	1.40	0.240	(0.305)	0.103	0.137
44	3.67	1.40	0.240	(0.305)	0.103	0.137
45	3.75	1.50	0.257	(0.305)	0.110	0.147
46	3.83	1.50	0.257	(0.305)	0.110	0.147
47	3.92	1.60	0.274	(0.305)	0.117	0.157
48	4.00	1.60	0.274	(0.305)	0.117	0.157
49	4.08	1.70	0.291	(0.305)	0.125	0.167
50	4.17	1.80	0.308	(0.305)	0.132	0.176
51	4.25	1.90	0.326	(0.305)	0.139	0.186
52	4.33	2.00	0.343	(0.305)	0.147	0.196
53	4.42	2.10	0.360	(0.305)	0.154	0.206
54	4.50	2.10	0.360	(0.305)	0.154	0.206
55	4.58	2.20	0.377	(0.305)	0.161	0.216
56	4.67	2.30	0.394	(0.305)	0.169	0.225
57	4.75	2.40	0.411	(0.305)	0.176	0.235
58	4.83	2.40	0.411	(0.305)	0.176	0.235

```
                                                        PR6HR5YR
59   4.92     2.50      0.428       (  0.305)      0.183        0.245
60   5.00     2.60      0.445       (  0.305)      0.191        0.255
61   5.08     3.10      0.531       (  0.305)      0.227        0.304
62   5.17     3.60      0.617       (  0.305)      0.264        0.353
63   5.25     3.90      0.668       (  0.305)      0.286        0.382
64   5.33     4.20      0.720          0.305    (  0.308)       0.415
65   5.42     4.70      0.805          0.305    (  0.345)       0.500
66   5.50     5.60      0.960          0.305    (  0.411)       0.654
67   5.58     1.90      0.326       (  0.305)      0.139        0.186
68   5.67     0.90      0.154       (  0.305)      0.066        0.088
69   5.75     0.60      0.103       (  0.305)      0.044        0.059
70   5.83     0.50      0.086       (  0.305)      0.037        0.049
71   5.92     0.30      0.051       (  0.305)      0.022        0.029
72   6.00     0.20      0.034       (  0.305)      0.015        0.020
              (Loss Rate Not Used)
   Sum =     100.0                                     Sum =     9.9
      Flood volume = Effective rainfall      0.83(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       0.8(Ac.Ft)
      Total soil loss =      0.60(In)
      Total soil loss =     0.559(Ac.Ft)
      Total rainfall =      1.43(In)
      Flood volume =     33698.4 Cubic Feet
      Total soil loss =      24337.1 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      6.414(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0019      0.28  VQ        |         |         |         |
  0+10       0.0057      0.56  V Q       |         |         |         |
  0+15       0.0101      0.64  V Q       |         |         |         |
  0+20       0.0147      0.66  V Q       |         |         |         |
  0+25       0.0193      0.66  V Q       |         |         |         |
  0+30       0.0242      0.72  |VQ       |         |         |         |
  0+35       0.0295      0.76  |V Q      |         |         |         |
  0+40       0.0348      0.77  |V Q      |         |         |         |
  0+45       0.0401      0.77  | VQ      |         |         |         |
  0+50       0.0455      0.77  | VQ      |         |         |         |
  0+55       0.0508      0.77  | VQ      |         |         |         |
  1+ 0       0.0565      0.83  | VQ      |         |         |         |
  1+ 5       0.0625      0.87  |  Q      |         |         |         |
  1+10       0.0686      0.88  |  Q      |         |         |         |
  1+15       0.0747      0.89  |  Q      |         |         |         |
  1+20       0.0808      0.89  |  QV     |         |         |         |
  1+25       0.0869      0.89  |  QV     |         |         |         |
  1+30       0.0930      0.89  |  QV     |         |         |         |
  1+35       0.0991      0.89  |  Q V    |         |         |         |
  1+40       0.1052      0.89  |  Q V    |         |         |         |
  1+45       0.1113      0.89  |  Q V    |         |         |         |
  1+50       0.1174      0.89  |  Q  V   |         |         |         |
  1+55       0.1235      0.89  |  Q  V   |         |         |         |
  2+ 0       0.1300      0.94  |  Q  V   |         |         |         |
  2+ 5       0.1364      0.93  |  Q   V  |         |         |         |
  2+10       0.1429      0.95  |  Q   V  |         |         |         |
  2+15       0.1497      0.99  |  Q   V  |         |         |         |
  2+20       0.1565      0.99  |  Q    V |         |         |         |
  2+25       0.1634      1.00  |  Q    V |         |         |         |
  2+30       0.1703      1.00  |  Q    V |         |         |         |
  2+35       0.1771      1.00  |  Q     V|         |         |         |
  2+40       0.1840      1.00  |  Q     V|         |         |         |
  2+45       0.1912      1.05  |   Q    V|         |         |         |
  2+50       0.1988      1.10  |   Q     V         |         |         |
  2+55       0.2064      1.10  |   Q     V         |         |         |
  3+ 0       0.2140      1.11  |   Q     |V        |         |         |
  3+ 5       0.2216      1.11  |   Q     |V        |         |         |
  3+10       0.2296      1.16  |   Q     |V        |         |         |
  3+15       0.2379      1.21  |   Q     | V       |         |         |
  3+20       0.2463      1.21  |   Q     | V       |         |         |
  3+25       0.2550      1.27  |    Q    |  V      |         |         |
  3+30       0.2645      1.37  |    Q    |  V      |         |         |
  3+35       0.2747      1.48  |    Q    |   V     |         |         |
  3+40       0.2853      1.54  |     Q   |   V     |         |         |
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                                                PR6HR5YR
    3+45       0.2963      1.60  |     Q   |    V    |         |         |
    3+50       0.3077      1.65  |     Q   |    V    |         |         |
    3+55       0.3194      1.71  |     Q   |     V   |         |         |
    4+ 0       0.3316      1.76  |      Q  |      V  |         |         |
    4+ 5       0.3441      1.82  |      Q  |      V  |         |         |
    4+10       0.3574      1.93  |      Q  |       V |         |         |
    4+15       0.3714      2.03  |       Q |        V|         |         |
    4+20       0.3862      2.14  |       Q |        V|         |         |
    4+25       0.4017      2.25  |        Q|         V         |         |
    4+30       0.4176      2.31  |        Q|         |V        |         |
    4+35       0.4340      2.38  |        Q|         | V       |         |
    4+40       0.4510      2.48  |        Q|         |  V      |         |
    4+45       0.4689      2.59  |         Q         |   V     |         |
    4+50       0.4871      2.64  |         Q         |    V    |         |
    4+55       0.5057      2.71  |         Q         |     V   |         |
    5+ 0       0.5251      2.81  |         |Q        |      V  |         |
    5+ 5       0.5467      3.14  |         | Q       |       V |         |
    5+10       0.5718      3.65  |         |   Q     |        V|         |
    5+15       0.5999      4.08  |         |     Q   |         |V        |
    5+20       0.6306      4.45  |         |      Q  |         | V       |
    5+25       0.6659      5.12  |         |         Q         |   V     |
    5+30       0.7100      6.41  |         |         |    Q    |     V   |
    5+35       0.7415      4.57  |         |       Q |         |       V |
    5+40       0.7554      2.02  |       Q |         |         |        V|
    5+45       0.7627      1.06  |   Q     |         |         |        V|
    5+50       0.7673      0.67  | Q       |         |         |        V|
    5+55       0.7705      0.46  |Q        |         |         |        V|
    6+ 0       0.7725      0.30  |Q        |         |         |        V|
    6+ 5       0.7734      0.13  Q         |         |         |        V|
    6+10       0.7736      0.02  Q         |         |         |        V|
    6+15       0.7736      0.01  Q         |         |         |        V|
-----------------------------------------------------------------------
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PR24HR5YR

U n i t   H y d r o g r a p h   A n a l y s i s

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Study date 09/07/16 File: PR245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.72                  19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            4.30                  48.15

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    2.324(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.324(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  42.0      0.650     0.590        0.305       1.000      0.305
                                                  Sum (F) =   0.305
Area averaged mean soil loss (F) (In/Hr) =  0.305
Minimum soil loss rate ((In/Hr)) =  0.153
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
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PR24HR5YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period	(hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.019	(0.541)	0.008	0.011
2	0.17	0.07	0.019	(0.539)	0.008	0.011
3	0.25	0.07	0.019	(0.537)	0.008	0.011
4	0.33	0.10	0.028	(0.534)	0.012	0.016
5	0.42	0.10	0.028	(0.532)	0.012	0.016
6	0.50	0.10	0.028	(0.530)	0.012	0.016
7	0.58	0.10	0.028	(0.528)	0.012	0.016
8	0.67	0.10	0.028	(0.526)	0.012	0.016
9	0.75	0.10	0.028	(0.524)	0.012	0.016
10	0.83	0.13	0.037	(0.522)	0.016	0.021
11	0.92	0.13	0.037	(0.520)	0.016	0.021
12	1.00	0.13	0.037	(0.518)	0.016	0.021
13	1.08	0.10	0.028	(0.516)	0.012	0.016
14	1.17	0.10	0.028	(0.514)	0.012	0.016
15	1.25	0.10	0.028	(0.512)	0.012	0.016
16	1.33	0.10	0.028	(0.510)	0.012	0.016
17	1.42	0.10	0.028	(0.508)	0.012	0.016
18	1.50	0.10	0.028	(0.506)	0.012	0.016
19	1.58	0.10	0.028	(0.504)	0.012	0.016
20	1.67	0.10	0.028	(0.502)	0.012	0.016
21	1.75	0.10	0.028	(0.500)	0.012	0.016
22	1.83	0.13	0.037	(0.498)	0.016	0.021
23	1.92	0.13	0.037	(0.496)	0.016	0.021
24	2.00	0.13	0.037	(0.494)	0.016	0.021
25	2.08	0.13	0.037	(0.492)	0.016	0.021
26	2.17	0.13	0.037	(0.490)	0.016	0.021
27	2.25	0.13	0.037	(0.488)	0.016	0.021
28	2.33	0.13	0.037	(0.486)	0.016	0.021
29	2.42	0.13	0.037	(0.484)	0.016	0.021
30	2.50	0.13	0.037	(0.482)	0.016	0.021
31	2.58	0.17	0.046	(0.480)	0.020	0.027
32	2.67	0.17	0.046	(0.478)	0.020	0.027
33	2.75	0.17	0.046	(0.476)	0.020	0.027
34	2.83	0.17	0.046	(0.474)	0.020	0.027
35	2.92	0.17	0.046	(0.472)	0.020	0.027
36	3.00	0.17	0.046	(0.470)	0.020	0.027
37	3.08	0.17	0.046	(0.468)	0.020	0.027
38	3.17	0.17	0.046	(0.466)	0.020	0.027
39	3.25	0.17	0.046	(0.464)	0.020	0.027
40	3.33	0.17	0.046	(0.462)	0.020	0.027
41	3.42	0.17	0.046	(0.460)	0.020	0.027
42	3.50	0.17	0.046	(0.458)	0.020	0.027
43	3.58	0.17	0.046	(0.456)	0.020	0.027
44	3.67	0.17	0.046	(0.455)	0.020	0.027
45	3.75	0.17	0.046	(0.453)	0.020	0.027
46	3.83	0.20	0.056	(0.451)	0.024	0.032
47	3.92	0.20	0.056	(0.449)	0.024	0.032
48	4.00	0.20	0.056	(0.447)	0.024	0.032
49	4.08	0.20	0.056	(0.445)	0.024	0.032
50	4.17	0.20	0.056	(0.443)	0.024	0.032
51	4.25	0.20	0.056	(0.441)	0.024	0.032
52	4.33	0.23	0.065	(0.439)	0.028	0.037
53	4.42	0.23	0.065	(0.437)	0.028	0.037
54	4.50	0.23	0.065	(0.436)	0.028	0.037
55	4.58	0.23	0.065	(0.434)	0.028	0.037
56	4.67	0.23	0.065	(0.432)	0.028	0.037
57	4.75	0.23	0.065	(0.430)	0.028	0.037
58	4.83	0.27	0.074	(0.428)	0.032	0.043

59	4.92	0.27	0.074	(0.426)	0.032	0.043
60	5.00	0.27	0.074	(0.424)	0.032	0.043
61	5.08	0.20	0.056	(0.423)	0.024	0.032
62	5.17	0.20	0.056	(0.421)	0.024	0.032
63	5.25	0.20	0.056	(0.419)	0.024	0.032
64	5.33	0.23	0.065	(0.417)	0.028	0.037
65	5.42	0.23	0.065	(0.415)	0.028	0.037
66	5.50	0.23	0.065	(0.413)	0.028	0.037
67	5.58	0.27	0.074	(0.412)	0.032	0.043
68	5.67	0.27	0.074	(0.410)	0.032	0.043
69	5.75	0.27	0.074	(0.408)	0.032	0.043
70	5.83	0.27	0.074	(0.406)	0.032	0.043
71	5.92	0.27	0.074	(0.404)	0.032	0.043
72	6.00	0.27	0.074	(0.403)	0.032	0.043
73	6.08	0.30	0.084	(0.401)	0.036	0.048
74	6.17	0.30	0.084	(0.399)	0.036	0.048
75	6.25	0.30	0.084	(0.397)	0.036	0.048
76	6.33	0.30	0.084	(0.396)	0.036	0.048
77	6.42	0.30	0.084	(0.394)	0.036	0.048
78	6.50	0.30	0.084	(0.392)	0.036	0.048
79	6.58	0.33	0.093	(0.390)	0.040	0.053
80	6.67	0.33	0.093	(0.388)	0.040	0.053
81	6.75	0.33	0.093	(0.387)	0.040	0.053
82	6.83	0.33	0.093	(0.385)	0.040	0.053
83	6.92	0.33	0.093	(0.383)	0.040	0.053
84	7.00	0.33	0.093	(0.381)	0.040	0.053
85	7.08	0.33	0.093	(0.380)	0.040	0.053
86	7.17	0.33	0.093	(0.378)	0.040	0.053
87	7.25	0.33	0.093	(0.376)	0.040	0.053
88	7.33	0.37	0.102	(0.375)	0.044	0.058
89	7.42	0.37	0.102	(0.373)	0.044	0.058
90	7.50	0.37	0.102	(0.371)	0.044	0.058
91	7.58	0.40	0.112	(0.369)	0.048	0.064
92	7.67	0.40	0.112	(0.368)	0.048	0.064
93	7.75	0.40	0.112	(0.366)	0.048	0.064
94	7.83	0.43	0.121	(0.364)	0.052	0.069
95	7.92	0.43	0.121	(0.363)	0.052	0.069
96	8.00	0.43	0.121	(0.361)	0.052	0.069
97	8.08	0.50	0.139	(0.359)	0.060	0.080
98	8.17	0.50	0.139	(0.358)	0.060	0.080
99	8.25	0.50	0.139	(0.356)	0.060	0.080
100	8.33	0.50	0.139	(0.354)	0.060	0.080
101	8.42	0.50	0.139	(0.353)	0.060	0.080
102	8.50	0.50	0.139	(0.351)	0.060	0.080
103	8.58	0.53	0.149	(0.349)	0.064	0.085
104	8.67	0.53	0.149	(0.348)	0.064	0.085
105	8.75	0.53	0.149	(0.346)	0.064	0.085
106	8.83	0.57	0.158	(0.344)	0.068	0.090
107	8.92	0.57	0.158	(0.343)	0.068	0.090
108	9.00	0.57	0.158	(0.341)	0.068	0.090
109	9.08	0.63	0.177	(0.340)	0.076	0.101
110	9.17	0.63	0.177	(0.338)	0.076	0.101
111	9.25	0.63	0.177	(0.336)	0.076	0.101
112	9.33	0.67	0.186	(0.335)	0.080	0.106
113	9.42	0.67	0.186	(0.333)	0.080	0.106
114	9.50	0.67	0.186	(0.332)	0.080	0.106
115	9.58	0.70	0.195	(0.330)	0.084	0.112
116	9.67	0.70	0.195	(0.328)	0.084	0.112
117	9.75	0.70	0.195	(0.327)	0.084	0.112
118	9.83	0.73	0.205	(0.325)	0.088	0.117
119	9.92	0.73	0.205	(0.324)	0.088	0.117
120	10.00	0.73	0.205	(0.322)	0.088	0.117
121	10.08	0.50	0.139	(0.321)	0.060	0.080
122	10.17	0.50	0.139	(0.319)	0.060	0.080
123	10.25	0.50	0.139	(0.317)	0.060	0.080
124	10.33	0.50	0.139	(0.316)	0.060	0.080
125	10.42	0.50	0.139	(0.314)	0.060	0.080
126	10.50	0.50	0.139	(0.313)	0.060	0.080
127	10.58	0.67	0.186	(0.311)	0.080	0.106
128	10.67	0.67	0.186	(0.310)	0.080	0.106
129	10.75	0.67	0.186	(0.308)	0.080	0.106
130	10.83	0.67	0.186	(0.307)	0.080	0.106
131	10.92	0.67	0.186	(0.305)	0.080	0.106
132	11.00	0.67	0.186	(0.304)	0.080	0.106
133	11.08	0.63	0.177	(0.302)	0.076	0.101
134	11.17	0.63	0.177	(0.301)	0.076	0.101
135	11.25	0.63	0.177	(0.299)	0.076	0.101
136	11.33	0.63	0.177	(0.298)	0.076	0.101
137	11.42	0.63	0.177	(0.296)	0.076	0.101

138	11.50	0.63	0.177	(0.295)	0.076	0.101
139	11.58	0.57	0.158	(0.293)	0.068	0.090
140	11.67	0.57	0.158	(0.292)	0.068	0.090
141	11.75	0.57	0.158	(0.291)	0.068	0.090
142	11.83	0.60	0.167	(0.289)	0.072	0.096
143	11.92	0.60	0.167	(0.288)	0.072	0.096
144	12.00	0.60	0.167	(0.286)	0.072	0.096
145	12.08	0.83	0.232	(0.285)	0.099	0.133
146	12.17	0.83	0.232	(0.283)	0.099	0.133
147	12.25	0.83	0.232	(0.282)	0.099	0.133
148	12.33	0.87	0.242	(0.280)	0.103	0.138
149	12.42	0.87	0.242	(0.279)	0.103	0.138
150	12.50	0.87	0.242	(0.278)	0.103	0.138
151	12.58	0.93	0.260	(0.276)	0.111	0.149
152	12.67	0.93	0.260	(0.275)	0.111	0.149
153	12.75	0.93	0.260	(0.273)	0.111	0.149
154	12.83	0.97	0.270	(0.272)	0.115	0.154
155	12.92	0.97	0.270	(0.271)	0.115	0.154
156	13.00	0.97	0.270	(0.269)	0.115	0.154
157	13.08	1.13	0.316	(0.268)	0.135	0.181
158	13.17	1.13	0.316	(0.267)	0.135	0.181
159	13.25	1.13	0.316	(0.265)	0.135	0.181
160	13.33	1.13	0.316	(0.264)	0.135	0.181
161	13.42	1.13	0.316	(0.263)	0.135	0.181
162	13.50	1.13	0.316	(0.261)	0.135	0.181
163	13.58	0.77	0.214	(0.260)	0.092	0.122
164	13.67	0.77	0.214	(0.259)	0.092	0.122
165	13.75	0.77	0.214	(0.257)	0.092	0.122
166	13.83	0.77	0.214	(0.256)	0.092	0.122
167	13.92	0.77	0.214	(0.255)	0.092	0.122
168	14.00	0.77	0.214	(0.253)	0.092	0.122
169	14.08	0.90	0.251	(0.252)	0.107	0.144
170	14.17	0.90	0.251	(0.251)	0.107	0.144
171	14.25	0.90	0.251	(0.250)	0.107	0.144
172	14.33	0.87	0.242	(0.248)	0.103	0.138
173	14.42	0.87	0.242	(0.247)	0.103	0.138
174	14.50	0.87	0.242	(0.246)	0.103	0.138
175	14.58	0.87	0.242	(0.244)	0.103	0.138
176	14.67	0.87	0.242	(0.243)	0.103	0.138
177	14.75	0.87	0.242	(0.242)	0.103	0.138
178	14.83	0.83	0.232	(0.241)	0.099	0.133
179	14.92	0.83	0.232	(0.239)	0.099	0.133
180	15.00	0.83	0.232	(0.238)	0.099	0.133
181	15.08	0.80	0.223	(0.237)	0.095	0.128
182	15.17	0.80	0.223	(0.236)	0.095	0.128
183	15.25	0.80	0.223	(0.235)	0.095	0.128
184	15.33	0.77	0.214	(0.233)	0.092	0.122
185	15.42	0.77	0.214	(0.232)	0.092	0.122
186	15.50	0.77	0.214	(0.231)	0.092	0.122
187	15.58	0.63	0.177	(0.230)	0.076	0.101
188	15.67	0.63	0.177	(0.229)	0.076	0.101
189	15.75	0.63	0.177	(0.227)	0.076	0.101
190	15.83	0.63	0.177	(0.226)	0.076	0.101
191	15.92	0.63	0.177	(0.225)	0.076	0.101
192	16.00	0.63	0.177	(0.224)	0.076	0.101
193	16.08	0.13	0.037	(0.223)	0.016	0.021
194	16.17	0.13	0.037	(0.222)	0.016	0.021
195	16.25	0.13	0.037	(0.221)	0.016	0.021
196	16.33	0.13	0.037	(0.219)	0.016	0.021
197	16.42	0.13	0.037	(0.218)	0.016	0.021
198	16.50	0.13	0.037	(0.217)	0.016	0.021
199	16.58	0.10	0.028	(0.216)	0.012	0.016
200	16.67	0.10	0.028	(0.215)	0.012	0.016
201	16.75	0.10	0.028	(0.214)	0.012	0.016
202	16.83	0.10	0.028	(0.213)	0.012	0.016
203	16.92	0.10	0.028	(0.212)	0.012	0.016
204	17.00	0.10	0.028	(0.211)	0.012	0.016
205	17.08	0.17	0.046	(0.210)	0.020	0.027
206	17.17	0.17	0.046	(0.209)	0.020	0.027
207	17.25	0.17	0.046	(0.208)	0.020	0.027
208	17.33	0.17	0.046	(0.206)	0.020	0.027
209	17.42	0.17	0.046	(0.205)	0.020	0.027
210	17.50	0.17	0.046	(0.204)	0.020	0.027
211	17.58	0.17	0.046	(0.203)	0.020	0.027
212	17.67	0.17	0.046	(0.202)	0.020	0.027
213	17.75	0.17	0.046	(0.201)	0.020	0.027
214	17.83	0.13	0.037	(0.200)	0.016	0.021
215	17.92	0.13	0.037	(0.199)	0.016	0.021
216	18.00	0.13	0.037	(0.198)	0.016	0.021

217	18.08	0.13	0.037	(0.197)	0.016	0.021
218	18.17	0.13	0.037	(0.196)	0.016	0.021
219	18.25	0.13	0.037	(0.195)	0.016	0.021
220	18.33	0.13	0.037	(0.195)	0.016	0.021
221	18.42	0.13	0.037	(0.194)	0.016	0.021
222	18.50	0.13	0.037	(0.193)	0.016	0.021
223	18.58	0.10	0.028	(0.192)	0.012	0.016
224	18.67	0.10	0.028	(0.191)	0.012	0.016
225	18.75	0.10	0.028	(0.190)	0.012	0.016
226	18.83	0.07	0.019	(0.189)	0.008	0.011
227	18.92	0.07	0.019	(0.188)	0.008	0.011
228	19.00	0.07	0.019	(0.187)	0.008	0.011
229	19.08	0.10	0.028	(0.186)	0.012	0.016
230	19.17	0.10	0.028	(0.185)	0.012	0.016
231	19.25	0.10	0.028	(0.185)	0.012	0.016
232	19.33	0.13	0.037	(0.184)	0.016	0.021
233	19.42	0.13	0.037	(0.183)	0.016	0.021
234	19.50	0.13	0.037	(0.182)	0.016	0.021
235	19.58	0.10	0.028	(0.181)	0.012	0.016
236	19.67	0.10	0.028	(0.180)	0.012	0.016
237	19.75	0.10	0.028	(0.180)	0.012	0.016
238	19.83	0.07	0.019	(0.179)	0.008	0.011
239	19.92	0.07	0.019	(0.178)	0.008	0.011
240	20.00	0.07	0.019	(0.177)	0.008	0.011
241	20.08	0.10	0.028	(0.176)	0.012	0.016
242	20.17	0.10	0.028	(0.176)	0.012	0.016
243	20.25	0.10	0.028	(0.175)	0.012	0.016
244	20.33	0.10	0.028	(0.174)	0.012	0.016
245	20.42	0.10	0.028	(0.173)	0.012	0.016
246	20.50	0.10	0.028	(0.173)	0.012	0.016
247	20.58	0.10	0.028	(0.172)	0.012	0.016
248	20.67	0.10	0.028	(0.171)	0.012	0.016
249	20.75	0.10	0.028	(0.170)	0.012	0.016
250	20.83	0.07	0.019	(0.170)	0.008	0.011
251	20.92	0.07	0.019	(0.169)	0.008	0.011
252	21.00	0.07	0.019	(0.168)	0.008	0.011
253	21.08	0.10	0.028	(0.168)	0.012	0.016
254	21.17	0.10	0.028	(0.167)	0.012	0.016
255	21.25	0.10	0.028	(0.166)	0.012	0.016
256	21.33	0.07	0.019	(0.166)	0.008	0.011
257	21.42	0.07	0.019	(0.165)	0.008	0.011
258	21.50	0.07	0.019	(0.165)	0.008	0.011
259	21.58	0.10	0.028	(0.164)	0.012	0.016
260	21.67	0.10	0.028	(0.163)	0.012	0.016
261	21.75	0.10	0.028	(0.163)	0.012	0.016
262	21.83	0.07	0.019	(0.162)	0.008	0.011
263	21.92	0.07	0.019	(0.162)	0.008	0.011
264	22.00	0.07	0.019	(0.161)	0.008	0.011
265	22.08	0.10	0.028	(0.161)	0.012	0.016
266	22.17	0.10	0.028	(0.160)	0.012	0.016
267	22.25	0.10	0.028	(0.159)	0.012	0.016
268	22.33	0.07	0.019	(0.159)	0.008	0.011
269	22.42	0.07	0.019	(0.159)	0.008	0.011
270	22.50	0.07	0.019	(0.158)	0.008	0.011
271	22.58	0.07	0.019	(0.158)	0.008	0.011
272	22.67	0.07	0.019	(0.157)	0.008	0.011
273	22.75	0.07	0.019	(0.157)	0.008	0.011
274	22.83	0.07	0.019	(0.156)	0.008	0.011
275	22.92	0.07	0.019	(0.156)	0.008	0.011
276	23.00	0.07	0.019	(0.156)	0.008	0.011
277	23.08	0.07	0.019	(0.155)	0.008	0.011
278	23.17	0.07	0.019	(0.155)	0.008	0.011
279	23.25	0.07	0.019	(0.154)	0.008	0.011
280	23.33	0.07	0.019	(0.154)	0.008	0.011
281	23.42	0.07	0.019	(0.154)	0.008	0.011
282	23.50	0.07	0.019	(0.154)	0.008	0.011
283	23.58	0.07	0.019	(0.153)	0.008	0.011
284	23.67	0.07	0.019	(0.153)	0.008	0.011
285	23.75	0.07	0.019	(0.153)	0.008	0.011
286	23.83	0.07	0.019	(0.153)	0.008	0.011
287	23.92	0.07	0.019	(0.153)	0.008	0.011
288	24.00	0.07	0.019	(0.153)	0.008	0.011
			(Loss Rate Not Used)			
	Sum =	100.0			Sum =	16.0

Flood volume = Effective rainfall 1.33(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 1.2(Ac.Ft)
Total soil loss = 0.99(In)
Total soil loss = 0.928(Ac.Ft)
Total rainfall = 2.32(In)

```
                                   PR24HR5YR
      Flood volume =       54036.4 Cubic Feet
      Total soil loss =       40432.9 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      2.041(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0004      0.06  Q         |         |         |         |
  0+10       0.0012      0.11  Q         |         |         |         |
  0+15       0.0020      0.12  Q         |         |         |         |
  0+20       0.0030      0.15  Q         |         |         |         |
  0+25       0.0042      0.17  Q         |         |         |         |
  0+30       0.0054      0.18  Q         |         |         |         |
  0+35       0.0067      0.18  Q         |         |         |         |
  0+40       0.0079      0.18  Q         |         |         |         |
  0+45       0.0092      0.18  Q         |         |         |         |
  0+50       0.0106      0.21  Q         |         |         |         |
  0+55       0.0122      0.23  Q         |         |         |         |
  1+ 0       0.0139      0.24  Q         |         |         |         |
  1+ 5       0.0153      0.21  Q         |         |         |         |
  1+10       0.0166      0.19  Q         |         |         |         |
  1+15       0.0178      0.18  Q         |         |         |         |
  1+20       0.0191      0.18  Q         |         |         |         |
  1+25       0.0203      0.18  Q         |         |         |         |
  1+30       0.0216      0.18  Q         |         |         |         |
  1+35       0.0228      0.18  Q         |         |         |         |
  1+40       0.0240      0.18  Q         |         |         |         |
  1+45       0.0253      0.18  Q         |         |         |         |
  1+50       0.0267      0.21  Q         |         |         |         |
  1+55       0.0283      0.23  Q         |         |         |         |
  2+ 0       0.0300      0.24  Q         |         |         |         |
  2+ 5       0.0316      0.24  QV        |         |         |         |
  2+10       0.0333      0.24  QV        |         |         |         |
  2+15       0.0349      0.24  QV        |         |         |         |
  2+20       0.0366      0.24  QV        |         |         |         |
  2+25       0.0383      0.24  QV        |         |         |         |
  2+30       0.0399      0.24  QV        |         |         |         |
  2+35       0.0418      0.27  |Q        |         |         |         |
  2+40       0.0438      0.29  |Q        |         |         |         |
  2+45       0.0459      0.30  |Q        |         |         |         |
  2+50       0.0479      0.30  |Q        |         |         |         |
  2+55       0.0500      0.30  |Q        |         |         |         |
  3+ 0       0.0521      0.30  |Q        |         |         |         |
  3+ 5       0.0541      0.30  |Q        |         |         |         |
  3+10       0.0562      0.30  |Q        |         |         |         |
  3+15       0.0583      0.30  |Q        |         |         |         |
  3+20       0.0603      0.30  |Q        |         |         |         |
  3+25       0.0624      0.30  |QV       |         |         |         |
  3+30       0.0645      0.30  |QV       |         |         |         |
  3+35       0.0665      0.30  |QV       |         |         |         |
  3+40       0.0686      0.30  |QV       |         |         |         |
  3+45       0.0707      0.30  |QV       |         |         |         |
  3+50       0.0729      0.33  |QV       |         |         |         |
  3+55       0.0754      0.35  |QV       |         |         |         |
  4+ 0       0.0779      0.36  |QV       |         |         |         |
  4+ 5       0.0803      0.36  |QV       |         |         |         |
  4+10       0.0828      0.36  |QV       |         |         |         |
  4+15       0.0853      0.36  |QV       |         |         |         |
  4+20       0.0880      0.39  |QV       |         |         |         |
  4+25       0.0908      0.41  |QV       |         |         |         |
  4+30       0.0937      0.42  |Q V      |         |         |         |
  4+35       0.0966      0.42  |Q V      |         |         |         |
  4+40       0.0995      0.42  |Q V      |         |         |         |
  4+45       0.1024      0.42  |Q V      |         |         |         |
  4+50       0.1055      0.45  |Q V      |         |         |         |
  4+55       0.1088      0.47  |Q V      |         |         |         |
  5+ 0       0.1121      0.48  |Q V      |         |         |         |
  5+ 5       0.1150      0.42  |Q V      |         |         |         |
  5+10       0.1175      0.37  |Q V      |         |         |         |
  5+15       0.1200      0.36  |Q V      |         |         |         |
  5+20       0.1227      0.39  |Q V      |         |         |         |
  5+25       0.1256      0.41  |Q  V     |         |         |         |
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  5+30      0.1285      0.42  |Q  V     |         |         |         |
  5+35      0.1316      0.45  |Q  V     |         |         |         |
  5+40      0.1348      0.47  |Q  V     |         |         |         |
  5+45      0.1381      0.48  |Q  V     |         |         |         |
  5+50      0.1414      0.48  |Q  V     |         |         |         |
  5+55      0.1447      0.48  |Q  V     |         |         |         |
  6+ 0      0.1480      0.48  |Q  V     |         |         |         |
  6+ 5      0.1516      0.51  | Q V     |         |         |         |
  6+10      0.1552      0.53  | Q  V    |         |         |         |
  6+15      0.1590      0.54  | Q  V    |         |         |         |
  6+20      0.1627      0.54  | Q  V    |         |         |         |
  6+25      0.1664      0.54  | Q  V    |         |         |         |
  6+30      0.1701      0.54  | Q  V    |         |         |         |
  6+35      0.1740      0.57  | Q  V    |         |         |         |
  6+40      0.1781      0.59  | Q  V    |         |         |         |
  6+45      0.1823      0.60  | Q  V    |         |         |         |
  6+50      0.1864      0.60  | Q   V   |         |         |         |
  6+55      0.1905      0.60  | Q   V   |         |         |         |
  7+ 0      0.1947      0.60  | Q   V   |         |         |         |
  7+ 5      0.1988      0.60  | Q   V   |         |         |         |
  7+10      0.2029      0.60  | Q   V   |         |         |         |
  7+15      0.2071      0.60  | Q   V   |         |         |         |
  7+20      0.2114      0.63  | Q   V   |         |         |         |
  7+25      0.2159      0.65  | Q   V   |         |         |         |
  7+30      0.2205      0.66  | Q    V  |         |         |         |
  7+35      0.2252      0.69  | Q    V  |         |         |         |
  7+40      0.2301      0.71  | Q    V  |         |         |         |
  7+45      0.2351      0.72  | Q    V  |         |         |         |
  7+50      0.2403      0.75  |  Q   V  |         |         |         |
  7+55      0.2456      0.77  |  Q   V  |         |         |         |
  8+ 0      0.2510      0.78  |  Q    V |         |         |         |
  8+ 5      0.2568      0.84  |  Q    V |         |         |         |
  8+10      0.2629      0.89  |  Q    V |         |         |         |
  8+15      0.2691      0.90  |  Q    V |         |         |         |
  8+20      0.2753      0.90  |  Q    V |         |         |         |
  8+25      0.2815      0.90  |  Q     V|         |         |         |
  8+30      0.2877      0.90  |  Q     V|         |         |         |
  8+35      0.2941      0.93  |  Q     V|         |         |         |
  8+40      0.3006      0.95  |  Q     V|         |         |         |
  8+45      0.3073      0.96  |  Q     V|         |         |         |
  8+50      0.3141      0.99  |  Q      V         |         |         |
  8+55      0.3211      1.01  |   Q     V         |         |         |
  9+ 0      0.3281      1.02  |   Q     V         |         |         |
  9+ 5      0.3355      1.08  |   Q     V         |         |         |
  9+10      0.3433      1.13  |   Q     |V        |         |         |
  9+15      0.3511      1.14  |   Q     |V        |         |         |
  9+20      0.3592      1.17  |   Q     |V        |         |         |
  9+25      0.3674      1.20  |   Q     |V        |         |         |
  9+30      0.3757      1.20  |   Q     | V       |         |         |
  9+35      0.3842      1.23  |   Q     | V       |         |         |
  9+40      0.3928      1.26  |    Q    | V       |         |         |
  9+45      0.4015      1.26  |    Q    | V       |         |         |
  9+50      0.4104      1.29  |    Q    |  V      |         |         |
  9+55      0.4194      1.32  |    Q    |  V      |         |         |
 10+ 0      0.4285      1.32  |    Q    |  V      |         |         |
 10+ 5      0.4362      1.11  |   Q     |   V     |         |         |
 10+10      0.4427      0.94  |  Q      |   V     |         |         |
 10+15      0.4489      0.91  |  Q      |   V     |         |         |
 10+20      0.4551      0.90  |  Q      |   V     |         |         |
 10+25      0.4613      0.90  |  Q      |   V     |         |         |
 10+30      0.4675      0.90  |  Q      |    V    |         |         |
 10+35      0.4748      1.05  |   Q     |    V    |         |         |
 10+40      0.4828      1.17  |   Q     |    V    |         |         |
 10+45      0.4911      1.19  |   Q     |    V    |         |         |
 10+50      0.4993      1.20  |   Q     |     V   |         |         |
 10+55      0.5076      1.20  |   Q     |     V   |         |         |
 11+ 0      0.5159      1.20  |   Q     |     V   |         |         |
 11+ 5      0.5239      1.17  |   Q     |     V   |         |         |
 11+10      0.5318      1.15  |   Q     |      V  |         |         |
 11+15      0.5397      1.14  |   Q     |      V  |         |         |
 11+20      0.5476      1.14  |   Q     |      V  |         |         |
 11+25      0.5554      1.14  |   Q     |      V  |         |         |
 11+30      0.5633      1.14  |   Q     |       V |         |         |
 11+35      0.5707      1.08  |   Q     |       V |         |         |
 11+40      0.5778      1.03  |   Q     |       V |         |         |
 11+45      0.5849      1.02  |   Q     |       V |         |         |
 11+50      0.5921      1.05  |   Q     |        V|         |         |
 11+55      0.5995      1.07  |   Q     |        V|         |         |
 12+ 0      0.6069      1.08  |   Q     |        V|         |         |
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12+ 5	0.6158	1.29
12+10	0.6259	1.46
12+15	0.6362	1.49
12+20	0.6467	1.53
12+25	0.6574	1.56
12+30	0.6682	1.56
12+35	0.6793	1.62
12+40	0.6908	1.67
12+45	0.7024	1.68
12+50	0.7142	1.71
12+55	0.7261	1.74
13+ 0	0.7381	1.74
13+ 5	0.7511	1.89
13+10	0.7650	2.01
13+15	0.7790	2.03
13+20	0.7930	2.04
13+25	0.8071	2.04
13+30	0.8212	2.04
13+35	0.8330	1.71
13+40	0.8429	1.44
13+45	0.8525	1.40
13+50	0.8620	1.38
13+55	0.8715	1.38
14+ 0	0.8811	1.38
14+ 5	0.8914	1.50
14+10	0.9024	1.60
14+15	0.9135	1.62
14+20	0.9245	1.59
14+25	0.9353	1.57
14+30	0.9460	1.56
14+35	0.9568	1.56
14+40	0.9675	1.56
14+45	0.9783	1.56
14+50	0.9888	1.53
14+55	0.9992	1.51
15+ 0	1.0096	1.50
15+ 5	1.0197	1.47
15+10	1.0296	1.45
15+15	1.0396	1.44
15+20	1.0493	1.41
15+25	1.0588	1.39
15+30	1.0684	1.38
15+35	1.0771	1.26
15+40	1.0851	1.16
15+45	1.0930	1.15
15+50	1.1008	1.14
15+55	1.1087	1.14
16+ 0	1.1165	1.14
16+ 5	1.1213	0.69
16+10	1.1236	0.33
16+15	1.1254	0.26
16+20	1.1270	0.24
16+25	1.1287	0.24
16+30	1.1303	0.24
16+35	1.1318	0.21
16+40	1.1330	0.19
16+45	1.1343	0.18
16+50	1.1355	0.18
16+55	1.1368	0.18
17+ 0	1.1380	0.18
17+ 5	1.1397	0.24
17+10	1.1417	0.29
17+15	1.1437	0.30
17+20	1.1458	0.30
17+25	1.1478	0.30
17+30	1.1499	0.30
17+35	1.1520	0.30
17+40	1.1540	0.30
17+45	1.1561	0.30
17+50	1.1580	0.27
17+55	1.1597	0.25
18+ 0	1.1613	0.24
18+ 5	1.1630	0.24
18+10	1.1646	0.24
18+15	1.1663	0.24
18+20	1.1679	0.24
18+25	1.1696	0.24
18+30	1.1713	0.24
18+35	1.1727	0.21

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                                                PR24HR5YR
   18+40       1.1740      0.19  Q         |         |         |      V  |
   18+45       1.1752      0.18  Q         |         |         |      V  |
   18+50       1.1763      0.15  Q         |         |         |      V  |
   18+55       1.1771      0.13  Q         |         |         |      V  |
   19+ 0       1.1780      0.12  Q         |         |         |      V  |
   19+ 5       1.1790      0.15  Q         |         |         |       V |
   19+10       1.1802      0.17  Q         |         |         |       V |
   19+15       1.1814      0.18  Q         |         |         |       V |
   19+20       1.1829      0.21  Q         |         |         |       V |
   19+25       1.1845      0.23  Q         |         |         |       V |
   19+30       1.1861      0.24  Q         |         |         |       V |
   19+35       1.1876      0.21  Q         |         |         |       V |
   19+40       1.1889      0.19  Q         |         |         |       V |
   19+45       1.1901      0.18  Q         |         |         |       V |
   19+50       1.1911      0.15  Q         |         |         |       V |
   19+55       1.1920      0.13  Q         |         |         |       V |
   20+ 0       1.1929      0.12  Q         |         |         |       V |
   20+ 5       1.1939      0.15  Q         |         |         |       V |
   20+10       1.1951      0.17  Q         |         |         |       V |
   20+15       1.1963      0.18  Q         |         |         |       V |
   20+20       1.1976      0.18  Q         |         |         |       V |
   20+25       1.1988      0.18  Q         |         |         |       V |
   20+30       1.2000      0.18  Q         |         |         |       V |
   20+35       1.2013      0.18  Q         |         |         |       V |
   20+40       1.2025      0.18  Q         |         |         |       V |
   20+45       1.2038      0.18  Q         |         |         |       V |
   20+50       1.2048      0.15  Q         |         |         |       V |
   20+55       1.2057      0.13  Q         |         |         |       V |
   21+ 0       1.2065      0.12  Q         |         |         |       V |
   21+ 5       1.2075      0.15  Q         |         |         |       V |
   21+10       1.2087      0.17  Q         |         |         |       V |
   21+15       1.2100      0.18  Q         |         |         |        V|
   21+20       1.2110      0.15  Q         |         |         |        V|
   21+25       1.2119      0.13  Q         |         |         |        V|
   21+30       1.2127      0.12  Q         |         |         |        V|
   21+35       1.2137      0.15  Q         |         |         |        V|
   21+40       1.2149      0.17  Q         |         |         |        V|
   21+45       1.2162      0.18  Q         |         |         |        V|
   21+50       1.2172      0.15  Q         |         |         |        V|
   21+55       1.2181      0.13  Q         |         |         |        V|
   22+ 0       1.2189      0.12  Q         |         |         |        V|
   22+ 5       1.2199      0.15  Q         |         |         |        V|
   22+10       1.2211      0.17  Q         |         |         |        V|
   22+15       1.2224      0.18  Q         |         |         |        V|
   22+20       1.2234      0.15  Q         |         |         |        V|
   22+25       1.2243      0.13  Q         |         |         |        V|
   22+30       1.2251      0.12  Q         |         |         |        V|
   22+35       1.2259      0.12  Q         |         |         |        V|
   22+40       1.2268      0.12  Q         |         |         |        V|
   22+45       1.2276      0.12  Q         |         |         |        V|
   22+50       1.2284      0.12  Q         |         |         |        V|
   22+55       1.2292      0.12  Q         |         |         |        V|
   23+ 0       1.2301      0.12  Q         |         |         |        V|
   23+ 5       1.2309      0.12  Q         |         |         |        V|
   23+10       1.2317      0.12  Q         |         |         |        V|
   23+15       1.2325      0.12  Q         |         |         |        V|
   23+20       1.2334      0.12  Q         |         |         |        V|
   23+25       1.2342      0.12  Q         |         |         |        V|
   23+30       1.2350      0.12  Q         |         |         |        V|
   23+35       1.2359      0.12  Q         |         |         |        V|
   23+40       1.2367      0.12  Q         |         |         |        V|
   23+45       1.2375      0.12  Q         |         |         |        V|
   23+50       1.2383      0.12  Q         |         |         |        V|
   23+55       1.2392      0.12  Q         |         |         |        V|
   24+ 0       1.2400      0.12  Q         |         |         |        V|
   24+ 5       1.2404      0.06  Q         |         |         |        V|
   24+10       1.2405      0.01  Q         |         |         |        V|
   24+15       1.2405      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

10 YEAR

```
                                 PR1HR10YR
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.48                    5.37

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.20                   13.44

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.776(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.776(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  62.0      0.448     0.590        0.210       1.000      0.210
                                                  Sum (F) =   0.210
Area averaged mean soil loss (F) (In/Hr) =  0.210
Minimum soil loss rate ((In/Hr)) =  0.105
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

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                                        PR1HR10YR
       ----------------------------------------------------------------------

                       U n i t   H y d r o g r a p h
                               VALLEY S-Curve
       --------------------------------------------------------------------
                       Unit Hydrograph Data
       ---------------------------------------------------------------------
       Unit time period   Time % of lag   Distribution   Unit Hydrograph
           (hrs)                            Graph %           (CFS)
       ---------------------------------------------------------------------
           1   0.083        241.878         49.815             5.621
           2   0.167        483.756         40.562             4.577
           3   0.250        725.634          7.289             0.823
           4   0.333        967.512          2.334             0.263
                                     Sum = 100.000   Sum=      11.284
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     4.40     0.410       (  0.210)       0.175         0.234
   2   0.17     4.50     0.419       (  0.210)       0.179         0.240
   3   0.25     5.40     0.503          0.210    (  0.215)         0.293
   4   0.33     5.40     0.503          0.210    (  0.215)         0.293
   5   0.42     5.70     0.531          0.210    (  0.227)         0.321
   6   0.50     6.40     0.596          0.210    (  0.255)         0.386
   7   0.58     7.90     0.736          0.210    (  0.315)         0.525
   8   0.67     9.10     0.848          0.210    (  0.363)         0.637
   9   0.75    12.80     1.192          0.210    (  0.510)         0.982
  10   0.83    25.60     2.384          0.210    (  1.020)         2.174
  11   0.92     7.90     0.736          0.210    (  0.315)         0.525
  12   1.00     4.90     0.456       (  0.210)       0.195         0.261
                  (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     6.9
        Flood volume = Effective rainfall      0.57(In)
         times area      11.2(Ac.)/[(In)/(Ft.)] =       0.5(Ac.Ft)
        Total soil loss =      0.20(In)
        Total soil loss =     0.190(Ac.Ft)
        Total rainfall =      0.78(In)
        Flood volume =       23272.1 Cubic Feet
        Total soil loss =       8274.0 Cubic Feet
       --------------------------------------------------------------------
        Peak flow rate of this hydrograph =     17.386(CFS)
       --------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R   S T O R M
                      R u n o f f     H y d r o g r a p h
       --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ----------------------------------------------------------------------
    0+ 5       0.0091      1.32  V Q       |         |         |         |
    0+10       0.0258      2.42  |V  Q     |         |         |         |
    0+15       0.0460      2.94  |  V Q    |         |         |         |
    0+20       0.0683      3.25  |    VQ   |         |         |         |
    0+25       0.0921      3.45  |     Q   |         |         |         |
    0+30       0.1193      3.96  |      QV |         |         |         |
    0+35       0.1542      5.06  |         QV        |         |         |
    0+40       0.1982      6.39  |         | Q V     |         |         |
    0+45       0.2600      8.97  |         |      Q V|         |         |
    0+50       0.3798     17.39  |         |         |       V |    Q    |
    0+55       0.4754     13.89  |         |         |      Q  |     V   |
    1+ 0       0.5162      5.92  |         |Q        |         |        V |
    1+ 5       0.5313      2.20  |   Q     |         |         |         V|
    1+10       0.5338      0.35  Q         |         |         |         V|
    1+15       0.5343      0.07  Q         |         |         |          V
-----------------------------------------------------------------------
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PR3HR10YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 09/07/16 File: PR310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

Drainage Area = 11.20(Ac.) = 0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 11.20(Ac.) = 0.017 Sq. Mi.
Length along longest watercourse = 916.00(Ft.)
Length along longest watercourse measured to centroid = 495.00(Ft.)
Length along longest watercourse = 0.173 Mi.
Length along longest watercourse measured to centroid = 0.094 Mi.
Difference in elevation = 10.60(Ft.)
Slope along watercourse = 61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.034 Hr.
Lag time = 2.07 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.83 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
11.20	0.80	8.96

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
11.20	1.80	20.15

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.800(In)
Area Averaged 100-Year Rainfall = 1.800(In)

Point rain (area averaged) = 1.211(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.211(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
11.197	62.00	0.590

Total Area Entered = 11.20(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
62.0	62.0	0.448	0.590	0.210	1.000	0.210
					Sum (F) =	0.210

Area averaged mean soil loss (F) (In/Hr) = 0.210
Minimum soil loss rate ((In/Hr)) = 0.105
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.428

PR3HR10YR

U n i t   H y d r o g r a p h

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	1.30	0.189	(0.210)	0.081	0.108
2	0.17	1.30	0.189	(0.210)	0.081	0.108
3	0.25	1.10	0.160	(0.210)	0.068	0.091
4	0.33	1.50	0.218	(0.210)	0.093	0.125
5	0.42	1.50	0.218	(0.210)	0.093	0.125
6	0.50	1.80	0.262	(0.210)	0.112	0.150
7	0.58	1.50	0.218	(0.210)	0.093	0.125
8	0.67	1.80	0.262	(0.210)	0.112	0.150
9	0.75	1.80	0.262	(0.210)	0.112	0.150
10	0.83	1.50	0.218	(0.210)	0.093	0.125
11	0.92	1.60	0.233	(0.210)	0.100	0.133
12	1.00	1.80	0.262	(0.210)	0.112	0.150
13	1.08	2.20	0.320	(0.210)	0.137	0.183
14	1.17	2.20	0.320	(0.210)	0.137	0.183
15	1.25	2.20	0.320	(0.210)	0.137	0.183
16	1.33	2.00	0.291	(0.210)	0.124	0.166
17	1.42	2.60	0.378	(0.210)	0.162	0.216
18	1.50	2.70	0.392	(0.210)	0.168	0.224
19	1.58	2.40	0.349	(0.210)	0.149	0.200
20	1.67	2.70	0.392	(0.210)	0.168	0.224
21	1.75	3.30	0.480	(0.210)	0.205	0.274
22	1.83	3.10	0.451	(0.210)	0.193	0.258
23	1.92	2.90	0.422	(0.210)	0.180	0.241
24	2.00	3.00	0.436	(0.210)	0.187	0.249
25	2.08	3.10	0.451	(0.210)	0.193	0.258
26	2.17	4.20	0.611	0.210	(0.261)	0.400
27	2.25	5.00	0.727	0.210	(0.311)	0.517
28	2.33	3.50	0.509	0.210	(0.218)	0.298
29	2.42	6.80	0.988	0.210	(0.423)	0.778
30	2.50	7.30	1.061	0.210	(0.454)	0.851
31	2.58	8.20	1.192	0.210	(0.510)	0.982
32	2.67	5.90	0.858	0.210	(0.367)	0.647
33	2.75	2.00	0.291	(0.210)	0.124	0.166
34	2.83	1.80	0.262	(0.210)	0.112	0.150
35	2.92	1.80	0.262	(0.210)	0.112	0.150
36	3.00	0.60	0.087	(0.210)	0.037	0.050

(Loss Rate Not Used)

Sum = 100.0 Sum = 9.4

Flood volume = Effective rainfall 0.78(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)
Total soil loss = 0.43(In)
Total soil loss = 0.400(Ac.Ft)
Total rainfall = 1.21(In)
Flood volume = 31795.3 Cubic Feet
Total soil loss = 17440.1 Cubic Feet

Peak flow rate of this hydrograph = 10.137(CFS)

+++

3 - H O U R   S T O R M
R u n o f f   H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0042	0.61	VQ	|	|	|	|

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                                                PR3HR10YR
    0+10       0.0118     1.10  V Q       |         |         |         |
    0+15       0.0193     1.10  |VQ       |         |         |         |
    0+20       0.0279     1.24  |VQ       |         |         |         |
    0+25       0.0374     1.38  | Q       |         |         |         |
    0+30       0.0480     1.54  | VQ      |         |         |         |
    0+35       0.0584     1.52  |  Q      |         |         |         |
    0+40       0.0692     1.57  |  Q      |         |         |         |
    0+45       0.0807     1.67  |  QV     |         |         |         |
    0+50       0.0914     1.54  |  Q V    |         |         |         |
    0+55       0.1016     1.48  | Q  V    |         |         |         |
    1+ 0       0.1125     1.59  |  Q  V   |         |         |         |
    1+ 5       0.1253     1.86  |  Q  V   |         |         |         |
    1+10       0.1393     2.02  |   Q  V  |         |         |         |
    1+15       0.1534     2.06  |   Q   V |         |         |         |
    1+20       0.1670     1.97  |  Q     V|         |         |         |
    1+25       0.1820     2.18  |   Q    V|         |         |         |
    1+30       0.1988     2.44  |   Q     V         |         |         |
    1+35       0.2151     2.37  |   Q     |V        |         |         |
    1+40       0.2318     2.42  |   Q     | V       |         |         |
    1+45       0.2510     2.79  |    Q    |  V      |         |         |
    1+50       0.2713     2.94  |    Q    |   V     |         |         |
    1+55       0.2907     2.82  |    Q    |    V    |         |         |
    2+ 0       0.3100     2.79  |    Q    |     V   |         |         |
    2+ 5       0.3296     2.86  |    Q    |       V |         |         |
    2+10       0.3551     3.70  |      Q  |        V|         |         |
    2+15       0.3897     5.02  |         Q         |V        |         |
    2+20       0.4203     4.44  |       Q |         |  V      |         |
    2+25       0.4635     6.27  |         | Q       |    V    |         |
    2+30       0.5236     8.73  |         |      Q  |       V |         |
    2+35       0.5934    10.14  |         |         Q         | V       |
    2+40       0.6557     9.04  |         |       Q |         |    V    |
    2+45       0.6897     4.93  |        Q|         |         |      V  |
    2+50       0.7061     2.39  |   Q     |         |         |       V |
    2+55       0.7188     1.83  |  Q      |         |         |        V|
    3+ 0       0.7266     1.13  | Q       |         |         |        V|
    3+ 5       0.7293     0.39  Q         |         |         |        V|
    3+10       0.7298     0.08  Q         |         |         |        V|
    3+15       0.7299     0.01  Q         |         |         |        V|
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PR6HR10YR

U n i t   H y d r o g r a p h   A n a l y s i s

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Study date 09/07/16 File: PR610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.10                 12.32

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            2.50                 27.99

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.676(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.676(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  62.0      0.448     0.590        0.210       1.000      0.210
                                                  Sum (F) =   0.210
Area averaged mean soil loss (F) (In/Hr) =  0.210
Minimum soil loss rate ((In/Hr)) =  0.105
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
```

PR6HR10YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.101	(0.210)	0.043	0.058
2	0.17	0.60	0.121	(0.210)	0.052	0.069
3	0.25	0.60	0.121	(0.210)	0.052	0.069
4	0.33	0.60	0.121	(0.210)	0.052	0.069
5	0.42	0.60	0.121	(0.210)	0.052	0.069
6	0.50	0.70	0.141	(0.210)	0.060	0.081
7	0.58	0.70	0.141	(0.210)	0.060	0.081
8	0.67	0.70	0.141	(0.210)	0.060	0.081
9	0.75	0.70	0.141	(0.210)	0.060	0.081
10	0.83	0.70	0.141	(0.210)	0.060	0.081
11	0.92	0.70	0.141	(0.210)	0.060	0.081
12	1.00	0.80	0.161	(0.210)	0.069	0.092
13	1.08	0.80	0.161	(0.210)	0.069	0.092
14	1.17	0.80	0.161	(0.210)	0.069	0.092
15	1.25	0.80	0.161	(0.210)	0.069	0.092
16	1.33	0.80	0.161	(0.210)	0.069	0.092
17	1.42	0.80	0.161	(0.210)	0.069	0.092
18	1.50	0.80	0.161	(0.210)	0.069	0.092
19	1.58	0.80	0.161	(0.210)	0.069	0.092
20	1.67	0.80	0.161	(0.210)	0.069	0.092
21	1.75	0.80	0.161	(0.210)	0.069	0.092
22	1.83	0.80	0.161	(0.210)	0.069	0.092
23	1.92	0.80	0.161	(0.210)	0.069	0.092
24	2.00	0.90	0.181	(0.210)	0.077	0.104
25	2.08	0.80	0.161	(0.210)	0.069	0.092
26	2.17	0.90	0.181	(0.210)	0.077	0.104
27	2.25	0.90	0.181	(0.210)	0.077	0.104
28	2.33	0.90	0.181	(0.210)	0.077	0.104
29	2.42	0.90	0.181	(0.210)	0.077	0.104
30	2.50	0.90	0.181	(0.210)	0.077	0.104
31	2.58	0.90	0.181	(0.210)	0.077	0.104
32	2.67	0.90	0.181	(0.210)	0.077	0.104
33	2.75	1.00	0.201	(0.210)	0.086	0.115
34	2.83	1.00	0.201	(0.210)	0.086	0.115
35	2.92	1.00	0.201	(0.210)	0.086	0.115
36	3.00	1.00	0.201	(0.210)	0.086	0.115
37	3.08	1.00	0.201	(0.210)	0.086	0.115
38	3.17	1.10	0.221	(0.210)	0.095	0.127
39	3.25	1.10	0.221	(0.210)	0.095	0.127
40	3.33	1.10	0.221	(0.210)	0.095	0.127
41	3.42	1.20	0.241	(0.210)	0.103	0.138
42	3.50	1.30	0.261	(0.210)	0.112	0.150
43	3.58	1.40	0.282	(0.210)	0.121	0.161
44	3.67	1.40	0.282	(0.210)	0.121	0.161
45	3.75	1.50	0.302	(0.210)	0.129	0.173
46	3.83	1.50	0.302	(0.210)	0.129	0.173
47	3.92	1.60	0.322	(0.210)	0.138	0.184
48	4.00	1.60	0.322	(0.210)	0.138	0.184
49	4.08	1.70	0.342	(0.210)	0.146	0.196
50	4.17	1.80	0.362	(0.210)	0.155	0.207
51	4.25	1.90	0.382	(0.210)	0.164	0.219
52	4.33	2.00	0.402	(0.210)	0.172	0.230
53	4.42	2.10	0.422	(0.210)	0.181	0.242
54	4.50	2.10	0.422	(0.210)	0.181	0.242
55	4.58	2.20	0.442	(0.210)	0.189	0.253
56	4.67	2.30	0.463	(0.210)	0.198	0.265
57	4.75	2.40	0.483	(0.210)	0.207	0.276
58	4.83	2.40	0.483	(0.210)	0.207	0.276

```
                                    PR6HR10YR
59   4.92      2.50      0.503           0.210    (  0.215)       0.292
60   5.00      2.60      0.523           0.210    (  0.224)       0.313
61   5.08      3.10      0.623           0.210    (  0.267)       0.413
62   5.17      3.60      0.724           0.210    (  0.310)       0.514
63   5.25      3.90      0.784           0.210    (  0.336)       0.574
64   5.33      4.20      0.845           0.210    (  0.362)       0.634
65   5.42      4.70      0.945           0.210    (  0.405)       0.735
66   5.50      5.60      1.126           0.210    (  0.482)       0.916
67   5.58      1.90      0.382        (  0.210)      0.164        0.219
68   5.67      0.90      0.181        (  0.210)      0.077        0.104
69   5.75      0.60      0.121        (  0.210)      0.052        0.069
70   5.83      0.50      0.101        (  0.210)      0.043        0.058
71   5.92      0.30      0.060        (  0.210)      0.026        0.035
72   6.00      0.20      0.040        (  0.210)      0.017        0.023
               (Loss Rate Not Used)
   Sum =     100.0                                 Sum =    12.4
      Flood volume = Effective rainfall      1.04(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       1.0(Ac.Ft)
      Total soil loss =      0.64(In)
      Total soil loss =     0.598(Ac.Ft)
      Total rainfall =      1.68(In)
      Flood volume =     42069.3 Cubic Feet
      Total soil loss =      26048.1 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      9.190(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0022      0.32  VQ        |         |         |         |
  0+10       0.0067      0.65  V Q       |         |         |         |
  0+15       0.0119      0.75  V  Q      |         |         |         |
  0+20       0.0172      0.78  V  Q      |         |         |         |
  0+25       0.0226      0.78  V  Q      |         |         |         |
  0+30       0.0284      0.84  |V Q      |         |         |         |
  0+35       0.0346      0.90  |V Q      |         |         |         |
  0+40       0.0408      0.91  |V Q      |         |         |         |
  0+45       0.0471      0.91  |V Q      |         |         |         |
  0+50       0.0534      0.91  | VQ      |         |         |         |
  0+55       0.0596      0.91  | VQ      |         |         |         |
  1+ 0       0.0663      0.97  | VQ      |         |         |         |
  1+ 5       0.0734      1.03  |  VQ     |         |         |         |
  1+10       0.0805      1.04  |  VQ     |         |         |         |
  1+15       0.0877      1.04  |  VQ     |         |         |         |
  1+20       0.0948      1.04  |  VQ     |         |         |         |
  1+25       0.1020      1.04  |   Q     |         |         |         |
  1+30       0.1092      1.04  |   Q     |         |         |         |
  1+35       0.1163      1.04  |   Q     |         |         |         |
  1+40       0.1235      1.04  |   QV    |         |         |         |
  1+45       0.1306      1.04  |   QV    |         |         |         |
  1+50       0.1378      1.04  |   QV    |         |         |         |
  1+55       0.1449      1.04  |   Q V   |         |         |         |
  2+ 0       0.1525      1.10  |   Q V   |         |         |         |
  2+ 5       0.1600      1.09  |   Q V   |         |         |         |
  2+10       0.1677      1.11  |   Q V   |         |         |         |
  2+15       0.1757      1.16  |   Q  V  |         |         |         |
  2+20       0.1837      1.17  |   Q  V  |         |         |         |
  2+25       0.1918      1.17  |   Q  V  |         |         |         |
  2+30       0.1998      1.17  |   Q   V |         |         |         |
  2+35       0.2079      1.17  |   Q   V |         |         |         |
  2+40       0.2159      1.17  |   Q   V |         |         |         |
  2+45       0.2244      1.23  |   Q    V|         |         |         |
  2+50       0.2333      1.29  |    Q   V|         |         |         |
  2+55       0.2422      1.30  |    Q    V         |         |         |
  3+ 0       0.2512      1.30  |    Q    V         |         |         |
  3+ 5       0.2601      1.30  |    Q    V         |         |         |
  3+10       0.2695      1.36  |    Q    |V        |         |         |
  3+15       0.2792      1.42  |    Q    |V        |         |         |
  3+20       0.2891      1.43  |    Q    |V        |         |         |
  3+25       0.2993      1.49  |    Q    | V       |         |         |
  3+30       0.3104      1.61  |     Q   | V       |         |         |
  3+35       0.3224      1.74  |     Q   |  V      |         |         |
  3+40       0.3348      1.80  |      Q  |  V      |         |         |
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                                                PR6HR10YR
    3+45       0.3478      1.88  |      Q  |   V     |         |         |
    3+50       0.3611      1.94  |      Q  |   V     |         |         |
    3+55       0.3749      2.01  |       Q |    V    |         |         |
    4+ 0       0.3892      2.07  |       Q |     V   |         |         |
    4+ 5       0.4039      2.14  |       Q |     V   |         |         |
    4+10       0.4195      2.26  |        Q|      V  |         |         |
    4+15       0.4359      2.39  |        Q|       V |         |         |
    4+20       0.4532      2.52  |         Q       V |         |         |
    4+25       0.4715      2.65  |         Q        V|         |         |
    4+30       0.4901      2.71  |         Q         V         |         |
    4+35       0.5094      2.79  |         |Q        |V        |         |
    4+40       0.5294      2.91  |         |Q        |V        |         |
    4+45       0.5503      3.04  |         | Q       | V       |         |
    4+50       0.5717      3.10  |         | Q       |  V      |         |
    4+55       0.5937      3.21  |         | Q       |   V     |         |
    5+ 0       0.6171      3.40  |         |  Q      |    V    |         |
    5+ 5       0.6452      4.07  |         |     Q   |     V   |         |
    5+10       0.6804      5.12  |         |         Q       V |         |
    5+15       0.7217      6.00  |         |         |   Q    V|         |
    5+20       0.7681      6.73  |         |         |     Q   |V        |
    5+25       0.8207      7.65  |         |         |         Q  V      |
    5+30       0.8840      9.19  |         |         |         |     Q   |
    5+35       0.9267      6.20  |         |         |   Q     |       V |
    5+40       0.9441      2.53  |         Q         |         |        V|
    5+45       0.9530      1.28  |    Q    |         |         |        V|
    5+50       0.9584      0.78  |  Q      |         |         |        V|
    5+55       0.9621      0.54  | Q       |         |         |        V|
    6+ 0       0.9645      0.35  |Q        |         |         |        V|
    6+ 5       0.9655      0.15  Q         |         |         |        V|
    6+10       0.9657      0.03  Q         |         |         |        V|
    6+15       0.9658      0.01  Q         |         |         |        V|
-----------------------------------------------------------------------
```

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                                   PR24HR10YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.72                  19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            4.30                  48.15

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    2.781(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.781(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  62.0      0.448     0.590        0.210       1.000      0.210
                                                  Sum (F) =   0.210
Area averaged mean soil loss (F) (In/Hr) =  0.210
Minimum soil loss rate ((In/Hr)) =  0.105
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
```

PR24HR10YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.022	(0.373)	0.010	0.013
2	0.17	0.07	0.022	(0.371)	0.010	0.013
3	0.25	0.07	0.022	(0.370)	0.010	0.013
4	0.33	0.10	0.033	(0.368)	0.014	0.019
5	0.42	0.10	0.033	(0.367)	0.014	0.019
6	0.50	0.10	0.033	(0.366)	0.014	0.019
7	0.58	0.10	0.033	(0.364)	0.014	0.019
8	0.67	0.10	0.033	(0.363)	0.014	0.019
9	0.75	0.10	0.033	(0.361)	0.014	0.019
10	0.83	0.13	0.045	(0.360)	0.019	0.025
11	0.92	0.13	0.045	(0.359)	0.019	0.025
12	1.00	0.13	0.045	(0.357)	0.019	0.025
13	1.08	0.10	0.033	(0.356)	0.014	0.019
14	1.17	0.10	0.033	(0.354)	0.014	0.019
15	1.25	0.10	0.033	(0.353)	0.014	0.019
16	1.33	0.10	0.033	(0.351)	0.014	0.019
17	1.42	0.10	0.033	(0.350)	0.014	0.019
18	1.50	0.10	0.033	(0.349)	0.014	0.019
19	1.58	0.10	0.033	(0.347)	0.014	0.019
20	1.67	0.10	0.033	(0.346)	0.014	0.019
21	1.75	0.10	0.033	(0.345)	0.014	0.019
22	1.83	0.13	0.045	(0.343)	0.019	0.025
23	1.92	0.13	0.045	(0.342)	0.019	0.025
24	2.00	0.13	0.045	(0.340)	0.019	0.025
25	2.08	0.13	0.045	(0.339)	0.019	0.025
26	2.17	0.13	0.045	(0.338)	0.019	0.025
27	2.25	0.13	0.045	(0.336)	0.019	0.025
28	2.33	0.13	0.045	(0.335)	0.019	0.025
29	2.42	0.13	0.045	(0.333)	0.019	0.025
30	2.50	0.13	0.045	(0.332)	0.019	0.025
31	2.58	0.17	0.056	(0.331)	0.024	0.032
32	2.67	0.17	0.056	(0.329)	0.024	0.032
33	2.75	0.17	0.056	(0.328)	0.024	0.032
34	2.83	0.17	0.056	(0.327)	0.024	0.032
35	2.92	0.17	0.056	(0.325)	0.024	0.032
36	3.00	0.17	0.056	(0.324)	0.024	0.032
37	3.08	0.17	0.056	(0.323)	0.024	0.032
38	3.17	0.17	0.056	(0.321)	0.024	0.032
39	3.25	0.17	0.056	(0.320)	0.024	0.032
40	3.33	0.17	0.056	(0.319)	0.024	0.032
41	3.42	0.17	0.056	(0.317)	0.024	0.032
42	3.50	0.17	0.056	(0.316)	0.024	0.032
43	3.58	0.17	0.056	(0.315)	0.024	0.032
44	3.67	0.17	0.056	(0.313)	0.024	0.032
45	3.75	0.17	0.056	(0.312)	0.024	0.032
46	3.83	0.20	0.067	(0.311)	0.029	0.038
47	3.92	0.20	0.067	(0.309)	0.029	0.038
48	4.00	0.20	0.067	(0.308)	0.029	0.038
49	4.08	0.20	0.067	(0.307)	0.029	0.038
50	4.17	0.20	0.067	(0.306)	0.029	0.038
51	4.25	0.20	0.067	(0.304)	0.029	0.038
52	4.33	0.23	0.078	(0.303)	0.033	0.045
53	4.42	0.23	0.078	(0.302)	0.033	0.045
54	4.50	0.23	0.078	(0.300)	0.033	0.045
55	4.58	0.23	0.078	(0.299)	0.033	0.045
56	4.67	0.23	0.078	(0.298)	0.033	0.045
57	4.75	0.23	0.078	(0.296)	0.033	0.045
58	4.83	0.27	0.089	(0.295)	0.038	0.051

59	4.92	0.27	0.089	(0.294)	0.038	0.051
60	5.00	0.27	0.089	(0.293)	0.038	0.051
61	5.08	0.20	0.067	(0.291)	0.029	0.038
62	5.17	0.20	0.067	(0.290)	0.029	0.038
63	5.25	0.20	0.067	(0.289)	0.029	0.038
64	5.33	0.23	0.078	(0.288)	0.033	0.045
65	5.42	0.23	0.078	(0.286)	0.033	0.045
66	5.50	0.23	0.078	(0.285)	0.033	0.045
67	5.58	0.27	0.089	(0.284)	0.038	0.051
68	5.67	0.27	0.089	(0.283)	0.038	0.051
69	5.75	0.27	0.089	(0.281)	0.038	0.051
70	5.83	0.27	0.089	(0.280)	0.038	0.051
71	5.92	0.27	0.089	(0.279)	0.038	0.051
72	6.00	0.27	0.089	(0.278)	0.038	0.051
73	6.08	0.30	0.100	(0.276)	0.043	0.057
74	6.17	0.30	0.100	(0.275)	0.043	0.057
75	6.25	0.30	0.100	(0.274)	0.043	0.057
76	6.33	0.30	0.100	(0.273)	0.043	0.057
77	6.42	0.30	0.100	(0.271)	0.043	0.057
78	6.50	0.30	0.100	(0.270)	0.043	0.057
79	6.58	0.33	0.111	(0.269)	0.048	0.064
80	6.67	0.33	0.111	(0.268)	0.048	0.064
81	6.75	0.33	0.111	(0.267)	0.048	0.064
82	6.83	0.33	0.111	(0.265)	0.048	0.064
83	6.92	0.33	0.111	(0.264)	0.048	0.064
84	7.00	0.33	0.111	(0.263)	0.048	0.064
85	7.08	0.33	0.111	(0.262)	0.048	0.064
86	7.17	0.33	0.111	(0.261)	0.048	0.064
87	7.25	0.33	0.111	(0.259)	0.048	0.064
88	7.33	0.37	0.122	(0.258)	0.052	0.070
89	7.42	0.37	0.122	(0.257)	0.052	0.070
90	7.50	0.37	0.122	(0.256)	0.052	0.070
91	7.58	0.40	0.134	(0.255)	0.057	0.076
92	7.67	0.40	0.134	(0.254)	0.057	0.076
93	7.75	0.40	0.134	(0.252)	0.057	0.076
94	7.83	0.43	0.145	(0.251)	0.062	0.083
95	7.92	0.43	0.145	(0.250)	0.062	0.083
96	8.00	0.43	0.145	(0.249)	0.062	0.083
97	8.08	0.50	0.167	(0.248)	0.071	0.095
98	8.17	0.50	0.167	(0.247)	0.071	0.095
99	8.25	0.50	0.167	(0.245)	0.071	0.095
100	8.33	0.50	0.167	(0.244)	0.071	0.095
101	8.42	0.50	0.167	(0.243)	0.071	0.095
102	8.50	0.50	0.167	(0.242)	0.071	0.095
103	8.58	0.53	0.178	(0.241)	0.076	0.102
104	8.67	0.53	0.178	(0.240)	0.076	0.102
105	8.75	0.53	0.178	(0.239)	0.076	0.102
106	8.83	0.57	0.189	(0.237)	0.081	0.108
107	8.92	0.57	0.189	(0.236)	0.081	0.108
108	9.00	0.57	0.189	(0.235)	0.081	0.108
109	9.08	0.63	0.211	(0.234)	0.090	0.121
110	9.17	0.63	0.211	(0.233)	0.090	0.121
111	9.25	0.63	0.211	(0.232)	0.090	0.121
112	9.33	0.67	0.223	(0.231)	0.095	0.127
113	9.42	0.67	0.223	(0.230)	0.095	0.127
114	9.50	0.67	0.223	(0.229)	0.095	0.127
115	9.58	0.70	0.234	(0.227)	0.100	0.134
116	9.67	0.70	0.234	(0.226)	0.100	0.134
117	9.75	0.70	0.234	(0.225)	0.100	0.134
118	9.83	0.73	0.245	(0.224)	0.105	0.140
119	9.92	0.73	0.245	(0.223)	0.105	0.140
120	10.00	0.73	0.245	(0.222)	0.105	0.140
121	10.08	0.50	0.167	(0.221)	0.071	0.095
122	10.17	0.50	0.167	(0.220)	0.071	0.095
123	10.25	0.50	0.167	(0.219)	0.071	0.095
124	10.33	0.50	0.167	(0.218)	0.071	0.095
125	10.42	0.50	0.167	(0.217)	0.071	0.095
126	10.50	0.50	0.167	(0.216)	0.071	0.095
127	10.58	0.67	0.223	(0.215)	0.095	0.127
128	10.67	0.67	0.223	(0.214)	0.095	0.127
129	10.75	0.67	0.223	(0.213)	0.095	0.127
130	10.83	0.67	0.223	(0.211)	0.095	0.127
131	10.92	0.67	0.223	(0.210)	0.095	0.127
132	11.00	0.67	0.223	(0.209)	0.095	0.127
133	11.08	0.63	0.211	(0.208)	0.090	0.121
134	11.17	0.63	0.211	(0.207)	0.090	0.121
135	11.25	0.63	0.211	(0.206)	0.090	0.121
136	11.33	0.63	0.211	(0.205)	0.090	0.121
137	11.42	0.63	0.211	(0.204)	0.090	0.121

138	11.50	0.63	0.211	(0.203)	0.090	0.121
139	11.58	0.57	0.189	(0.202)	0.081	0.108
140	11.67	0.57	0.189	(0.201)	0.081	0.108
141	11.75	0.57	0.189	(0.200)	0.081	0.108
142	11.83	0.60	0.200	(0.199)	0.086	0.115
143	11.92	0.60	0.200	(0.198)	0.086	0.115
144	12.00	0.60	0.200	(0.197)	0.086	0.115
145	12.08	0.83	0.278	(0.196)	0.119	0.159
146	12.17	0.83	0.278	(0.195)	0.119	0.159
147	12.25	0.83	0.278	(0.194)	0.119	0.159
148	12.33	0.87	0.289	(0.193)	0.124	0.165
149	12.42	0.87	0.289	(0.192)	0.124	0.165
150	12.50	0.87	0.289	(0.191)	0.124	0.165
151	12.58	0.93	0.312	(0.190)	0.133	0.178
152	12.67	0.93	0.312	(0.190)	0.133	0.178
153	12.75	0.93	0.312	(0.189)	0.133	0.178
154	12.83	0.97	0.323	(0.188)	0.138	0.185
155	12.92	0.97	0.323	(0.187)	0.138	0.185
156	13.00	0.97	0.323	(0.186)	0.138	0.185
157	13.08	1.13	0.378	(0.185)	0.162	0.216
158	13.17	1.13	0.378	(0.184)	0.162	0.216
159	13.25	1.13	0.378	(0.183)	0.162	0.216
160	13.33	1.13	0.378	(0.182)	0.162	0.216
161	13.42	1.13	0.378	(0.181)	0.162	0.216
162	13.50	1.13	0.378	(0.180)	0.162	0.216
163	13.58	0.77	0.256	(0.179)	0.110	0.146
164	13.67	0.77	0.256	(0.178)	0.110	0.146
165	13.75	0.77	0.256	(0.177)	0.110	0.146
166	13.83	0.77	0.256	(0.176)	0.110	0.146
167	13.92	0.77	0.256	(0.176)	0.110	0.146
168	14.00	0.77	0.256	(0.175)	0.110	0.146
169	14.08	0.90	0.300	(0.174)	0.129	0.172
170	14.17	0.90	0.300	(0.173)	0.129	0.172
171	14.25	0.90	0.300	(0.172)	0.129	0.172
172	14.33	0.87	0.289	(0.171)	0.124	0.165
173	14.42	0.87	0.289	(0.170)	0.124	0.165
174	14.50	0.87	0.289	(0.169)	0.124	0.165
175	14.58	0.87	0.289	(0.169)	0.124	0.165
176	14.67	0.87	0.289	(0.168)	0.124	0.165
177	14.75	0.87	0.289	(0.167)	0.124	0.165
178	14.83	0.83	0.278	(0.166)	0.119	0.159
179	14.92	0.83	0.278	(0.165)	0.119	0.159
180	15.00	0.83	0.278	(0.164)	0.119	0.159
181	15.08	0.80	0.267	(0.163)	0.114	0.153
182	15.17	0.80	0.267	(0.163)	0.114	0.153
183	15.25	0.80	0.267	(0.162)	0.114	0.153
184	15.33	0.77	0.256	(0.161)	0.110	0.146
185	15.42	0.77	0.256	(0.160)	0.110	0.146
186	15.50	0.77	0.256	(0.159)	0.110	0.146
187	15.58	0.63	0.211	(0.158)	0.090	0.121
188	15.67	0.63	0.211	(0.158)	0.090	0.121
189	15.75	0.63	0.211	(0.157)	0.090	0.121
190	15.83	0.63	0.211	(0.156)	0.090	0.121
191	15.92	0.63	0.211	(0.155)	0.090	0.121
192	16.00	0.63	0.211	(0.154)	0.090	0.121
193	16.08	0.13	0.045	(0.154)	0.019	0.025
194	16.17	0.13	0.045	(0.153)	0.019	0.025
195	16.25	0.13	0.045	(0.152)	0.019	0.025
196	16.33	0.13	0.045	(0.151)	0.019	0.025
197	16.42	0.13	0.045	(0.151)	0.019	0.025
198	16.50	0.13	0.045	(0.150)	0.019	0.025
199	16.58	0.10	0.033	(0.149)	0.014	0.019
200	16.67	0.10	0.033	(0.148)	0.014	0.019
201	16.75	0.10	0.033	(0.147)	0.014	0.019
202	16.83	0.10	0.033	(0.147)	0.014	0.019
203	16.92	0.10	0.033	(0.146)	0.014	0.019
204	17.00	0.10	0.033	(0.145)	0.014	0.019
205	17.08	0.17	0.056	(0.145)	0.024	0.032
206	17.17	0.17	0.056	(0.144)	0.024	0.032
207	17.25	0.17	0.056	(0.143)	0.024	0.032
208	17.33	0.17	0.056	(0.142)	0.024	0.032
209	17.42	0.17	0.056	(0.142)	0.024	0.032
210	17.50	0.17	0.056	(0.141)	0.024	0.032
211	17.58	0.17	0.056	(0.140)	0.024	0.032
212	17.67	0.17	0.056	(0.140)	0.024	0.032
213	17.75	0.17	0.056	(0.139)	0.024	0.032
214	17.83	0.13	0.045	(0.138)	0.019	0.025
215	17.92	0.13	0.045	(0.137)	0.019	0.025
216	18.00	0.13	0.045	(0.137)	0.019	0.025

217	18.08	0.13	0.045	(0.136)	0.019	0.025
218	18.17	0.13	0.045	(0.135)	0.019	0.025
219	18.25	0.13	0.045	(0.135)	0.019	0.025
220	18.33	0.13	0.045	(0.134)	0.019	0.025
221	18.42	0.13	0.045	(0.133)	0.019	0.025
222	18.50	0.13	0.045	(0.133)	0.019	0.025
223	18.58	0.10	0.033	(0.132)	0.014	0.019
224	18.67	0.10	0.033	(0.132)	0.014	0.019
225	18.75	0.10	0.033	(0.131)	0.014	0.019
226	18.83	0.07	0.022	(0.130)	0.010	0.013
227	18.92	0.07	0.022	(0.130)	0.010	0.013
228	19.00	0.07	0.022	(0.129)	0.010	0.013
229	19.08	0.10	0.033	(0.128)	0.014	0.019
230	19.17	0.10	0.033	(0.128)	0.014	0.019
231	19.25	0.10	0.033	(0.127)	0.014	0.019
232	19.33	0.13	0.045	(0.127)	0.019	0.025
233	19.42	0.13	0.045	(0.126)	0.019	0.025
234	19.50	0.13	0.045	(0.125)	0.019	0.025
235	19.58	0.10	0.033	(0.125)	0.014	0.019
236	19.67	0.10	0.033	(0.124)	0.014	0.019
237	19.75	0.10	0.033	(0.124)	0.014	0.019
238	19.83	0.07	0.022	(0.123)	0.010	0.013
239	19.92	0.07	0.022	(0.123)	0.010	0.013
240	20.00	0.07	0.022	(0.122)	0.010	0.013
241	20.08	0.10	0.033	(0.122)	0.014	0.019
242	20.17	0.10	0.033	(0.121)	0.014	0.019
243	20.25	0.10	0.033	(0.121)	0.014	0.019
244	20.33	0.10	0.033	(0.120)	0.014	0.019
245	20.42	0.10	0.033	(0.119)	0.014	0.019
246	20.50	0.10	0.033	(0.119)	0.014	0.019
247	20.58	0.10	0.033	(0.118)	0.014	0.019
248	20.67	0.10	0.033	(0.118)	0.014	0.019
249	20.75	0.10	0.033	(0.117)	0.014	0.019
250	20.83	0.07	0.022	(0.117)	0.010	0.013
251	20.92	0.07	0.022	(0.117)	0.010	0.013
252	21.00	0.07	0.022	(0.116)	0.010	0.013
253	21.08	0.10	0.033	(0.116)	0.014	0.019
254	21.17	0.10	0.033	(0.115)	0.014	0.019
255	21.25	0.10	0.033	(0.115)	0.014	0.019
256	21.33	0.07	0.022	(0.114)	0.010	0.013
257	21.42	0.07	0.022	(0.114)	0.010	0.013
258	21.50	0.07	0.022	(0.113)	0.010	0.013
259	21.58	0.10	0.033	(0.113)	0.014	0.019
260	21.67	0.10	0.033	(0.113)	0.014	0.019
261	21.75	0.10	0.033	(0.112)	0.014	0.019
262	21.83	0.07	0.022	(0.112)	0.010	0.013
263	21.92	0.07	0.022	(0.111)	0.010	0.013
264	22.00	0.07	0.022	(0.111)	0.010	0.013
265	22.08	0.10	0.033	(0.111)	0.014	0.019
266	22.17	0.10	0.033	(0.110)	0.014	0.019
267	22.25	0.10	0.033	(0.110)	0.014	0.019
268	22.33	0.07	0.022	(0.110)	0.010	0.013
269	22.42	0.07	0.022	(0.109)	0.010	0.013
270	22.50	0.07	0.022	(0.109)	0.010	0.013
271	22.58	0.07	0.022	(0.109)	0.010	0.013
272	22.67	0.07	0.022	(0.108)	0.010	0.013
273	22.75	0.07	0.022	(0.108)	0.010	0.013
274	22.83	0.07	0.022	(0.108)	0.010	0.013
275	22.92	0.07	0.022	(0.107)	0.010	0.013
276	23.00	0.07	0.022	(0.107)	0.010	0.013
277	23.08	0.07	0.022	(0.107)	0.010	0.013
278	23.17	0.07	0.022	(0.107)	0.010	0.013
279	23.25	0.07	0.022	(0.107)	0.010	0.013
280	23.33	0.07	0.022	(0.106)	0.010	0.013
281	23.42	0.07	0.022	(0.106)	0.010	0.013
282	23.50	0.07	0.022	(0.106)	0.010	0.013
283	23.58	0.07	0.022	(0.106)	0.010	0.013
284	23.67	0.07	0.022	(0.106)	0.010	0.013
285	23.75	0.07	0.022	(0.105)	0.010	0.013
286	23.83	0.07	0.022	(0.105)	0.010	0.013
287	23.92	0.07	0.022	(0.105)	0.010	0.013
288	24.00	0.07	0.022	(0.105)	0.010	0.013

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.1

Flood volume = Effective rainfall 1.59(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 1.5(Ac.Ft)
Total soil loss = 1.19(In)
Total soil loss = 1.111(Ac.Ft)
Total rainfall = 2.78(In)

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                                        PR24HR10YR
      Flood volume =       64664.1 Cubic Feet
      Total soil loss =       48385.0 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      2.443(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0005      0.07  Q         |         |         |         |
  0+10       0.0014      0.13  Q         |         |         |         |
  0+15       0.0024      0.14  Q         |         |         |         |
  0+20       0.0036      0.18  Q         |         |         |         |
  0+25       0.0050      0.21  Q         |         |         |         |
  0+30       0.0065      0.21  Q         |         |         |         |
  0+35       0.0080      0.22  Q         |         |         |         |
  0+40       0.0095      0.22  Q         |         |         |         |
  0+45       0.0110      0.22  Q         |         |         |         |
  0+50       0.0127      0.25  VQ        |         |         |         |
  0+55       0.0146      0.28  VQ        |         |         |         |
  1+ 0       0.0166      0.29  VQ        |         |         |         |
  1+ 5       0.0183      0.25  VQ        |         |         |         |
  1+10       0.0198      0.22  Q         |         |         |         |
  1+15       0.0213      0.22  Q         |         |         |         |
  1+20       0.0228      0.22  Q         |         |         |         |
  1+25       0.0243      0.22  Q         |         |         |         |
  1+30       0.0258      0.22  Q         |         |         |         |
  1+35       0.0273      0.22  Q         |         |         |         |
  1+40       0.0288      0.22  Q         |         |         |         |
  1+45       0.0303      0.22  Q         |         |         |         |
  1+50       0.0320      0.25  VQ        |         |         |         |
  1+55       0.0339      0.28  VQ        |         |         |         |
  2+ 0       0.0359      0.29  VQ        |         |         |         |
  2+ 5       0.0379      0.29   |Q       |         |         |         |
  2+10       0.0398      0.29   |Q       |         |         |         |
  2+15       0.0418      0.29   |Q       |         |         |         |
  2+20       0.0438      0.29   |Q       |         |         |         |
  2+25       0.0458      0.29   |Q       |         |         |         |
  2+30       0.0478      0.29   |Q       |         |         |         |
  2+35       0.0500      0.32   |Q       |         |         |         |
  2+40       0.0524      0.35   |Q       |         |         |         |
  2+45       0.0549      0.36   |Q       |         |         |         |
  2+50       0.0573      0.36   |Q       |         |         |         |
  2+55       0.0598      0.36   |Q       |         |         |         |
  3+ 0       0.0623      0.36   |Q       |         |         |         |
  3+ 5       0.0648      0.36   |Q       |         |         |         |
  3+10       0.0672      0.36   |Q       |         |         |         |
  3+15       0.0697      0.36   |Q       |         |         |         |
  3+20       0.0722      0.36   |Q       |         |         |         |
  3+25       0.0747      0.36   |QV      |         |         |         |
  3+30       0.0771      0.36   |QV      |         |         |         |
  3+35       0.0796      0.36   |QV      |         |         |         |
  3+40       0.0821      0.36   |QV      |         |         |         |
  3+45       0.0846      0.36   |QV      |         |         |         |
  3+50       0.0873      0.40   |QV      |         |         |         |
  3+55       0.0902      0.42   |QV      |         |         |         |
  4+ 0       0.0932      0.43   |QV      |         |         |         |
  4+ 5       0.0961      0.43   |QV      |         |         |         |
  4+10       0.0991      0.43   |QV      |         |         |         |
  4+15       0.1021      0.43   |QV      |         |         |         |
  4+20       0.1053      0.47   |QV      |         |         |         |
  4+25       0.1087      0.50   |QV      |         |         |         |
  4+30       0.1122      0.50   | QV     |         |         |         |
  4+35       0.1156      0.50   | QV     |         |         |         |
  4+40       0.1191      0.50   | QV     |         |         |         |
  4+45       0.1225      0.50   | QV     |         |         |         |
  4+50       0.1263      0.54   | QV     |         |         |         |
  4+55       0.1302      0.57   | QV     |         |         |         |
  5+ 0       0.1341      0.57   | QV     |         |         |         |
  5+ 5       0.1376      0.50   | QV     |         |         |         |
  5+10       0.1406      0.44   |Q V     |         |         |         |
  5+15       0.1436      0.43   |Q V     |         |         |         |
  5+20       0.1468      0.47   |Q V     |         |         |         |
  5+25       0.1503      0.50   |Q  V    |         |         |         |
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 5+30       0.1537      0.50  | Q V     |         |         |         |
 5+35       0.1574      0.54  | Q V     |         |         |         |
 5+40       0.1613      0.57  | Q V     |         |         |         |
 5+45       0.1653      0.57  | Q V     |         |         |         |
 5+50       0.1692      0.57  | Q V     |         |         |         |
 5+55       0.1732      0.57  | Q V     |         |         |         |
 6+ 0       0.1772      0.57  | Q V     |         |         |         |
 6+ 5       0.1814      0.61  | Q V     |         |         |         |
 6+10       0.1858      0.64  | Q  V    |         |         |         |
 6+15       0.1902      0.64  | Q  V    |         |         |         |
 6+20       0.1947      0.65  | Q  V    |         |         |         |
 6+25       0.1991      0.65  | Q  V    |         |         |         |
 6+30       0.2036      0.65  | Q  V    |         |         |         |
 6+35       0.2083      0.68  | Q  V    |         |         |         |
 6+40       0.2132      0.71  | Q  V    |         |         |         |
 6+45       0.2181      0.72  | Q  V    |         |         |         |
 6+50       0.2231      0.72  | Q   V   |         |         |         |
 6+55       0.2280      0.72  | Q   V   |         |         |         |
 7+ 0       0.2330      0.72  | Q   V   |         |         |         |
 7+ 5       0.2379      0.72  | Q   V   |         |         |         |
 7+10       0.2429      0.72  | Q   V   |         |         |         |
 7+15       0.2478      0.72  | Q   V   |         |         |         |
 7+20       0.2530      0.75  |  Q  V   |         |         |         |
 7+25       0.2584      0.78  |  Q  V   |         |         |         |
 7+30       0.2638      0.79  |  Q   V  |         |         |         |
 7+35       0.2695      0.83  |  Q   V  |         |         |         |
 7+40       0.2754      0.86  |  Q   V  |         |         |         |
 7+45       0.2813      0.86  |  Q   V  |         |         |         |
 7+50       0.2875      0.90  |  Q   V  |         |         |         |
 7+55       0.2939      0.93  |  Q   V  |         |         |         |
 8+ 0       0.3003      0.93  |  Q    V |         |         |         |
 8+ 5       0.3072      1.01  |   Q   V |         |         |         |
 8+10       0.3146      1.06  |   Q   V |         |         |         |
 8+15       0.3220      1.07  |   Q   V |         |         |         |
 8+20       0.3294      1.08  |   Q   V |         |         |         |
 8+25       0.3368      1.08  |   Q    V|         |         |         |
 8+30       0.3442      1.08  |   Q    V|         |         |         |
 8+35       0.3519      1.11  |   Q    V|         |         |         |
 8+40       0.3598      1.14  |   Q    V|         |         |         |
 8+45       0.3677      1.15  |   Q    V|         |         |         |
 8+50       0.3758      1.19  |   Q     V         |         |         |
 8+55       0.3842      1.21  |   Q     V         |         |         |
 9+ 0       0.3926      1.22  |   Q     V         |         |         |
 9+ 5       0.4015      1.29  |    Q    V         |         |         |
 9+10       0.4108      1.35  |    Q    |V        |         |         |
 9+15       0.4202      1.36  |    Q    |V        |         |         |
 9+20       0.4299      1.40  |    Q    |V        |         |         |
 9+25       0.4397      1.43  |    Q    |V        |         |         |
 9+30       0.4496      1.44  |    Q    | V       |         |         |
 9+35       0.4597      1.47  |    Q    | V       |         |         |
 9+40       0.4701      1.50  |     Q   | V       |         |         |
 9+45       0.4805      1.51  |     Q   | V       |         |         |
 9+50       0.4911      1.54  |     Q   |  V      |         |         |
 9+55       0.5019      1.57  |     Q   |  V      |         |         |
10+ 0       0.5128      1.58  |     Q   |  V      |         |         |
10+ 5       0.5220      1.33  |    Q    |   V     |         |         |
10+10       0.5297      1.13  |   Q     |   V     |         |         |
10+15       0.5372      1.09  |   Q     |   V     |         |         |
10+20       0.5446      1.08  |   Q     |   V     |         |         |
10+25       0.5521      1.08  |   Q     |   V     |         |         |
10+30       0.5595      1.08  |   Q     |    V    |         |         |
10+35       0.5681      1.26  |    Q    |    V    |         |         |
10+40       0.5778      1.40  |    Q    |    V    |         |         |
10+45       0.5876      1.43  |    Q    |    V    |         |         |
10+50       0.5975      1.44  |    Q    |     V   |         |         |
10+55       0.6074      1.44  |    Q    |     V   |         |         |
11+ 0       0.6173      1.44  |    Q    |     V   |         |         |
11+ 5       0.6270      1.40  |    Q    |     V   |         |         |
11+10       0.6364      1.37  |    Q    |      V  |         |         |
11+15       0.6458      1.37  |    Q    |      V  |         |         |
11+20       0.6552      1.37  |    Q    |      V  |         |         |
11+25       0.6646      1.37  |    Q    |      V  |         |         |
11+30       0.6741      1.37  |    Q    |       V |         |         |
11+35       0.6830      1.29  |    Q    |       V |         |         |
11+40       0.6915      1.24  |   Q     |       V |         |         |
11+45       0.6999      1.22  |   Q     |       V |         |         |
11+50       0.7086      1.26  |    Q    |        V|         |         |
11+55       0.7174      1.29  |    Q    |        V|         |         |
12+ 0       0.7263      1.29  |    Q    |        V|         |         |
```

```
                                            PR24HR10YR
12+ 5       0.7369      1.54  |     Q   |        V|         |         |
12+10       0.7490      1.75  |     Q   |         V         |         |
12+15       0.7613      1.78  |      Q  |         V         |         |
12+20       0.7739      1.83  |      Q  |         V         |         |
12+25       0.7867      1.86  |      Q  |         |V        |         |
12+30       0.7996      1.87  |      Q  |         |V        |         |
12+35       0.8129      1.94  |      Q  |         |V        |         |
12+40       0.8267      2.00  |      Q  |         | V       |         |
12+45       0.8405      2.01  |       Q |         | V       |         |
12+50       0.8546      2.05  |       Q |         |  V      |         |
12+55       0.8689      2.08  |       Q |         |  V      |         |
13+ 0       0.8833      2.08  |       Q |         |  V      |         |
13+ 5       0.8988      2.26  |        Q|         |   V     |         |
13+10       0.9154      2.41  |        Q|         |   V     |         |
13+15       0.9322      2.43  |        Q|         |    V    |         |
13+20       0.9490      2.44  |        Q|         |    V    |         |
13+25       0.9658      2.44  |        Q|         |     V   |         |
13+30       0.9827      2.44  |        Q|         |     V   |         |
13+35       0.9968      2.05  |       Q |         |     V   |         |
13+40       1.0087      1.73  |     Q   |         |      V  |         |
13+45       1.0202      1.67  |     Q   |         |      V  |         |
13+50       1.0316      1.65  |     Q   |         |      V  |         |
13+55       1.0430      1.65  |     Q   |         |       V |         |
14+ 0       1.0543      1.65  |     Q   |         |       V |         |
14+ 5       1.0667      1.80  |      Q  |         |       V |         |
14+10       1.0799      1.91  |      Q  |         |        V|         |
14+15       1.0932      1.93  |      Q  |         |        V|         |
14+20       1.1063      1.90  |      Q  |         |        V|         |
14+25       1.1192      1.87  |      Q  |         |         V         |
14+30       1.1321      1.87  |      Q  |         |         V         |
14+35       1.1450      1.87  |      Q  |         |         V         |
14+40       1.1578      1.87  |      Q  |         |         |V        |
14+45       1.1707      1.87  |      Q  |         |         |V        |
14+50       1.1833      1.83  |      Q  |         |         |V        |
14+55       1.1957      1.80  |      Q  |         |         | V       |
15+ 0       1.2081      1.80  |      Q  |         |         | V       |
15+ 5       1.2202      1.76  |      Q  |         |         | V       |
15+10       1.2322      1.73  |     Q   |         |         |  V      |
15+15       1.2440      1.73  |     Q   |         |         |  V      |
15+20       1.2557      1.69  |     Q   |         |         |  V      |
15+25       1.2671      1.66  |     Q   |         |         |   V     |
15+30       1.2785      1.65  |     Q   |         |         |   V     |
15+35       1.2889      1.51  |     Q   |         |         |   V     |
15+40       1.2985      1.39  |    Q    |         |         |   V     |
15+45       1.3079      1.37  |    Q    |         |         |    V    |
15+50       1.3173      1.37  |    Q    |         |         |    V    |
15+55       1.3267      1.37  |    Q    |         |         |    V    |
16+ 0       1.3361      1.37  |    Q    |         |         |     V   |
16+ 5       1.3418      0.83  |  Q      |         |         |     V   |
16+10       1.3445      0.39  |Q        |         |         |     V   |
16+15       1.3467      0.31  |Q        |         |         |     V   |
16+20       1.3487      0.29  |Q        |         |         |     V   |
16+25       1.3506      0.29  |Q        |         |         |     V   |
16+30       1.3526      0.29  |Q        |         |         |     V   |
16+35       1.3544      0.25  |Q        |         |         |     V   |
16+40       1.3559      0.22  Q         |         |         |     V   |
16+45       1.3574      0.22  Q         |         |         |     V   |
16+50       1.3589      0.22  Q         |         |         |     V   |
16+55       1.3603      0.22  Q         |         |         |     V   |
17+ 0       1.3618      0.22  Q         |         |         |     V   |
17+ 5       1.3638      0.29  |Q        |         |         |     V   |
17+10       1.3662      0.35  |Q        |         |         |     V   |
17+15       1.3686      0.36  |Q        |         |         |     V   |
17+20       1.3711      0.36  |Q        |         |         |     V   |
17+25       1.3736      0.36  |Q        |         |         |      V  |
17+30       1.3761      0.36  |Q        |         |         |      V  |
17+35       1.3785      0.36  |Q        |         |         |      V  |
17+40       1.3810      0.36  |Q        |         |         |      V  |
17+45       1.3835      0.36  |Q        |         |         |      V  |
17+50       1.3857      0.32  |Q        |         |         |      V  |
17+55       1.3877      0.29  |Q        |         |         |      V  |
18+ 0       1.3897      0.29  |Q        |         |         |      V  |
18+ 5       1.3917      0.29  |Q        |         |         |      V  |
18+10       1.3937      0.29  |Q        |         |         |      V  |
18+15       1.3957      0.29  |Q        |         |         |      V  |
18+20       1.3976      0.29  |Q        |         |         |      V  |
18+25       1.3996      0.29  |Q        |         |         |      V  |
18+30       1.4016      0.29  |Q        |         |         |      V  |
18+35       1.4033      0.25  |Q        |         |         |      V  |
```

PR24HR10YR

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  18+40       1.4049      0.22  Q          |         |         |      V  |
  18+45       1.4064      0.22  Q          |         |         |      V  |
  18+50       1.4076      0.18  Q          |         |         |      V  |
  18+55       1.4086      0.15  Q          |         |         |      V  |
  19+ 0       1.4096      0.15  Q          |         |         |      V  |
  19+ 5       1.4109      0.18  Q          |         |         |       V |
  19+10       1.4123      0.21  Q          |         |         |       V |
  19+15       1.4138      0.21  Q          |         |         |       V |
  19+20       1.4155      0.25  |Q         |         |         |       V |
  19+25       1.4175      0.28  |Q         |         |         |       V |
  19+30       1.4194      0.29  |Q         |         |         |       V |
  19+35       1.4212      0.25  |Q         |         |         |       V |
  19+40       1.4227      0.22  Q          |         |         |       V |
  19+45       1.4242      0.22  Q          |         |         |       V |
  19+50       1.4254      0.18  Q          |         |         |       V |
  19+55       1.4265      0.15  Q          |         |         |       V |
  20+ 0       1.4275      0.15  Q          |         |         |       V |
  20+ 5       1.4287      0.18  Q          |         |         |       V |
  20+10       1.4301      0.21  Q          |         |         |       V |
  20+15       1.4316      0.21  Q          |         |         |       V |
  20+20       1.4331      0.22  Q          |         |         |       V |
  20+25       1.4346      0.22  Q          |         |         |       V |
  20+30       1.4361      0.22  Q          |         |         |       V |
  20+35       1.4375      0.22  Q          |         |         |       V |
  20+40       1.4390      0.22  Q          |         |         |       V |
  20+45       1.4405      0.22  Q          |         |         |       V |
  20+50       1.4417      0.18  Q          |         |         |       V |
  20+55       1.4428      0.15  Q          |         |         |       V |
  21+ 0       1.4438      0.15  Q          |         |         |       V |
  21+ 5       1.4450      0.18  Q          |         |         |       V |
  21+10       1.4465      0.21  Q          |         |         |       V |
  21+15       1.4479      0.21  Q          |         |         |        V|
  21+20       1.4492      0.18  Q          |         |         |        V|
  21+25       1.4502      0.15  Q          |         |         |        V|
  21+30       1.4512      0.15  Q          |         |         |        V|
  21+35       1.4524      0.18  Q          |         |         |        V|
  21+40       1.4539      0.21  Q          |         |         |        V|
  21+45       1.4554      0.21  Q          |         |         |        V|
  21+50       1.4566      0.18  Q          |         |         |        V|
  21+55       1.4576      0.15  Q          |         |         |        V|
  22+ 0       1.4586      0.15  Q          |         |         |        V|
  22+ 5       1.4599      0.18  Q          |         |         |        V|
  22+10       1.4613      0.21  Q          |         |         |        V|
  22+15       1.4628      0.21  Q          |         |         |        V|
  22+20       1.4640      0.18  Q          |         |         |        V|
  22+25       1.4651      0.15  Q          |         |         |        V|
  22+30       1.4661      0.15  Q          |         |         |        V|
  22+35       1.4670      0.14  Q          |         |         |        V|
  22+40       1.4680      0.14  Q          |         |         |        V|
  22+45       1.4690      0.14  Q          |         |         |        V|
  22+50       1.4700      0.14  Q          |         |         |        V|
  22+55       1.4710      0.14  Q          |         |         |        V|
  23+ 0       1.4720      0.14  Q          |         |         |        V|
  23+ 5       1.4730      0.14  Q          |         |         |        V|
  23+10       1.4740      0.14  Q          |         |         |        V|
  23+15       1.4750      0.14  Q          |         |         |        V|
  23+20       1.4760      0.14  Q          |         |         |        V|
  23+25       1.4769      0.14  Q          |         |         |        V|
  23+30       1.4779      0.14  Q          |         |         |        V|
  23+35       1.4789      0.14  Q          |         |         |        V|
  23+40       1.4799      0.14  Q          |         |         |        V|
  23+45       1.4809      0.14  Q          |         |         |        V|
  23+50       1.4819      0.14  Q          |         |         |        V|
  23+55       1.4829      0.14  Q          |         |         |        V|
  24+ 0       1.4839      0.14  Q          |         |         |        V|
  24+ 5       1.4844      0.07  Q          |         |         |        V|
  24+10       1.4845      0.01  Q          |         |         |        V|
  24+15       1.4845      0.00  Q          |         |         |        V|
-----------------------------------------------------------------------
```

100 YEAR

```
                              PR1HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.48                  5.37

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.20                 13.44

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    1.200(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.200(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  62.0      0.448     0.590        0.210       1.000      0.210
                                                 Sum (F) =   0.210
Area averaged mean soil loss (F) (In/Hr) =  0.210
Minimum soil loss rate ((In/Hr)) =  0.105
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                       PR1HR100YR
       ----------------------------------------------------------------------

                       U n i t   H y d r o g r a p h
                               VALLEY S-Curve
       --------------------------------------------------------------------
                       Unit Hydrograph Data
       ---------------------------------------------------------------------
       Unit time period   Time % of lag   Distribution   Unit Hydrograph
           (hrs)                            Graph %            (CFS)
       ---------------------------------------------------------------------
           1   0.083        241.878          49.815              5.621
           2   0.167        483.756          40.562              4.577
           3   0.250        725.634           7.289              0.823
           4   0.333        967.512           2.334              0.263
                                    Sum = 100.000   Sum=      11.284
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern    Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent    (In/Hr)          Max    |   Low        (In/Hr)
   1   0.08      4.40      0.634           0.210    (  0.271)        0.423
   2   0.17      4.50      0.648           0.210    (  0.277)        0.438
   3   0.25      5.40      0.778           0.210    (  0.333)        0.567
   4   0.33      5.40      0.778           0.210    (  0.333)        0.567
   5   0.42      5.70      0.821           0.210    (  0.351)        0.610
   6   0.50      6.40      0.922           0.210    (  0.394)        0.711
   7   0.58      7.90      1.137           0.210    (  0.487)        0.927
   8   0.67      9.10      1.310           0.210    (  0.561)        1.100
   9   0.75     12.80      1.843           0.210    (  0.789)        1.633
  10   0.83     25.60      3.686           0.210    (  1.578)        3.476
  11   0.92      7.90      1.137           0.210    (  0.487)        0.927
  12   1.00      4.90      0.706           0.210    (  0.302)        0.495
                (Loss Rate Not Used)
     Sum =     100.0                                   Sum =    11.9
        Flood volume = Effective rainfall      0.99(In)
         times area      11.2(Ac.)/[(In)/(Ft.)] =       0.9(Ac.Ft)
        Total soil loss =      0.21(In)
        Total soil loss =     0.196(Ac.Ft)
        Total rainfall =      1.20(In)
        Flood volume =      40221.5 Cubic Feet
        Total soil loss =       8547.7 Cubic Feet
       --------------------------------------------------------------------
         Peak flow rate of this hydrograph =     28.175(CFS)
       --------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
       --------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

       --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft    Q(CFS)  0        7.5      15.0      22.5      30.0
  -----------------------------------------------------------------------
    0+ 5       0.0164      2.38  V  Q      |         |         |         |
    0+10       0.0467      4.40  | V  Q    |         |         |         |
    0+15       0.0849      5.54  |  V   Q  |         |         |         |
    0+20       0.1280      6.26  |    V  Q |         |         |         |
    0+25       0.1735      6.61  |      VQ |         |         |         |
    0+30       0.2246      7.41  |        Q|         |         |         |
    0+35       0.2874      9.12  |         | Q       |         |         |
    0+40       0.3644     11.18  |         |   QV    |         |         |
    0+45       0.4689     15.17  |         |         Q         |         |
    0+50       0.6629     28.18  |         |         |       V |      Q  |
    0+55       0.8197     22.77  |         |         |         Q    V    |
    1+ 0       0.8908     10.32  |         |  Q      |         |       V |
    1+ 5       0.9180      3.95  |    Q    |         |         |        V|
    1+10       0.9225      0.65  Q         |         |         |        V|
    1+15       0.9234      0.13  Q         |         |         |        V|
-----------------------------------------------------------------------
```

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                              PR3HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR3100.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
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Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            0.80                   8.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.80                  20.15

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.800(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.800(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  62.0      0.448     0.590        0.210       1.000      0.210
                                                  Sum (F) =   0.210
Area averaged mean soil loss (F) (In/Hr) =  0.210
Minimum soil loss rate ((In/Hr)) =  0.105
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
```

PR3HR100YR
U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.281	(0.210)	0.120	0.161
2	0.17	1.30	0.281	(0.210)	0.120	0.161
3	0.25	1.10	0.238	(0.210)	0.102	0.136
4	0.33	1.50	0.324	(0.210)	0.139	0.185
5	0.42	1.50	0.324	(0.210)	0.139	0.185
6	0.50	1.80	0.389	(0.210)	0.166	0.222
7	0.58	1.50	0.324	(0.210)	0.139	0.185
8	0.67	1.80	0.389	(0.210)	0.166	0.222
9	0.75	1.80	0.389	(0.210)	0.166	0.222
10	0.83	1.50	0.324	(0.210)	0.139	0.185
11	0.92	1.60	0.346	(0.210)	0.148	0.198
12	1.00	1.80	0.389	(0.210)	0.166	0.222
13	1.08	2.20	0.475	(0.210)	0.203	0.272
14	1.17	2.20	0.475	(0.210)	0.203	0.272
15	1.25	2.20	0.475	(0.210)	0.203	0.272
16	1.33	2.00	0.432	(0.210)	0.185	0.247
17	1.42	2.60	0.562	0.210	(0.240)	0.351
18	1.50	2.70	0.583	0.210	(0.250)	0.373
19	1.58	2.40	0.518	0.210	(0.222)	0.308
20	1.67	2.70	0.583	0.210	(0.250)	0.373
21	1.75	3.30	0.713	0.210	(0.305)	0.502
22	1.83	3.10	0.670	0.210	(0.287)	0.459
23	1.92	2.90	0.626	0.210	(0.268)	0.416
24	2.00	3.00	0.648	0.210	(0.277)	0.438
25	2.08	3.10	0.670	0.210	(0.287)	0.459
26	2.17	4.20	0.907	0.210	(0.388)	0.697
27	2.25	5.00	1.080	0.210	(0.462)	0.870
28	2.33	3.50	0.756	0.210	(0.324)	0.546
29	2.42	6.80	1.469	0.210	(0.629)	1.258
30	2.50	7.30	1.577	0.210	(0.675)	1.366
31	2.58	8.20	1.771	0.210	(0.758)	1.561
32	2.67	5.90	1.274	0.210	(0.545)	1.064
33	2.75	2.00	0.432	(0.210)	0.185	0.247
34	2.83	1.80	0.389	(0.210)	0.166	0.222
35	2.92	1.80	0.389	(0.210)	0.166	0.222
36	3.00	0.60	0.130	(0.210)	0.055	0.074

(Loss Rate Not Used)

Sum = 100.0 Sum = 15.2

Flood volume = Effective rainfall 1.26(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 1.2(Ac.Ft)
Total soil loss = 0.54(In)
Total soil loss = 0.501(Ac.Ft)
Total rainfall = 1.80(In)
Flood volume = 51334.0 Cubic Feet
Total soil loss = 21823.6 Cubic Feet

Peak flow rate of this hydrograph = 16.215(CFS)

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0062	0.90	VQ	|	|	|	|

```
                                               PR3HR100YR
    0+10       0.0175      1.64  V  Q      |         |         |         |
    0+15       0.0287      1.63  V  Q      |         |         |         |
    0+20       0.0414      1.84  |V Q      |         |         |         |
    0+25       0.0555      2.05  |V  Q     |         |         |         |
    0+30       0.0713      2.29  | V Q     |         |         |         |
    0+35       0.0868      2.26  | V Q     |         |         |         |
    0+40       0.1029      2.33  |  VQ     |         |         |         |
    0+45       0.1200      2.48  |   Q     |         |         |         |
    0+50       0.1358      2.29  |   Q     |         |         |         |
    0+55       0.1509      2.20  |   QV    |         |         |         |
    1+ 0       0.1672      2.37  |   QV    |         |         |         |
    1+ 5       0.1862      2.76  |    QV   |         |         |         |
    1+10       0.2069      3.01  |     QV  |         |         |         |
    1+15       0.2280      3.06  |     QV  |         |         |         |
    1+20       0.2482      2.93  |    Q  V |         |         |         |
    1+25       0.2716      3.40  |     Q  V|         |         |         |
    1+30       0.2990      3.98  |      Q  V         |         |         |
    1+35       0.3252      3.79  |      Q  |V        |         |         |
    1+40       0.3521      3.91  |      Q  |V        |         |         |
    1+45       0.3857      4.89  |        Q|  V      |         |         |
    1+50       0.4220      5.27  |         Q   V     |         |         |
    1+55       0.4561      4.96  |        Q|    V    |         |         |
    2+ 0       0.4897      4.88  |        Q|     V   |         |         |
    2+ 5       0.5245      5.05  |         Q      V  |         |         |
    2+10       0.5692      6.49  |         | Q      V|         |         |
    2+15       0.6283      8.58  |         |      Q  |V        |         |
    2+20       0.6816      7.75  |         |    Q    |  V      |         |
    2+25       0.7538     10.48  |         |         Q    V    |         |
    2+30       0.8511     14.13  |         |         |       Q |         |
    2+35       0.9628     16.22  |         |         |         | Q       |
    2+40       1.0632     14.59  |         |         |        Q|     V   |
    2+45       1.1177      7.91  |         |    Q    |         |      V  |
    2+50       1.1430      3.67  |      Q  |         |         |       V |
    2+55       1.1619      2.75  |    Q    |         |         |        V|
    3+ 0       1.1735      1.68  |  Q      |         |         |        V|
    3+ 5       1.1775      0.58  |Q        |         |         |        V|
    3+10       1.1783      0.12  Q         |         |         |        V|
    3+15       1.1785      0.02  Q         |         |         |        V|
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                              PR6HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  09/07/16 File: PR6100.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.10                  12.32

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            2.50                  27.99

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    2.500(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.500(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  62.0      0.448     0.590        0.210       1.000      0.210
                                                  Sum (F) =   0.210
Area averaged mean soil loss (F) (In/Hr) =  0.210
Minimum soil loss rate ((In/Hr)) =  0.105
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
```

PR6HR100YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.150	(0.210)	0.064	0.086
2	0.17	0.60	0.180	(0.210)	0.077	0.103
3	0.25	0.60	0.180	(0.210)	0.077	0.103
4	0.33	0.60	0.180	(0.210)	0.077	0.103
5	0.42	0.60	0.180	(0.210)	0.077	0.103
6	0.50	0.70	0.210	(0.210)	0.090	0.120
7	0.58	0.70	0.210	(0.210)	0.090	0.120
8	0.67	0.70	0.210	(0.210)	0.090	0.120
9	0.75	0.70	0.210	(0.210)	0.090	0.120
10	0.83	0.70	0.210	(0.210)	0.090	0.120
11	0.92	0.70	0.210	(0.210)	0.090	0.120
12	1.00	0.80	0.240	(0.210)	0.103	0.137
13	1.08	0.80	0.240	(0.210)	0.103	0.137
14	1.17	0.80	0.240	(0.210)	0.103	0.137
15	1.25	0.80	0.240	(0.210)	0.103	0.137
16	1.33	0.80	0.240	(0.210)	0.103	0.137
17	1.42	0.80	0.240	(0.210)	0.103	0.137
18	1.50	0.80	0.240	(0.210)	0.103	0.137
19	1.58	0.80	0.240	(0.210)	0.103	0.137
20	1.67	0.80	0.240	(0.210)	0.103	0.137
21	1.75	0.80	0.240	(0.210)	0.103	0.137
22	1.83	0.80	0.240	(0.210)	0.103	0.137
23	1.92	0.80	0.240	(0.210)	0.103	0.137
24	2.00	0.90	0.270	(0.210)	0.116	0.154
25	2.08	0.80	0.240	(0.210)	0.103	0.137
26	2.17	0.90	0.270	(0.210)	0.116	0.154
27	2.25	0.90	0.270	(0.210)	0.116	0.154
28	2.33	0.90	0.270	(0.210)	0.116	0.154
29	2.42	0.90	0.270	(0.210)	0.116	0.154
30	2.50	0.90	0.270	(0.210)	0.116	0.154
31	2.58	0.90	0.270	(0.210)	0.116	0.154
32	2.67	0.90	0.270	(0.210)	0.116	0.154
33	2.75	1.00	0.300	(0.210)	0.128	0.172
34	2.83	1.00	0.300	(0.210)	0.128	0.172
35	2.92	1.00	0.300	(0.210)	0.128	0.172
36	3.00	1.00	0.300	(0.210)	0.128	0.172
37	3.08	1.00	0.300	(0.210)	0.128	0.172
38	3.17	1.10	0.330	(0.210)	0.141	0.189
39	3.25	1.10	0.330	(0.210)	0.141	0.189
40	3.33	1.10	0.330	(0.210)	0.141	0.189
41	3.42	1.20	0.360	(0.210)	0.154	0.206
42	3.50	1.30	0.390	(0.210)	0.167	0.223
43	3.58	1.40	0.420	(0.210)	0.180	0.240
44	3.67	1.40	0.420	(0.210)	0.180	0.240
45	3.75	1.50	0.450	(0.210)	0.193	0.257
46	3.83	1.50	0.450	(0.210)	0.193	0.257
47	3.92	1.60	0.480	(0.210)	0.205	0.275
48	4.00	1.60	0.480	(0.210)	0.205	0.275
49	4.08	1.70	0.510	0.210	(0.218)	0.300
50	4.17	1.80	0.540	0.210	(0.231)	0.330
51	4.25	1.90	0.570	0.210	(0.244)	0.360
52	4.33	2.00	0.600	0.210	(0.257)	0.390
53	4.42	2.10	0.630	0.210	(0.270)	0.420
54	4.50	2.10	0.630	0.210	(0.270)	0.420
55	4.58	2.20	0.660	0.210	(0.282)	0.450
56	4.67	2.30	0.690	0.210	(0.295)	0.480
57	4.75	2.40	0.720	0.210	(0.308)	0.510
58	4.83	2.40	0.720	0.210	(0.308)	0.510

```
                                           PR6HR100YR
59   4.92     2.50      0.750          0.210    (  0.321)        0.540
60   5.00     2.60      0.780          0.210    (  0.334)        0.570
61   5.08     3.10      0.930          0.210    (  0.398)        0.720
62   5.17     3.60      1.080          0.210    (  0.462)        0.870
63   5.25     3.90      1.170          0.210    (  0.501)        0.960
64   5.33     4.20      1.260          0.210    (  0.539)        1.050
65   5.42     4.70      1.410          0.210    (  0.603)        1.200
66   5.50     5.60      1.680          0.210    (  0.719)        1.470
67   5.58     1.90      0.570          0.210    (  0.244)        0.360
68   5.67     0.90      0.270       (  0.210)       0.116        0.154
69   5.75     0.60      0.180       (  0.210)       0.077        0.103
70   5.83     0.50      0.150       (  0.210)       0.064        0.086
71   5.92     0.30      0.090       (  0.210)       0.039        0.051
72   6.00     0.20      0.060       (  0.210)       0.026        0.034
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    20.0
      Flood volume = Effective rainfall      1.66(In)
       times area      11.2(Ac.)/[(In)/(Ft.)] =       1.6(Ac.Ft)
      Total soil loss =      0.84(In)
      Total soil loss =     0.780(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =      67635.4 Cubic Feet
      Total soil loss =      33973.4 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     14.876(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0033      0.48  Q         |         |         |         |
  0+10       0.0100      0.97  VQ        |         |         |         |
  0+15       0.0177      1.12  V Q       |         |         |         |
  0+20       0.0257      1.16  V Q       |         |         |         |
  0+25       0.0337      1.16  V Q       |         |         |         |
  0+30       0.0424      1.26  |VQ       |         |         |         |
  0+35       0.0516      1.34  |VQ       |         |         |         |
  0+40       0.0609      1.35  |VQ       |         |         |         |
  0+45       0.0702      1.36  |VQ       |         |         |         |
  0+50       0.0796      1.36  | Q       |         |         |         |
  0+55       0.0889      1.36  | Q       |         |         |         |
  1+ 0       0.0989      1.45  | Q       |         |         |         |
  1+ 5       0.1095      1.53  | VQ      |         |         |         |
  1+10       0.1201      1.55  |  Q      |         |         |         |
  1+15       0.1308      1.55  |  Q      |         |         |         |
  1+20       0.1415      1.55  |  Q      |         |         |         |
  1+25       0.1521      1.55  |  Q      |         |         |         |
  1+30       0.1628      1.55  |  QV     |         |         |         |
  1+35       0.1735      1.55  |  QV     |         |         |         |
  1+40       0.1842      1.55  |  QV     |         |         |         |
  1+45       0.1948      1.55  |  Q V    |         |         |         |
  1+50       0.2055      1.55  |  Q V    |         |         |         |
  1+55       0.2162      1.55  |  Q V    |         |         |         |
  2+ 0       0.2275      1.65  |  Q V    |         |         |         |
  2+ 5       0.2387      1.63  |  Q  V   |         |         |         |
  2+10       0.2502      1.66  |  Q  V   |         |         |         |
  2+15       0.2621      1.73  |  Q  V   |         |         |         |
  2+20       0.2741      1.74  |  Q   V  |         |         |         |
  2+25       0.2861      1.74  |  Q   V  |         |         |         |
  2+30       0.2981      1.74  |  Q   V  |         |         |         |
  2+35       0.3101      1.74  |  Q   V  |         |         |         |
  2+40       0.3221      1.74  |  Q    V |         |         |         |
  2+45       0.3348      1.84  |  Q    V |         |         |         |
  2+50       0.3480      1.92  |  Q    V |         |         |         |
  2+55       0.3613      1.93  |  Q     V|         |         |         |
  3+ 0       0.3746      1.94  |  Q     V|         |         |         |
  3+ 5       0.3880      1.94  |  Q     V|         |         |         |
  3+10       0.4020      2.03  |   Q     V         |         |         |
  3+15       0.4165      2.11  |   Q     V         |         |         |
  3+20       0.4312      2.13  |   Q     |V        |         |         |
  3+25       0.4465      2.23  |   Q     |V        |         |         |
  3+30       0.4631      2.40  |   Q     |V        |         |         |
  3+35       0.4809      2.59  |    Q    | V       |         |         |
  3+40       0.4994      2.69  |    Q    | V       |         |         |
```

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                                               PR6HR100YR
    3+45       0.5188      2.80  |    Q    |  V      |         |         |
    3+50       0.5386      2.89  |    Q    |  V      |         |         |
    3+55       0.5593      3.00  |    Q    |   V     |         |         |
    4+ 0       0.5805      3.08  |     Q   |   V     |         |         |
    4+ 5       0.6028      3.24  |     Q   |    V    |         |         |
    4+10       0.6271      3.52  |      Q  |     V   |         |         |
    4+15       0.6536      3.85  |      Q  |     V   |         |         |
    4+20       0.6825      4.19  |       Q |      V  |         |         |
    4+25       0.7136      4.53  |        Q|       V |         |         |
    4+30       0.7460      4.70  |        Q|        V|         |         |
    4+35       0.7797      4.90  |        Q|         V         |         |
    4+40       0.8156      5.21  |         Q         |V        |         |
    4+45       0.8538      5.54  |         |Q        |V        |         |
    4+50       0.8932      5.71  |         |Q        |  V      |         |
    4+55       0.9339      5.92  |         |Q        |   V     |         |
    5+ 0       0.9768      6.23  |         | Q       |    V    |         |
    5+ 5       1.0266      7.23  |         |   Q     |     V   |         |
    5+10       1.0872      8.80  |         |      Q  |       V |         |
    5+15       1.1569     10.12  |         |         Q        V|         |
    5+20       1.2341     11.20  |         |         | Q       |V        |
    5+25       1.3207     12.57  |         |         |    Q    |   V     |
    5+30       1.4231     14.88  |         |         |        Q|     V   |
    5+35       1.4921     10.02  |         |         Q         |       V |
    5+40       1.5200      4.04  |       Q |         |         |        V|
    5+45       1.5335      1.97  |  Q      |         |         |        V|
    5+50       1.5416      1.18  | Q       |         |         |        V|
    5+55       1.5472      0.81  |Q        |         |         |        V|
    6+ 0       1.5508      0.53  |Q        |         |         |        V|
    6+ 5       1.5523      0.22  Q         |         |         |        V|
    6+10       1.5526      0.04  Q         |         |         |        V|
    6+15       1.5527      0.01  Q         |         |         |        V|
-----------------------------------------------------------------------
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PR24HR100YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 09/07/16 File: PR24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

----------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



----------------------------------------------------------------------
---------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.72                  19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            4.30                  48.15

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    4.300(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00         0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  62.0      0.448     0.590        0.210       1.000      0.210
                                                  Sum (F) =   0.210
Area averaged mean soil loss (F) (In/Hr) =  0.210
Minimum soil loss rate ((In/Hr)) =  0.105
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
----------------------------------------------------------------------
```

PR24HR100YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.034	(0.373)	0.015	0.020
2	0.17	0.07	0.034	(0.371)	0.015	0.020
3	0.25	0.07	0.034	(0.370)	0.015	0.020
4	0.33	0.10	0.052	(0.368)	0.022	0.030
5	0.42	0.10	0.052	(0.367)	0.022	0.030
6	0.50	0.10	0.052	(0.366)	0.022	0.030
7	0.58	0.10	0.052	(0.364)	0.022	0.030
8	0.67	0.10	0.052	(0.363)	0.022	0.030
9	0.75	0.10	0.052	(0.361)	0.022	0.030
10	0.83	0.13	0.069	(0.360)	0.029	0.039
11	0.92	0.13	0.069	(0.359)	0.029	0.039
12	1.00	0.13	0.069	(0.357)	0.029	0.039
13	1.08	0.10	0.052	(0.356)	0.022	0.030
14	1.17	0.10	0.052	(0.354)	0.022	0.030
15	1.25	0.10	0.052	(0.353)	0.022	0.030
16	1.33	0.10	0.052	(0.351)	0.022	0.030
17	1.42	0.10	0.052	(0.350)	0.022	0.030
18	1.50	0.10	0.052	(0.349)	0.022	0.030
19	1.58	0.10	0.052	(0.347)	0.022	0.030
20	1.67	0.10	0.052	(0.346)	0.022	0.030
21	1.75	0.10	0.052	(0.345)	0.022	0.030
22	1.83	0.13	0.069	(0.343)	0.029	0.039
23	1.92	0.13	0.069	(0.342)	0.029	0.039
24	2.00	0.13	0.069	(0.340)	0.029	0.039
25	2.08	0.13	0.069	(0.339)	0.029	0.039
26	2.17	0.13	0.069	(0.338)	0.029	0.039
27	2.25	0.13	0.069	(0.336)	0.029	0.039
28	2.33	0.13	0.069	(0.335)	0.029	0.039
29	2.42	0.13	0.069	(0.333)	0.029	0.039
30	2.50	0.13	0.069	(0.332)	0.029	0.039
31	2.58	0.17	0.086	(0.331)	0.037	0.049
32	2.67	0.17	0.086	(0.329)	0.037	0.049
33	2.75	0.17	0.086	(0.328)	0.037	0.049
34	2.83	0.17	0.086	(0.327)	0.037	0.049
35	2.92	0.17	0.086	(0.325)	0.037	0.049
36	3.00	0.17	0.086	(0.324)	0.037	0.049
37	3.08	0.17	0.086	(0.323)	0.037	0.049
38	3.17	0.17	0.086	(0.321)	0.037	0.049
39	3.25	0.17	0.086	(0.320)	0.037	0.049
40	3.33	0.17	0.086	(0.319)	0.037	0.049
41	3.42	0.17	0.086	(0.317)	0.037	0.049
42	3.50	0.17	0.086	(0.316)	0.037	0.049
43	3.58	0.17	0.086	(0.315)	0.037	0.049
44	3.67	0.17	0.086	(0.313)	0.037	0.049
45	3.75	0.17	0.086	(0.312)	0.037	0.049
46	3.83	0.20	0.103	(0.311)	0.044	0.059
47	3.92	0.20	0.103	(0.309)	0.044	0.059
48	4.00	0.20	0.103	(0.308)	0.044	0.059
49	4.08	0.20	0.103	(0.307)	0.044	0.059
50	4.17	0.20	0.103	(0.306)	0.044	0.059
51	4.25	0.20	0.103	(0.304)	0.044	0.059
52	4.33	0.23	0.120	(0.303)	0.052	0.069
53	4.42	0.23	0.120	(0.302)	0.052	0.069
54	4.50	0.23	0.120	(0.300)	0.052	0.069
55	4.58	0.23	0.120	(0.299)	0.052	0.069
56	4.67	0.23	0.120	(0.298)	0.052	0.069
57	4.75	0.23	0.120	(0.296)	0.052	0.069
58	4.83	0.27	0.138	(0.295)	0.059	0.079

59	4.92	0.27	0.138	(0.294)	0.059	0.079
60	5.00	0.27	0.138	(0.293)	0.059	0.079
61	5.08	0.20	0.103	(0.291)	0.044	0.059
62	5.17	0.20	0.103	(0.290)	0.044	0.059
63	5.25	0.20	0.103	(0.289)	0.044	0.059
64	5.33	0.23	0.120	(0.288)	0.052	0.069
65	5.42	0.23	0.120	(0.286)	0.052	0.069
66	5.50	0.23	0.120	(0.285)	0.052	0.069
67	5.58	0.27	0.138	(0.284)	0.059	0.079
68	5.67	0.27	0.138	(0.283)	0.059	0.079
69	5.75	0.27	0.138	(0.281)	0.059	0.079
70	5.83	0.27	0.138	(0.280)	0.059	0.079
71	5.92	0.27	0.138	(0.279)	0.059	0.079
72	6.00	0.27	0.138	(0.278)	0.059	0.079
73	6.08	0.30	0.155	(0.276)	0.066	0.089
74	6.17	0.30	0.155	(0.275)	0.066	0.089
75	6.25	0.30	0.155	(0.274)	0.066	0.089
76	6.33	0.30	0.155	(0.273)	0.066	0.089
77	6.42	0.30	0.155	(0.271)	0.066	0.089
78	6.50	0.30	0.155	(0.270)	0.066	0.089
79	6.58	0.33	0.172	(0.269)	0.074	0.098
80	6.67	0.33	0.172	(0.268)	0.074	0.098
81	6.75	0.33	0.172	(0.267)	0.074	0.098
82	6.83	0.33	0.172	(0.265)	0.074	0.098
83	6.92	0.33	0.172	(0.264)	0.074	0.098
84	7.00	0.33	0.172	(0.263)	0.074	0.098
85	7.08	0.33	0.172	(0.262)	0.074	0.098
86	7.17	0.33	0.172	(0.261)	0.074	0.098
87	7.25	0.33	0.172	(0.259)	0.074	0.098
88	7.33	0.37	0.189	(0.258)	0.081	0.108
89	7.42	0.37	0.189	(0.257)	0.081	0.108
90	7.50	0.37	0.189	(0.256)	0.081	0.108
91	7.58	0.40	0.206	(0.255)	0.088	0.118
92	7.67	0.40	0.206	(0.254)	0.088	0.118
93	7.75	0.40	0.206	(0.252)	0.088	0.118
94	7.83	0.43	0.224	(0.251)	0.096	0.128
95	7.92	0.43	0.224	(0.250)	0.096	0.128
96	8.00	0.43	0.224	(0.249)	0.096	0.128
97	8.08	0.50	0.258	(0.248)	0.110	0.148
98	8.17	0.50	0.258	(0.247)	0.110	0.148
99	8.25	0.50	0.258	(0.245)	0.110	0.148
100	8.33	0.50	0.258	(0.244)	0.110	0.148
101	8.42	0.50	0.258	(0.243)	0.110	0.148
102	8.50	0.50	0.258	(0.242)	0.110	0.148
103	8.58	0.53	0.275	(0.241)	0.118	0.157
104	8.67	0.53	0.275	(0.240)	0.118	0.157
105	8.75	0.53	0.275	(0.239)	0.118	0.157
106	8.83	0.57	0.292	(0.237)	0.125	0.167
107	8.92	0.57	0.292	(0.236)	0.125	0.167
108	9.00	0.57	0.292	(0.235)	0.125	0.167
109	9.08	0.63	0.327	(0.234)	0.140	0.187
110	9.17	0.63	0.327	(0.233)	0.140	0.187
111	9.25	0.63	0.327	(0.232)	0.140	0.187
112	9.33	0.67	0.344	(0.231)	0.147	0.197
113	9.42	0.67	0.344	(0.230)	0.147	0.197
114	9.50	0.67	0.344	(0.229)	0.147	0.197
115	9.58	0.70	0.361	(0.227)	0.155	0.207
116	9.67	0.70	0.361	(0.226)	0.155	0.207
117	9.75	0.70	0.361	(0.225)	0.155	0.207
118	9.83	0.73	0.378	(0.224)	0.162	0.216
119	9.92	0.73	0.378	(0.223)	0.162	0.216
120	10.00	0.73	0.378	(0.222)	0.162	0.216
121	10.08	0.50	0.258	(0.221)	0.110	0.148
122	10.17	0.50	0.258	(0.220)	0.110	0.148
123	10.25	0.50	0.258	(0.219)	0.110	0.148
124	10.33	0.50	0.258	(0.218)	0.110	0.148
125	10.42	0.50	0.258	(0.217)	0.110	0.148
126	10.50	0.50	0.258	(0.216)	0.110	0.148
127	10.58	0.67	0.344	(0.215)	0.147	0.197
128	10.67	0.67	0.344	(0.214)	0.147	0.197
129	10.75	0.67	0.344	(0.213)	0.147	0.197
130	10.83	0.67	0.344	(0.211)	0.147	0.197
131	10.92	0.67	0.344	(0.210)	0.147	0.197
132	11.00	0.67	0.344	(0.209)	0.147	0.197
133	11.08	0.63	0.327	(0.208)	0.140	0.187
134	11.17	0.63	0.327	(0.207)	0.140	0.187
135	11.25	0.63	0.327	(0.206)	0.140	0.187
136	11.33	0.63	0.327	(0.205)	0.140	0.187
137	11.42	0.63	0.327	(0.204)	0.140	0.187

138	11.50	0.63	0.327	(0.203)	0.140	0.187
139	11.58	0.57	0.292	(0.202)	0.125	0.167
140	11.67	0.57	0.292	(0.201)	0.125	0.167
141	11.75	0.57	0.292	(0.200)	0.125	0.167
142	11.83	0.60	0.310	(0.199)	0.133	0.177
143	11.92	0.60	0.310	(0.198)	0.133	0.177
144	12.00	0.60	0.310	(0.197)	0.133	0.177
145	12.08	0.83	0.430	(0.196)	0.184	0.246
146	12.17	0.83	0.430	(0.195)	0.184	0.246
147	12.25	0.83	0.430	(0.194)	0.184	0.246
148	12.33	0.87	0.447	(0.193)	0.191	0.256
149	12.42	0.87	0.447	(0.192)	0.191	0.256
150	12.50	0.87	0.447	(0.191)	0.191	0.256
151	12.58	0.93	0.482	0.190	(0.206)	0.291
152	12.67	0.93	0.482	0.190	(0.206)	0.292
153	12.75	0.93	0.482	0.189	(0.206)	0.293
154	12.83	0.97	0.499	0.188	(0.213)	0.311
155	12.92	0.97	0.499	0.187	(0.213)	0.312
156	13.00	0.97	0.499	0.186	(0.213)	0.313
157	13.08	1.13	0.585	0.185	(0.250)	0.400
158	13.17	1.13	0.585	0.184	(0.250)	0.401
159	13.25	1.13	0.585	0.183	(0.250)	0.402
160	13.33	1.13	0.585	0.182	(0.250)	0.403
161	13.42	1.13	0.585	0.181	(0.250)	0.404
162	13.50	1.13	0.585	0.180	(0.250)	0.405
163	13.58	0.77	0.396	(0.179)	0.169	0.226
164	13.67	0.77	0.396	(0.178)	0.169	0.226
165	13.75	0.77	0.396	(0.177)	0.169	0.226
166	13.83	0.77	0.396	(0.176)	0.169	0.226
167	13.92	0.77	0.396	(0.176)	0.169	0.226
168	14.00	0.77	0.396	(0.175)	0.169	0.226
169	14.08	0.90	0.464	0.174	(0.199)	0.291
170	14.17	0.90	0.464	0.173	(0.199)	0.291
171	14.25	0.90	0.464	0.172	(0.199)	0.292
172	14.33	0.87	0.447	0.171	(0.191)	0.276
173	14.42	0.87	0.447	0.170	(0.191)	0.277
174	14.50	0.87	0.447	0.169	(0.191)	0.278
175	14.58	0.87	0.447	0.169	(0.191)	0.279
176	14.67	0.87	0.447	0.168	(0.191)	0.280
177	14.75	0.87	0.447	0.167	(0.191)	0.280
178	14.83	0.83	0.430	0.166	(0.184)	0.264
179	14.92	0.83	0.430	0.165	(0.184)	0.265
180	15.00	0.83	0.430	0.164	(0.184)	0.266
181	15.08	0.80	0.413	0.163	(0.177)	0.249
182	15.17	0.80	0.413	0.163	(0.177)	0.250
183	15.25	0.80	0.413	0.162	(0.177)	0.251
184	15.33	0.77	0.396	0.161	(0.169)	0.235
185	15.42	0.77	0.396	0.160	(0.169)	0.236
186	15.50	0.77	0.396	0.159	(0.169)	0.236
187	15.58	0.63	0.327	(0.158)	0.140	0.187
188	15.67	0.63	0.327	(0.158)	0.140	0.187
189	15.75	0.63	0.327	(0.157)	0.140	0.187
190	15.83	0.63	0.327	(0.156)	0.140	0.187
191	15.92	0.63	0.327	(0.155)	0.140	0.187
192	16.00	0.63	0.327	(0.154)	0.140	0.187
193	16.08	0.13	0.069	(0.154)	0.029	0.039
194	16.17	0.13	0.069	(0.153)	0.029	0.039
195	16.25	0.13	0.069	(0.152)	0.029	0.039
196	16.33	0.13	0.069	(0.151)	0.029	0.039
197	16.42	0.13	0.069	(0.151)	0.029	0.039
198	16.50	0.13	0.069	(0.150)	0.029	0.039
199	16.58	0.10	0.052	(0.149)	0.022	0.030
200	16.67	0.10	0.052	(0.148)	0.022	0.030
201	16.75	0.10	0.052	(0.147)	0.022	0.030
202	16.83	0.10	0.052	(0.147)	0.022	0.030
203	16.92	0.10	0.052	(0.146)	0.022	0.030
204	17.00	0.10	0.052	(0.145)	0.022	0.030
205	17.08	0.17	0.086	(0.145)	0.037	0.049
206	17.17	0.17	0.086	(0.144)	0.037	0.049
207	17.25	0.17	0.086	(0.143)	0.037	0.049
208	17.33	0.17	0.086	(0.142)	0.037	0.049
209	17.42	0.17	0.086	(0.142)	0.037	0.049
210	17.50	0.17	0.086	(0.141)	0.037	0.049
211	17.58	0.17	0.086	(0.140)	0.037	0.049
212	17.67	0.17	0.086	(0.140)	0.037	0.049
213	17.75	0.17	0.086	(0.139)	0.037	0.049
214	17.83	0.13	0.069	(0.138)	0.029	0.039
215	17.92	0.13	0.069	(0.137)	0.029	0.039
216	18.00	0.13	0.069	(0.137)	0.029	0.039

217	18.08	0.13	0.069	(0.136)	0.029	0.039
218	18.17	0.13	0.069	(0.135)	0.029	0.039
219	18.25	0.13	0.069	(0.135)	0.029	0.039
220	18.33	0.13	0.069	(0.134)	0.029	0.039
221	18.42	0.13	0.069	(0.133)	0.029	0.039
222	18.50	0.13	0.069	(0.133)	0.029	0.039
223	18.58	0.10	0.052	(0.132)	0.022	0.030
224	18.67	0.10	0.052	(0.132)	0.022	0.030
225	18.75	0.10	0.052	(0.131)	0.022	0.030
226	18.83	0.07	0.034	(0.130)	0.015	0.020
227	18.92	0.07	0.034	(0.130)	0.015	0.020
228	19.00	0.07	0.034	(0.129)	0.015	0.020
229	19.08	0.10	0.052	(0.128)	0.022	0.030
230	19.17	0.10	0.052	(0.128)	0.022	0.030
231	19.25	0.10	0.052	(0.127)	0.022	0.030
232	19.33	0.13	0.069	(0.127)	0.029	0.039
233	19.42	0.13	0.069	(0.126)	0.029	0.039
234	19.50	0.13	0.069	(0.125)	0.029	0.039
235	19.58	0.10	0.052	(0.125)	0.022	0.030
236	19.67	0.10	0.052	(0.124)	0.022	0.030
237	19.75	0.10	0.052	(0.124)	0.022	0.030
238	19.83	0.07	0.034	(0.123)	0.015	0.020
239	19.92	0.07	0.034	(0.123)	0.015	0.020
240	20.00	0.07	0.034	(0.122)	0.015	0.020
241	20.08	0.10	0.052	(0.122)	0.022	0.030
242	20.17	0.10	0.052	(0.121)	0.022	0.030
243	20.25	0.10	0.052	(0.121)	0.022	0.030
244	20.33	0.10	0.052	(0.120)	0.022	0.030
245	20.42	0.10	0.052	(0.119)	0.022	0.030
246	20.50	0.10	0.052	(0.119)	0.022	0.030
247	20.58	0.10	0.052	(0.118)	0.022	0.030
248	20.67	0.10	0.052	(0.118)	0.022	0.030
249	20.75	0.10	0.052	(0.117)	0.022	0.030
250	20.83	0.07	0.034	(0.117)	0.015	0.020
251	20.92	0.07	0.034	(0.117)	0.015	0.020
252	21.00	0.07	0.034	(0.116)	0.015	0.020
253	21.08	0.10	0.052	(0.116)	0.022	0.030
254	21.17	0.10	0.052	(0.115)	0.022	0.030
255	21.25	0.10	0.052	(0.115)	0.022	0.030
256	21.33	0.07	0.034	(0.114)	0.015	0.020
257	21.42	0.07	0.034	(0.114)	0.015	0.020
258	21.50	0.07	0.034	(0.113)	0.015	0.020
259	21.58	0.10	0.052	(0.113)	0.022	0.030
260	21.67	0.10	0.052	(0.113)	0.022	0.030
261	21.75	0.10	0.052	(0.112)	0.022	0.030
262	21.83	0.07	0.034	(0.112)	0.015	0.020
263	21.92	0.07	0.034	(0.111)	0.015	0.020
264	22.00	0.07	0.034	(0.111)	0.015	0.020
265	22.08	0.10	0.052	(0.111)	0.022	0.030
266	22.17	0.10	0.052	(0.110)	0.022	0.030
267	22.25	0.10	0.052	(0.110)	0.022	0.030
268	22.33	0.07	0.034	(0.110)	0.015	0.020
269	22.42	0.07	0.034	(0.109)	0.015	0.020
270	22.50	0.07	0.034	(0.109)	0.015	0.020
271	22.58	0.07	0.034	(0.109)	0.015	0.020
272	22.67	0.07	0.034	(0.108)	0.015	0.020
273	22.75	0.07	0.034	(0.108)	0.015	0.020
274	22.83	0.07	0.034	(0.108)	0.015	0.020
275	22.92	0.07	0.034	(0.107)	0.015	0.020
276	23.00	0.07	0.034	(0.107)	0.015	0.020
277	23.08	0.07	0.034	(0.107)	0.015	0.020
278	23.17	0.07	0.034	(0.107)	0.015	0.020
279	23.25	0.07	0.034	(0.107)	0.015	0.020
280	23.33	0.07	0.034	(0.106)	0.015	0.020
281	23.42	0.07	0.034	(0.106)	0.015	0.020
282	23.50	0.07	0.034	(0.106)	0.015	0.020
283	23.58	0.07	0.034	(0.106)	0.015	0.020
284	23.67	0.07	0.034	(0.106)	0.015	0.020
285	23.75	0.07	0.034	(0.105)	0.015	0.020
286	23.83	0.07	0.034	(0.105)	0.015	0.020
287	23.92	0.07	0.034	(0.105)	0.015	0.020
288	24.00	0.07	0.034	(0.105)	0.015	0.020
			(Loss Rate Not Used)			
	Sum =	100.0			Sum =	30.4

Flood volume = Effective rainfall 2.53(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 2.4(Ac.Ft)
Total soil loss = 1.77(In)
Total soil loss = 1.649(Ac.Ft)
Total rainfall = 4.30(In)

```
                                             PR24HR100YR
      Flood volume =      102936.8 Cubic Feet
      Total soil loss =       71833.4 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      4.562(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R   S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5      0.0008      0.11  Q         |         |         |         |
  0+10      0.0021      0.20  Q         |         |         |         |
  0+15      0.0036      0.22  Q         |         |         |         |
  0+20      0.0056      0.28  VQ        |         |         |         |
  0+25      0.0078      0.32  VQ        |         |         |         |
  0+30      0.0100      0.33  VQ        |         |         |         |
  0+35      0.0123      0.33  VQ        |         |         |         |
  0+40      0.0146      0.33  VQ        |         |         |         |
  0+45      0.0169      0.33  VQ        |         |         |         |
  0+50      0.0196      0.39  VQ        |         |         |         |
  0+55      0.0226      0.43  VQ        |         |         |         |
  1+ 0      0.0256      0.44  VQ        |         |         |         |
  1+ 5      0.0283      0.39  VQ        |         |         |         |
  1+10      0.0307      0.34  VQ        |         |         |         |
  1+15      0.0330      0.34  VQ        |         |         |         |
  1+20      0.0353      0.33  VQ        |         |         |         |
  1+25      0.0376      0.33  VQ        |         |         |         |
  1+30      0.0399      0.33  VQ        |         |         |         |
  1+35      0.0422      0.33  VQ        |         |         |         |
  1+40      0.0445      0.33  VQ        |         |         |         |
  1+45      0.0468      0.33  VQ        |         |         |         |
  1+50      0.0494      0.39  VQ        |         |         |         |
  1+55      0.0524      0.43  VQ        |         |         |         |
  2+ 0      0.0555      0.44  VQ        |         |         |         |
  2+ 5      0.0585      0.44  VQ        |         |         |         |
  2+10      0.0616      0.44  |Q        |         |         |         |
  2+15      0.0647      0.44  |Q        |         |         |         |
  2+20      0.0677      0.44  |Q        |         |         |         |
  2+25      0.0708      0.44  |Q        |         |         |         |
  2+30      0.0738      0.44  |Q        |         |         |         |
  2+35      0.0773      0.50  |Q        |         |         |         |
  2+40      0.0810      0.54  |VQ       |         |         |         |
  2+45      0.0848      0.55  |VQ       |         |         |         |
  2+50      0.0887      0.56  |VQ       |         |         |         |
  2+55      0.0925      0.56  |VQ       |         |         |         |
  3+ 0      0.0963      0.56  |VQ       |         |         |         |
  3+ 5      0.1001      0.56  |VQ       |         |         |         |
  3+10      0.1040      0.56  |VQ       |         |         |         |
  3+15      0.1078      0.56  |VQ       |         |         |         |
  3+20      0.1116      0.56  |VQ       |         |         |         |
  3+25      0.1154      0.56  |VQ       |         |         |         |
  3+30      0.1193      0.56  | Q       |         |         |         |
  3+35      0.1231      0.56  | Q       |         |         |         |
  3+40      0.1269      0.56  | Q       |         |         |         |
  3+45      0.1307      0.56  | Q       |         |         |         |
  3+50      0.1349      0.61  | Q       |         |         |         |
  3+55      0.1395      0.66  | Q       |         |         |         |
  4+ 0      0.1440      0.66  | Q       |         |         |         |
  4+ 5      0.1486      0.67  | Q       |         |         |         |
  4+10      0.1532      0.67  | Q       |         |         |         |
  4+15      0.1578      0.67  | Q       |         |         |         |
  4+20      0.1628      0.72  | Q       |         |         |         |
  4+25      0.1680      0.77  | VQ      |         |         |         |
  4+30      0.1734      0.77  | VQ      |         |         |         |
  4+35      0.1787      0.78  |  Q      |         |         |         |
  4+40      0.1841      0.78  |  Q      |         |         |         |
  4+45      0.1894      0.78  |  Q      |         |         |         |
  4+50      0.1952      0.83  |  Q      |         |         |         |
  4+55      0.2012      0.88  |  Q      |         |         |         |
  5+ 0      0.2073      0.89  |  Q      |         |         |         |
  5+ 5      0.2127      0.78  |  Q      |         |         |         |
  5+10      0.2174      0.69  | QV      |         |         |         |
  5+15      0.2221      0.67  | QV      |         |         |         |
  5+20      0.2270      0.72  | QV      |         |         |         |
  5+25      0.2323      0.77  |  Q      |         |         |         |
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  5+30       0.2376      0.77  |  QV     |         |         |         |
  5+35       0.2434      0.83  |  QV     |         |         |         |
  5+40       0.2494      0.88  |  QV     |         |         |         |
  5+45       0.2555      0.89  |  QV     |         |         |         |
  5+50       0.2616      0.89  |  QV     |         |         |         |
  5+55       0.2678      0.89  |  QV     |         |         |         |
  6+ 0       0.2739      0.89  |  QV     |         |         |         |
  6+ 5       0.2804      0.94  |  QV     |         |         |         |
  6+10       0.2872      0.99  |  QV     |         |         |         |
  6+15       0.2941      1.00  |  QV     |         |         |         |
  6+20       0.3010      1.00  |  Q V    |         |         |         |
  6+25       0.3078      1.00  |  Q V    |         |         |         |
  6+30       0.3147      1.00  |  Q V    |         |         |         |
  6+35       0.3220      1.06  |   QV    |         |         |         |
  6+40       0.3296      1.10  |   QV    |         |         |         |
  6+45       0.3372      1.11  |   QV    |         |         |         |
  6+50       0.3448      1.11  |   QV    |         |         |         |
  6+55       0.3525      1.11  |   QV    |         |         |         |
  7+ 0       0.3601      1.11  |   Q V   |         |         |         |
  7+ 5       0.3678      1.11  |   Q V   |         |         |         |
  7+10       0.3754      1.11  |   Q V   |         |         |         |
  7+15       0.3831      1.11  |   Q V   |         |         |         |
  7+20       0.3911      1.17  |   Q V   |         |         |         |
  7+25       0.3995      1.21  |   Q V   |         |         |         |
  7+30       0.4079      1.22  |   Q V   |         |         |         |
  7+35       0.4167      1.28  |    Q V  |         |         |         |
  7+40       0.4258      1.32  |    Q V  |         |         |         |
  7+45       0.4349      1.33  |    Q V  |         |         |         |
  7+50       0.4445      1.39  |    Q V  |         |         |         |
  7+55       0.4544      1.43  |    Q V  |         |         |         |
  8+ 0       0.4643      1.44  |    Q V  |         |         |         |
  8+ 5       0.4750      1.55  |     Q V |         |         |         |
  8+10       0.4863      1.64  |     Q V |         |         |         |
  8+15       0.4978      1.66  |     Q V |         |         |         |
  8+20       0.5092      1.67  |     Q V |         |         |         |
  8+25       0.5207      1.67  |     Q V |         |         |         |
  8+30       0.5322      1.67  |     Q  V|         |         |         |
  8+35       0.5440      1.72  |     Q  V|         |         |         |
  8+40       0.5562      1.77  |      Q V|         |         |         |
  8+45       0.5684      1.77  |      Q V|         |         |         |
  8+50       0.5811      1.83  |      Q V|         |         |         |
  8+55       0.5940      1.88  |      Q  V         |         |         |
  9+ 0       0.6070      1.89  |      Q  V         |         |         |
  9+ 5       0.6207      2.00  |      Q  V         |         |         |
  9+10       0.6351      2.09  |       Q V         |         |         |
  9+15       0.6496      2.11  |       Q V         |         |         |
  9+20       0.6645      2.17  |       Q |V        |         |         |
  9+25       0.6798      2.21  |       Q |V        |         |         |
  9+30       0.6950      2.22  |       Q |V        |         |         |
  9+35       0.7107      2.28  |        Q| V       |         |         |
  9+40       0.7267      2.32  |        Q| V       |         |         |
  9+45       0.7428      2.33  |        Q| V       |         |         |
  9+50       0.7592      2.39  |        Q| V       |         |         |
  9+55       0.7760      2.43  |        Q|  V      |         |         |
 10+ 0       0.7928      2.44  |        Q|  V      |         |         |
 10+ 5       0.8069      2.06  |       Q |  V      |         |         |
 10+10       0.8189      1.74  |     Q   |  V      |         |         |
 10+15       0.8305      1.68  |     Q   |   V     |         |         |
 10+20       0.8420      1.67  |     Q   |   V     |         |         |
 10+25       0.8535      1.67  |     Q   |   V     |         |         |
 10+30       0.8650      1.67  |     Q   |   V     |         |         |
 10+35       0.8783      1.94  |      Q  |   V     |         |         |
 10+40       0.8933      2.17  |       Q |    V    |         |         |
 10+45       0.9085      2.21  |       Q |    V    |         |         |
 10+50       0.9238      2.22  |       Q |    V    |         |         |
 10+55       0.9391      2.22  |       Q |    V    |         |         |
 11+ 0       0.9544      2.22  |       Q |     V   |         |         |
 11+ 5       0.9693      2.17  |       Q |     V   |         |         |
 11+10       0.9839      2.12  |       Q |     V   |         |         |
 11+15       0.9985      2.11  |       Q |     V   |         |         |
 11+20       1.0130      2.11  |       Q |      V  |         |         |
 11+25       1.0275      2.11  |       Q |      V  |         |         |
 11+30       1.0421      2.11  |       Q |      V  |         |         |
 11+35       1.0558      2.00  |      Q  |      V  |         |         |
 11+40       1.0690      1.91  |      Q  |       V |         |         |
 11+45       1.0820      1.89  |      Q  |       V |         |         |
 11+50       1.0954      1.94  |      Q  |       V |         |         |
 11+55       1.1091      1.99  |      Q  |       V |         |         |
 12+ 0       1.1229      2.00  |      Q  |        V|         |         |
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                                            PR24HR100YR
12+ 5       1.1393      2.39 |        Q|        V|         |         |
12+10       1.1579      2.70 |         Q        V|         |         |
12+15       1.1769      2.76 |         |Q       V|         |         |
12+20       1.1964      2.83 |         |Q        V         |         |
12+25       1.2162      2.88 |         |Q        V         |         |
12+30       1.2361      2.89 |         |Q        V         |         |
12+35       1.2574      3.09 |         | Q       |V        |         |
12+40       1.2798      3.25 |         |  Q      |V        |         |
12+45       1.3024      3.29 |         |  Q      | V       |         |
12+50       1.3259      3.41 |         |  Q      | V       |         |
12+55       1.3500      3.50 |         |  Q      | V       |         |
13+ 0       1.3743      3.52 |         |   Q     |  V      |         |
13+ 5       1.4020      4.02 |         |     Q   |  V      |         |
13+10       1.4325      4.43 |         |      Q  |   V     |         |
13+15       1.4635      4.51 |         |       Q |   V     |         |
13+20       1.4948      4.54 |         |       Q |    V    |         |
13+25       1.5262      4.55 |         |       Q |    V    |         |
13+30       1.5576      4.56 |         |       Q |     V   |         |
13+35       1.5821      3.56 |         |   Q     |     V   |         |
13+40       1.6010      2.75 |         Q         |      V  |         |
13+45       1.6190      2.60 |         Q         |      V  |         |
13+50       1.6366      2.55 |         Q         |      V  |         |
13+55       1.6542      2.55 |         Q         |      V  |         |
14+ 0       1.6717      2.55 |         Q         |       V |         |
14+ 5       1.6918      2.92 |         |Q        |       V |         |
14+10       1.7140      3.22 |         | Q       |        V|         |
14+15       1.7366      3.28 |         |  Q      |        V|         |
14+20       1.7587      3.21 |         | Q       |        V|         |
14+25       1.7803      3.14 |         | Q       |         V         |
14+30       1.8019      3.13 |         | Q       |         V         |
14+35       1.8235      3.14 |         | Q       |         V         |
14+40       1.8452      3.15 |         | Q       |         |V        |
14+45       1.8669      3.16 |         | Q       |         |V        |
14+50       1.8881      3.07 |         | Q       |         |V        |
14+55       1.9088      3.00 |         | Q       |         | V       |
15+ 0       1.9294      3.00 |         |Q        |         | V       |
15+ 5       1.9495      2.91 |         |Q        |         | V       |
15+10       1.9690      2.84 |         |Q        |         |  V      |
15+15       1.9885      2.83 |         |Q        |         |  V      |
15+20       2.0074      2.74 |         Q         |         |  V      |
15+25       2.0258      2.67 |         Q         |         |   V     |
15+30       2.0442      2.67 |         Q         |         |   V     |
15+35       2.0606      2.39 |        Q|         |         |   V     |
15+40       2.0755      2.16 |       Q |         |         |    V    |
15+45       2.0902      2.12 |       Q |         |         |    V    |
15+50       2.1047      2.11 |       Q |         |         |    V    |
15+55       2.1192      2.11 |       Q |         |         |    V    |
16+ 0       2.1338      2.11 |       Q |         |         |     V   |
16+ 5       2.1426      1.28 |    Q    |         |         |     V   |
16+10       2.1467      0.60 | Q       |         |         |     V   |
16+15       2.1501      0.48 |Q        |         |         |     V   |
16+20       2.1531      0.44 |Q        |         |         |     V   |
16+25       2.1562      0.44 |Q        |         |         |     V   |
16+30       2.1592      0.44 |Q        |         |         |     V   |
16+35       2.1619      0.39 |Q        |         |         |     V   |
16+40       2.1643      0.34 |Q        |         |         |     V   |
16+45       2.1666      0.34 |Q        |         |         |     V   |
16+50       2.1689      0.33 |Q        |         |         |     V   |
16+55       2.1712      0.33 |Q        |         |         |     V   |
17+ 0       2.1735      0.33 |Q        |         |         |     V   |
17+ 5       2.1765      0.44 |Q        |         |         |     V   |
17+10       2.1802      0.53 | Q       |         |         |     V   |
17+15       2.1840      0.55 | Q       |         |         |     V   |
17+20       2.1878      0.56 | Q       |         |         |      V  |
17+25       2.1917      0.56 | Q       |         |         |      V  |
17+30       2.1955      0.56 | Q       |         |         |      V  |
17+35       2.1993      0.56 | Q       |         |         |      V  |
17+40       2.2031      0.56 | Q       |         |         |      V  |
17+45       2.2070      0.56 | Q       |         |         |      V  |
17+50       2.2104      0.50 | Q       |         |         |      V  |
17+55       2.2135      0.45 |Q        |         |         |      V  |
18+ 0       2.2166      0.45 |Q        |         |         |      V  |
18+ 5       2.2197      0.44 |Q        |         |         |      V  |
18+10       2.2227      0.44 |Q        |         |         |      V  |
18+15       2.2258      0.44 |Q        |         |         |      V  |
18+20       2.2289      0.44 |Q        |         |         |      V  |
18+25       2.2319      0.44 |Q        |         |         |      V  |
18+30       2.2350      0.44 |Q        |         |         |      V  |
18+35       2.2377      0.39 |Q        |         |         |      V  |
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 18+40       2.2400      0.34   |Q         |         |         |      V  |
 18+45       2.2423      0.34   |Q         |         |         |      V  |
 18+50       2.2443      0.28   |Q         |         |         |      V  |
 18+55       2.2459      0.23   Q          |         |         |       V |
 19+ 0       2.2474      0.22   Q          |         |         |       V |
 19+ 5       2.2493      0.28   |Q         |         |         |       V |
 19+10       2.2515      0.32   |Q         |         |         |       V |
 19+15       2.2538      0.33   |Q         |         |         |       V |
 19+20       2.2565      0.39   |Q         |         |         |       V |
 19+25       2.2595      0.43   |Q         |         |         |       V |
 19+30       2.2625      0.44   |Q         |         |         |       V |
 19+35       2.2652      0.39   |Q         |         |         |       V |
 19+40       2.2676      0.34   |Q         |         |         |       V |
 19+45       2.2699      0.34   |Q         |         |         |       V |
 19+50       2.2718      0.28   |Q         |         |         |       V |
 19+55       2.2734      0.23   Q          |         |         |       V |
 20+ 0       2.2749      0.22   Q          |         |         |       V |
 20+ 5       2.2769      0.28   |Q         |         |         |       V |
 20+10       2.2791      0.32   |Q         |         |         |       V |
 20+15       2.2814      0.33   |Q         |         |         |       V |
 20+20       2.2836      0.33   |Q         |         |         |       V |
 20+25       2.2859      0.33   |Q         |         |         |       V |
 20+30       2.2882      0.33   |Q         |         |         |       V |
 20+35       2.2905      0.33   |Q         |         |         |       V |
 20+40       2.2928      0.33   |Q         |         |         |       V |
 20+45       2.2951      0.33   |Q         |         |         |       V |
 20+50       2.2970      0.28   |Q         |         |         |       V |
 20+55       2.2986      0.23   Q          |         |         |       V |
 21+ 0       2.3002      0.22   Q          |         |         |       V |
 21+ 5       2.3021      0.28   |Q         |         |         |       V |
 21+10       2.3043      0.32   |Q         |         |         |        V|
 21+15       2.3066      0.33   |Q         |         |         |        V|
 21+20       2.3085      0.28   |Q         |         |         |        V|
 21+25       2.3101      0.23   Q          |         |         |        V|
 21+30       2.3117      0.22   Q          |         |         |        V|
 21+35       2.3136      0.28   |Q         |         |         |        V|
 21+40       2.3158      0.32   |Q         |         |         |        V|
 21+45       2.3181      0.33   |Q         |         |         |        V|
 21+50       2.3200      0.28   |Q         |         |         |        V|
 21+55       2.3216      0.23   Q          |         |         |        V|
 22+ 0       2.3231      0.22   Q          |         |         |        V|
 22+ 5       2.3250      0.28   |Q         |         |         |        V|
 22+10       2.3273      0.32   |Q         |         |         |        V|
 22+15       2.3295      0.33   |Q         |         |         |        V|
 22+20       2.3315      0.28   |Q         |         |         |        V|
 22+25       2.3331      0.23   Q          |         |         |        V|
 22+30       2.3346      0.22   Q          |         |         |        V|
 22+35       2.3361      0.22   Q          |         |         |        V|
 22+40       2.3377      0.22   Q          |         |         |        V|
 22+45       2.3392      0.22   Q          |         |         |        V|
 22+50       2.3407      0.22   Q          |         |         |        V|
 22+55       2.3423      0.22   Q          |         |         |        V|
 23+ 0       2.3438      0.22   Q          |         |         |        V|
 23+ 5       2.3453      0.22   Q          |         |         |        V|
 23+10       2.3469      0.22   Q          |         |         |        V|
 23+15       2.3484      0.22   Q          |         |         |        V|
 23+20       2.3499      0.22   Q          |         |         |        V|
 23+25       2.3514      0.22   Q          |         |         |        V|
 23+30       2.3530      0.22   Q          |         |         |        V|
 23+35       2.3545      0.22   Q          |         |         |        V|
 23+40       2.3560      0.22   Q          |         |         |        V|
 23+45       2.3576      0.22   Q          |         |         |        V|
 23+50       2.3591      0.22   Q          |         |         |        V|
 23+55       2.3606      0.22   Q          |         |         |        V|
 24+ 0       2.3622      0.22   Q          |         |         |        V|
 24+ 5       2.3629      0.11   Q          |         |         |        V|
 24+10       2.3631      0.02   Q          |         |         |        V|
 24+15       2.3631      0.01   Q          |         |         |         V
-----------------------------------------------------------------------
```

BASIN B

2 YEAR

PR1HR2YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 09/07/16 File: PR12.out

+++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format


```
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.48                  4.16

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.20                 10.40

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.480(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.480(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  33.4      0.729     0.560        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
--------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                        PR1HR2YR
       ----------------------------------------------------------------------

                       U n i t   H y d r o g r a p h
                               VALLEY S-Curve
       --------------------------------------------------------------------
                       Unit Hydrograph Data
       ---------------------------------------------------------------------
       Unit time period   Time % of lag   Distribution   Unit Hydrograph
           (hrs)                            Graph %           (CFS)
       ---------------------------------------------------------------------
           1   0.083        214.725          45.835              4.003
           2   0.167        429.451          42.353              3.699
           3   0.250        644.176           8.227              0.718
           4   0.333        858.902           3.586              0.313
                                     Sum = 100.000   Sum=        8.733
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)          Max    |   Low        (In/Hr)
   1   0.08     4.40     0.253        (  0.362)       0.115        0.139
   2   0.17     4.50     0.259        (  0.362)       0.117        0.142
   3   0.25     5.40     0.311        (  0.362)       0.141        0.170
   4   0.33     5.40     0.311        (  0.362)       0.141        0.170
   5   0.42     5.70     0.328        (  0.362)       0.148        0.180
   6   0.50     6.40     0.369        (  0.362)       0.167        0.202
   7   0.58     7.90     0.455        (  0.362)       0.206        0.249
   8   0.67     9.10     0.524        (  0.362)       0.237        0.287
   9   0.75    12.80     0.737        (  0.362)       0.333        0.404
  10   0.83    25.60     1.474           0.362    (  0.666)        1.113
  11   0.92     7.90     0.455        (  0.362)       0.206        0.249
  12   1.00     4.90     0.282        (  0.362)       0.128        0.155
                 (Loss Rate Not Used)
     Sum =     100.0                                   Sum =     3.5
        Flood volume = Effective rainfall      0.29(In)
         times area       8.7(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
        Total soil loss =      0.19(In)
        Total soil loss =     0.138(Ac.Ft)
        Total rainfall =      0.48(In)
        Flood volume =        9071.6 Cubic Feet
        Total soil loss =        6025.1 Cubic Feet
       --------------------------------------------------------------------
         Peak flow rate of this hydrograph =      6.235(CFS)
       --------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R   S T O R M
                      R u n o f f     H y d r o g r a p h
       --------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

       --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 -----------------------------------------------------------------------
    0+ 5       0.0038      0.56  V Q        |         |         |         |
    0+10       0.0113      1.08  | V Q      |         |         |         |
    0+15       0.0203      1.31  |  V Q     |         |         |         |
    0+20       0.0303      1.46  |    Q     |         |         |         |
    0+25       0.0408      1.52  |     QV   |         |         |         |
    0+30       0.0522      1.65  |     Q    V         |         |         |
    0+35       0.0654      1.93  |      Q   | V       |         |         |
    0+40       0.0811      2.27  |        Q|    V     |         |         |
    0+45       0.1012      2.92  |          |Q       V|         |         |
    0+50       0.1442      6.24  |          |         |   Q  V  |         |
    0+55       0.1820      5.50  |          |         |Q        |   V     |
    1+ 0       0.1990      2.47  |        Q|          |         |       V |
    1+ 5       0.2066      1.10  |   Q      |         |         |        V|
    1+10       0.2079      0.19  Q          |         |         |        V|
    1+15       0.2083      0.05  Q          |         |         |         V
-----------------------------------------------------------------------
```

```
                                   PR3HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format

---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.80                   6.93

100 YEAR Area rainfall data:

Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.80                  15.60

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    0.800(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    0.800(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)

RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  33.4      0.729     0.560        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
```

PR3HR2YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.125	(0.362)	0.056	0.068
2	0.17	1.30	0.125	(0.362)	0.056	0.068
3	0.25	1.10	0.106	(0.362)	0.048	0.058
4	0.33	1.50	0.144	(0.362)	0.065	0.079
5	0.42	1.50	0.144	(0.362)	0.065	0.079
6	0.50	1.80	0.173	(0.362)	0.078	0.095
7	0.58	1.50	0.144	(0.362)	0.065	0.079
8	0.67	1.80	0.173	(0.362)	0.078	0.095
9	0.75	1.80	0.173	(0.362)	0.078	0.095
10	0.83	1.50	0.144	(0.362)	0.065	0.079
11	0.92	1.60	0.154	(0.362)	0.069	0.084
12	1.00	1.80	0.173	(0.362)	0.078	0.095
13	1.08	2.20	0.211	(0.362)	0.095	0.116
14	1.17	2.20	0.211	(0.362)	0.095	0.116
15	1.25	2.20	0.211	(0.362)	0.095	0.116
16	1.33	2.00	0.192	(0.362)	0.087	0.105
17	1.42	2.60	0.250	(0.362)	0.113	0.137
18	1.50	2.70	0.259	(0.362)	0.117	0.142
19	1.58	2.40	0.230	(0.362)	0.104	0.126
20	1.67	2.70	0.259	(0.362)	0.117	0.142
21	1.75	3.30	0.317	(0.362)	0.143	0.174
22	1.83	3.10	0.298	(0.362)	0.135	0.163
23	1.92	2.90	0.278	(0.362)	0.126	0.153
24	2.00	3.00	0.288	(0.362)	0.130	0.158
25	2.08	3.10	0.298	(0.362)	0.135	0.163
26	2.17	4.20	0.403	(0.362)	0.182	0.221
27	2.25	5.00	0.480	(0.362)	0.217	0.263
28	2.33	3.50	0.336	(0.362)	0.152	0.184
29	2.42	6.80	0.653	(0.362)	0.295	0.358
30	2.50	7.30	0.701	(0.362)	0.317	0.384
31	2.58	8.20	0.787	(0.362)	0.356	0.431
32	2.67	5.90	0.566	(0.362)	0.256	0.310
33	2.75	2.00	0.192	(0.362)	0.087	0.105
34	2.83	1.80	0.173	(0.362)	0.078	0.095
35	2.92	1.80	0.173	(0.362)	0.078	0.095
36	3.00	0.60	0.058	(0.362)	0.026	0.032
		(Loss Rate Not Used)				
Sum =		100.0				Sum = 5.3

Flood volume = Effective rainfall 0.44(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)
Total soil loss = 0.36(In)
Total soil loss = 0.261(Ac.Ft)
Total rainfall = 0.80(In)
Flood volume = 13788.9 Cubic Feet
Total soil loss = 11373.3 Cubic Feet

Peak flow rate of this hydrograph = 3.463(CFS)

3 - H O U R   S T O R M
Runoff Hydrograph

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0019	0.27	VQ	|	|	|	|

```
                                                PR3HR2YR
    0+10       0.0055      0.53  V Q       |         |         |         |
    0+15       0.0092      0.53  |VQ       |         |         |         |
    0+20       0.0133      0.60  |VQ       |         |         |         |
    0+25       0.0180      0.67  | Q       |         |         |         |
    0+30       0.0231      0.75  | Q       |         |         |         |
    0+35       0.0282      0.75  | QV      |         |         |         |
    0+40       0.0335      0.76  |  QV     |         |         |         |
    0+45       0.0391      0.82  |  QV     |         |         |         |
    0+50       0.0443      0.76  |  Q V    |         |         |         |
    0+55       0.0494      0.73  | Q   V   |         |         |         |
    1+ 0       0.0547      0.78  |  Q  V   |         |         |         |
    1+ 5       0.0609      0.90  |  Q   V  |         |         |         |
    1+10       0.0677      0.99  |  Q    V |         |         |         |
    1+15       0.0746      1.00  |   Q    V|         |         |         |
    1+20       0.0813      0.97  |  Q      V         |         |         |
    1+25       0.0886      1.06  |   Q     |V        |         |         |
    1+30       0.0967      1.19  |   Q     | V       |         |         |
    1+35       0.1047      1.16  |   Q     |  V      |         |         |
    1+40       0.1129      1.18  |   Q     |   V     |         |         |
    1+45       0.1222      1.36  |    Q    |    V    |         |         |
    1+50       0.1321      1.44  |    Q    |     V   |         |         |
    1+55       0.1416      1.38  |    Q    |      V  |         |         |
    2+ 0       0.1511      1.37  |    Q    |        V|         |         |
    2+ 5       0.1607      1.40  |    Q    |         V         |         |
    2+10       0.1720      1.65  |     Q   |         |V        |         |
    2+15       0.1861      2.04  |       Q |         |  V      |         |
    2+20       0.1993      1.92  |      Q  |         |    V    |         |
    2+25       0.2156      2.37  |        Q|         |      V  |         |
    2+30       0.2368      3.08  |         | Q       |        V|         |
    2+35       0.2607      3.46  |         |  Q      |         | V       |
    2+40       0.2829      3.23  |         | Q       |         |    V    |
    2+45       0.2967      2.00  |       Q |         |         |      V  |
    2+50       0.3044      1.13  |   Q     |         |         |       V |
    2+55       0.3107      0.90  |  Q      |         |         |        V|
    3+ 0       0.3146      0.58  | Q       |         |         |        V|
    3+ 5       0.3161      0.21  Q         |         |         |        V|
    3+10       0.3165      0.05  Q         |         |         |        V|
    3+15       0.3165      0.01  Q         |         |         |         V
-----------------------------------------------------------------------
```

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                              PR6HR2YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR62.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      8.66(Ac.)  =     0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      8.66(Ac.)  =     0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =     0.180 Mi.
Length along longest watercourse measured to centroid =     0.115 Mi.
Difference in elevation =      9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.10                  9.53

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            2.50                 21.66

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.100(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.100(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  33.4      0.729     0.560        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
```

PR6HR2YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.066	(0.362)	0.030	0.036
2	0.17	0.60	0.079	(0.362)	0.036	0.043
3	0.25	0.60	0.079	(0.362)	0.036	0.043
4	0.33	0.60	0.079	(0.362)	0.036	0.043
5	0.42	0.60	0.079	(0.362)	0.036	0.043
6	0.50	0.70	0.092	(0.362)	0.042	0.051
7	0.58	0.70	0.092	(0.362)	0.042	0.051
8	0.67	0.70	0.092	(0.362)	0.042	0.051
9	0.75	0.70	0.092	(0.362)	0.042	0.051
10	0.83	0.70	0.092	(0.362)	0.042	0.051
11	0.92	0.70	0.092	(0.362)	0.042	0.051
12	1.00	0.80	0.106	(0.362)	0.048	0.058
13	1.08	0.80	0.106	(0.362)	0.048	0.058
14	1.17	0.80	0.106	(0.362)	0.048	0.058
15	1.25	0.80	0.106	(0.362)	0.048	0.058
16	1.33	0.80	0.106	(0.362)	0.048	0.058
17	1.42	0.80	0.106	(0.362)	0.048	0.058
18	1.50	0.80	0.106	(0.362)	0.048	0.058
19	1.58	0.80	0.106	(0.362)	0.048	0.058
20	1.67	0.80	0.106	(0.362)	0.048	0.058
21	1.75	0.80	0.106	(0.362)	0.048	0.058
22	1.83	0.80	0.106	(0.362)	0.048	0.058
23	1.92	0.80	0.106	(0.362)	0.048	0.058
24	2.00	0.90	0.119	(0.362)	0.054	0.065
25	2.08	0.80	0.106	(0.362)	0.048	0.058
26	2.17	0.90	0.119	(0.362)	0.054	0.065
27	2.25	0.90	0.119	(0.362)	0.054	0.065
28	2.33	0.90	0.119	(0.362)	0.054	0.065
29	2.42	0.90	0.119	(0.362)	0.054	0.065
30	2.50	0.90	0.119	(0.362)	0.054	0.065
31	2.58	0.90	0.119	(0.362)	0.054	0.065
32	2.67	0.90	0.119	(0.362)	0.054	0.065
33	2.75	1.00	0.132	(0.362)	0.060	0.072
34	2.83	1.00	0.132	(0.362)	0.060	0.072
35	2.92	1.00	0.132	(0.362)	0.060	0.072
36	3.00	1.00	0.132	(0.362)	0.060	0.072
37	3.08	1.00	0.132	(0.362)	0.060	0.072
38	3.17	1.10	0.145	(0.362)	0.066	0.080
39	3.25	1.10	0.145	(0.362)	0.066	0.080
40	3.33	1.10	0.145	(0.362)	0.066	0.080
41	3.42	1.20	0.158	(0.362)	0.072	0.087
42	3.50	1.30	0.172	(0.362)	0.078	0.094
43	3.58	1.40	0.185	(0.362)	0.084	0.101
44	3.67	1.40	0.185	(0.362)	0.084	0.101
45	3.75	1.50	0.198	(0.362)	0.089	0.109
46	3.83	1.50	0.198	(0.362)	0.089	0.109
47	3.92	1.60	0.211	(0.362)	0.095	0.116
48	4.00	1.60	0.211	(0.362)	0.095	0.116
49	4.08	1.70	0.224	(0.362)	0.101	0.123
50	4.17	1.80	0.238	(0.362)	0.107	0.130
51	4.25	1.90	0.251	(0.362)	0.113	0.137
52	4.33	2.00	0.264	(0.362)	0.119	0.145
53	4.42	2.10	0.277	(0.362)	0.125	0.152
54	4.50	2.10	0.277	(0.362)	0.125	0.152
55	4.58	2.20	0.290	(0.362)	0.131	0.159
56	4.67	2.30	0.304	(0.362)	0.137	0.166
57	4.75	2.40	0.317	(0.362)	0.143	0.174
58	4.83	2.40	0.317	(0.362)	0.143	0.174

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59   4.92     2.50      0.330       (  0.362)       0.149        0.181
60   5.00     2.60      0.343       (  0.362)       0.155        0.188
61   5.08     3.10      0.409       (  0.362)       0.185        0.224
62   5.17     3.60      0.475       (  0.362)       0.215        0.260
63   5.25     3.90      0.515       (  0.362)       0.233        0.282
64   5.33     4.20      0.554       (  0.362)       0.251        0.304
65   5.42     4.70      0.620       (  0.362)       0.280        0.340
66   5.50     5.60      0.739       (  0.362)       0.334        0.405
67   5.58     1.90      0.251       (  0.362)       0.113        0.137
68   5.67     0.90      0.119       (  0.362)       0.054        0.065
69   5.75     0.60      0.079       (  0.362)       0.036        0.043
70   5.83     0.50      0.066       (  0.362)       0.030        0.036
71   5.92     0.30      0.040       (  0.362)       0.018        0.022
72   6.00     0.20      0.026       (  0.362)       0.012        0.014
                (Loss Rate Not Used)
   Sum =     100.0                                 Sum =     7.2
      Flood volume = Effective rainfall      0.60(In)
       times area       8.7(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
      Total soil loss =      0.50(In)
      Total soil loss =     0.359(Ac.Ft)
      Total rainfall =      1.10(In)
      Flood volume =       18959.9 Cubic Feet
      Total soil loss =       15638.4 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      3.187(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0010      0.14  Q         |         |         |         |
  0+10       0.0031      0.31  VQ        |         |         |         |
  0+15       0.0056      0.36  VQ        |         |         |         |
  0+20       0.0082      0.38  VQ        |         |         |         |
  0+25       0.0108      0.38  VQ        |         |         |         |
  0+30       0.0136      0.41  |Q        |         |         |         |
  0+35       0.0166      0.43  |Q        |         |         |         |
  0+40       0.0196      0.44  |Q        |         |         |         |
  0+45       0.0227      0.44  |QV       |         |         |         |
  0+50       0.0257      0.44  |QV       |         |         |         |
  0+55       0.0288      0.44  |QV       |         |         |         |
  1+ 0       0.0320      0.47  |QV       |         |         |         |
  1+ 5       0.0355      0.50  |Q V      |         |         |         |
  1+10       0.0389      0.50  | QV      |         |         |         |
  1+15       0.0424      0.51  | QV      |         |         |         |
  1+20       0.0459      0.51  | Q V     |         |         |         |
  1+25       0.0494      0.51  | Q V     |         |         |         |
  1+30       0.0529      0.51  | Q V     |         |         |         |
  1+35       0.0563      0.51  | Q  V    |         |         |         |
  1+40       0.0598      0.51  | Q  V    |         |         |         |
  1+45       0.0633      0.51  | Q  V    |         |         |         |
  1+50       0.0668      0.51  | Q   V   |         |         |         |
  1+55       0.0703      0.51  | Q   V   |         |         |         |
  2+ 0       0.0739      0.53  | Q   V   |         |         |         |
  2+ 5       0.0776      0.53  | Q    V  |         |         |         |
  2+10       0.0813      0.54  | Q    V  |         |         |         |
  2+15       0.0852      0.56  | Q    V  |         |         |         |
  2+20       0.0891      0.57  | Q     V |         |         |         |
  2+25       0.0930      0.57  | Q     V |         |         |         |
  2+30       0.0969      0.57  | Q     V |         |         |         |
  2+35       0.1009      0.57  | Q      V|         |         |         |
  2+40       0.1048      0.57  | Q      V|         |         |         |
  2+45       0.1089      0.60  | Q       V         |         |         |
  2+50       0.1132      0.62  | Q       V         |         |         |
  2+55       0.1175      0.63  | Q       V         |         |         |
  3+ 0       0.1219      0.63  | Q       |V        |         |         |
  3+ 5       0.1262      0.63  | Q       |V        |         |         |
  3+10       0.1308      0.66  | Q       | V       |         |         |
  3+15       0.1355      0.69  | Q       | V       |         |         |
  3+20       0.1403      0.69  | Q       | V       |         |         |
  3+25       0.1453      0.72  | Q       |  V      |         |         |
  3+30       0.1507      0.78  |  Q      |  V      |         |         |
  3+35       0.1565      0.84  |  Q      |   V     |         |         |
  3+40       0.1625      0.88  |  Q      |   V     |         |         |
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                                                PR6HR2YR
    3+45       0.1688      0.91  |  Q      |    V    |         |         |
    3+50       0.1752      0.94  |  Q      |     V   |         |         |
    3+55       0.1819      0.97  |  Q      |     V   |         |         |
    4+ 0       0.1889      1.00  |   Q     |      V  |         |         |
    4+ 5       0.1960      1.04  |   Q     |       V |         |         |
    4+10       0.2036      1.10  |   Q     |       V |         |         |
    4+15       0.2115      1.16  |   Q     |        V|         |         |
    4+20       0.2199      1.22  |   Q     |         V         |         |
    4+25       0.2288      1.28  |    Q    |         |V        |         |
    4+30       0.2378      1.32  |    Q    |         |V        |         |
    4+35       0.2472      1.35  |    Q    |         | V       |         |
    4+40       0.2569      1.41  |    Q    |         |  V      |         |
    4+45       0.2670      1.47  |    Q    |         |   V     |         |
    4+50       0.2774      1.51  |     Q   |         |    V    |         |
    4+55       0.2880      1.54  |     Q   |         |     V   |         |
    5+ 0       0.2991      1.60  |     Q   |         |      V  |         |
    5+ 5       0.3113      1.78  |      Q  |         |       V |         |
    5+10       0.3255      2.06  |       Q |         |        V|         |
    5+15       0.3415      2.31  |        Q|         |         |V        |
    5+20       0.3588      2.52  |         Q         |         | V       |
    5+25       0.3779      2.77  |         |Q        |         |   V     |
    5+30       0.3998      3.19  |         | Q       |         |     V   |
    5+35       0.4163      2.39  |        Q|         |         |       V |
    5+40       0.4243      1.17  |   Q     |         |         |       V |
    5+45       0.4287      0.64  | Q       |         |         |        V|
    5+50       0.4315      0.40  |Q        |         |         |        V|
    5+55       0.4333      0.27  |Q        |         |         |        V|
    6+ 0       0.4346      0.18  Q         |         |         |        V|
    6+ 5       0.4351      0.08  Q         |         |         |        V|
    6+10       0.4352      0.02  Q         |         |         |        V|
    6+15       0.4353      0.00  Q         |         |         |        V|
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PR24HR2YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 09/07/16 File: PR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

Drainage Area = 8.66(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.66(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 951.00(Ft.)
Length along longest watercourse measured to centroid = 606.00(Ft.)
Length along longest watercourse = 0.180 Mi.
Length along longest watercourse measured to centroid = 0.115 Mi.
Difference in elevation = 9.50(Ft.)
Slope along watercourse = 52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.039 Hr.
Lag time = 2.33 Min.
25% of lag time = 0.58 Min.
40% of lag time = 0.93 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.66	1.72	14.90

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.66	4.30	37.26

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.720(In)
Area Averaged 100-Year Rainfall = 4.300(In)

Point rain (area averaged) = 1.720(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.720(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.665	53.00	0.560

Total Area Entered = 8.66(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
53.0	33.4	0.729	0.560	0.362	1.000	0.362
					Sum (F) =	0.362

Area averaged mean soil loss (F) (In/Hr) = 0.362
Minimum soil loss rate ((In/Hr)) = 0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.452

PR24HR2YR

U n i t H y d r o g r a p h

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.014	(0.641)	0.006	0.008
2	0.17	0.07	0.014	(0.639)	0.006	0.008
3	0.25	0.07	0.014	(0.636)	0.006	0.008
4	0.33	0.10	0.021	(0.634)	0.009	0.011
5	0.42	0.10	0.021	(0.631)	0.009	0.011
6	0.50	0.10	0.021	(0.629)	0.009	0.011
7	0.58	0.10	0.021	(0.627)	0.009	0.011
8	0.67	0.10	0.021	(0.624)	0.009	0.011
9	0.75	0.10	0.021	(0.622)	0.009	0.011
10	0.83	0.13	0.028	(0.619)	0.012	0.015
11	0.92	0.13	0.028	(0.617)	0.012	0.015
12	1.00	0.13	0.028	(0.614)	0.012	0.015
13	1.08	0.10	0.021	(0.612)	0.009	0.011
14	1.17	0.10	0.021	(0.609)	0.009	0.011
15	1.25	0.10	0.021	(0.607)	0.009	0.011
16	1.33	0.10	0.021	(0.605)	0.009	0.011
17	1.42	0.10	0.021	(0.602)	0.009	0.011
18	1.50	0.10	0.021	(0.600)	0.009	0.011
19	1.58	0.10	0.021	(0.597)	0.009	0.011
20	1.67	0.10	0.021	(0.595)	0.009	0.011
21	1.75	0.10	0.021	(0.593)	0.009	0.011
22	1.83	0.13	0.028	(0.590)	0.012	0.015
23	1.92	0.13	0.028	(0.588)	0.012	0.015
24	2.00	0.13	0.028	(0.586)	0.012	0.015
25	2.08	0.13	0.028	(0.583)	0.012	0.015
26	2.17	0.13	0.028	(0.581)	0.012	0.015
27	2.25	0.13	0.028	(0.578)	0.012	0.015
28	2.33	0.13	0.028	(0.576)	0.012	0.015
29	2.42	0.13	0.028	(0.574)	0.012	0.015
30	2.50	0.13	0.028	(0.571)	0.012	0.015
31	2.58	0.17	0.034	(0.569)	0.016	0.019
32	2.67	0.17	0.034	(0.567)	0.016	0.019
33	2.75	0.17	0.034	(0.564)	0.016	0.019
34	2.83	0.17	0.034	(0.562)	0.016	0.019
35	2.92	0.17	0.034	(0.560)	0.016	0.019
36	3.00	0.17	0.034	(0.557)	0.016	0.019
37	3.08	0.17	0.034	(0.555)	0.016	0.019
38	3.17	0.17	0.034	(0.553)	0.016	0.019
39	3.25	0.17	0.034	(0.551)	0.016	0.019
40	3.33	0.17	0.034	(0.548)	0.016	0.019
41	3.42	0.17	0.034	(0.546)	0.016	0.019
42	3.50	0.17	0.034	(0.544)	0.016	0.019
43	3.58	0.17	0.034	(0.541)	0.016	0.019
44	3.67	0.17	0.034	(0.539)	0.016	0.019
45	3.75	0.17	0.034	(0.537)	0.016	0.019
46	3.83	0.20	0.041	(0.535)	0.019	0.023
47	3.92	0.20	0.041	(0.532)	0.019	0.023
48	4.00	0.20	0.041	(0.530)	0.019	0.023
49	4.08	0.20	0.041	(0.528)	0.019	0.023
50	4.17	0.20	0.041	(0.526)	0.019	0.023
51	4.25	0.20	0.041	(0.523)	0.019	0.023
52	4.33	0.23	0.048	(0.521)	0.022	0.026
53	4.42	0.23	0.048	(0.519)	0.022	0.026
54	4.50	0.23	0.048	(0.517)	0.022	0.026
55	4.58	0.23	0.048	(0.514)	0.022	0.026
56	4.67	0.23	0.048	(0.512)	0.022	0.026
57	4.75	0.23	0.048	(0.510)	0.022	0.026
58	4.83	0.27	0.055	(0.508)	0.025	0.030

59	4.92	0.27	0.055	(0.506)	0.025	0.030
60	5.00	0.27	0.055	(0.503)	0.025	0.030
61	5.08	0.20	0.041	(0.501)	0.019	0.023
62	5.17	0.20	0.041	(0.499)	0.019	0.023
63	5.25	0.20	0.041	(0.497)	0.019	0.023
64	5.33	0.23	0.048	(0.495)	0.022	0.026
65	5.42	0.23	0.048	(0.493)	0.022	0.026
66	5.50	0.23	0.048	(0.490)	0.022	0.026
67	5.58	0.27	0.055	(0.488)	0.025	0.030
68	5.67	0.27	0.055	(0.486)	0.025	0.030
69	5.75	0.27	0.055	(0.484)	0.025	0.030
70	5.83	0.27	0.055	(0.482)	0.025	0.030
71	5.92	0.27	0.055	(0.480)	0.025	0.030
72	6.00	0.27	0.055	(0.478)	0.025	0.030
73	6.08	0.30	0.062	(0.475)	0.028	0.034
74	6.17	0.30	0.062	(0.473)	0.028	0.034
75	6.25	0.30	0.062	(0.471)	0.028	0.034
76	6.33	0.30	0.062	(0.469)	0.028	0.034
77	6.42	0.30	0.062	(0.467)	0.028	0.034
78	6.50	0.30	0.062	(0.465)	0.028	0.034
79	6.58	0.33	0.069	(0.463)	0.031	0.038
80	6.67	0.33	0.069	(0.461)	0.031	0.038
81	6.75	0.33	0.069	(0.459)	0.031	0.038
82	6.83	0.33	0.069	(0.457)	0.031	0.038
83	6.92	0.33	0.069	(0.455)	0.031	0.038
84	7.00	0.33	0.069	(0.452)	0.031	0.038
85	7.08	0.33	0.069	(0.450)	0.031	0.038
86	7.17	0.33	0.069	(0.448)	0.031	0.038
87	7.25	0.33	0.069	(0.446)	0.031	0.038
88	7.33	0.37	0.076	(0.444)	0.034	0.041
89	7.42	0.37	0.076	(0.442)	0.034	0.041
90	7.50	0.37	0.076	(0.440)	0.034	0.041
91	7.58	0.40	0.083	(0.438)	0.037	0.045
92	7.67	0.40	0.083	(0.436)	0.037	0.045
93	7.75	0.40	0.083	(0.434)	0.037	0.045
94	7.83	0.43	0.089	(0.432)	0.040	0.049
95	7.92	0.43	0.089	(0.430)	0.040	0.049
96	8.00	0.43	0.089	(0.428)	0.040	0.049
97	8.08	0.50	0.103	(0.426)	0.047	0.057
98	8.17	0.50	0.103	(0.424)	0.047	0.057
99	8.25	0.50	0.103	(0.422)	0.047	0.057
100	8.33	0.50	0.103	(0.420)	0.047	0.057
101	8.42	0.50	0.103	(0.418)	0.047	0.057
102	8.50	0.50	0.103	(0.416)	0.047	0.057
103	8.58	0.53	0.110	(0.414)	0.050	0.060
104	8.67	0.53	0.110	(0.412)	0.050	0.060
105	8.75	0.53	0.110	(0.410)	0.050	0.060
106	8.83	0.57	0.117	(0.409)	0.053	0.064
107	8.92	0.57	0.117	(0.407)	0.053	0.064
108	9.00	0.57	0.117	(0.405)	0.053	0.064
109	9.08	0.63	0.131	(0.403)	0.059	0.072
110	9.17	0.63	0.131	(0.401)	0.059	0.072
111	9.25	0.63	0.131	(0.399)	0.059	0.072
112	9.33	0.67	0.138	(0.397)	0.062	0.075
113	9.42	0.67	0.138	(0.395)	0.062	0.075
114	9.50	0.67	0.138	(0.393)	0.062	0.075
115	9.58	0.70	0.144	(0.391)	0.065	0.079
116	9.67	0.70	0.144	(0.389)	0.065	0.079
117	9.75	0.70	0.144	(0.388)	0.065	0.079
118	9.83	0.73	0.151	(0.386)	0.068	0.083
119	9.92	0.73	0.151	(0.384)	0.068	0.083
120	10.00	0.73	0.151	(0.382)	0.068	0.083
121	10.08	0.50	0.103	(0.380)	0.047	0.057
122	10.17	0.50	0.103	(0.378)	0.047	0.057
123	10.25	0.50	0.103	(0.377)	0.047	0.057
124	10.33	0.50	0.103	(0.375)	0.047	0.057
125	10.42	0.50	0.103	(0.373)	0.047	0.057
126	10.50	0.50	0.103	(0.371)	0.047	0.057
127	10.58	0.67	0.138	(0.369)	0.062	0.075
128	10.67	0.67	0.138	(0.367)	0.062	0.075
129	10.75	0.67	0.138	(0.366)	0.062	0.075
130	10.83	0.67	0.138	(0.364)	0.062	0.075
131	10.92	0.67	0.138	(0.362)	0.062	0.075
132	11.00	0.67	0.138	(0.360)	0.062	0.075
133	11.08	0.63	0.131	(0.359)	0.059	0.072
134	11.17	0.63	0.131	(0.357)	0.059	0.072
135	11.25	0.63	0.131	(0.355)	0.059	0.072
136	11.33	0.63	0.131	(0.353)	0.059	0.072
137	11.42	0.63	0.131	(0.351)	0.059	0.072

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138	11.50	0.63	0.131	(0.350)	0.059	0.072
139	11.58	0.57	0.117	(0.348)	0.053	0.064
140	11.67	0.57	0.117	(0.346)	0.053	0.064
141	11.75	0.57	0.117	(0.345)	0.053	0.064
142	11.83	0.60	0.124	(0.343)	0.056	0.068
143	11.92	0.60	0.124	(0.341)	0.056	0.068
144	12.00	0.60	0.124	(0.339)	0.056	0.068
145	12.08	0.83	0.172	(0.338)	0.078	0.094
146	12.17	0.83	0.172	(0.336)	0.078	0.094
147	12.25	0.83	0.172	(0.334)	0.078	0.094
148	12.33	0.87	0.179	(0.333)	0.081	0.098
149	12.42	0.87	0.179	(0.331)	0.081	0.098
150	12.50	0.87	0.179	(0.329)	0.081	0.098
151	12.58	0.93	0.193	(0.328)	0.087	0.106
152	12.67	0.93	0.193	(0.326)	0.087	0.106
153	12.75	0.93	0.193	(0.324)	0.087	0.106
154	12.83	0.97	0.200	(0.323)	0.090	0.109
155	12.92	0.97	0.200	(0.321)	0.090	0.109
156	13.00	0.97	0.200	(0.319)	0.090	0.109
157	13.08	1.13	0.234	(0.318)	0.106	0.128
158	13.17	1.13	0.234	(0.316)	0.106	0.128
159	13.25	1.13	0.234	(0.315)	0.106	0.128
160	13.33	1.13	0.234	(0.313)	0.106	0.128
161	13.42	1.13	0.234	(0.311)	0.106	0.128
162	13.50	1.13	0.234	(0.310)	0.106	0.128
163	13.58	0.77	0.158	(0.308)	0.072	0.087
164	13.67	0.77	0.158	(0.307)	0.072	0.087
165	13.75	0.77	0.158	(0.305)	0.072	0.087
166	13.83	0.77	0.158	(0.304)	0.072	0.087
167	13.92	0.77	0.158	(0.302)	0.072	0.087
168	14.00	0.77	0.158	(0.301)	0.072	0.087
169	14.08	0.90	0.186	(0.299)	0.084	0.102
170	14.17	0.90	0.186	(0.297)	0.084	0.102
171	14.25	0.90	0.186	(0.296)	0.084	0.102
172	14.33	0.87	0.179	(0.294)	0.081	0.098
173	14.42	0.87	0.179	(0.293)	0.081	0.098
174	14.50	0.87	0.179	(0.291)	0.081	0.098
175	14.58	0.87	0.179	(0.290)	0.081	0.098
176	14.67	0.87	0.179	(0.288)	0.081	0.098
177	14.75	0.87	0.179	(0.287)	0.081	0.098
178	14.83	0.83	0.172	(0.285)	0.078	0.094
179	14.92	0.83	0.172	(0.284)	0.078	0.094
180	15.00	0.83	0.172	(0.283)	0.078	0.094
181	15.08	0.80	0.165	(0.281)	0.075	0.090
182	15.17	0.80	0.165	(0.280)	0.075	0.090
183	15.25	0.80	0.165	(0.278)	0.075	0.090
184	15.33	0.77	0.158	(0.277)	0.072	0.087
185	15.42	0.77	0.158	(0.275)	0.072	0.087
186	15.50	0.77	0.158	(0.274)	0.072	0.087
187	15.58	0.63	0.131	(0.273)	0.059	0.072
188	15.67	0.63	0.131	(0.271)	0.059	0.072
189	15.75	0.63	0.131	(0.270)	0.059	0.072
190	15.83	0.63	0.131	(0.268)	0.059	0.072
191	15.92	0.63	0.131	(0.267)	0.059	0.072
192	16.00	0.63	0.131	(0.266)	0.059	0.072
193	16.08	0.13	0.028	(0.264)	0.012	0.015
194	16.17	0.13	0.028	(0.263)	0.012	0.015
195	16.25	0.13	0.028	(0.262)	0.012	0.015
196	16.33	0.13	0.028	(0.260)	0.012	0.015
197	16.42	0.13	0.028	(0.259)	0.012	0.015
198	16.50	0.13	0.028	(0.258)	0.012	0.015
199	16.58	0.10	0.021	(0.256)	0.009	0.011
200	16.67	0.10	0.021	(0.255)	0.009	0.011
201	16.75	0.10	0.021	(0.254)	0.009	0.011
202	16.83	0.10	0.021	(0.252)	0.009	0.011
203	16.92	0.10	0.021	(0.251)	0.009	0.011
204	17.00	0.10	0.021	(0.250)	0.009	0.011
205	17.08	0.17	0.034	(0.249)	0.016	0.019
206	17.17	0.17	0.034	(0.247)	0.016	0.019
207	17.25	0.17	0.034	(0.246)	0.016	0.019
208	17.33	0.17	0.034	(0.245)	0.016	0.019
209	17.42	0.17	0.034	(0.244)	0.016	0.019
210	17.50	0.17	0.034	(0.242)	0.016	0.019
211	17.58	0.17	0.034	(0.241)	0.016	0.019
212	17.67	0.17	0.034	(0.240)	0.016	0.019
213	17.75	0.17	0.034	(0.239)	0.016	0.019
214	17.83	0.13	0.028	(0.238)	0.012	0.015
215	17.92	0.13	0.028	(0.236)	0.012	0.015
216	18.00	0.13	0.028	(0.235)	0.012	0.015

217	18.08	0.13	0.028	(0.234)	0.012	0.015
218	18.17	0.13	0.028	(0.233)	0.012	0.015
219	18.25	0.13	0.028	(0.232)	0.012	0.015
220	18.33	0.13	0.028	(0.231)	0.012	0.015
221	18.42	0.13	0.028	(0.230)	0.012	0.015
222	18.50	0.13	0.028	(0.228)	0.012	0.015
223	18.58	0.10	0.021	(0.227)	0.009	0.011
224	18.67	0.10	0.021	(0.226)	0.009	0.011
225	18.75	0.10	0.021	(0.225)	0.009	0.011
226	18.83	0.07	0.014	(0.224)	0.006	0.008
227	18.92	0.07	0.014	(0.223)	0.006	0.008
228	19.00	0.07	0.014	(0.222)	0.006	0.008
229	19.08	0.10	0.021	(0.221)	0.009	0.011
230	19.17	0.10	0.021	(0.220)	0.009	0.011
231	19.25	0.10	0.021	(0.219)	0.009	0.011
232	19.33	0.13	0.028	(0.218)	0.012	0.015
233	19.42	0.13	0.028	(0.217)	0.012	0.015
234	19.50	0.13	0.028	(0.216)	0.012	0.015
235	19.58	0.10	0.021	(0.215)	0.009	0.011
236	19.67	0.10	0.021	(0.214)	0.009	0.011
237	19.75	0.10	0.021	(0.213)	0.009	0.011
238	19.83	0.07	0.014	(0.212)	0.006	0.008
239	19.92	0.07	0.014	(0.211)	0.006	0.008
240	20.00	0.07	0.014	(0.210)	0.006	0.008
241	20.08	0.10	0.021	(0.209)	0.009	0.011
242	20.17	0.10	0.021	(0.208)	0.009	0.011
243	20.25	0.10	0.021	(0.207)	0.009	0.011
244	20.33	0.10	0.021	(0.206)	0.009	0.011
245	20.42	0.10	0.021	(0.206)	0.009	0.011
246	20.50	0.10	0.021	(0.205)	0.009	0.011
247	20.58	0.10	0.021	(0.204)	0.009	0.011
248	20.67	0.10	0.021	(0.203)	0.009	0.011
249	20.75	0.10	0.021	(0.202)	0.009	0.011
250	20.83	0.07	0.014	(0.201)	0.006	0.008
251	20.92	0.07	0.014	(0.200)	0.006	0.008
252	21.00	0.07	0.014	(0.200)	0.006	0.008
253	21.08	0.10	0.021	(0.199)	0.009	0.011
254	21.17	0.10	0.021	(0.198)	0.009	0.011
255	21.25	0.10	0.021	(0.197)	0.009	0.011
256	21.33	0.07	0.014	(0.197)	0.006	0.008
257	21.42	0.07	0.014	(0.196)	0.006	0.008
258	21.50	0.07	0.014	(0.195)	0.006	0.008
259	21.58	0.10	0.021	(0.194)	0.009	0.011
260	21.67	0.10	0.021	(0.194)	0.009	0.011
261	21.75	0.10	0.021	(0.193)	0.009	0.011
262	21.83	0.07	0.014	(0.192)	0.006	0.008
263	21.92	0.07	0.014	(0.192)	0.006	0.008
264	22.00	0.07	0.014	(0.191)	0.006	0.008
265	22.08	0.10	0.021	(0.190)	0.009	0.011
266	22.17	0.10	0.021	(0.190)	0.009	0.011
267	22.25	0.10	0.021	(0.189)	0.009	0.011
268	22.33	0.07	0.014	(0.189)	0.006	0.008
269	22.42	0.07	0.014	(0.188)	0.006	0.008
270	22.50	0.07	0.014	(0.187)	0.006	0.008
271	22.58	0.07	0.014	(0.187)	0.006	0.008
272	22.67	0.07	0.014	(0.186)	0.006	0.008
273	22.75	0.07	0.014	(0.186)	0.006	0.008
274	22.83	0.07	0.014	(0.185)	0.006	0.008
275	22.92	0.07	0.014	(0.185)	0.006	0.008
276	23.00	0.07	0.014	(0.184)	0.006	0.008
277	23.08	0.07	0.014	(0.184)	0.006	0.008
278	23.17	0.07	0.014	(0.184)	0.006	0.008
279	23.25	0.07	0.014	(0.183)	0.006	0.008
280	23.33	0.07	0.014	(0.183)	0.006	0.008
281	23.42	0.07	0.014	(0.183)	0.006	0.008
282	23.50	0.07	0.014	(0.182)	0.006	0.008
283	23.58	0.07	0.014	(0.182)	0.006	0.008
284	23.67	0.07	0.014	(0.182)	0.006	0.008
285	23.75	0.07	0.014	(0.181)	0.006	0.008
286	23.83	0.07	0.014	(0.181)	0.006	0.008
287	23.92	0.07	0.014	(0.181)	0.006	0.008
288	24.00	0.07	0.014	(0.181)	0.006	0.008
			(Loss Rate Not Used)			
Sum =		100.0			Sum =	11.3

Flood volume = Effective rainfall 0.94(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)
Total soil loss = 0.78(In)
Total soil loss = 0.561(Ac.Ft)
Total rainfall = 1.72(In)

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                                              PR24HR2YR
      Flood volume =       29646.7 Cubic Feet
      Total soil loss =       24453.1 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      1.120(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0006      0.06  Q         |         |         |         |
  0+15       0.0010      0.06  Q         |         |         |         |
  0+20       0.0016      0.08  Q         |         |         |         |
  0+25       0.0023      0.09  Q         |         |         |         |
  0+30       0.0029      0.10  Q         |         |         |         |
  0+35       0.0036      0.10  Q         |         |         |         |
  0+40       0.0043      0.10  Q         |         |         |         |
  0+45       0.0050      0.10  Q         |         |         |         |
  0+50       0.0058      0.11  Q         |         |         |         |
  0+55       0.0066      0.13  Q         |         |         |         |
  1+ 0       0.0075      0.13  Q         |         |         |         |
  1+ 5       0.0083      0.12  Q         |         |         |         |
  1+10       0.0090      0.10  Q         |         |         |         |
  1+15       0.0097      0.10  Q         |         |         |         |
  1+20       0.0104      0.10  Q         |         |         |         |
  1+25       0.0111      0.10  Q         |         |         |         |
  1+30       0.0118      0.10  Q         |         |         |         |
  1+35       0.0125      0.10  Q         |         |         |         |
  1+40       0.0131      0.10  Q         |         |         |         |
  1+45       0.0138      0.10  Q         |         |         |         |
  1+50       0.0146      0.11  Q         |         |         |         |
  1+55       0.0155      0.13  Q         |         |         |         |
  2+ 0       0.0164      0.13  Q         |         |         |         |
  2+ 5       0.0173      0.13  QV        |         |         |         |
  2+10       0.0182      0.13  QV        |         |         |         |
  2+15       0.0191      0.13  QV        |         |         |         |
  2+20       0.0200      0.13  QV        |         |         |         |
  2+25       0.0209      0.13  QV        |         |         |         |
  2+30       0.0218      0.13  QV        |         |         |         |
  2+35       0.0228      0.15  QV        |         |         |         |
  2+40       0.0239      0.16  QV        |         |         |         |
  2+45       0.0251      0.16  QV        |         |         |         |
  2+50       0.0262      0.16  QV        |         |         |         |
  2+55       0.0273      0.16  QV        |         |         |         |
  3+ 0       0.0285      0.16  QV        |         |         |         |
  3+ 5       0.0296      0.16  QV        |         |         |         |
  3+10       0.0307      0.16  QV        |         |         |         |
  3+15       0.0319      0.16  QV        |         |         |         |
  3+20       0.0330      0.16  QV        |         |         |         |
  3+25       0.0341      0.16  Q V       |         |         |         |
  3+30       0.0353      0.16  Q V       |         |         |         |
  3+35       0.0364      0.16  Q V       |         |         |         |
  3+40       0.0376      0.16  Q V       |         |         |         |
  3+45       0.0387      0.16  Q V       |         |         |         |
  3+50       0.0399      0.18  Q V       |         |         |         |
  3+55       0.0413      0.19  Q V       |         |         |         |
  4+ 0       0.0426      0.20  Q V       |         |         |         |
  4+ 5       0.0440      0.20  Q V       |         |         |         |
  4+10       0.0453      0.20  Q V       |         |         |         |
  4+15       0.0467      0.20  Q V       |         |         |         |
  4+20       0.0482      0.21  Q V       |         |         |         |
  4+25       0.0497      0.23  Q V       |         |         |         |
  4+30       0.0513      0.23  Q  V      |         |         |         |
  4+35       0.0529      0.23  Q  V      |         |         |         |
  4+40       0.0545      0.23  Q  V      |         |         |         |
  4+45       0.0561      0.23  Q  V      |         |         |         |
  4+50       0.0578      0.25  Q  V      |         |         |         |
  4+55       0.0595      0.26  |Q V      |         |         |         |
  5+ 0       0.0614      0.26  |Q V      |         |         |         |
  5+ 5       0.0630      0.23  Q  V      |         |         |         |
  5+10       0.0644      0.21  Q  V      |         |         |         |
  5+15       0.0658      0.20  Q  V      |         |         |         |
  5+20       0.0672      0.21  Q  V      |         |         |         |
  5+25       0.0688      0.23  Q   V     |         |         |         |
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 5+30       0.0704      0.23  Q   V     |         |         |         |
 5+35       0.0720      0.25  Q   V     |         |         |         |
 5+40       0.0738      0.26  |Q  V     |         |         |         |
 5+45       0.0756      0.26  |Q  V     |         |         |         |
 5+50       0.0775      0.26  |Q  V     |         |         |         |
 5+55       0.0793      0.26  |Q  V     |         |         |         |
 6+ 0       0.0811      0.26  |Q  V     |         |         |         |
 6+ 5       0.0830      0.28  |Q  V     |         |         |         |
 6+10       0.0850      0.29  |Q  V     |         |         |         |
 6+15       0.0871      0.30  |Q   V    |         |         |         |
 6+20       0.0891      0.30  |Q   V    |         |         |         |
 6+25       0.0911      0.30  |Q   V    |         |         |         |
 6+30       0.0932      0.30  |Q   V    |         |         |         |
 6+35       0.0953      0.31  |Q   V    |         |         |         |
 6+40       0.0976      0.33  |Q   V    |         |         |         |
 6+45       0.0998      0.33  |Q   V    |         |         |         |
 6+50       0.1021      0.33  |Q    V   |         |         |         |
 6+55       0.1044      0.33  |Q    V   |         |         |         |
 7+ 0       0.1066      0.33  |Q    V   |         |         |         |
 7+ 5       0.1089      0.33  |Q    V   |         |         |         |
 7+10       0.1112      0.33  |Q    V   |         |         |         |
 7+15       0.1134      0.33  |Q    V   |         |         |         |
 7+20       0.1158      0.34  |Q    V   |         |         |         |
 7+25       0.1183      0.36  |Q    V   |         |         |         |
 7+30       0.1208      0.36  |Q     V  |         |         |         |
 7+35       0.1234      0.38  |Q     V  |         |         |         |
 7+40       0.1261      0.39  |Q     V  |         |         |         |
 7+45       0.1288      0.39  |Q     V  |         |         |         |
 7+50       0.1316      0.41  |Q     V  |         |         |         |
 7+55       0.1345      0.42  |Q     V  |         |         |         |
 8+ 0       0.1375      0.43  |Q      V |         |         |         |
 8+ 5       0.1406      0.46  |Q      V |         |         |         |
 8+10       0.1440      0.49  |Q      V |         |         |         |
 8+15       0.1474      0.49  |Q      V |         |         |         |
 8+20       0.1508      0.49  |Q      V |         |         |         |
 8+25       0.1542      0.49  |Q       V|         |         |         |
 8+30       0.1576      0.49  |Q       V|         |         |         |
 8+35       0.1611      0.51  | Q      V|         |         |         |
 8+40       0.1647      0.52  | Q      V|         |         |         |
 8+45       0.1683      0.53  | Q      V|         |         |         |
 8+50       0.1720      0.54  | Q       V         |         |         |
 8+55       0.1759      0.56  | Q       V         |         |         |
 9+ 0       0.1797      0.56  | Q       V         |         |         |
 9+ 5       0.1838      0.59  | Q       V         |         |         |
 9+10       0.1880      0.62  | Q       |V        |         |         |
 9+15       0.1923      0.62  | Q       |V        |         |         |
 9+20       0.1967      0.64  | Q       |V        |         |         |
 9+25       0.2013      0.65  | Q       |V        |         |         |
 9+30       0.2058      0.66  | Q       | V       |         |         |
 9+35       0.2104      0.67  | Q       | V       |         |         |
 9+40       0.2152      0.69  | Q       | V       |         |         |
 9+45       0.2199      0.69  | Q       | V       |         |         |
 9+50       0.2248      0.71  | Q       |  V      |         |         |
 9+55       0.2298      0.72  | Q       |  V      |         |         |
10+ 0       0.2347      0.72  | Q       |  V      |         |         |
10+ 5       0.2390      0.62  | Q       |   V     |         |         |
10+10       0.2426      0.52  | Q       |   V     |         |         |
10+15       0.2461      0.50  | Q       |   V     |         |         |
10+20       0.2495      0.49  |Q        |   V     |         |         |
10+25       0.2529      0.49  |Q        |   V     |         |         |
10+30       0.2563      0.49  |Q        |    V    |         |         |
10+35       0.2602      0.57  | Q       |    V    |         |         |
10+40       0.2646      0.64  | Q       |    V    |         |         |
10+45       0.2691      0.65  | Q       |    V    |         |         |
10+50       0.2736      0.66  | Q       |     V   |         |         |
10+55       0.2782      0.66  | Q       |     V   |         |         |
11+ 0       0.2827      0.66  | Q       |     V   |         |         |
11+ 5       0.2871      0.64  | Q       |     V   |         |         |
11+10       0.2915      0.63  | Q       |      V  |         |         |
11+15       0.2958      0.63  | Q       |      V  |         |         |
11+20       0.3001      0.63  | Q       |      V  |         |         |
11+25       0.3044      0.63  | Q       |      V  |         |         |
11+30       0.3087      0.63  | Q       |       V |         |         |
11+35       0.3128      0.60  | Q       |       V |         |         |
11+40       0.3167      0.57  | Q       |       V |         |         |
11+45       0.3206      0.56  | Q       |       V |         |         |
11+50       0.3246      0.58  | Q       |        V|         |         |
11+55       0.3286      0.59  | Q       |        V|         |         |
12+ 0       0.3327      0.59  | Q       |        V|         |         |
```

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                                             PR24HR2YR
12+ 5       0.3375      0.70  | Q       |        V|         |         |
12+10       0.3430      0.80  |  Q      |         V         |         |
12+15       0.3486      0.82  |  Q      |         V         |         |
12+20       0.3544      0.84  |  Q      |         V         |         |
12+25       0.3603      0.85  |  Q      |         |V        |         |
12+30       0.3661      0.86  |  Q      |         |V        |         |
12+35       0.3722      0.89  |  Q      |         |V        |         |
12+40       0.3785      0.91  |  Q      |         | V       |         |
12+45       0.3849      0.92  |  Q      |         | V       |         |
12+50       0.3913      0.94  |  Q      |         | V       |         |
12+55       0.3979      0.95  |  Q      |         |  V      |         |
13+ 0       0.4045      0.95  |  Q      |         |  V      |         |
13+ 5       0.4116      1.03  |   Q     |         |   V     |         |
13+10       0.4191      1.10  |   Q     |         |   V     |         |
13+15       0.4268      1.11  |   Q     |         |    V    |         |
13+20       0.4345      1.12  |   Q     |         |    V    |         |
13+25       0.4422      1.12  |   Q     |         |    V    |         |
13+30       0.4500      1.12  |   Q     |         |     V   |         |
13+35       0.4565      0.95  |  Q      |         |     V   |         |
13+40       0.4620      0.80  |  Q      |         |      V  |         |
13+45       0.4673      0.77  |  Q      |         |      V  |         |
13+50       0.4726      0.76  |  Q      |         |      V  |         |
13+55       0.4778      0.76  |  Q      |         |       V |         |
14+ 0       0.4830      0.76  |  Q      |         |       V |         |
14+ 5       0.4886      0.82  |  Q      |         |       V |         |
14+10       0.4946      0.87  |  Q      |         |        V|         |
14+15       0.5007      0.88  |  Q      |         |        V|         |
14+20       0.5068      0.87  |  Q      |         |        V|         |
14+25       0.5127      0.86  |  Q      |         |         V         |
14+30       0.5186      0.86  |  Q      |         |         V         |
14+35       0.5245      0.86  |  Q      |         |         V         |
14+40       0.5304      0.86  |  Q      |         |         |V        |
14+45       0.5363      0.86  |  Q      |         |         |V        |
14+50       0.5421      0.84  |  Q      |         |         |V        |
14+55       0.5478      0.83  |  Q      |         |         | V       |
15+ 0       0.5535      0.82  |  Q      |         |         | V       |
15+ 5       0.5590      0.81  |  Q      |         |         | V       |
15+10       0.5645      0.79  |  Q      |         |         |  V      |
15+15       0.5700      0.79  |  Q      |         |         |  V      |
15+20       0.5753      0.78  |  Q      |         |         |  V      |
15+25       0.5805      0.76  |  Q      |         |         |   V     |
15+30       0.5858      0.76  |  Q      |         |         |   V     |
15+35       0.5906      0.70  | Q       |         |         |   V     |
15+40       0.5950      0.64  | Q       |         |         |   V     |
15+45       0.5993      0.63  | Q       |         |         |    V    |
15+50       0.6036      0.63  | Q       |         |         |    V    |
15+55       0.6079      0.63  | Q       |         |         |    V    |
16+ 0       0.6123      0.63  | Q       |         |         |    V    |
16+ 5       0.6150      0.40  |Q        |         |         |     V   |
16+10       0.6163      0.19  Q         |         |         |     V   |
16+15       0.6173      0.15  Q         |         |         |     V   |
16+20       0.6183      0.13  Q         |         |         |     V   |
16+25       0.6192      0.13  Q         |         |         |     V   |
16+30       0.6201      0.13  Q         |         |         |     V   |
16+35       0.6209      0.12  Q         |         |         |     V   |
16+40       0.6216      0.10  Q         |         |         |     V   |
16+45       0.6223      0.10  Q         |         |         |     V   |
16+50       0.6230      0.10  Q         |         |         |     V   |
16+55       0.6236      0.10  Q         |         |         |     V   |
17+ 0       0.6243      0.10  Q         |         |         |     V   |
17+ 5       0.6252      0.13  Q         |         |         |     V   |
17+10       0.6263      0.16  Q         |         |         |     V   |
17+15       0.6274      0.16  Q         |         |         |     V   |
17+20       0.6285      0.16  Q         |         |         |     V   |
17+25       0.6297      0.16  Q         |         |         |      V  |
17+30       0.6308      0.16  Q         |         |         |      V  |
17+35       0.6319      0.16  Q         |         |         |      V  |
17+40       0.6331      0.16  Q         |         |         |      V  |
17+45       0.6342      0.16  Q         |         |         |      V  |
17+50       0.6352      0.15  Q         |         |         |      V  |
17+55       0.6362      0.14  Q         |         |         |      V  |
18+ 0       0.6371      0.13  Q         |         |         |      V  |
18+ 5       0.6380      0.13  Q         |         |         |      V  |
18+10       0.6389      0.13  Q         |         |         |      V  |
18+15       0.6398      0.13  Q         |         |         |      V  |
18+20       0.6407      0.13  Q         |         |         |      V  |
18+25       0.6416      0.13  Q         |         |         |      V  |
18+30       0.6425      0.13  Q         |         |         |      V  |
18+35       0.6433      0.12  Q         |         |         |      V  |
```

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  18+40       0.6440     0.10  Q         |         |         |      V  |
  18+45       0.6447     0.10  Q         |         |         |      V  |
  18+50       0.6453     0.08  Q         |         |         |      V  |
  18+55       0.6458     0.07  Q         |         |         |      V  |
  19+ 0       0.6462     0.07  Q         |         |         |      V  |
  19+ 5       0.6468     0.08  Q         |         |         |       V |
  19+10       0.6475     0.09  Q         |         |         |       V |
  19+15       0.6481     0.10  Q         |         |         |       V |
  19+20       0.6489     0.11  Q         |         |         |       V |
  19+25       0.6498     0.13  Q         |         |         |       V |
  19+30       0.6507     0.13  Q         |         |         |       V |
  19+35       0.6515     0.12  Q         |         |         |       V |
  19+40       0.6522     0.10  Q         |         |         |       V |
  19+45       0.6529     0.10  Q         |         |         |       V |
  19+50       0.6535     0.08  Q         |         |         |       V |
  19+55       0.6540     0.07  Q         |         |         |       V |
  20+ 0       0.6544     0.07  Q         |         |         |       V |
  20+ 5       0.6550     0.08  Q         |         |         |       V |
  20+10       0.6556     0.09  Q         |         |         |       V |
  20+15       0.6563     0.10  Q         |         |         |       V |
  20+20       0.6570     0.10  Q         |         |         |       V |
  20+25       0.6577     0.10  Q         |         |         |       V |
  20+30       0.6583     0.10  Q         |         |         |       V |
  20+35       0.6590     0.10  Q         |         |         |       V |
  20+40       0.6597     0.10  Q         |         |         |       V |
  20+45       0.6604     0.10  Q         |         |         |       V |
  20+50       0.6610     0.08  Q         |         |         |       V |
  20+55       0.6614     0.07  Q         |         |         |       V |
  21+ 0       0.6619     0.07  Q         |         |         |       V |
  21+ 5       0.6625     0.08  Q         |         |         |       V |
  21+10       0.6631     0.09  Q         |         |         |       V |
  21+15       0.6638     0.10  Q         |         |         |        V|
  21+20       0.6644     0.08  Q         |         |         |        V|
  21+25       0.6648     0.07  Q         |         |         |        V|
  21+30       0.6653     0.07  Q         |         |         |        V|
  21+35       0.6659     0.08  Q         |         |         |        V|
  21+40       0.6665     0.09  Q         |         |         |        V|
  21+45       0.6672     0.10  Q         |         |         |        V|
  21+50       0.6678     0.08  Q         |         |         |        V|
  21+55       0.6682     0.07  Q         |         |         |        V|
  22+ 0       0.6687     0.07  Q         |         |         |        V|
  22+ 5       0.6693     0.08  Q         |         |         |        V|
  22+10       0.6699     0.09  Q         |         |         |        V|
  22+15       0.6706     0.10  Q         |         |         |        V|
  22+20       0.6712     0.08  Q         |         |         |        V|
  22+25       0.6717     0.07  Q         |         |         |        V|
  22+30       0.6721     0.07  Q         |         |         |        V|
  22+35       0.6726     0.07  Q         |         |         |        V|
  22+40       0.6730     0.07  Q         |         |         |        V|
  22+45       0.6735     0.07  Q         |         |         |        V|
  22+50       0.6739     0.07  Q         |         |         |        V|
  22+55       0.6744     0.07  Q         |         |         |        V|
  23+ 0       0.6748     0.07  Q         |         |         |        V|
  23+ 5       0.6753     0.07  Q         |         |         |        V|
  23+10       0.6757     0.07  Q         |         |         |        V|
  23+15       0.6762     0.07  Q         |         |         |        V|
  23+20       0.6766     0.07  Q         |         |         |        V|
  23+25       0.6771     0.07  Q         |         |         |        V|
  23+30       0.6776     0.07  Q         |         |         |        V|
  23+35       0.6780     0.07  Q         |         |         |        V|
  23+40       0.6785     0.07  Q         |         |         |        V|
  23+45       0.6789     0.07  Q         |         |         |        V|
  23+50       0.6794     0.07  Q         |         |         |        V|
  23+55       0.6798     0.07  Q         |         |         |        V|
  24+ 0       0.6803     0.07  Q         |         |         |        V|
  24+ 5       0.6805     0.04  Q         |         |         |        V|
  24+10       0.6806     0.01  Q         |         |         |        V|
  24+15       0.6806     0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

5 YEAR

```
                                 PR1HR5YR
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR15.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.48                    4.16

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.20                   10.40

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.649(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.649(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  33.4      0.729     0.560        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                  PR1HR5YR
       ----------------------------------------------------------------------

                       U n i t   H y d r o g r a p h
                               VALLEY S-Curve
       --------------------------------------------------------------------
                       Unit Hydrograph Data
       ---------------------------------------------------------------------
       Unit time period   Time % of lag   Distribution   Unit Hydrograph
           (hrs)                            Graph %           (CFS)
       ---------------------------------------------------------------------
           1   0.083        214.725         45.835             4.003
           2   0.167        429.451         42.353             3.699
           3   0.250        644.176          8.227             0.718
           4   0.333        858.902          3.586             0.313
                                     Sum = 100.000   Sum=      8.733
---------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)          Max    |   Low        (In/Hr)
   1   0.08     4.40     0.342        (  0.362)      0.155        0.188
   2   0.17     4.50     0.350        (  0.362)      0.158        0.192
   3   0.25     5.40     0.420        (  0.362)      0.190        0.230
   4   0.33     5.40     0.420        (  0.362)      0.190        0.230
   5   0.42     5.70     0.444        (  0.362)      0.201        0.243
   6   0.50     6.40     0.498        (  0.362)      0.225        0.273
   7   0.58     7.90     0.615        (  0.362)      0.278        0.337
   8   0.67     9.10     0.708        (  0.362)      0.320        0.388
   9   0.75    12.80     0.996           0.362    (  0.450)       0.634
  10   0.83    25.60     1.992           0.362    (  0.901)       1.631
  11   0.92     7.90     0.615        (  0.362)      0.278        0.337
  12   1.00     4.90     0.381        (  0.362)      0.172        0.209
                   (Loss Rate Not Used)
     Sum =     100.0                                       Sum =     4.9
        Flood volume = Effective rainfall      0.41(In)
         times area       8.7(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
        Total soil loss =      0.24(In)
        Total soil loss =     0.174(Ac.Ft)
        Total rainfall =      0.65(In)
        Flood volume =       12823.9 Cubic Feet
        Total soil loss =       7576.8 Cubic Feet
       --------------------------------------------------------------------
         Peak flow rate of this hydrograph =      9.263(CFS)
       --------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R   S T O R M
                      R u n o f f     H y d r o g r a p h
       --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 -----------------------------------------------------------------------
    0+ 5      0.0052      0.75  V  Q      |         |         |         |
    0+10      0.0153      1.46  | V  Q    |         |         |         |
    0+15      0.0274      1.77  |  V   Q  |         |         |         |
    0+20      0.0410      1.97  |    V Q  |         |         |         |
    0+25      0.0551      2.05  |      VQ |         |         |         |
    0+30      0.0705      2.23  |       QV|         |         |         |
    0+35      0.0884      2.61  |         Q V       |         |         |
    0+40      0.1096      3.07  |         | Q V     |         |         |
    0+45      0.1393      4.30  |         |      QV |         |         |
    0+50      0.2030      9.26  |         |         |      V  |      Q  |
    0+55      0.2579      7.96  |         |         |         |Q   V    |
    1+ 0      0.2817      3.45  |         |  Q      |         |        V|
    1+ 5      0.2922      1.53  |     Q   |         |         |         V|
    1+10      0.2939      0.26  |Q        |         |         |         V|
    1+15      0.2944      0.07  Q         |         |         |         V
-----------------------------------------------------------------------
```

PR3HR5YR

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        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =      9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.80                   6.93

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.80                  15.60

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.034(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.034(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  33.4      0.729     0.560        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
```

PR3HR5YR

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.161	(0.362)	0.073	0.088
2	0.17	1.30	0.161	(0.362)	0.073	0.088
3	0.25	1.10	0.137	(0.362)	0.062	0.075
4	0.33	1.50	0.186	(0.362)	0.084	0.102
5	0.42	1.50	0.186	(0.362)	0.084	0.102
6	0.50	1.80	0.223	(0.362)	0.101	0.122
7	0.58	1.50	0.186	(0.362)	0.084	0.102
8	0.67	1.80	0.223	(0.362)	0.101	0.122
9	0.75	1.80	0.223	(0.362)	0.101	0.122
10	0.83	1.50	0.186	(0.362)	0.084	0.102
11	0.92	1.60	0.199	(0.362)	0.090	0.109
12	1.00	1.80	0.223	(0.362)	0.101	0.122
13	1.08	2.20	0.273	(0.362)	0.123	0.150
14	1.17	2.20	0.273	(0.362)	0.123	0.150
15	1.25	2.20	0.273	(0.362)	0.123	0.150
16	1.33	2.00	0.248	(0.362)	0.112	0.136
17	1.42	2.60	0.323	(0.362)	0.146	0.177
18	1.50	2.70	0.335	(0.362)	0.151	0.184
19	1.58	2.40	0.298	(0.362)	0.135	0.163
20	1.67	2.70	0.335	(0.362)	0.151	0.184
21	1.75	3.30	0.410	(0.362)	0.185	0.224
22	1.83	3.10	0.385	(0.362)	0.174	0.211
23	1.92	2.90	0.360	(0.362)	0.163	0.197
24	2.00	3.00	0.372	(0.362)	0.168	0.204
25	2.08	3.10	0.385	(0.362)	0.174	0.211
26	2.17	4.20	0.521	(0.362)	0.236	0.286
27	2.25	5.00	0.621	(0.362)	0.280	0.340
28	2.33	3.50	0.434	(0.362)	0.196	0.238
29	2.42	6.80	0.844	0.362	(0.381)	0.482
30	2.50	7.30	0.906	0.362	(0.409)	0.544
31	2.58	8.20	1.018	0.362	(0.460)	0.656
32	2.67	5.90	0.732	(0.362)	0.331	0.401
33	2.75	2.00	0.248	(0.362)	0.112	0.136
34	2.83	1.80	0.223	(0.362)	0.101	0.122
35	2.92	1.80	0.223	(0.362)	0.101	0.122
36	3.00	0.60	0.074	(0.362)	0.034	0.041

(Loss Rate Not Used)

Sum = 100.0 Sum = 7.0

Flood volume = Effective rainfall 0.58(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)
Total soil loss = 0.45(In)
Total soil loss = 0.328(Ac.Ft)
Total rainfall = 1.03(In)
Flood volume = 18259.9 Cubic Feet
Total soil loss = 14269.3 Cubic Feet

Peak flow rate of this hydrograph = 5.061(CFS)

++

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0024	0.35	VQ	|	|	|	|

```
                                                PR3HR5YR
    0+10       0.0071       0.68  V Q       |         |         |         |
    0+15       0.0119       0.69  |VQ       |         |         |         |
    0+20       0.0172       0.78  |V Q      |         |         |         |
    0+25       0.0232       0.87  | VQ      |         |         |         |
    0+30       0.0298       0.96  | VQ      |         |         |         |
    0+35       0.0365       0.97  |  Q      |         |         |         |
    0+40       0.0433       0.99  |  QV     |         |         |         |
    0+45       0.0506       1.05  |   Q     |         |         |         |
    0+50       0.0573       0.98  |  Q V    |         |         |         |
    0+55       0.0638       0.94  |  Q  V   |         |         |         |
    1+ 0       0.0707       1.00  |   Q V   |         |         |         |
    1+ 5       0.0787       1.16  |   Q  V  |         |         |         |
    1+10       0.0875       1.27  |    Q  V |         |         |         |
    1+15       0.0965       1.30  |    Q   V|         |         |         |
    1+20       0.1051       1.25  |    Q    V         |         |         |
    1+25       0.1145       1.37  |    Q    V         |         |         |
    1+30       0.1251       1.53  |     Q   |V        |         |         |
    1+35       0.1354       1.50  |     Q   | V       |         |         |
    1+40       0.1459       1.53  |     Q   |  V      |         |         |
    1+45       0.1580       1.75  |      Q  |    V    |         |         |
    1+50       0.1708       1.86  |      Q  |     V   |         |         |
    1+55       0.1831       1.79  |      Q  |      V  |         |         |
    2+ 0       0.1953       1.77  |      Q  |       V |         |         |
    2+ 5       0.2077       1.81  |      Q  |        V|         |         |
    2+10       0.2224       2.13  |       Q |         |V        |         |
    2+15       0.2406       2.63  |         Q         | V       |         |
    2+20       0.2577       2.48  |        Q|         |   V     |         |
    2+25       0.2793       3.15  |         | Q       |     V   |         |
    2+30       0.3085       4.24  |         |     Q   |        V|         |
    2+35       0.3434       5.06  |         |         Q         | V       |
    2+40       0.3749       4.58  |         |       Q |         |    V    |
    2+45       0.3933       2.67  |         Q         |         |      V  |
    2+50       0.4035       1.49  |    Q    |         |         |       V |
    2+55       0.4116       1.17  |   Q     |         |         |        V|
    3+ 0       0.4167       0.75  | Q       |         |         |        V|
    3+ 5       0.4186       0.28  |Q        |         |         |        V|
    3+10       0.4191       0.07  Q         |         |         |        V|
    3+15       0.4192       0.01  Q         |         |         |        V|
-----------------------------------------------------------------------
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PR6HR5YR

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        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  09/07/16 File: PR65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.10                 9.53

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            2.50                21.66

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.428(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.428(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00          0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  33.4      0.729     0.560        0.362       1.000      0.362
                                                 Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
```

PR6HR5YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.086	(0.362)	0.039	0.047
2	0.17	0.60	0.103	(0.362)	0.046	0.056
3	0.25	0.60	0.103	(0.362)	0.046	0.056
4	0.33	0.60	0.103	(0.362)	0.046	0.056
5	0.42	0.60	0.103	(0.362)	0.046	0.056
6	0.50	0.70	0.120	(0.362)	0.054	0.066
7	0.58	0.70	0.120	(0.362)	0.054	0.066
8	0.67	0.70	0.120	(0.362)	0.054	0.066
9	0.75	0.70	0.120	(0.362)	0.054	0.066
10	0.83	0.70	0.120	(0.362)	0.054	0.066
11	0.92	0.70	0.120	(0.362)	0.054	0.066
12	1.00	0.80	0.137	(0.362)	0.062	0.075
13	1.08	0.80	0.137	(0.362)	0.062	0.075
14	1.17	0.80	0.137	(0.362)	0.062	0.075
15	1.25	0.80	0.137	(0.362)	0.062	0.075
16	1.33	0.80	0.137	(0.362)	0.062	0.075
17	1.42	0.80	0.137	(0.362)	0.062	0.075
18	1.50	0.80	0.137	(0.362)	0.062	0.075
19	1.58	0.80	0.137	(0.362)	0.062	0.075
20	1.67	0.80	0.137	(0.362)	0.062	0.075
21	1.75	0.80	0.137	(0.362)	0.062	0.075
22	1.83	0.80	0.137	(0.362)	0.062	0.075
23	1.92	0.80	0.137	(0.362)	0.062	0.075
24	2.00	0.90	0.154	(0.362)	0.070	0.085
25	2.08	0.80	0.137	(0.362)	0.062	0.075
26	2.17	0.90	0.154	(0.362)	0.070	0.085
27	2.25	0.90	0.154	(0.362)	0.070	0.085
28	2.33	0.90	0.154	(0.362)	0.070	0.085
29	2.42	0.90	0.154	(0.362)	0.070	0.085
30	2.50	0.90	0.154	(0.362)	0.070	0.085
31	2.58	0.90	0.154	(0.362)	0.070	0.085
32	2.67	0.90	0.154	(0.362)	0.070	0.085
33	2.75	1.00	0.171	(0.362)	0.077	0.094
34	2.83	1.00	0.171	(0.362)	0.077	0.094
35	2.92	1.00	0.171	(0.362)	0.077	0.094
36	3.00	1.00	0.171	(0.362)	0.077	0.094
37	3.08	1.00	0.171	(0.362)	0.077	0.094
38	3.17	1.10	0.188	(0.362)	0.085	0.103
39	3.25	1.10	0.188	(0.362)	0.085	0.103
40	3.33	1.10	0.188	(0.362)	0.085	0.103
41	3.42	1.20	0.206	(0.362)	0.093	0.113
42	3.50	1.30	0.223	(0.362)	0.101	0.122
43	3.58	1.40	0.240	(0.362)	0.108	0.131
44	3.67	1.40	0.240	(0.362)	0.108	0.131
45	3.75	1.50	0.257	(0.362)	0.116	0.141
46	3.83	1.50	0.257	(0.362)	0.116	0.141
47	3.92	1.60	0.274	(0.362)	0.124	0.150
48	4.00	1.60	0.274	(0.362)	0.124	0.150
49	4.08	1.70	0.291	(0.362)	0.132	0.160
50	4.17	1.80	0.308	(0.362)	0.139	0.169
51	4.25	1.90	0.326	(0.362)	0.147	0.178
52	4.33	2.00	0.343	(0.362)	0.155	0.188
53	4.42	2.10	0.360	(0.362)	0.163	0.197
54	4.50	2.10	0.360	(0.362)	0.163	0.197
55	4.58	2.20	0.377	(0.362)	0.170	0.207
56	4.67	2.30	0.394	(0.362)	0.178	0.216
57	4.75	2.40	0.411	(0.362)	0.186	0.225
58	4.83	2.40	0.411	(0.362)	0.186	0.225

```
59   4.92     2.50      0.428       (  0.362)       0.194        0.235
60   5.00     2.60      0.445       (  0.362)       0.201        0.244
61   5.08     3.10      0.531       (  0.362)       0.240        0.291
62   5.17     3.60      0.617       (  0.362)       0.279        0.338
63   5.25     3.90      0.668       (  0.362)       0.302        0.366
64   5.33     4.20      0.720       (  0.362)       0.325        0.394
65   5.42     4.70      0.805          0.362    (  0.364)        0.444
66   5.50     5.60      0.960          0.362    (  0.434)        0.598
67   5.58     1.90      0.326       (  0.362)       0.147        0.178
68   5.67     0.90      0.154       (  0.362)       0.070        0.085
69   5.75     0.60      0.103       (  0.362)       0.046        0.056
70   5.83     0.50      0.086       (  0.362)       0.039        0.047
71   5.92     0.30      0.051       (  0.362)       0.023        0.028
72   6.00     0.20      0.034       (  0.362)       0.015        0.019
               (Loss Rate Not Used)
   Sum =     100.0                                       Sum =     9.5
      Flood volume = Effective rainfall      0.79(In)
       times area       8.7(Ac.)/[(In)/(Ft.)] =       0.6(Ac.Ft)
      Total soil loss =      0.64(In)
      Total soil loss =     0.462(Ac.Ft)
      Total rainfall =      1.43(In)
      Flood volume =       24806.2 Cubic Feet
      Total soil loss =       20106.0 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      4.433(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0013      0.19  Q         |         |         |         |
  0+10       0.0040      0.40  VQ        |         |         |         |
  0+15       0.0073      0.47  VQ        |         |         |         |
  0+20       0.0106      0.49  VQ        |         |         |         |
  0+25       0.0140      0.49  VQ        |         |         |         |
  0+30       0.0177      0.53  |VQ       |         |         |         |
  0+35       0.0216      0.56  |VQ       |         |         |         |
  0+40       0.0255      0.57  |VQ       |         |         |         |
  0+45       0.0295      0.57  | Q       |         |         |         |
  0+50       0.0334      0.57  | Q       |         |         |         |
  0+55       0.0374      0.57  | Q       |         |         |         |
  1+ 0       0.0416      0.61  | Q       |         |         |         |
  1+ 5       0.0460      0.65  | QV      |         |         |         |
  1+10       0.0505      0.65  | QV      |         |         |         |
  1+15       0.0551      0.66  | QV      |         |         |         |
  1+20       0.0596      0.66  | Q V     |         |         |         |
  1+25       0.0641      0.66  | Q V     |         |         |         |
  1+30       0.0686      0.66  | Q V     |         |         |         |
  1+35       0.0731      0.66  | Q  V    |         |         |         |
  1+40       0.0777      0.66  | Q  V    |         |         |         |
  1+45       0.0822      0.66  | Q  V    |         |         |         |
  1+50       0.0867      0.66  | Q   V   |         |         |         |
  1+55       0.0912      0.66  | Q   V   |         |         |         |
  2+ 0       0.0960      0.69  | Q   V   |         |         |         |
  2+ 5       0.1008      0.69  | Q    V  |         |         |         |
  2+10       0.1056      0.70  | Q    V  |         |         |         |
  2+15       0.1106      0.73  | Q    V  |         |         |         |
  2+20       0.1157      0.74  | Q     V |         |         |         |
  2+25       0.1208      0.74  | Q     V |         |         |         |
  2+30       0.1259      0.74  | Q     V |         |         |         |
  2+35       0.1309      0.74  | Q      V|         |         |         |
  2+40       0.1360      0.74  | Q      V|         |         |         |
  2+45       0.1414      0.78  |  Q     V|         |         |         |
  2+50       0.1469      0.81  |  Q      V         |         |         |
  2+55       0.1526      0.82  |  Q      V         |         |         |
  3+ 0       0.1582      0.82  |  Q      |V        |         |         |
  3+ 5       0.1639      0.82  |  Q      |V        |         |         |
  3+10       0.1698      0.86  |  Q      |V        |         |         |
  3+15       0.1759      0.89  |  Q      | V       |         |         |
  3+20       0.1821      0.90  |  Q      | V       |         |         |
  3+25       0.1886      0.94  |  Q      |  V      |         |         |
  3+30       0.1956      1.01  |   Q     |  V      |         |         |
  3+35       0.2031      1.09  |   Q     |   V     |         |         |
  3+40       0.2109      1.14  |   Q     |   V     |         |         |
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                                                PR6HR5YR
    3+45       0.2191      1.18  |   Q     |    V    |         |         |
    3+50       0.2275      1.22  |   Q     |    V    |         |         |
    3+55       0.2362      1.27  |    Q    |     V   |         |         |
    4+ 0       0.2452      1.30  |    Q    |      V  |         |         |
    4+ 5       0.2544      1.35  |    Q    |      V  |         |         |
    4+10       0.2642      1.42  |    Q    |       V |         |         |
    4+15       0.2746      1.50  |     Q   |        V|         |         |
    4+20       0.2855      1.58  |     Q   |         V         |         |
    4+25       0.2970      1.67  |     Q   |         V         |         |
    4+30       0.3087      1.71  |     Q   |         |V        |         |
    4+35       0.3208      1.76  |      Q  |         | V       |         |
    4+40       0.3335      1.83  |      Q  |         |  V      |         |
    4+45       0.3466      1.91  |      Q  |         |   V     |         |
    4+50       0.3601      1.96  |      Q  |         |    V    |         |
    4+55       0.3739      2.00  |       Q |         |     V   |         |
    5+ 0       0.3882      2.08  |       Q |         |      V  |         |
    5+ 5       0.4041      2.31  |        Q|         |       V |         |
    5+10       0.4226      2.68  |         Q         |        V|         |
    5+15       0.4433      3.00  |         | Q       |         |V        |
    5+20       0.4658      3.27  |         |  Q      |         | V       |
    5+25       0.4906      3.60  |         |   Q     |         |   V     |
    5+30       0.5211      4.43  |         |      Q  |         |     V   |
    5+35       0.5443      3.37  |         |  Q      |         |       V |
    5+40       0.5551      1.57  |     Q   |         |         |       V |
    5+45       0.5610      0.85  |  Q      |         |         |        V|
    5+50       0.5645      0.51  | Q       |         |         |        V|
    5+55       0.5670      0.35  |Q        |         |         |        V|
    6+ 0       0.5686      0.23  Q         |         |         |        V|
    6+ 5       0.5693      0.10  Q         |         |         |        V|
    6+10       0.5694      0.02  Q         |         |         |        V|
    6+15       0.5695      0.01  Q         |         |         |        V|
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PR24HR5YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 09/07/16 File: PR245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format


```
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.72                 14.90

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            4.30                 37.26

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    2.324(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.324(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00          0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  33.4      0.729     0.560        0.362       1.000      0.362
                                                  Sum (F) =   0.362
Area averaged mean soil loss (F) (In/Hr) =  0.362
Minimum soil loss rate ((In/Hr)) =  0.181
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
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PR24HR5YR

U n i t H y d r o g r a p h

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	0.07	0.019	(0.641)	0.008	0.010
2	0.17	0.07	0.019	(0.639)	0.008	0.010
3	0.25	0.07	0.019	(0.636)	0.008	0.010
4	0.33	0.10	0.028	(0.634)	0.013	0.015
5	0.42	0.10	0.028	(0.631)	0.013	0.015
6	0.50	0.10	0.028	(0.629)	0.013	0.015
7	0.58	0.10	0.028	(0.627)	0.013	0.015
8	0.67	0.10	0.028	(0.624)	0.013	0.015
9	0.75	0.10	0.028	(0.622)	0.013	0.015
10	0.83	0.13	0.037	(0.619)	0.017	0.020
11	0.92	0.13	0.037	(0.617)	0.017	0.020
12	1.00	0.13	0.037	(0.614)	0.017	0.020
13	1.08	0.10	0.028	(0.612)	0.013	0.015
14	1.17	0.10	0.028	(0.609)	0.013	0.015
15	1.25	0.10	0.028	(0.607)	0.013	0.015
16	1.33	0.10	0.028	(0.605)	0.013	0.015
17	1.42	0.10	0.028	(0.602)	0.013	0.015
18	1.50	0.10	0.028	(0.600)	0.013	0.015
19	1.58	0.10	0.028	(0.597)	0.013	0.015
20	1.67	0.10	0.028	(0.595)	0.013	0.015
21	1.75	0.10	0.028	(0.593)	0.013	0.015
22	1.83	0.13	0.037	(0.590)	0.017	0.020
23	1.92	0.13	0.037	(0.588)	0.017	0.020
24	2.00	0.13	0.037	(0.586)	0.017	0.020
25	2.08	0.13	0.037	(0.583)	0.017	0.020
26	2.17	0.13	0.037	(0.581)	0.017	0.020
27	2.25	0.13	0.037	(0.578)	0.017	0.020
28	2.33	0.13	0.037	(0.576)	0.017	0.020
29	2.42	0.13	0.037	(0.574)	0.017	0.020
30	2.50	0.13	0.037	(0.571)	0.017	0.020
31	2.58	0.17	0.046	(0.569)	0.021	0.025
32	2.67	0.17	0.046	(0.567)	0.021	0.025
33	2.75	0.17	0.046	(0.564)	0.021	0.025
34	2.83	0.17	0.046	(0.562)	0.021	0.025
35	2.92	0.17	0.046	(0.560)	0.021	0.025
36	3.00	0.17	0.046	(0.557)	0.021	0.025
37	3.08	0.17	0.046	(0.555)	0.021	0.025
38	3.17	0.17	0.046	(0.553)	0.021	0.025
39	3.25	0.17	0.046	(0.551)	0.021	0.025
40	3.33	0.17	0.046	(0.548)	0.021	0.025
41	3.42	0.17	0.046	(0.546)	0.021	0.025
42	3.50	0.17	0.046	(0.544)	0.021	0.025
43	3.58	0.17	0.046	(0.541)	0.021	0.025
44	3.67	0.17	0.046	(0.539)	0.021	0.025
45	3.75	0.17	0.046	(0.537)	0.021	0.025
46	3.83	0.20	0.056	(0.535)	0.025	0.031
47	3.92	0.20	0.056	(0.532)	0.025	0.031
48	4.00	0.20	0.056	(0.530)	0.025	0.031
49	4.08	0.20	0.056	(0.528)	0.025	0.031
50	4.17	0.20	0.056	(0.526)	0.025	0.031
51	4.25	0.20	0.056	(0.523)	0.025	0.031
52	4.33	0.23	0.065	(0.521)	0.029	0.036
53	4.42	0.23	0.065	(0.519)	0.029	0.036
54	4.50	0.23	0.065	(0.517)	0.029	0.036
55	4.58	0.23	0.065	(0.514)	0.029	0.036
56	4.67	0.23	0.065	(0.512)	0.029	0.036
57	4.75	0.23	0.065	(0.510)	0.029	0.036
58	4.83	0.27	0.074	(0.508)	0.034	0.041

59	4.92	0.27	0.074	(0.506)	0.034	0.041
60	5.00	0.27	0.074	(0.503)	0.034	0.041
61	5.08	0.20	0.056	(0.501)	0.025	0.031
62	5.17	0.20	0.056	(0.499)	0.025	0.031
63	5.25	0.20	0.056	(0.497)	0.025	0.031
64	5.33	0.23	0.065	(0.495)	0.029	0.036
65	5.42	0.23	0.065	(0.493)	0.029	0.036
66	5.50	0.23	0.065	(0.490)	0.029	0.036
67	5.58	0.27	0.074	(0.488)	0.034	0.041
68	5.67	0.27	0.074	(0.486)	0.034	0.041
69	5.75	0.27	0.074	(0.484)	0.034	0.041
70	5.83	0.27	0.074	(0.482)	0.034	0.041
71	5.92	0.27	0.074	(0.480)	0.034	0.041
72	6.00	0.27	0.074	(0.478)	0.034	0.041
73	6.08	0.30	0.084	(0.475)	0.038	0.046
74	6.17	0.30	0.084	(0.473)	0.038	0.046
75	6.25	0.30	0.084	(0.471)	0.038	0.046
76	6.33	0.30	0.084	(0.469)	0.038	0.046
77	6.42	0.30	0.084	(0.467)	0.038	0.046
78	6.50	0.30	0.084	(0.465)	0.038	0.046
79	6.58	0.33	0.093	(0.463)	0.042	0.051
80	6.67	0.33	0.093	(0.461)	0.042	0.051
81	6.75	0.33	0.093	(0.459)	0.042	0.051
82	6.83	0.33	0.093	(0.457)	0.042	0.051
83	6.92	0.33	0.093	(0.455)	0.042	0.051
84	7.00	0.33	0.093	(0.452)	0.042	0.051
85	7.08	0.33	0.093	(0.450)	0.042	0.051
86	7.17	0.33	0.093	(0.448)	0.042	0.051
87	7.25	0.33	0.093	(0.446)	0.042	0.051
88	7.33	0.37	0.102	(0.444)	0.046	0.056
89	7.42	0.37	0.102	(0.442)	0.046	0.056
90	7.50	0.37	0.102	(0.440)	0.046	0.056
91	7.58	0.40	0.112	(0.438)	0.050	0.061
92	7.67	0.40	0.112	(0.436)	0.050	0.061
93	7.75	0.40	0.112	(0.434)	0.050	0.061
94	7.83	0.43	0.121	(0.432)	0.055	0.066
95	7.92	0.43	0.121	(0.430)	0.055	0.066
96	8.00	0.43	0.121	(0.428)	0.055	0.066
97	8.08	0.50	0.139	(0.426)	0.063	0.076
98	8.17	0.50	0.139	(0.424)	0.063	0.076
99	8.25	0.50	0.139	(0.422)	0.063	0.076
100	8.33	0.50	0.139	(0.420)	0.063	0.076
101	8.42	0.50	0.139	(0.418)	0.063	0.076
102	8.50	0.50	0.139	(0.416)	0.063	0.076
103	8.58	0.53	0.149	(0.414)	0.067	0.082
104	8.67	0.53	0.149	(0.412)	0.067	0.082
105	8.75	0.53	0.149	(0.410)	0.067	0.082
106	8.83	0.57	0.158	(0.409)	0.071	0.087
107	8.92	0.57	0.158	(0.407)	0.071	0.087
108	9.00	0.57	0.158	(0.405)	0.071	0.087
109	9.08	0.63	0.177	(0.403)	0.080	0.097
110	9.17	0.63	0.177	(0.401)	0.080	0.097
111	9.25	0.63	0.177	(0.399)	0.080	0.097
112	9.33	0.67	0.186	(0.397)	0.084	0.102
113	9.42	0.67	0.186	(0.395)	0.084	0.102
114	9.50	0.67	0.186	(0.393)	0.084	0.102
115	9.58	0.70	0.195	(0.391)	0.088	0.107
116	9.67	0.70	0.195	(0.389)	0.088	0.107
117	9.75	0.70	0.195	(0.388)	0.088	0.107
118	9.83	0.73	0.205	(0.386)	0.092	0.112
119	9.92	0.73	0.205	(0.384)	0.092	0.112
120	10.00	0.73	0.205	(0.382)	0.092	0.112
121	10.08	0.50	0.139	(0.380)	0.063	0.076
122	10.17	0.50	0.139	(0.378)	0.063	0.076
123	10.25	0.50	0.139	(0.377)	0.063	0.076
124	10.33	0.50	0.139	(0.375)	0.063	0.076
125	10.42	0.50	0.139	(0.373)	0.063	0.076
126	10.50	0.50	0.139	(0.371)	0.063	0.076
127	10.58	0.67	0.186	(0.369)	0.084	0.102
128	10.67	0.67	0.186	(0.367)	0.084	0.102
129	10.75	0.67	0.186	(0.366)	0.084	0.102
130	10.83	0.67	0.186	(0.364)	0.084	0.102
131	10.92	0.67	0.186	(0.362)	0.084	0.102
132	11.00	0.67	0.186	(0.360)	0.084	0.102
133	11.08	0.63	0.177	(0.359)	0.080	0.097
134	11.17	0.63	0.177	(0.357)	0.080	0.097
135	11.25	0.63	0.177	(0.355)	0.080	0.097
136	11.33	0.63	0.177	(0.353)	0.080	0.097
137	11.42	0.63	0.177	(0.351)	0.080	0.097

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138	11.50	0.63	0.177	(0.350)	0.080	0.097
139	11.58	0.57	0.158	(0.348)	0.071	0.087
140	11.67	0.57	0.158	(0.346)	0.071	0.087
141	11.75	0.57	0.158	(0.345)	0.071	0.087
142	11.83	0.60	0.167	(0.343)	0.076	0.092
143	11.92	0.60	0.167	(0.341)	0.076	0.092
144	12.00	0.60	0.167	(0.339)	0.076	0.092
145	12.08	0.83	0.232	(0.338)	0.105	0.127
146	12.17	0.83	0.232	(0.336)	0.105	0.127
147	12.25	0.83	0.232	(0.334)	0.105	0.127
148	12.33	0.87	0.242	(0.333)	0.109	0.132
149	12.42	0.87	0.242	(0.331)	0.109	0.132
150	12.50	0.87	0.242	(0.329)	0.109	0.132
151	12.58	0.93	0.260	(0.328)	0.118	0.143
152	12.67	0.93	0.260	(0.326)	0.118	0.143
153	12.75	0.93	0.260	(0.324)	0.118	0.143
154	12.83	0.97	0.270	(0.323)	0.122	0.148
155	12.92	0.97	0.270	(0.321)	0.122	0.148
156	13.00	0.97	0.270	(0.319)	0.122	0.148
157	13.08	1.13	0.316	(0.318)	0.143	0.173
158	13.17	1.13	0.316	(0.316)	0.143	0.173
159	13.25	1.13	0.316	(0.315)	0.143	0.173
160	13.33	1.13	0.316	(0.313)	0.143	0.173
161	13.42	1.13	0.316	(0.311)	0.143	0.173
162	13.50	1.13	0.316	(0.310)	0.143	0.173
163	13.58	0.77	0.214	(0.308)	0.097	0.117
164	13.67	0.77	0.214	(0.307)	0.097	0.117
165	13.75	0.77	0.214	(0.305)	0.097	0.117
166	13.83	0.77	0.214	(0.304)	0.097	0.117
167	13.92	0.77	0.214	(0.302)	0.097	0.117
168	14.00	0.77	0.214	(0.301)	0.097	0.117
169	14.08	0.90	0.251	(0.299)	0.113	0.138
170	14.17	0.90	0.251	(0.297)	0.113	0.138
171	14.25	0.90	0.251	(0.296)	0.113	0.138
172	14.33	0.87	0.242	(0.294)	0.109	0.132
173	14.42	0.87	0.242	(0.293)	0.109	0.132
174	14.50	0.87	0.242	(0.291)	0.109	0.132
175	14.58	0.87	0.242	(0.290)	0.109	0.132
176	14.67	0.87	0.242	(0.288)	0.109	0.132
177	14.75	0.87	0.242	(0.287)	0.109	0.132
178	14.83	0.83	0.232	(0.285)	0.105	0.127
179	14.92	0.83	0.232	(0.284)	0.105	0.127
180	15.00	0.83	0.232	(0.283)	0.105	0.127
181	15.08	0.80	0.223	(0.281)	0.101	0.122
182	15.17	0.80	0.223	(0.280)	0.101	0.122
183	15.25	0.80	0.223	(0.278)	0.101	0.122
184	15.33	0.77	0.214	(0.277)	0.097	0.117
185	15.42	0.77	0.214	(0.275)	0.097	0.117
186	15.50	0.77	0.214	(0.274)	0.097	0.117
187	15.58	0.63	0.177	(0.273)	0.080	0.097
188	15.67	0.63	0.177	(0.271)	0.080	0.097
189	15.75	0.63	0.177	(0.270)	0.080	0.097
190	15.83	0.63	0.177	(0.268)	0.080	0.097
191	15.92	0.63	0.177	(0.267)	0.080	0.097
192	16.00	0.63	0.177	(0.266)	0.080	0.097
193	16.08	0.13	0.037	(0.264)	0.017	0.020
194	16.17	0.13	0.037	(0.263)	0.017	0.020
195	16.25	0.13	0.037	(0.262)	0.017	0.020
196	16.33	0.13	0.037	(0.260)	0.017	0.020
197	16.42	0.13	0.037	(0.259)	0.017	0.020
198	16.50	0.13	0.037	(0.258)	0.017	0.020
199	16.58	0.10	0.028	(0.256)	0.013	0.015
200	16.67	0.10	0.028	(0.255)	0.013	0.015
201	16.75	0.10	0.028	(0.254)	0.013	0.015
202	16.83	0.10	0.028	(0.252)	0.013	0.015
203	16.92	0.10	0.028	(0.251)	0.013	0.015
204	17.00	0.10	0.028	(0.250)	0.013	0.015
205	17.08	0.17	0.046	(0.249)	0.021	0.025
206	17.17	0.17	0.046	(0.247)	0.021	0.025
207	17.25	0.17	0.046	(0.246)	0.021	0.025
208	17.33	0.17	0.046	(0.245)	0.021	0.025
209	17.42	0.17	0.046	(0.244)	0.021	0.025
210	17.50	0.17	0.046	(0.242)	0.021	0.025
211	17.58	0.17	0.046	(0.241)	0.021	0.025
212	17.67	0.17	0.046	(0.240)	0.021	0.025
213	17.75	0.17	0.046	(0.239)	0.021	0.025
214	17.83	0.13	0.037	(0.238)	0.017	0.020
215	17.92	0.13	0.037	(0.236)	0.017	0.020
216	18.00	0.13	0.037	(0.235)	0.017	0.020

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217	18.08	0.13	0.037	(0.234)	0.017	0.020
218	18.17	0.13	0.037	(0.233)	0.017	0.020
219	18.25	0.13	0.037	(0.232)	0.017	0.020
220	18.33	0.13	0.037	(0.231)	0.017	0.020
221	18.42	0.13	0.037	(0.230)	0.017	0.020
222	18.50	0.13	0.037	(0.228)	0.017	0.020
223	18.58	0.10	0.028	(0.227)	0.013	0.015
224	18.67	0.10	0.028	(0.226)	0.013	0.015
225	18.75	0.10	0.028	(0.225)	0.013	0.015
226	18.83	0.07	0.019	(0.224)	0.008	0.010
227	18.92	0.07	0.019	(0.223)	0.008	0.010
228	19.00	0.07	0.019	(0.222)	0.008	0.010
229	19.08	0.10	0.028	(0.221)	0.013	0.015
230	19.17	0.10	0.028	(0.220)	0.013	0.015
231	19.25	0.10	0.028	(0.219)	0.013	0.015
232	19.33	0.13	0.037	(0.218)	0.017	0.020
233	19.42	0.13	0.037	(0.217)	0.017	0.020
234	19.50	0.13	0.037	(0.216)	0.017	0.020
235	19.58	0.10	0.028	(0.215)	0.013	0.015
236	19.67	0.10	0.028	(0.214)	0.013	0.015
237	19.75	0.10	0.028	(0.213)	0.013	0.015
238	19.83	0.07	0.019	(0.212)	0.008	0.010
239	19.92	0.07	0.019	(0.211)	0.008	0.010
240	20.00	0.07	0.019	(0.210)	0.008	0.010
241	20.08	0.10	0.028	(0.209)	0.013	0.015
242	20.17	0.10	0.028	(0.208)	0.013	0.015
243	20.25	0.10	0.028	(0.207)	0.013	0.015
244	20.33	0.10	0.028	(0.206)	0.013	0.015
245	20.42	0.10	0.028	(0.206)	0.013	0.015
246	20.50	0.10	0.028	(0.205)	0.013	0.015
247	20.58	0.10	0.028	(0.204)	0.013	0.015
248	20.67	0.10	0.028	(0.203)	0.013	0.015
249	20.75	0.10	0.028	(0.202)	0.013	0.015
250	20.83	0.07	0.019	(0.201)	0.008	0.010
251	20.92	0.07	0.019	(0.200)	0.008	0.010
252	21.00	0.07	0.019	(0.200)	0.008	0.010
253	21.08	0.10	0.028	(0.199)	0.013	0.015
254	21.17	0.10	0.028	(0.198)	0.013	0.015
255	21.25	0.10	0.028	(0.197)	0.013	0.015
256	21.33	0.07	0.019	(0.197)	0.008	0.010
257	21.42	0.07	0.019	(0.196)	0.008	0.010
258	21.50	0.07	0.019	(0.195)	0.008	0.010
259	21.58	0.10	0.028	(0.194)	0.013	0.015
260	21.67	0.10	0.028	(0.194)	0.013	0.015
261	21.75	0.10	0.028	(0.193)	0.013	0.015
262	21.83	0.07	0.019	(0.192)	0.008	0.010
263	21.92	0.07	0.019	(0.192)	0.008	0.010
264	22.00	0.07	0.019	(0.191)	0.008	0.010
265	22.08	0.10	0.028	(0.190)	0.013	0.015
266	22.17	0.10	0.028	(0.190)	0.013	0.015
267	22.25	0.10	0.028	(0.189)	0.013	0.015
268	22.33	0.07	0.019	(0.189)	0.008	0.010
269	22.42	0.07	0.019	(0.188)	0.008	0.010
270	22.50	0.07	0.019	(0.187)	0.008	0.010
271	22.58	0.07	0.019	(0.187)	0.008	0.010
272	22.67	0.07	0.019	(0.186)	0.008	0.010
273	22.75	0.07	0.019	(0.186)	0.008	0.010
274	22.83	0.07	0.019	(0.185)	0.008	0.010
275	22.92	0.07	0.019	(0.185)	0.008	0.010
276	23.00	0.07	0.019	(0.184)	0.008	0.010
277	23.08	0.07	0.019	(0.184)	0.008	0.010
278	23.17	0.07	0.019	(0.184)	0.008	0.010
279	23.25	0.07	0.019	(0.183)	0.008	0.010
280	23.33	0.07	0.019	(0.183)	0.008	0.010
281	23.42	0.07	0.019	(0.183)	0.008	0.010
282	23.50	0.07	0.019	(0.182)	0.008	0.010
283	23.58	0.07	0.019	(0.182)	0.008	0.010
284	23.67	0.07	0.019	(0.182)	0.008	0.010
285	23.75	0.07	0.019	(0.181)	0.008	0.010
286	23.83	0.07	0.019	(0.181)	0.008	0.010
287	23.92	0.07	0.019	(0.181)	0.008	0.010
288	24.00	0.07	0.019	(0.181)	0.008	0.010

(Loss Rate Not Used)

Sum = 100.0 Sum = 15.3

Flood volume = Effective rainfall 1.27(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.9(Ac.Ft)
Total soil loss = 1.05(In)
Total soil loss = 0.759(Ac.Ft)
Total rainfall = 2.32(In)

```
                                       PR24HR5YR
      Flood volume =       40062.7 Cubic Feet
      Total soil loss =       33044.4 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      1.513(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5      0.0003      0.04  Q         |         |         |         |
  0+10      0.0008      0.08  Q         |         |         |         |
  0+15      0.0014      0.09  Q         |         |         |         |
  0+20      0.0022      0.11  Q         |         |         |         |
  0+25      0.0031      0.13  Q         |         |         |         |
  0+30      0.0040      0.13  Q         |         |         |         |
  0+35      0.0049      0.13  Q         |         |         |         |
  0+40      0.0058      0.13  Q         |         |         |         |
  0+45      0.0067      0.13  Q         |         |         |         |
  0+50      0.0078      0.15  Q         |         |         |         |
  0+55      0.0090      0.17  Q         |         |         |         |
  1+ 0      0.0102      0.18  Q         |         |         |         |
  1+ 5      0.0113      0.16  Q         |         |         |         |
  1+10      0.0122      0.14  Q         |         |         |         |
  1+15      0.0132      0.14  Q         |         |         |         |
  1+20      0.0141      0.13  Q         |         |         |         |
  1+25      0.0150      0.13  Q         |         |         |         |
  1+30      0.0159      0.13  Q         |         |         |         |
  1+35      0.0168      0.13  Q         |         |         |         |
  1+40      0.0178      0.13  Q         |         |         |         |
  1+45      0.0187      0.13  Q         |         |         |         |
  1+50      0.0197      0.15  Q         |         |         |         |
  1+55      0.0209      0.17  Q         |         |         |         |
  2+ 0      0.0221      0.18  Q         |         |         |         |
  2+ 5      0.0234      0.18  QV        |         |         |         |
  2+10      0.0246      0.18  QV        |         |         |         |
  2+15      0.0258      0.18  QV        |         |         |         |
  2+20      0.0270      0.18  QV        |         |         |         |
  2+25      0.0283      0.18  QV        |         |         |         |
  2+30      0.0295      0.18  QV        |         |         |         |
  2+35      0.0309      0.20  QV        |         |         |         |
  2+40      0.0324      0.22  QV        |         |         |         |
  2+45      0.0339      0.22  QV        |         |         |         |
  2+50      0.0354      0.22  QV        |         |         |         |
  2+55      0.0369      0.22  QV        |         |         |         |
  3+ 0      0.0385      0.22  QV        |         |         |         |
  3+ 5      0.0400      0.22  QV        |         |         |         |
  3+10      0.0415      0.22  QV        |         |         |         |
  3+15      0.0431      0.22  QV        |         |         |         |
  3+20      0.0446      0.22  QV        |         |         |         |
  3+25      0.0461      0.22  Q V       |         |         |         |
  3+30      0.0477      0.22  Q V       |         |         |         |
  3+35      0.0492      0.22  Q V       |         |         |         |
  3+40      0.0507      0.22  Q V       |         |         |         |
  3+45      0.0523      0.22  Q V       |         |         |         |
  3+50      0.0540      0.24  Q V       |         |         |         |
  3+55      0.0558      0.26  |QV       |         |         |         |
  4+ 0      0.0576      0.27  |QV       |         |         |         |
  4+ 5      0.0594      0.27  |QV       |         |         |         |
  4+10      0.0613      0.27  |QV       |         |         |         |
  4+15      0.0631      0.27  |QV       |         |         |         |
  4+20      0.0651      0.29  |QV       |         |         |         |
  4+25      0.0672      0.31  |QV       |         |         |         |
  4+30      0.0693      0.31  |Q V      |         |         |         |
  4+35      0.0715      0.31  |Q V      |         |         |         |
  4+40      0.0736      0.31  |Q V      |         |         |         |
  4+45      0.0758      0.31  |Q V      |         |         |         |
  4+50      0.0780      0.33  |Q V      |         |         |         |
  4+55      0.0805      0.35  |Q V      |         |         |         |
  5+ 0      0.0829      0.35  |Q V      |         |         |         |
  5+ 5      0.0851      0.32  |Q V      |         |         |         |
  5+10      0.0870      0.28  |Q V      |         |         |         |
  5+15      0.0889      0.27  |Q V      |         |         |         |
  5+20      0.0908      0.29  |Q V      |         |         |         |
  5+25      0.0929      0.31  |Q  V     |         |         |         |
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  5+30     0.0951     0.31   |Q  V     |          |          |          |
  5+35     0.0974     0.33   |Q  V     |          |          |          |
  5+40     0.0998     0.35   |Q  V     |          |          |          |
  5+45     0.1022     0.35   |Q  V     |          |          |          |
  5+50     0.1047     0.36   |Q  V     |          |          |          |
  5+55     0.1071     0.36   |Q  V     |          |          |          |
  6+ 0     0.1096     0.36   |Q  V     |          |          |          |
  6+ 5     0.1122     0.38   |Q  V     |          |          |          |
  6+10     0.1149     0.40   |Q  V     |          |          |          |
  6+15     0.1176     0.40   |Q   V    |          |          |          |
  6+20     0.1204     0.40   |Q   V    |          |          |          |
  6+25     0.1232     0.40   |Q   V    |          |          |          |
  6+30     0.1259     0.40   |Q   V    |          |          |          |
  6+35     0.1288     0.42   |Q   V    |          |          |          |
  6+40     0.1318     0.44   |Q   V    |          |          |          |
  6+45     0.1349     0.44   |Q   V    |          |          |          |
  6+50     0.1380     0.45   |Q    V   |          |          |          |
  6+55     0.1410     0.45   |Q    V   |          |          |          |
  7+ 0     0.1441     0.45   |Q    V   |          |          |          |
  7+ 5     0.1472     0.45   |Q    V   |          |          |          |
  7+10     0.1502     0.45   |Q    V   |          |          |          |
  7+15     0.1533     0.45   |Q    V   |          |          |          |
  7+20     0.1565     0.47   |Q    V   |          |          |          |
  7+25     0.1598     0.48   |Q    V   |          |          |          |
  7+30     0.1632     0.49   |Q     V  |          |          |          |
  7+35     0.1667     0.51   | Q    V  |          |          |          |
  7+40     0.1704     0.53   | Q    V  |          |          |          |
  7+45     0.1740     0.53   | Q    V  |          |          |          |
  7+50     0.1778     0.55   | Q    V  |          |          |          |
  7+55     0.1818     0.57   | Q    V  |          |          |          |
  8+ 0     0.1858     0.58   | Q     V |          |          |          |
  8+ 5     0.1900     0.62   | Q     V |          |          |          |
  8+10     0.1946     0.66   | Q     V |          |          |          |
  8+15     0.1991     0.66   | Q     V |          |          |          |
  8+20     0.2037     0.67   | Q     V |          |          |          |
  8+25     0.2083     0.67   | Q      V|          |          |          |
  8+30     0.2129     0.67   | Q      V|          |          |          |
  8+35     0.2177     0.69   | Q      V|          |          |          |
  8+40     0.2225     0.71   | Q      V|          |          |          |
  8+45     0.2274     0.71   | Q      V|          |          |          |
  8+50     0.2325     0.73   | Q       V          |          |          |
  8+55     0.2377     0.75   |  Q      V          |          |          |
  9+ 0     0.2429     0.76   |  Q      V          |          |          |
  9+ 5     0.2484     0.80   |  Q      V          |          |          |
  9+10     0.2541     0.84   |  Q      |V         |          |          |
  9+15     0.2599     0.84   |  Q      |V         |          |          |
  9+20     0.2659     0.87   |  Q      |V         |          |          |
  9+25     0.2720     0.89   |  Q      |V         |          |          |
  9+30     0.2781     0.89   |  Q      | V        |          |          |
  9+35     0.2844     0.91   |  Q      | V        |          |          |
  9+40     0.2908     0.93   |  Q      | V        |          |          |
  9+45     0.2972     0.93   |  Q      | V        |          |          |
  9+50     0.3038     0.96   |  Q      |  V       |          |          |
  9+55     0.3105     0.97   |  Q      |  V       |          |          |
 10+ 0     0.3172     0.98   |  Q      |  V       |          |          |
 10+ 5     0.3230     0.84   |  Q      |   V      |          |          |
 10+10     0.3278     0.70   | Q       |   V      |          |          |
 10+15     0.3325     0.68   | Q       |   V      |          |          |
 10+20     0.3371     0.67   | Q       |   V      |          |          |
 10+25     0.3417     0.67   | Q       |   V      |          |          |
 10+30     0.3463     0.67   | Q       |    V     |          |          |
 10+35     0.3516     0.77   |  Q      |    V     |          |          |
 10+40     0.3575     0.86   |  Q      |    V     |          |          |
 10+45     0.3636     0.88   |  Q      |    V     |          |          |
 10+50     0.3698     0.89   |  Q      |     V    |          |          |
 10+55     0.3759     0.89   |  Q      |     V    |          |          |
 11+ 0     0.3820     0.89   |  Q      |     V    |          |          |
 11+ 5     0.3880     0.87   |  Q      |     V    |          |          |
 11+10     0.3939     0.85   |  Q      |      V   |          |          |
 11+15     0.3997     0.85   |  Q      |      V   |          |          |
 11+20     0.4055     0.85   |  Q      |      V   |          |          |
 11+25     0.4114     0.85   |  Q      |      V   |          |          |
 11+30     0.4172     0.85   |  Q      |       V  |          |          |
 11+35     0.4227     0.80   |  Q      |       V  |          |          |
 11+40     0.4280     0.77   |  Q      |       V  |          |          |
 11+45     0.4332     0.76   |  Q      |       V  |          |          |
 11+50     0.4386     0.78   |  Q      |        V |          |          |
 11+55     0.4441     0.80   |  Q      |        V |          |          |
 12+ 0     0.4496     0.80   |  Q      |        V |          |          |
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                                             PR24HR5YR
12+ 5       0.4561      0.94  |  Q      |        V|         |         |
12+10       0.4635      1.08  |   Q     |         V         |         |
12+15       0.4711      1.10  |   Q     |         V         |         |
12+20       0.4789      1.13  |   Q     |         V         |         |
12+25       0.4868      1.15  |   Q     |         |V        |         |
12+30       0.4948      1.16  |   Q     |         |V        |         |
12+35       0.5030      1.20  |   Q     |         |V        |         |
12+40       0.5115      1.24  |   Q     |         | V       |         |
12+45       0.5201      1.24  |   Q     |         | V       |         |
12+50       0.5288      1.27  |    Q    |         | V       |         |
12+55       0.5377      1.29  |    Q    |         |  V      |         |
13+ 0       0.5466      1.29  |    Q    |         |  V      |         |
13+ 5       0.5562      1.39  |    Q    |         |   V     |         |
13+10       0.5664      1.49  |    Q    |         |   V     |         |
13+15       0.5768      1.51  |     Q   |         |    V    |         |
13+20       0.5872      1.51  |     Q   |         |    V    |         |
13+25       0.5976      1.51  |     Q   |         |    V    |         |
13+30       0.6080      1.51  |     Q   |         |     V   |         |
13+35       0.6169      1.29  |    Q    |         |     V   |         |
13+40       0.6244      1.08  |   Q     |         |      V  |         |
13+45       0.6315      1.04  |   Q     |         |      V  |         |
13+50       0.6386      1.02  |   Q     |         |      V  |         |
13+55       0.6456      1.02  |   Q     |         |       V |         |
14+ 0       0.6527      1.02  |   Q     |         |       V |         |
14+ 5       0.6603      1.11  |   Q     |         |       V |         |
14+10       0.6684      1.18  |   Q     |         |        V|         |
14+15       0.6767      1.20  |   Q     |         |        V|         |
14+20       0.6848      1.18  |   Q     |         |        V|         |
14+25       0.6928      1.16  |   Q     |         |         V         |
14+30       0.7008      1.16  |   Q     |         |         V         |
14+35       0.7088      1.16  |   Q     |         |         V         |
14+40       0.7167      1.16  |   Q     |         |         |V        |
14+45       0.7247      1.16  |   Q     |         |         |V        |
14+50       0.7325      1.14  |   Q     |         |         |V        |
14+55       0.7402      1.12  |   Q     |         |         | V       |
15+ 0       0.7479      1.11  |   Q     |         |         | V       |
15+ 5       0.7554      1.09  |   Q     |         |         | V       |
15+10       0.7628      1.07  |   Q     |         |         |  V      |
15+15       0.7702      1.07  |   Q     |         |         |  V      |
15+20       0.7774      1.05  |   Q     |         |         |  V      |
15+25       0.7845      1.03  |   Q     |         |         |   V     |
15+30       0.7916      1.03  |   Q     |         |         |   V     |
15+35       0.7981      0.94  |  Q      |         |         |   V     |
15+40       0.8040      0.87  |  Q      |         |         |   V     |
15+45       0.8099      0.85  |  Q      |         |         |    V    |
15+50       0.8157      0.85  |  Q      |         |         |    V    |
15+55       0.8215      0.85  |  Q      |         |         |    V    |
16+ 0       0.8274      0.85  |  Q      |         |         |    V    |
16+ 5       0.8311      0.54  | Q       |         |         |     V   |
16+10       0.8329      0.26  |Q        |         |         |     V   |
16+15       0.8342      0.20  Q         |         |         |     V   |
16+20       0.8355      0.18  Q         |         |         |     V   |
16+25       0.8367      0.18  Q         |         |         |     V   |
16+30       0.8379      0.18  Q         |         |         |     V   |
16+35       0.8390      0.16  Q         |         |         |     V   |
16+40       0.8400      0.14  Q         |         |         |     V   |
16+45       0.8409      0.14  Q         |         |         |     V   |
16+50       0.8418      0.13  Q         |         |         |     V   |
16+55       0.8427      0.13  Q         |         |         |     V   |
17+ 0       0.8437      0.13  Q         |         |         |     V   |
17+ 5       0.8449      0.17  Q         |         |         |     V   |
17+10       0.8463      0.21  Q         |         |         |     V   |
17+15       0.8478      0.22  Q         |         |         |     V   |
17+20       0.8494      0.22  Q         |         |         |     V   |
17+25       0.8509      0.22  Q         |         |         |      V  |
17+30       0.8524      0.22  Q         |         |         |      V  |
17+35       0.8540      0.22  Q         |         |         |      V  |
17+40       0.8555      0.22  Q         |         |         |      V  |
17+45       0.8570      0.22  Q         |         |         |      V  |
17+50       0.8584      0.20  Q         |         |         |      V  |
17+55       0.8597      0.18  Q         |         |         |      V  |
18+ 0       0.8609      0.18  Q         |         |         |      V  |
18+ 5       0.8621      0.18  Q         |         |         |      V  |
18+10       0.8634      0.18  Q         |         |         |      V  |
18+15       0.8646      0.18  Q         |         |         |      V  |
18+20       0.8658      0.18  Q         |         |         |      V  |
18+25       0.8670      0.18  Q         |         |         |      V  |
18+30       0.8683      0.18  Q         |         |         |      V  |
18+35       0.8694      0.16  Q         |         |         |      V  |
```

```
  18+40       0.8703      0.14  Q         |         |         |      V   |
  18+45       0.8712      0.14  Q         |         |         |      V   |
  18+50       0.8720      0.11  Q         |         |         |      V   |
  18+55       0.8727      0.09  Q         |         |         |      V   |
  19+ 0       0.8733      0.09  Q         |         |         |      V   |
  19+ 5       0.8741      0.11  Q         |         |         |       V  |
  19+10       0.8749      0.13  Q         |         |         |       V  |
  19+15       0.8758      0.13  Q         |         |         |       V  |
  19+20       0.8769      0.15  Q         |         |         |       V  |
  19+25       0.8781      0.17  Q         |         |         |       V  |
  19+30       0.8793      0.18  Q         |         |         |       V  |
  19+35       0.8804      0.16  Q         |         |         |       V  |
  19+40       0.8814      0.14  Q         |         |         |       V  |
  19+45       0.8823      0.14  Q         |         |         |       V  |
  19+50       0.8831      0.11  Q         |         |         |       V  |
  19+55       0.8837      0.09  Q         |         |         |       V  |
  20+ 0       0.8843      0.09  Q         |         |         |       V  |
  20+ 5       0.8851      0.11  Q         |         |         |       V  |
  20+10       0.8860      0.13  Q         |         |         |       V  |
  20+15       0.8869      0.13  Q         |         |         |       V  |
  20+20       0.8878      0.13  Q         |         |         |       V  |
  20+25       0.8887      0.13  Q         |         |         |       V  |
  20+30       0.8896      0.13  Q         |         |         |       V  |
  20+35       0.8906      0.13  Q         |         |         |       V  |
  20+40       0.8915      0.13  Q         |         |         |       V  |
  20+45       0.8924      0.13  Q         |         |         |       V  |
  20+50       0.8932      0.11  Q         |         |         |       V  |
  20+55       0.8938      0.09  Q         |         |         |       V  |
  21+ 0       0.8945      0.09  Q         |         |         |       V  |
  21+ 5       0.8952      0.11  Q         |         |         |       V  |
  21+10       0.8961      0.13  Q         |         |         |       V  |
  21+15       0.8970      0.13  Q         |         |         |        V|
  21+20       0.8978      0.11  Q         |         |         |        V|
  21+25       0.8984      0.09  Q         |         |         |        V|
  21+30       0.8991      0.09  Q         |         |         |        V|
  21+35       0.8998      0.11  Q         |         |         |        V|
  21+40       0.9007      0.13  Q         |         |         |        V|
  21+45       0.9016      0.13  Q         |         |         |        V|
  21+50       0.9024      0.11  Q         |         |         |        V|
  21+55       0.9030      0.09  Q         |         |         |        V|
  22+ 0       0.9037      0.09  Q         |         |         |        V|
  22+ 5       0.9044      0.11  Q         |         |         |        V|
  22+10       0.9053      0.13  Q         |         |         |        V|
  22+15       0.9062      0.13  Q         |         |         |        V|
  22+20       0.9070      0.11  Q         |         |         |        V|
  22+25       0.9076      0.09  Q         |         |         |        V|
  22+30       0.9083      0.09  Q         |         |         |        V|
  22+35       0.9089      0.09  Q         |         |         |        V|
  22+40       0.9095      0.09  Q         |         |         |        V|
  22+45       0.9101      0.09  Q         |         |         |        V|
  22+50       0.9107      0.09  Q         |         |         |        V|
  22+55       0.9113      0.09  Q         |         |         |        V|
  23+ 0       0.9119      0.09  Q         |         |         |        V|
  23+ 5       0.9125      0.09  Q         |         |         |        V|
  23+10       0.9132      0.09  Q         |         |         |        V|
  23+15       0.9138      0.09  Q         |         |         |        V|
  23+20       0.9144      0.09  Q         |         |         |        V|
  23+25       0.9150      0.09  Q         |         |         |        V|
  23+30       0.9156      0.09  Q         |         |         |        V|
  23+35       0.9162      0.09  Q         |         |         |        V|
  23+40       0.9168      0.09  Q         |         |         |        V|
  23+45       0.9174      0.09  Q         |         |         |        V|
  23+50       0.9181      0.09  Q         |         |         |        V|
  23+55       0.9187      0.09  Q         |         |         |        V|
  24+ 0       0.9193      0.09  Q         |         |         |        V|
  24+ 5       0.9196      0.05  Q         |         |         |        V|
  24+10       0.9197      0.01  Q         |         |         |        V|
  24+15       0.9197      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

10 YEAR

PR1HR10YR

U n i t   H y d r o g r a p h   A n a l y s i s

Study date 09/07/16 File: PR110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format


```
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.48                 4.16

100 YEAR Area rainfall data:

Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.20                10.40

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    0.776(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.776(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)

RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  53.0      0.541     0.560        0.269       1.000      0.269
                                                  Sum (F) =   0.269
Area averaged mean soil loss (F) (In/Hr) =  0.269
Minimum soil loss rate ((In/Hr)) =  0.134
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
--------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

PR1HR10YR

```
 ----------------------------------------------------------------------

                U n i t   H y d r o g r a p h
                        VALLEY S-Curve
 --------------------------------------------------------------------
                Unit Hydrograph Data
 ---------------------------------------------------------------------
 Unit time period   Time % of lag   Distribution   Unit Hydrograph
     (hrs)                           Graph %            (CFS)
 ---------------------------------------------------------------------
     1   0.083        214.725         45.835              4.003
     2   0.167        429.451         42.353              3.699
     3   0.250        644.176          8.227              0.718
     4   0.333        858.902          3.586              0.313
                               Sum = 100.000   Sum=       8.733
 ----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)          Max    |    Low      (In/Hr)
   1   0.08     4.40     0.410        (  0.269)      0.185        0.225
   2   0.17     4.50     0.419        (  0.269)      0.189        0.230
   3   0.25     5.40     0.503        (  0.269)      0.227        0.276
   4   0.33     5.40     0.503        (  0.269)      0.227        0.276
   5   0.42     5.70     0.531        (  0.269)      0.240        0.291
   6   0.50     6.40     0.596           0.269    (  0.269)       0.328
   7   0.58     7.90     0.736           0.269    (  0.333)       0.467
   8   0.67     9.10     0.848           0.269    (  0.383)       0.579
   9   0.75    12.80     1.192           0.269    (  0.539)       0.924
  10   0.83    25.60     2.384           0.269    (  1.078)       2.116
  11   0.92     7.90     0.736           0.269    (  0.333)       0.467
  12   1.00     4.90     0.456        (  0.269)      0.206        0.250
               (Loss Rate Not Used)
     Sum =     100.0                                    Sum =     6.4
        Flood volume = Effective rainfall      0.54(In)
         times area       8.7(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
        Total soil loss =      0.24(In)
        Total soil loss =     0.174(Ac.Ft)
        Total rainfall =      0.78(In)
        Flood volume =       16846.3 Cubic Feet
        Total soil loss =       7566.8 Cubic Feet
 --------------------------------------------------------------------
         Peak flow rate of this hydrograph =     12.454(CFS)
 --------------------------------------------------------------------
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    1 - H O U R    S T O R M
               R u n o f f      H y d r o g r a p h
 --------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

 --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
  -----------------------------------------------------------------------
    0+ 5      0.0062      0.90  VQ        |         |         |         |
    0+10      0.0183      1.75  |V Q      |         |         |         |
    0+15      0.0328      2.12  |  VQ     |         |         |         |
    0+20      0.0491      2.36  |   QV    |         |         |         |
    0+25      0.0660      2.46  |   Q V   |         |         |         |
    0+30      0.0844      2.67  |    Q  V |         |         |         |
    0+35      0.1077      3.38  |     Q   |V        |         |         |
    0+40      0.1378      4.37  |       Q |   V     |         |         |
    0+45      0.1810      6.28  |         | Q     V |         |         |
    0+50      0.2668     12.45  |         |         |   Q  V  |         |
    0+55      0.3394     10.55  |         |         |Q        |     V   |
    1+ 0      0.3707      4.54  |        Q|         |         |        V |
    1+ 5      0.3840      1.92  |  Q      |         |         |         V|
    1+10      0.3862      0.33  Q         |         |         |         V|
    1+15      0.3867      0.08  Q         |         |         |          V
 ----------------------------------------------------------------------
```

```
                              PR3HR10YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.80                   6.93

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.80                  15.60

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.211(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.211(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  53.0      0.541     0.560        0.269       1.000      0.269
                                                  Sum (F) =   0.269
Area averaged mean soil loss (F) (In/Hr) =  0.269
Minimum soil loss rate ((In/Hr)) =  0.134
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
```

PR3HR10YR
U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.189	(0.269)	0.085	0.104
2	0.17	1.30	0.189	(0.269)	0.085	0.104
3	0.25	1.10	0.160	(0.269)	0.072	0.088
4	0.33	1.50	0.218	(0.269)	0.099	0.119
5	0.42	1.50	0.218	(0.269)	0.099	0.119
6	0.50	1.80	0.262	(0.269)	0.118	0.143
7	0.58	1.50	0.218	(0.269)	0.099	0.119
8	0.67	1.80	0.262	(0.269)	0.118	0.143
9	0.75	1.80	0.262	(0.269)	0.118	0.143
10	0.83	1.50	0.218	(0.269)	0.099	0.119
11	0.92	1.60	0.233	(0.269)	0.105	0.127
12	1.00	1.80	0.262	(0.269)	0.118	0.143
13	1.08	2.20	0.320	(0.269)	0.145	0.175
14	1.17	2.20	0.320	(0.269)	0.145	0.175
15	1.25	2.20	0.320	(0.269)	0.145	0.175
16	1.33	2.00	0.291	(0.269)	0.131	0.159
17	1.42	2.60	0.378	(0.269)	0.171	0.207
18	1.50	2.70	0.392	(0.269)	0.177	0.215
19	1.58	2.40	0.349	(0.269)	0.158	0.191
20	1.67	2.70	0.392	(0.269)	0.177	0.215
21	1.75	3.30	0.480	(0.269)	0.217	0.263
22	1.83	3.10	0.451	(0.269)	0.204	0.247
23	1.92	2.90	0.422	(0.269)	0.191	0.231
24	2.00	3.00	0.436	(0.269)	0.197	0.239
25	2.08	3.10	0.451	(0.269)	0.204	0.247
26	2.17	4.20	0.611	0.269	(0.276)	0.342
27	2.25	5.00	0.727	0.269	(0.329)	0.458
28	2.33	3.50	0.509	(0.269)	0.230	0.279
29	2.42	6.80	0.988	0.269	(0.447)	0.720
30	2.50	7.30	1.061	0.269	(0.480)	0.793
31	2.58	8.20	1.192	0.269	(0.539)	0.923
32	2.67	5.90	0.858	0.269	(0.388)	0.589
33	2.75	2.00	0.291	(0.269)	0.131	0.159
34	2.83	1.80	0.262	(0.269)	0.118	0.143
35	2.92	1.80	0.262	(0.269)	0.118	0.143
36	3.00	0.60	0.087	(0.269)	0.039	0.048

(Loss Rate Not Used)

Sum = 100.0 Sum = 8.8

Flood volume = Effective rainfall 0.73(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)
Total soil loss = 0.48(In)
Total soil loss = 0.344(Ac.Ft)
Total rainfall = 1.21(In)
Flood volume = 23097.8 Cubic Feet
Total soil loss = 15004.3 Cubic Feet

Peak flow rate of this hydrograph = 7.236(CFS)

++

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0029	0.41	VQ	|	|	|	|

Attachment: Appendix C - Hydrology Report (2340 : PA16-0039 Plot Plan)

```
                                               PR3HR10YR
    0+10       0.0084      0.80  V  Q      |         |         |         |
    0+15       0.0139      0.81  |V Q      |         |         |         |
    0+20       0.0202      0.91  |V Q      |         |         |         |
    0+25       0.0272      1.02  | V Q     |         |         |         |
    0+30       0.0350      1.13  | V Q     |         |         |         |
    0+35       0.0428      1.13  |  VQ     |         |         |         |
    0+40       0.0507      1.16  |  VQ     |         |         |         |
    0+45       0.0592      1.24  |   Q     |         |         |         |
    0+50       0.0672      1.15  |   QV    |         |         |         |
    0+55       0.0747      1.10  |   QV    |         |         |         |
    1+ 0       0.0828      1.18  |   Q V   |         |         |         |
    1+ 5       0.0922      1.36  |    QV   |         |         |         |
    1+10       0.1025      1.49  |    Q V  |         |         |         |
    1+15       0.1130      1.52  |     Q V |         |         |         |
    1+20       0.1231      1.47  |    Q   V|         |         |         |
    1+25       0.1341      1.60  |     Q   V         |         |         |
    1+30       0.1465      1.80  |      Q  |V        |         |         |
    1+35       0.1586      1.76  |      Q  |V        |         |         |
    1+40       0.1709      1.79  |      Q  | V       |         |         |
    1+45       0.1851      2.05  |       Q |  V      |         |         |
    1+50       0.2000      2.18  |       Q |    V    |         |         |
    1+55       0.2145      2.10  |       Q |     V   |         |         |
    2+ 0       0.2287      2.07  |       Q |      V  |         |         |
    2+ 5       0.2433      2.12  |       Q |       V |         |         |
    2+10       0.2607      2.53  |         Q        V|         |         |
    2+15       0.2838      3.35  |         |  Q      |V        |         |
    2+20       0.3054      3.14  |         | Q       |  V      |         |
    2+25       0.3354      4.35  |         |      Q  |    V    |         |
    2+30       0.3780      6.18  |         |         |   Q   V |         |
    2+35       0.4278      7.24  |         |         |       Q | V       |
    2+40       0.4731      6.57  |         |         |     Q   |    V    |
    2+45       0.4987      3.73  |         |   Q     |         |      V  |
    2+50       0.5117      1.88  |      Q  |         |         |       V |
    2+55       0.5213      1.40  |    Q    |         |         |        V|
    3+ 0       0.5274      0.87  |  Q      |         |         |        V|
    3+ 5       0.5296      0.32  |Q        |         |         |        V|
    3+10       0.5301      0.08  Q         |         |         |        V|
    3+15       0.5303      0.01  Q         |         |         |         V
----------------------------------------------------------------------
```

```
                                   PR6HR10YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.10                    9.53

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            2.50                   21.66

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.676(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.676(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  53.0      0.541     0.560        0.269       1.000      0.269
                                                  Sum (F) =   0.269
Area averaged mean soil loss (F) (In/Hr) =  0.269
Minimum soil loss rate ((In/Hr)) =  0.134
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
```

PR6HR10YR

U n i t H y d r o g r a p h

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	0.50	0.101	(0.269)	0.045	0.055
2	0.17	0.60	0.121	(0.269)	0.055	0.066
3	0.25	0.60	0.121	(0.269)	0.055	0.066
4	0.33	0.60	0.121	(0.269)	0.055	0.066
5	0.42	0.60	0.121	(0.269)	0.055	0.066
6	0.50	0.70	0.141	(0.269)	0.064	0.077
7	0.58	0.70	0.141	(0.269)	0.064	0.077
8	0.67	0.70	0.141	(0.269)	0.064	0.077
9	0.75	0.70	0.141	(0.269)	0.064	0.077
10	0.83	0.70	0.141	(0.269)	0.064	0.077
11	0.92	0.70	0.141	(0.269)	0.064	0.077
12	1.00	0.80	0.161	(0.269)	0.073	0.088
13	1.08	0.80	0.161	(0.269)	0.073	0.088
14	1.17	0.80	0.161	(0.269)	0.073	0.088
15	1.25	0.80	0.161	(0.269)	0.073	0.088
16	1.33	0.80	0.161	(0.269)	0.073	0.088
17	1.42	0.80	0.161	(0.269)	0.073	0.088
18	1.50	0.80	0.161	(0.269)	0.073	0.088
19	1.58	0.80	0.161	(0.269)	0.073	0.088
20	1.67	0.80	0.161	(0.269)	0.073	0.088
21	1.75	0.80	0.161	(0.269)	0.073	0.088
22	1.83	0.80	0.161	(0.269)	0.073	0.088
23	1.92	0.80	0.161	(0.269)	0.073	0.088
24	2.00	0.90	0.181	(0.269)	0.082	0.099
25	2.08	0.80	0.161	(0.269)	0.073	0.088
26	2.17	0.90	0.181	(0.269)	0.082	0.099
27	2.25	0.90	0.181	(0.269)	0.082	0.099
28	2.33	0.90	0.181	(0.269)	0.082	0.099
29	2.42	0.90	0.181	(0.269)	0.082	0.099
30	2.50	0.90	0.181	(0.269)	0.082	0.099
31	2.58	0.90	0.181	(0.269)	0.082	0.099
32	2.67	0.90	0.181	(0.269)	0.082	0.099
33	2.75	1.00	0.201	(0.269)	0.091	0.110
34	2.83	1.00	0.201	(0.269)	0.091	0.110
35	2.92	1.00	0.201	(0.269)	0.091	0.110
36	3.00	1.00	0.201	(0.269)	0.091	0.110
37	3.08	1.00	0.201	(0.269)	0.091	0.110
38	3.17	1.10	0.221	(0.269)	0.100	0.121
39	3.25	1.10	0.221	(0.269)	0.100	0.121
40	3.33	1.10	0.221	(0.269)	0.100	0.121
41	3.42	1.20	0.241	(0.269)	0.109	0.132
42	3.50	1.30	0.261	(0.269)	0.118	0.143
43	3.58	1.40	0.282	(0.269)	0.127	0.154
44	3.67	1.40	0.282	(0.269)	0.127	0.154
45	3.75	1.50	0.302	(0.269)	0.136	0.165
46	3.83	1.50	0.302	(0.269)	0.136	0.165
47	3.92	1.60	0.322	(0.269)	0.145	0.176
48	4.00	1.60	0.322	(0.269)	0.145	0.176
49	4.08	1.70	0.342	(0.269)	0.155	0.187
50	4.17	1.80	0.362	(0.269)	0.164	0.198
51	4.25	1.90	0.382	(0.269)	0.173	0.209
52	4.33	2.00	0.402	(0.269)	0.182	0.220
53	4.42	2.10	0.422	(0.269)	0.191	0.231
54	4.50	2.10	0.422	(0.269)	0.191	0.231
55	4.58	2.20	0.442	(0.269)	0.200	0.242
56	4.67	2.30	0.463	(0.269)	0.209	0.253
57	4.75	2.40	0.483	(0.269)	0.218	0.265
58	4.83	2.40	0.483	(0.269)	0.218	0.265

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                                                    PR6HR10YR
59   4.92     2.50      0.503       (  0.269)       0.227         0.276
60   5.00     2.60      0.523       (  0.269)       0.236         0.287
61   5.08     3.10      0.623          0.269    (  0.282)         0.355
62   5.17     3.60      0.724          0.269    (  0.327)         0.455
63   5.25     3.90      0.784          0.269    (  0.355)         0.516
64   5.33     4.20      0.845          0.269    (  0.382)         0.576
65   5.42     4.70      0.945          0.269    (  0.427)         0.677
66   5.50     5.60      1.126          0.269    (  0.509)         0.858
67   5.58     1.90      0.382       (  0.269)       0.173         0.209
68   5.67     0.90      0.181       (  0.269)       0.082         0.099
69   5.75     0.60      0.121       (  0.269)       0.055         0.066
70   5.83     0.50      0.101       (  0.269)       0.045         0.055
71   5.92     0.30      0.060       (  0.269)       0.027         0.033
72   6.00     0.20      0.040       (  0.269)       0.018         0.022
               (Loss Rate Not Used)
   Sum =     100.0                                     Sum =    11.7
      Flood volume = Effective rainfall      0.97(In)
       times area       8.7(Ac.)/[(In)/(Ft.)] =       0.7(Ac.Ft)
      Total soil loss =      0.70(In)
      Total soil loss =     0.507(Ac.Ft)
      Total rainfall =      1.68(In)
      Flood volume =       30644.8 Cubic Feet
      Total soil loss =       22069.6 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      6.515(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0015      0.22  Q         |         |         |         |
  0+10       0.0047      0.47  VQ        |         |         |         |
  0+15       0.0085      0.55  V Q       |         |         |         |
  0+20       0.0125      0.57  V Q       |         |         |         |
  0+25       0.0165      0.58  V Q       |         |         |         |
  0+30       0.0207      0.62  |VQ       |         |         |         |
  0+35       0.0253      0.66  |VQ       |         |         |         |
  0+40       0.0299      0.67  |VQ       |         |         |         |
  0+45       0.0346      0.67  |VQ       |         |         |         |
  0+50       0.0392      0.67  | Q       |         |         |         |
  0+55       0.0439      0.67  | Q       |         |         |         |
  1+ 0       0.0488      0.72  | Q       |         |         |         |
  1+ 5       0.0540      0.76  |  Q      |         |         |         |
  1+10       0.0593      0.77  |  Q      |         |         |         |
  1+15       0.0646      0.77  |  Q      |         |         |         |
  1+20       0.0699      0.77  |  Q      |         |         |         |
  1+25       0.0752      0.77  |  QV     |         |         |         |
  1+30       0.0805      0.77  |  QV     |         |         |         |
  1+35       0.0858      0.77  |  QV     |         |         |         |
  1+40       0.0911      0.77  |  Q V    |         |         |         |
  1+45       0.0964      0.77  |  Q V    |         |         |         |
  1+50       0.1018      0.77  |  Q V    |         |         |         |
  1+55       0.1071      0.77  |  Q  V   |         |         |         |
  2+ 0       0.1127      0.81  |  Q  V   |         |         |         |
  2+ 5       0.1183      0.81  |  Q  V   |         |         |         |
  2+10       0.1239      0.82  |  Q   V  |         |         |         |
  2+15       0.1298      0.86  |  Q   V  |         |         |         |
  2+20       0.1358      0.86  |  Q   V  |         |         |         |
  2+25       0.1417      0.87  |  Q    V |         |         |         |
  2+30       0.1477      0.87  |  Q    V |         |         |         |
  2+35       0.1537      0.87  |  Q    V |         |         |         |
  2+40       0.1596      0.87  |  Q     V|         |         |         |
  2+45       0.1659      0.91  |  Q     V|         |         |         |
  2+50       0.1725      0.95  |  Q     V|         |         |         |
  2+55       0.1791      0.96  |  Q      V         |         |         |
  3+ 0       0.1857      0.96  |  Q      V         |         |         |
  3+ 5       0.1923      0.96  |  Q      V         |         |         |
  3+10       0.1993      1.01  |   Q     |V        |         |         |
  3+15       0.2065      1.05  |   Q     |V        |         |         |
  3+20       0.2138      1.06  |   Q     | V       |         |         |
  3+25       0.2214      1.10  |   Q     | V       |         |         |
  3+30       0.2296      1.19  |   Q     |  V      |         |         |
  3+35       0.2384      1.28  |    Q    |  V      |         |         |
  3+40       0.2476      1.33  |    Q    |   V     |         |         |
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                                                PR6HR10YR
    3+45       0.2571      1.39  |    Q    |   V     |         |         |
    3+50       0.2670      1.43  |    Q    |    V    |         |         |
    3+55       0.2772      1.49  |    Q    |    V    |         |         |
    4+ 0       0.2878      1.53  |     Q   |     V   |         |         |
    4+ 5       0.2986      1.58  |     Q   |     V   |         |         |
    4+10       0.3101      1.67  |     Q   |      V  |         |         |
    4+15       0.3223      1.76  |      Q  |       V |         |         |
    4+20       0.3351      1.86  |      Q  |        V|         |         |
    4+25       0.3485      1.96  |      Q  |        V|         |         |
    4+30       0.3624      2.01  |       Q |         V         |         |
    4+35       0.3766      2.06  |       Q |         |V        |         |
    4+40       0.3914      2.15  |       Q |         | V       |         |
    4+45       0.4068      2.24  |       Q |         |  V      |         |
    4+50       0.4227      2.30  |        Q|         |   V     |         |
    4+55       0.4389      2.35  |        Q|         |   V     |         |
    5+ 0       0.4557      2.44  |        Q|         |    V    |         |
    5+ 5       0.4747      2.76  |         |Q        |     V   |         |
    5+10       0.4983      3.43  |         |  Q      |       V |         |
    5+15       0.5265      4.10  |         |     Q   |        V|         |
    5+20       0.5586      4.65  |         |       Q |         |V        |
    5+25       0.5955      5.36  |         |         |Q        |  V      |
    5+30       0.6403      6.51  |         |         |     Q   |     V   |
    5+35       0.6725      4.68  |         |       Q |         |       V |
    5+40       0.6863      2.00  |       Q |         |         |        V|
    5+45       0.6936      1.05  |   Q     |         |         |        V|
    5+50       0.6977      0.60  | Q       |         |         |        V|
    5+55       0.7006      0.41  |Q        |         |         |        V|
    6+ 0       0.7024      0.27  |Q        |         |         |        V|
    6+ 5       0.7033      0.12  Q         |         |         |        V|
    6+10       0.7035      0.03  Q         |         |         |        V|
    6+15       0.7035      0.01  Q         |         |         |         V
-----------------------------------------------------------------------
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                                  PR24HR10YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  09/07/16 File: PR2410.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.72                   14.90

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            4.30                   37.26

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    2.781(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.781(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  53.0      0.541     0.560        0.269       1.000      0.269
                                                  Sum (F) =   0.269
Area averaged mean soil loss (F) (In/Hr) =  0.269
Minimum soil loss rate ((In/Hr)) =  0.134
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
```

PR24HR10YR
Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	0.07	0.022	(0.476)	0.010	0.012
2	0.17	0.07	0.022	(0.474)	0.010	0.012
3	0.25	0.07	0.022	(0.472)	0.010	0.012
4	0.33	0.10	0.033	(0.471)	0.015	0.018
5	0.42	0.10	0.033	(0.469)	0.015	0.018
6	0.50	0.10	0.033	(0.467)	0.015	0.018
7	0.58	0.10	0.033	(0.465)	0.015	0.018
8	0.67	0.10	0.033	(0.463)	0.015	0.018
9	0.75	0.10	0.033	(0.461)	0.015	0.018
10	0.83	0.13	0.045	(0.460)	0.020	0.024
11	0.92	0.13	0.045	(0.458)	0.020	0.024
12	1.00	0.13	0.045	(0.456)	0.020	0.024
13	1.08	0.10	0.033	(0.454)	0.015	0.018
14	1.17	0.10	0.033	(0.452)	0.015	0.018
15	1.25	0.10	0.033	(0.451)	0.015	0.018
16	1.33	0.10	0.033	(0.449)	0.015	0.018
17	1.42	0.10	0.033	(0.447)	0.015	0.018
18	1.50	0.10	0.033	(0.445)	0.015	0.018
19	1.58	0.10	0.033	(0.443)	0.015	0.018
20	1.67	0.10	0.033	(0.442)	0.015	0.018
21	1.75	0.10	0.033	(0.440)	0.015	0.018
22	1.83	0.13	0.045	(0.438)	0.020	0.024
23	1.92	0.13	0.045	(0.436)	0.020	0.024
24	2.00	0.13	0.045	(0.435)	0.020	0.024
25	2.08	0.13	0.045	(0.433)	0.020	0.024
26	2.17	0.13	0.045	(0.431)	0.020	0.024
27	2.25	0.13	0.045	(0.429)	0.020	0.024
28	2.33	0.13	0.045	(0.428)	0.020	0.024
29	2.42	0.13	0.045	(0.426)	0.020	0.024
30	2.50	0.13	0.045	(0.424)	0.020	0.024
31	2.58	0.17	0.056	(0.422)	0.025	0.030
32	2.67	0.17	0.056	(0.421)	0.025	0.030
33	2.75	0.17	0.056	(0.419)	0.025	0.030
34	2.83	0.17	0.056	(0.417)	0.025	0.030
35	2.92	0.17	0.056	(0.415)	0.025	0.030
36	3.00	0.17	0.056	(0.414)	0.025	0.030
37	3.08	0.17	0.056	(0.412)	0.025	0.030
38	3.17	0.17	0.056	(0.410)	0.025	0.030
39	3.25	0.17	0.056	(0.409)	0.025	0.030
40	3.33	0.17	0.056	(0.407)	0.025	0.030
41	3.42	0.17	0.056	(0.405)	0.025	0.030
42	3.50	0.17	0.056	(0.404)	0.025	0.030
43	3.58	0.17	0.056	(0.402)	0.025	0.030
44	3.67	0.17	0.056	(0.400)	0.025	0.030
45	3.75	0.17	0.056	(0.398)	0.025	0.030
46	3.83	0.20	0.067	(0.397)	0.030	0.037
47	3.92	0.20	0.067	(0.395)	0.030	0.037
48	4.00	0.20	0.067	(0.393)	0.030	0.037
49	4.08	0.20	0.067	(0.392)	0.030	0.037
50	4.17	0.20	0.067	(0.390)	0.030	0.037
51	4.25	0.20	0.067	(0.388)	0.030	0.037
52	4.33	0.23	0.078	(0.387)	0.035	0.043
53	4.42	0.23	0.078	(0.385)	0.035	0.043
54	4.50	0.23	0.078	(0.383)	0.035	0.043
55	4.58	0.23	0.078	(0.382)	0.035	0.043
56	4.67	0.23	0.078	(0.380)	0.035	0.043
57	4.75	0.23	0.078	(0.379)	0.035	0.043
58	4.83	0.27	0.089	(0.377)	0.040	0.049

59	4.92	0.27	0.089	(0.375)	0.040	0.049
60	5.00	0.27	0.089	(0.374)	0.040	0.049
61	5.08	0.20	0.067	(0.372)	0.030	0.037
62	5.17	0.20	0.067	(0.370)	0.030	0.037
63	5.25	0.20	0.067	(0.369)	0.030	0.037
64	5.33	0.23	0.078	(0.367)	0.035	0.043
65	5.42	0.23	0.078	(0.366)	0.035	0.043
66	5.50	0.23	0.078	(0.364)	0.035	0.043
67	5.58	0.27	0.089	(0.362)	0.040	0.049
68	5.67	0.27	0.089	(0.361)	0.040	0.049
69	5.75	0.27	0.089	(0.359)	0.040	0.049
70	5.83	0.27	0.089	(0.358)	0.040	0.049
71	5.92	0.27	0.089	(0.356)	0.040	0.049
72	6.00	0.27	0.089	(0.354)	0.040	0.049
73	6.08	0.30	0.100	(0.353)	0.045	0.055
74	6.17	0.30	0.100	(0.351)	0.045	0.055
75	6.25	0.30	0.100	(0.350)	0.045	0.055
76	6.33	0.30	0.100	(0.348)	0.045	0.055
77	6.42	0.30	0.100	(0.347)	0.045	0.055
78	6.50	0.30	0.100	(0.345)	0.045	0.055
79	6.58	0.33	0.111	(0.344)	0.050	0.061
80	6.67	0.33	0.111	(0.342)	0.050	0.061
81	6.75	0.33	0.111	(0.340)	0.050	0.061
82	6.83	0.33	0.111	(0.339)	0.050	0.061
83	6.92	0.33	0.111	(0.337)	0.050	0.061
84	7.00	0.33	0.111	(0.336)	0.050	0.061
85	7.08	0.33	0.111	(0.334)	0.050	0.061
86	7.17	0.33	0.111	(0.333)	0.050	0.061
87	7.25	0.33	0.111	(0.331)	0.050	0.061
88	7.33	0.37	0.122	(0.330)	0.055	0.067
89	7.42	0.37	0.122	(0.328)	0.055	0.067
90	7.50	0.37	0.122	(0.327)	0.055	0.067
91	7.58	0.40	0.134	(0.325)	0.060	0.073
92	7.67	0.40	0.134	(0.324)	0.060	0.073
93	7.75	0.40	0.134	(0.322)	0.060	0.073
94	7.83	0.43	0.145	(0.321)	0.065	0.079
95	7.92	0.43	0.145	(0.319)	0.065	0.079
96	8.00	0.43	0.145	(0.318)	0.065	0.079
97	8.08	0.50	0.167	(0.316)	0.075	0.091
98	8.17	0.50	0.167	(0.315)	0.075	0.091
99	8.25	0.50	0.167	(0.313)	0.075	0.091
100	8.33	0.50	0.167	(0.312)	0.075	0.091
101	8.42	0.50	0.167	(0.310)	0.075	0.091
102	8.50	0.50	0.167	(0.309)	0.075	0.091
103	8.58	0.53	0.178	(0.308)	0.080	0.098
104	8.67	0.53	0.178	(0.306)	0.080	0.098
105	8.75	0.53	0.178	(0.305)	0.080	0.098
106	8.83	0.57	0.189	(0.303)	0.085	0.104
107	8.92	0.57	0.189	(0.302)	0.085	0.104
108	9.00	0.57	0.189	(0.300)	0.085	0.104
109	9.08	0.63	0.211	(0.299)	0.096	0.116
110	9.17	0.63	0.211	(0.298)	0.096	0.116
111	9.25	0.63	0.211	(0.296)	0.096	0.116
112	9.33	0.67	0.223	(0.295)	0.101	0.122
113	9.42	0.67	0.223	(0.293)	0.101	0.122
114	9.50	0.67	0.223	(0.292)	0.101	0.122
115	9.58	0.70	0.234	(0.290)	0.106	0.128
116	9.67	0.70	0.234	(0.289)	0.106	0.128
117	9.75	0.70	0.234	(0.288)	0.106	0.128
118	9.83	0.73	0.245	(0.286)	0.111	0.134
119	9.92	0.73	0.245	(0.285)	0.111	0.134
120	10.00	0.73	0.245	(0.284)	0.111	0.134
121	10.08	0.50	0.167	(0.282)	0.075	0.091
122	10.17	0.50	0.167	(0.281)	0.075	0.091
123	10.25	0.50	0.167	(0.279)	0.075	0.091
124	10.33	0.50	0.167	(0.278)	0.075	0.091
125	10.42	0.50	0.167	(0.277)	0.075	0.091
126	10.50	0.50	0.167	(0.275)	0.075	0.091
127	10.58	0.67	0.223	(0.274)	0.101	0.122
128	10.67	0.67	0.223	(0.273)	0.101	0.122
129	10.75	0.67	0.223	(0.271)	0.101	0.122
130	10.83	0.67	0.223	(0.270)	0.101	0.122
131	10.92	0.67	0.223	(0.269)	0.101	0.122
132	11.00	0.67	0.223	(0.267)	0.101	0.122
133	11.08	0.63	0.211	(0.266)	0.096	0.116
134	11.17	0.63	0.211	(0.265)	0.096	0.116
135	11.25	0.63	0.211	(0.263)	0.096	0.116
136	11.33	0.63	0.211	(0.262)	0.096	0.116
137	11.42	0.63	0.211	(0.261)	0.096	0.116

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138	11.50	0.63	0.211	(0.260)	0.096	0.116
139	11.58	0.57	0.189	(0.258)	0.085	0.104
140	11.67	0.57	0.189	(0.257)	0.085	0.104
141	11.75	0.57	0.189	(0.256)	0.085	0.104
142	11.83	0.60	0.200	(0.254)	0.091	0.110
143	11.92	0.60	0.200	(0.253)	0.091	0.110
144	12.00	0.60	0.200	(0.252)	0.091	0.110
145	12.08	0.83	0.278	(0.251)	0.126	0.152
146	12.17	0.83	0.278	(0.249)	0.126	0.152
147	12.25	0.83	0.278	(0.248)	0.126	0.152
148	12.33	0.87	0.289	(0.247)	0.131	0.159
149	12.42	0.87	0.289	(0.246)	0.131	0.159
150	12.50	0.87	0.289	(0.244)	0.131	0.159
151	12.58	0.93	0.312	(0.243)	0.141	0.171
152	12.67	0.93	0.312	(0.242)	0.141	0.171
153	12.75	0.93	0.312	(0.241)	0.141	0.171
154	12.83	0.97	0.323	(0.240)	0.146	0.177
155	12.92	0.97	0.323	(0.238)	0.146	0.177
156	13.00	0.97	0.323	(0.237)	0.146	0.177
157	13.08	1.13	0.378	(0.236)	0.171	0.207
158	13.17	1.13	0.378	(0.235)	0.171	0.207
159	13.25	1.13	0.378	(0.234)	0.171	0.207
160	13.33	1.13	0.378	(0.232)	0.171	0.207
161	13.42	1.13	0.378	(0.231)	0.171	0.207
162	13.50	1.13	0.378	(0.230)	0.171	0.207
163	13.58	0.77	0.256	(0.229)	0.116	0.140
164	13.67	0.77	0.256	(0.228)	0.116	0.140
165	13.75	0.77	0.256	(0.227)	0.116	0.140
166	13.83	0.77	0.256	(0.225)	0.116	0.140
167	13.92	0.77	0.256	(0.224)	0.116	0.140
168	14.00	0.77	0.256	(0.223)	0.116	0.140
169	14.08	0.90	0.300	(0.222)	0.136	0.165
170	14.17	0.90	0.300	(0.221)	0.136	0.165
171	14.25	0.90	0.300	(0.220)	0.136	0.165
172	14.33	0.87	0.289	(0.219)	0.131	0.159
173	14.42	0.87	0.289	(0.217)	0.131	0.159
174	14.50	0.87	0.289	(0.216)	0.131	0.159
175	14.58	0.87	0.289	(0.215)	0.131	0.159
176	14.67	0.87	0.289	(0.214)	0.131	0.159
177	14.75	0.87	0.289	(0.213)	0.131	0.159
178	14.83	0.83	0.278	(0.212)	0.126	0.152
179	14.92	0.83	0.278	(0.211)	0.126	0.152
180	15.00	0.83	0.278	(0.210)	0.126	0.152
181	15.08	0.80	0.267	(0.209)	0.121	0.146
182	15.17	0.80	0.267	(0.208)	0.121	0.146
183	15.25	0.80	0.267	(0.207)	0.121	0.146
184	15.33	0.77	0.256	(0.205)	0.116	0.140
185	15.42	0.77	0.256	(0.204)	0.116	0.140
186	15.50	0.77	0.256	(0.203)	0.116	0.140
187	15.58	0.63	0.211	(0.202)	0.096	0.116
188	15.67	0.63	0.211	(0.201)	0.096	0.116
189	15.75	0.63	0.211	(0.200)	0.096	0.116
190	15.83	0.63	0.211	(0.199)	0.096	0.116
191	15.92	0.63	0.211	(0.198)	0.096	0.116
192	16.00	0.63	0.211	(0.197)	0.096	0.116
193	16.08	0.13	0.045	(0.196)	0.020	0.024
194	16.17	0.13	0.045	(0.195)	0.020	0.024
195	16.25	0.13	0.045	(0.194)	0.020	0.024
196	16.33	0.13	0.045	(0.193)	0.020	0.024
197	16.42	0.13	0.045	(0.192)	0.020	0.024
198	16.50	0.13	0.045	(0.191)	0.020	0.024
199	16.58	0.10	0.033	(0.190)	0.015	0.018
200	16.67	0.10	0.033	(0.189)	0.015	0.018
201	16.75	0.10	0.033	(0.188)	0.015	0.018
202	16.83	0.10	0.033	(0.187)	0.015	0.018
203	16.92	0.10	0.033	(0.186)	0.015	0.018
204	17.00	0.10	0.033	(0.185)	0.015	0.018
205	17.08	0.17	0.056	(0.185)	0.025	0.030
206	17.17	0.17	0.056	(0.184)	0.025	0.030
207	17.25	0.17	0.056	(0.183)	0.025	0.030
208	17.33	0.17	0.056	(0.182)	0.025	0.030
209	17.42	0.17	0.056	(0.181)	0.025	0.030
210	17.50	0.17	0.056	(0.180)	0.025	0.030
211	17.58	0.17	0.056	(0.179)	0.025	0.030
212	17.67	0.17	0.056	(0.178)	0.025	0.030
213	17.75	0.17	0.056	(0.177)	0.025	0.030
214	17.83	0.13	0.045	(0.176)	0.020	0.024
215	17.92	0.13	0.045	(0.176)	0.020	0.024
216	18.00	0.13	0.045	(0.175)	0.020	0.024

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217	18.08	0.13	0.045	(0.174)	0.020	0.024
218	18.17	0.13	0.045	(0.173)	0.020	0.024
219	18.25	0.13	0.045	(0.172)	0.020	0.024
220	18.33	0.13	0.045	(0.171)	0.020	0.024
221	18.42	0.13	0.045	(0.170)	0.020	0.024
222	18.50	0.13	0.045	(0.170)	0.020	0.024
223	18.58	0.10	0.033	(0.169)	0.015	0.018
224	18.67	0.10	0.033	(0.168)	0.015	0.018
225	18.75	0.10	0.033	(0.167)	0.015	0.018
226	18.83	0.07	0.022	(0.166)	0.010	0.012
227	18.92	0.07	0.022	(0.166)	0.010	0.012
228	19.00	0.07	0.022	(0.165)	0.010	0.012
229	19.08	0.10	0.033	(0.164)	0.015	0.018
230	19.17	0.10	0.033	(0.163)	0.015	0.018
231	19.25	0.10	0.033	(0.162)	0.015	0.018
232	19.33	0.13	0.045	(0.162)	0.020	0.024
233	19.42	0.13	0.045	(0.161)	0.020	0.024
234	19.50	0.13	0.045	(0.160)	0.020	0.024
235	19.58	0.10	0.033	(0.159)	0.015	0.018
236	19.67	0.10	0.033	(0.159)	0.015	0.018
237	19.75	0.10	0.033	(0.158)	0.015	0.018
238	19.83	0.07	0.022	(0.157)	0.010	0.012
239	19.92	0.07	0.022	(0.157)	0.010	0.012
240	20.00	0.07	0.022	(0.156)	0.010	0.012
241	20.08	0.10	0.033	(0.155)	0.015	0.018
242	20.17	0.10	0.033	(0.155)	0.015	0.018
243	20.25	0.10	0.033	(0.154)	0.015	0.018
244	20.33	0.10	0.033	(0.153)	0.015	0.018
245	20.42	0.10	0.033	(0.153)	0.015	0.018
246	20.50	0.10	0.033	(0.152)	0.015	0.018
247	20.58	0.10	0.033	(0.151)	0.015	0.018
248	20.67	0.10	0.033	(0.151)	0.015	0.018
249	20.75	0.10	0.033	(0.150)	0.015	0.018
250	20.83	0.07	0.022	(0.149)	0.010	0.012
251	20.92	0.07	0.022	(0.149)	0.010	0.012
252	21.00	0.07	0.022	(0.148)	0.010	0.012
253	21.08	0.10	0.033	(0.148)	0.015	0.018
254	21.17	0.10	0.033	(0.147)	0.015	0.018
255	21.25	0.10	0.033	(0.146)	0.015	0.018
256	21.33	0.07	0.022	(0.146)	0.010	0.012
257	21.42	0.07	0.022	(0.145)	0.010	0.012
258	21.50	0.07	0.022	(0.145)	0.010	0.012
259	21.58	0.10	0.033	(0.144)	0.015	0.018
260	21.67	0.10	0.033	(0.144)	0.015	0.018
261	21.75	0.10	0.033	(0.143)	0.015	0.018
262	21.83	0.07	0.022	(0.143)	0.010	0.012
263	21.92	0.07	0.022	(0.142)	0.010	0.012
264	22.00	0.07	0.022	(0.142)	0.010	0.012
265	22.08	0.10	0.033	(0.141)	0.015	0.018
266	22.17	0.10	0.033	(0.141)	0.015	0.018
267	22.25	0.10	0.033	(0.140)	0.015	0.018
268	22.33	0.07	0.022	(0.140)	0.010	0.012
269	22.42	0.07	0.022	(0.140)	0.010	0.012
270	22.50	0.07	0.022	(0.139)	0.010	0.012
271	22.58	0.07	0.022	(0.139)	0.010	0.012
272	22.67	0.07	0.022	(0.138)	0.010	0.012
273	22.75	0.07	0.022	(0.138)	0.010	0.012
274	22.83	0.07	0.022	(0.138)	0.010	0.012
275	22.92	0.07	0.022	(0.137)	0.010	0.012
276	23.00	0.07	0.022	(0.137)	0.010	0.012
277	23.08	0.07	0.022	(0.137)	0.010	0.012
278	23.17	0.07	0.022	(0.136)	0.010	0.012
279	23.25	0.07	0.022	(0.136)	0.010	0.012
280	23.33	0.07	0.022	(0.136)	0.010	0.012
281	23.42	0.07	0.022	(0.135)	0.010	0.012
282	23.50	0.07	0.022	(0.135)	0.010	0.012
283	23.58	0.07	0.022	(0.135)	0.010	0.012
284	23.67	0.07	0.022	(0.135)	0.010	0.012
285	23.75	0.07	0.022	(0.135)	0.010	0.012
286	23.83	0.07	0.022	(0.134)	0.010	0.012
287	23.92	0.07	0.022	(0.134)	0.010	0.012
288	24.00	0.07	0.022	(0.134)	0.010	0.012

(Loss Rate Not Used)

Sum = 100.0 Sum = 18.3

Flood volume = Effective rainfall 1.52(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 1.1(Ac.Ft)
Total soil loss = 1.26(In)
Total soil loss = 0.908(Ac.Ft)
Total rainfall = 2.78(In)

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                                        PR24HR10YR
      Flood volume =       47942.1 Cubic Feet
      Total soil loss =       39543.5 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      1.811(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0003      0.05  Q         |         |         |         |
  0+10       0.0010      0.09  Q         |         |         |         |
  0+15       0.0017      0.10  Q         |         |         |         |
  0+20       0.0026      0.13  Q         |         |         |         |
  0+25       0.0036      0.15  Q         |         |         |         |
  0+30       0.0047      0.16  Q         |         |         |         |
  0+35       0.0058      0.16  Q         |         |         |         |
  0+40       0.0069      0.16  Q         |         |         |         |
  0+45       0.0080      0.16  Q         |         |         |         |
  0+50       0.0093      0.18  Q         |         |         |         |
  0+55       0.0107      0.21  Q         |         |         |         |
  1+ 0       0.0122      0.21  Q         |         |         |         |
  1+ 5       0.0135      0.19  Q         |         |         |         |
  1+10       0.0146      0.17  Q         |         |         |         |
  1+15       0.0157      0.16  Q         |         |         |         |
  1+20       0.0168      0.16  Q         |         |         |         |
  1+25       0.0179      0.16  Q         |         |         |         |
  1+30       0.0190      0.16  Q         |         |         |         |
  1+35       0.0201      0.16  Q         |         |         |         |
  1+40       0.0212      0.16  Q         |         |         |         |
  1+45       0.0223      0.16  Q         |         |         |         |
  1+50       0.0236      0.18  Q         |         |         |         |
  1+55       0.0250      0.21  Q         |         |         |         |
  2+ 0       0.0265      0.21  Q         |         |         |         |
  2+ 5       0.0280      0.21  QV        |         |         |         |
  2+10       0.0294      0.21  QV        |         |         |         |
  2+15       0.0309      0.21  QV        |         |         |         |
  2+20       0.0324      0.21  QV        |         |         |         |
  2+25       0.0338      0.21  QV        |         |         |         |
  2+30       0.0353      0.21  QV        |         |         |         |
  2+35       0.0369      0.24  QV        |         |         |         |
  2+40       0.0387      0.26  |Q        |         |         |         |
  2+45       0.0405      0.26  |Q        |         |         |         |
  2+50       0.0424      0.27  |Q        |         |         |         |
  2+55       0.0442      0.27  |Q        |         |         |         |
  3+ 0       0.0460      0.27  |Q        |         |         |         |
  3+ 5       0.0479      0.27  |Q        |         |         |         |
  3+10       0.0497      0.27  |Q        |         |         |         |
  3+15       0.0516      0.27  |Q        |         |         |         |
  3+20       0.0534      0.27  |Q        |         |         |         |
  3+25       0.0552      0.27  |QV       |         |         |         |
  3+30       0.0571      0.27  |QV       |         |         |         |
  3+35       0.0589      0.27  |QV       |         |         |         |
  3+40       0.0607      0.27  |QV       |         |         |         |
  3+45       0.0626      0.27  |QV       |         |         |         |
  3+50       0.0646      0.29  |QV       |         |         |         |
  3+55       0.0667      0.31  |QV       |         |         |         |
  4+ 0       0.0689      0.32  |QV       |         |         |         |
  4+ 5       0.0711      0.32  |QV       |         |         |         |
  4+10       0.0733      0.32  |QV       |         |         |         |
  4+15       0.0755      0.32  |QV       |         |         |         |
  4+20       0.0779      0.34  |QV       |         |         |         |
  4+25       0.0804      0.37  |QV       |         |         |         |
  4+30       0.0830      0.37  |Q V      |         |         |         |
  4+35       0.0855      0.37  |Q V      |         |         |         |
  4+40       0.0881      0.37  |Q V      |         |         |         |
  4+45       0.0907      0.37  |Q V      |         |         |         |
  4+50       0.0934      0.40  |Q V      |         |         |         |
  4+55       0.0963      0.42  |Q V      |         |         |         |
  5+ 0       0.0992      0.42  |Q V      |         |         |         |
  5+ 5       0.1018      0.38  |Q V      |         |         |         |
  5+10       0.1041      0.33  |Q V      |         |         |         |
  5+15       0.1063      0.32  |Q V      |         |         |         |
  5+20       0.1087      0.34  |Q V      |         |         |         |
  5+25       0.1112      0.37  |Q  V     |         |         |         |
```

PR24HR10YR

```
  5+30  0.1138   0.37  |Q  V     |         |         |         |
  5+35  0.1165   0.40  |Q  V     |         |         |         |
  5+40  0.1194   0.42  |Q  V     |         |         |         |
  5+45  0.1223   0.42  |Q  V     |         |         |         |
  5+50  0.1253   0.43  |Q  V     |         |         |         |
  5+55  0.1282   0.43  |Q  V     |         |         |         |
  6+ 0  0.1311   0.43  |Q  V     |         |         |         |
  6+ 5  0.1342   0.45  |Q  V     |         |         |         |
  6+10  0.1375   0.47  |Q  V     |         |         |         |
  6+15  0.1408   0.48  |Q   V    |         |         |         |
  6+20  0.1441   0.48  |Q   V    |         |         |         |
  6+25  0.1474   0.48  |Q   V    |         |         |         |
  6+30  0.1507   0.48  |Q   V    |         |         |         |
  6+35  0.1542   0.50  | Q  V    |         |         |         |
  6+40  0.1578   0.53  | Q  V    |         |         |         |
  6+45  0.1614   0.53  | Q  V    |         |         |         |
  6+50  0.1651   0.53  | Q   V   |         |         |         |
  6+55  0.1688   0.53  | Q   V   |         |         |         |
  7+ 0  0.1724   0.53  | Q   V   |         |         |         |
  7+ 5  0.1761   0.53  | Q   V   |         |         |         |
  7+10  0.1798   0.53  | Q   V   |         |         |         |
  7+15  0.1834   0.53  | Q   V   |         |         |         |
  7+20  0.1873   0.56  | Q   V   |         |         |         |
  7+25  0.1913   0.58  | Q   V   |         |         |         |
  7+30  0.1953   0.58  | Q    V  |         |         |         |
  7+35  0.1995   0.61  | Q    V  |         |         |         |
  7+40  0.2039   0.63  | Q    V  |         |         |         |
  7+45  0.2083   0.64  | Q    V  |         |         |         |
  7+50  0.2128   0.66  | Q    V  |         |         |         |
  7+55  0.2175   0.69  | Q    V  |         |         |         |
  8+ 0  0.2223   0.69  | Q     V |         |         |         |
  8+ 5  0.2274   0.74  | Q     V |         |         |         |
  8+10  0.2328   0.79  |  Q    V |         |         |         |
  8+15  0.2383   0.80  |  Q    V |         |         |         |
  8+20  0.2438   0.80  |  Q    V |         |         |         |
  8+25  0.2493   0.80  |  Q     V|         |         |         |
  8+30  0.2548   0.80  |  Q     V|         |         |         |
  8+35  0.2605   0.82  |  Q     V|         |         |         |
  8+40  0.2663   0.85  |  Q     V|         |         |         |
  8+45  0.2722   0.85  |  Q     V|         |         |         |
  8+50  0.2782   0.88  |  Q      V         |         |         |
  8+55  0.2844   0.90  |  Q      V         |         |         |
  9+ 0  0.2906   0.90  |  Q      V         |         |         |
  9+ 5  0.2972   0.95  |  Q      V         |         |         |
  9+10  0.3041   1.00  |  Q      |V        |         |         |
  9+15  0.3110   1.01  |   Q     |V        |         |         |
  9+20  0.3182   1.04  |   Q     |V        |         |         |
  9+25  0.3255   1.06  |   Q     |V        |         |         |
  9+30  0.3328   1.06  |   Q     | V       |         |         |
  9+35  0.3403   1.09  |   Q     | V       |         |         |
  9+40  0.3479   1.11  |   Q     | V       |         |         |
  9+45  0.3556   1.12  |   Q     | V       |         |         |
  9+50  0.3635   1.14  |   Q     |  V      |         |         |
  9+55  0.3715   1.17  |   Q     |  V      |         |         |
 10+ 0  0.3796   1.17  |   Q     |  V      |         |         |
 10+ 5  0.3865   1.00  |   Q     |   V     |         |         |
 10+10  0.3923   0.84  |  Q      |   V     |         |         |
 10+15  0.3979   0.81  |  Q      |   V     |         |         |
 10+20  0.4034   0.80  |  Q      |   V     |         |         |
 10+25  0.4089   0.80  |  Q      |   V     |         |         |
 10+30  0.4144   0.80  |  Q      |    V    |         |         |
 10+35  0.4207   0.92  |  Q      |    V    |         |         |
 10+40  0.4279   1.03  |   Q     |    V    |         |         |
 10+45  0.4351   1.06  |   Q     |    V    |         |         |
 10+50  0.4425   1.07  |   Q     |     V   |         |         |
 10+55  0.4498   1.07  |   Q     |     V   |         |         |
 11+ 0  0.4571   1.07  |   Q     |     V   |         |         |
 11+ 5  0.4643   1.04  |   Q     |     V   |         |         |
 11+10  0.4713   1.02  |   Q     |      V  |         |         |
 11+15  0.4783   1.01  |   Q     |      V  |         |         |
 11+20  0.4853   1.01  |   Q     |      V  |         |         |
 11+25  0.4923   1.01  |   Q     |      V  |         |         |
 11+30  0.4992   1.01  |   Q     |       V |         |         |
 11+35  0.5059   0.96  |  Q      |       V |         |         |
 11+40  0.5122   0.92  |  Q      |       V |         |         |
 11+45  0.5184   0.91  |  Q      |       V |         |         |
 11+50  0.5249   0.93  |  Q      |        V|         |         |
 11+55  0.5314   0.95  |  Q      |        V|         |         |
 12+ 0  0.5380   0.96  |  Q      |        V|         |         |
```

```
                                            PR24HR10YR
12+ 5       0.5458      1.13  |   Q     |        V|         |         |
12+10       0.5547      1.29  |    Q    |         V         |         |
12+15       0.5637      1.32  |    Q    |         V         |         |
12+20       0.5731      1.36  |    Q    |         V         |         |
12+25       0.5826      1.38  |    Q    |         |V        |         |
12+30       0.5921      1.38  |    Q    |         |V        |         |
12+35       0.6020      1.43  |    Q    |         |V        |         |
12+40       0.6122      1.48  |    Q    |         | V       |         |
12+45       0.6224      1.49  |    Q    |         | V       |         |
12+50       0.6328      1.52  |     Q   |         | V       |         |
12+55       0.6434      1.54  |     Q   |         |  V      |         |
13+ 0       0.6541      1.54  |     Q   |         |  V      |         |
13+ 5       0.6655      1.67  |     Q   |         |   V     |         |
13+10       0.6778      1.78  |      Q  |         |   V     |         |
13+15       0.6902      1.80  |      Q  |         |    V    |         |
13+20       0.7027      1.81  |      Q  |         |    V    |         |
13+25       0.7152      1.81  |      Q  |         |    V    |         |
13+30       0.7276      1.81  |      Q  |         |     V   |         |
13+35       0.7382      1.54  |     Q   |         |     V   |         |
13+40       0.7472      1.29  |    Q    |         |      V  |         |
13+45       0.7557      1.25  |   Q     |         |      V  |         |
13+50       0.7642      1.23  |   Q     |         |      V  |         |
13+55       0.7726      1.23  |   Q     |         |       V |         |
14+ 0       0.7811      1.23  |   Q     |         |       V |         |
14+ 5       0.7902      1.32  |    Q    |         |       V |         |
14+10       0.7999      1.41  |    Q    |         |        V|         |
14+15       0.8098      1.43  |    Q    |         |        V|         |
14+20       0.8195      1.41  |    Q    |         |        V|         |
14+25       0.8291      1.39  |    Q    |         |         V         |
14+30       0.8386      1.39  |    Q    |         |         V         |
14+35       0.8482      1.38  |    Q    |         |         V         |
14+40       0.8577      1.38  |    Q    |         |         |V        |
14+45       0.8672      1.38  |    Q    |         |         |V        |
14+50       0.8766      1.36  |    Q    |         |         |V        |
14+55       0.8858      1.34  |    Q    |         |         | V       |
15+ 0       0.8950      1.33  |    Q    |         |         | V       |
15+ 5       0.9040      1.31  |    Q    |         |         | V       |
15+10       0.9129      1.28  |    Q    |         |         |  V      |
15+15       0.9217      1.28  |    Q    |         |         |  V      |
15+20       0.9303      1.25  |    Q    |         |         |  V      |
15+25       0.9388      1.23  |   Q     |         |         |   V     |
15+30       0.9472      1.23  |   Q     |         |         |   V     |
15+35       0.9550      1.13  |   Q     |         |         |   V     |
15+40       0.9622      1.04  |   Q     |         |         |   V     |
15+45       0.9692      1.02  |   Q     |         |         |    V    |
15+50       0.9762      1.01  |   Q     |         |         |    V    |
15+55       0.9831      1.01  |   Q     |         |         |    V    |
16+ 0       0.9901      1.01  |   Q     |         |         |    V    |
16+ 5       0.9945      0.65  | Q       |         |         |     V   |
16+10       0.9967      0.31  |Q        |         |         |     V   |
16+15       0.9983      0.24  Q         |         |         |     V   |
16+20       0.9998      0.21  Q         |         |         |     V   |
16+25       1.0013      0.21  Q         |         |         |     V   |
16+30       1.0027      0.21  Q         |         |         |     V   |
16+35       1.0040      0.19  Q         |         |         |     V   |
16+40       1.0052      0.17  Q         |         |         |     V   |
16+45       1.0063      0.16  Q         |         |         |     V   |
16+50       1.0074      0.16  Q         |         |         |     V   |
16+55       1.0085      0.16  Q         |         |         |     V   |
17+ 0       1.0096      0.16  Q         |         |         |     V   |
17+ 5       1.0110      0.21  Q         |         |         |     V   |
17+10       1.0128      0.25  |Q        |         |         |     V   |
17+15       1.0146      0.26  |Q        |         |         |     V   |
17+20       1.0164      0.27  |Q        |         |         |     V   |
17+25       1.0182      0.27  |Q        |         |         |      V  |
17+30       1.0201      0.27  |Q        |         |         |      V  |
17+35       1.0219      0.27  |Q        |         |         |      V  |
17+40       1.0237      0.27  |Q        |         |         |      V  |
17+45       1.0256      0.27  |Q        |         |         |      V  |
17+50       1.0272      0.24  Q         |         |         |      V  |
17+55       1.0288      0.22  Q         |         |         |      V  |
18+ 0       1.0302      0.21  Q         |         |         |      V  |
18+ 5       1.0317      0.21  Q         |         |         |      V  |
18+10       1.0332      0.21  Q         |         |         |      V  |
18+15       1.0346      0.21  Q         |         |         |      V  |
18+20       1.0361      0.21  Q         |         |         |      V  |
18+25       1.0376      0.21  Q         |         |         |      V  |
18+30       1.0390      0.21  Q         |         |         |      V  |
18+35       1.0403      0.19  Q         |         |         |      V  |
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PR24HR10YR

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18+40       1.0415      0.17  Q         |         |         |      V  |
18+45       1.0426      0.16  Q         |         |         |      V  |
18+50       1.0435      0.14  Q         |         |         |      V  |
18+55       1.0443      0.11  Q         |         |         |      V  |
19+ 0       1.0451      0.11  Q         |         |         |      V  |
19+ 5       1.0460      0.13  Q         |         |         |       V |
19+10       1.0470      0.15  Q         |         |         |       V |
19+15       1.0481      0.16  Q         |         |         |       V |
19+20       1.0494      0.18  Q         |         |         |       V |
19+25       1.0508      0.21  Q         |         |         |       V |
19+30       1.0523      0.21  Q         |         |         |       V |
19+35       1.0536      0.19  Q         |         |         |       V |
19+40       1.0547      0.17  Q         |         |         |       V |
19+45       1.0558      0.16  Q         |         |         |       V |
19+50       1.0567      0.14  Q         |         |         |       V |
19+55       1.0575      0.11  Q         |         |         |       V |
20+ 0       1.0583      0.11  Q         |         |         |       V |
20+ 5       1.0592      0.13  Q         |         |         |       V |
20+10       1.0602      0.15  Q         |         |         |       V |
20+15       1.0613      0.16  Q         |         |         |       V |
20+20       1.0624      0.16  Q         |         |         |       V |
20+25       1.0635      0.16  Q         |         |         |       V |
20+30       1.0646      0.16  Q         |         |         |       V |
20+35       1.0657      0.16  Q         |         |         |       V |
20+40       1.0668      0.16  Q         |         |         |       V |
20+45       1.0679      0.16  Q         |         |         |       V |
20+50       1.0688      0.14  Q         |         |         |       V |
20+55       1.0696      0.11  Q         |         |         |       V |
21+ 0       1.0704      0.11  Q         |         |         |       V |
21+ 5       1.0713      0.13  Q         |         |         |       V |
21+10       1.0723      0.15  Q         |         |         |       V |
21+15       1.0734      0.16  Q         |         |         |        V|
21+20       1.0744      0.14  Q         |         |         |        V|
21+25       1.0751      0.11  Q         |         |         |        V|
21+30       1.0759      0.11  Q         |         |         |        V|
21+35       1.0768      0.13  Q         |         |         |        V|
21+40       1.0778      0.15  Q         |         |         |        V|
21+45       1.0789      0.16  Q         |         |         |        V|
21+50       1.0799      0.14  Q         |         |         |        V|
21+55       1.0806      0.11  Q         |         |         |        V|
22+ 0       1.0814      0.11  Q         |         |         |        V|
22+ 5       1.0823      0.13  Q         |         |         |        V|
22+10       1.0833      0.15  Q         |         |         |        V|
22+15       1.0844      0.16  Q         |         |         |        V|
22+20       1.0854      0.14  Q         |         |         |        V|
22+25       1.0861      0.11  Q         |         |         |        V|
22+30       1.0869      0.11  Q         |         |         |        V|
22+35       1.0876      0.11  Q         |         |         |        V|
22+40       1.0883      0.11  Q         |         |         |        V|
22+45       1.0891      0.11  Q         |         |         |        V|
22+50       1.0898      0.11  Q         |         |         |        V|
22+55       1.0906      0.11  Q         |         |         |        V|
23+ 0       1.0913      0.11  Q         |         |         |        V|
23+ 5       1.0920      0.11  Q         |         |         |        V|
23+10       1.0928      0.11  Q         |         |         |        V|
23+15       1.0935      0.11  Q         |         |         |        V|
23+20       1.0942      0.11  Q         |         |         |        V|
23+25       1.0950      0.11  Q         |         |         |        V|
23+30       1.0957      0.11  Q         |         |         |        V|
23+35       1.0964      0.11  Q         |         |         |        V|
23+40       1.0972      0.11  Q         |         |         |        V|
23+45       1.0979      0.11  Q         |         |         |        V|
23+50       1.0986      0.11  Q         |         |         |        V|
23+55       1.0994      0.11  Q         |         |         |        V|
24+ 0       1.1001      0.11  Q         |         |         |        V|
24+ 5       1.1005      0.06  Q         |         |         |        V|
24+10       1.1006      0.01  Q         |         |         |        V|
24+15       1.1006      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

100 YEAR

```
                                        PR1HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  09/07/16 File: PR1100.out


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------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.48                    4.16

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.20                   10.40

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.480(In)
Area Averaged 100-Year Rainfall =    1.200(In)

Point rain (area averaged) =    1.200(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.200(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  53.0      0.541     0.560        0.269       1.000      0.269
                                                  Sum (F) =   0.269
Area averaged mean soil loss (F) (In/Hr) =  0.269
Minimum soil loss rate ((In/Hr)) =  0.134
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
```

```
                                               PR1HR100YR
        ----------------------------------------------------------------------

                        U n i t  H y d r o g r a p h
                                VALLEY S-Curve
        --------------------------------------------------------------------
                        Unit Hydrograph Data
        ---------------------------------------------------------------------
        Unit time period   Time % of lag   Distribution   Unit Hydrograph
            (hrs)                           Graph %             (CFS)
        ---------------------------------------------------------------------
            1   0.083        214.725          45.835              4.003
            2   0.167        429.451          42.353              3.699
            3   0.250        644.176           8.227              0.718
            4   0.333        858.902           3.586              0.313
                                      Sum = 100.000   Sum=        8.733
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |    Low        (In/Hr)
   1   0.08    4.40      0.634           0.269    (  0.286)        0.365
   2   0.17    4.50      0.648           0.269    (  0.293)        0.379
   3   0.25    5.40      0.778           0.269    (  0.351)        0.509
   4   0.33    5.40      0.778           0.269    (  0.351)        0.509
   5   0.42    5.70      0.821           0.269    (  0.371)        0.552
   6   0.50    6.40      0.922           0.269    (  0.417)        0.653
   7   0.58    7.90      1.138           0.269    (  0.514)        0.869
   8   0.67    9.10      1.310           0.269    (  0.592)        1.042
   9   0.75   12.80      1.843           0.269    (  0.833)        1.575
  10   0.83   25.60      3.686           0.269    (  1.666)        3.418
  11   0.92    7.90      1.138           0.269    (  0.514)        0.869
  12   1.00    4.90      0.706           0.269    (  0.319)        0.437
                 (Loss Rate Not Used)
     Sum =     100.0                                       Sum =    11.2
        Flood volume = Effective rainfall      0.93(In)
         times area       8.7(Ac.)/[(In)/(Ft.)] =       0.7(Ac.Ft)
        Total soil loss =      0.27(In)
        Total soil loss =     0.194(Ac.Ft)
        Total rainfall =      1.20(In)
        Flood volume =       29295.3 Cubic Feet
        Total soil loss =        8446.5 Cubic Feet
        --------------------------------------------------------------------
         Peak flow rate of this hydrograph =     20.534(CFS)
        --------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                            1 - H O U R   S T O R M
                       R u n o f f     H y d r o g r a p h
        --------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
  -----------------------------------------------------------------------
    0+ 5      0.0101      1.46  VQ        |         |         |         |
    0+10      0.0298      2.87  |V Q      |         |         |         |
    0+15      0.0553      3.70  |  VQ     |         |         |         |
    0+20      0.0850      4.31  |    Q    |         |         |         |
    0+25      0.1166      4.58  |     Q   |         |         |         |
    0+30      0.1523      5.18  |     Q  V|         |         |         |
    0+35      0.1967      6.45  |       Q |V        |         |         |
    0+40      0.2520      8.03  |         Q   V     |         |         |
    0+45      0.3277     10.99  |         |   Q    V|         |         |
    0+50      0.4691     20.53  |         |         |      Q  |         |
    0+55      0.5902     17.58  |         |         |  Q      |    V    |
    1+ 0      0.6447      7.92  |         Q         |         |       V |
    1+ 5      0.6675      3.31  |   Q     |         |         |        V|
    1+10      0.6716      0.59  Q         |         |         |        V|
    1+15      0.6725      0.14  Q         |         |         |        V|
-----------------------------------------------------------------------
```

```
                                PR3HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR3100.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            0.80                   6.93

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.80                  15.60

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    0.800(In)
Area Averaged 100-Year Rainfall =    1.800(In)

Point rain (area averaged) =    1.800(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.800(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  53.0      0.541     0.560        0.269       1.000      0.269
                                                  Sum (F) =   0.269
Area averaged mean soil loss (F) (In/Hr) =  0.269
Minimum soil loss rate ((In/Hr)) =  0.134
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
```

```
                                PR3HR100YR
                        U n i t   H y d r o g r a p h
                                VALLEY S-Curve
        --------------------------------------------------------------------
                        Unit Hydrograph Data
        ---------------------------------------------------------------------
        Unit time period   Time % of lag   Distribution   Unit Hydrograph
            (hrs)                             Graph %           (CFS)
        ---------------------------------------------------------------------
            1   0.083         214.725          45.835             4.003
            2   0.167         429.451          42.353             3.699
            3   0.250         644.176           8.227             0.718
            4   0.333         858.902           3.586             0.313
                                      Sum = 100.000   Sum=       8.733
----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     1.30      0.281        (  0.269)       0.127        0.154
   2   0.17     1.30      0.281        (  0.269)       0.127        0.154
   3   0.25     1.10      0.238        (  0.269)       0.107        0.130
   4   0.33     1.50      0.324        (  0.269)       0.146        0.178
   5   0.42     1.50      0.324        (  0.269)       0.146        0.178
   6   0.50     1.80      0.389        (  0.269)       0.176        0.213
   7   0.58     1.50      0.324        (  0.269)       0.146        0.178
   8   0.67     1.80      0.389        (  0.269)       0.176        0.213
   9   0.75     1.80      0.389        (  0.269)       0.176        0.213
  10   0.83     1.50      0.324        (  0.269)       0.146        0.178
  11   0.92     1.60      0.346        (  0.269)       0.156        0.189
  12   1.00     1.80      0.389        (  0.269)       0.176        0.213
  13   1.08     2.20      0.475        (  0.269)       0.215        0.260
  14   1.17     2.20      0.475        (  0.269)       0.215        0.260
  15   1.25     2.20      0.475        (  0.269)       0.215        0.260
  16   1.33     2.00      0.432        (  0.269)       0.195        0.237
  17   1.42     2.60      0.562        (  0.269)       0.254        0.308
  18   1.50     2.70      0.583        (  0.269)       0.264        0.320
  19   1.58     2.40      0.518        (  0.269)       0.234        0.284
  20   1.67     2.70      0.583        (  0.269)       0.264        0.320
  21   1.75     3.30      0.713           0.269     (  0.322)       0.444
  22   1.83     3.10      0.670           0.269     (  0.303)       0.401
  23   1.92     2.90      0.626           0.269     (  0.283)       0.358
  24   2.00     3.00      0.648           0.269     (  0.293)       0.379
  25   2.08     3.10      0.670           0.269     (  0.303)       0.401
  26   2.17     4.20      0.907           0.269     (  0.410)       0.639
  27   2.25     5.00      1.080           0.269     (  0.488)       0.811
  28   2.33     3.50      0.756           0.269     (  0.342)       0.487
  29   2.42     6.80      1.469           0.269     (  0.664)       1.200
  30   2.50     7.30      1.577           0.269     (  0.713)       1.308
  31   2.58     8.20      1.771           0.269     (  0.801)       1.503
  32   2.67     5.90      1.274           0.269     (  0.576)       1.006
  33   2.75     2.00      0.432        (  0.269)       0.195        0.237
  34   2.83     1.80      0.389        (  0.269)       0.176        0.213
  35   2.92     1.80      0.389        (  0.269)       0.176        0.213
  36   3.00     0.60      0.130        (  0.269)       0.059        0.071
                 (Loss Rate Not Used)
     Sum =     100.0                                    Sum =    14.1
        Flood volume = Effective rainfall      1.18(In)
         times area       8.7(Ac.)/[(In)/(Ft.)] =       0.8(Ac.Ft)
        Total soil loss =      0.62(In)
        Total soil loss =     0.451(Ac.Ft)
        Total rainfall =      1.80(In)
        Flood volume =      36985.7 Cubic Feet
        Total soil loss =       19629.3 Cubic Feet
        --------------------------------------------------------------------
         Peak flow rate of this hydrograph =     11.874(CFS)
        --------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                            3 - H O U R    S T O R M
                       R u n o f f      H y d r o g r a p h
        --------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        --------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft    Q(CFS)  0        5.0       10.0       15.0      20.0
  ----------------------------------------------------------------------
    0+ 5       0.0042      0.62  VQ        |         |         |         |
```

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                                               PR3HR100YR
    0+10       0.0124       1.19  V Q       |         |         |         |
    0+15       0.0207       1.20  V Q       |         |         |         |
    0+20       0.0300       1.35  |VQ       |         |         |         |
    0+25       0.0404       1.51  |V Q      |         |         |         |
    0+30       0.0520       1.68  | VQ      |         |         |         |
    0+35       0.0635       1.68  | VQ      |         |         |         |
    0+40       0.0754       1.72  |  Q      |         |         |         |
    0+45       0.0880       1.84  |  QV     |         |         |         |
    0+50       0.0998       1.71  |  QV     |         |         |         |
    0+55       0.1110       1.64  |  Q V    |         |         |         |
    1+ 0       0.1231       1.75  |  Q V    |         |         |         |
    1+ 5       0.1370       2.02  |   Q V   |         |         |         |
    1+10       0.1523       2.22  |   Q  V  |         |         |         |
    1+15       0.1679       2.26  |   Q  V  |         |         |         |
    1+20       0.1829       2.18  |   Q   V |         |         |         |
    1+25       0.1993       2.38  |   Q    V|         |         |         |
    1+30       0.2177       2.67  |    Q    V         |         |         |
    1+35       0.2357       2.62  |    Q    |V        |         |         |
    1+40       0.2540       2.66  |    Q    |V        |         |         |
    1+45       0.2765       3.27  |     Q   |  V      |         |         |
    1+50       0.3010       3.57  |      Q  |   V     |         |         |
    1+55       0.3240       3.34  |     Q   |    V    |         |         |
    2+ 0       0.3465       3.27  |     Q   |     V   |         |         |
    2+ 5       0.3699       3.39  |     Q   |      V  |         |         |
    2+10       0.4004       4.43  |       Q |       V |         |         |
    2+15       0.4419       6.02  |         | Q       V         |         |
    2+20       0.4800       5.54  |         |Q        | V       |         |
    2+25       0.5309       7.39  |         |   Q     |    V    |         |
    2+30       0.6018      10.28  |         |         Q       V |         |
    2+35       0.6835      11.87  |         |         |  Q      | V       |
    2+40       0.7586      10.90  |         |         |Q        |    V    |
    2+45       0.8011       6.16  |         | Q       |         |      V  |
    2+50       0.8212       2.92  |    Q    |         |         |       V |
    2+55       0.8358       2.13  |   Q     |         |         |        V|
    3+ 0       0.8448       1.30  | Q       |         |         |        V|
    3+ 5       0.8481       0.48  Q         |         |         |        V|
    3+10       0.8489       0.12  Q         |         |         |        V|
    3+15       0.8491       0.02  Q         |         |         |        V|
-----------------------------------------------------------------------
```

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                              PR6HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR6100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.10                   9.53

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            2.50                  21.66

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.100(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    2.500(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.500(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  53.0      0.541     0.560        0.269       1.000      0.269
                                                  Sum (F) =   0.269
Area averaged mean soil loss (F) (In/Hr) =  0.269
Minimum soil loss rate ((In/Hr)) =  0.134
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
---------------------------------------------------------------------
```

PR6HR100YR
Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.150	(0.269)	0.068	0.082
2	0.17	0.60	0.180	(0.269)	0.081	0.099
3	0.25	0.60	0.180	(0.269)	0.081	0.099
4	0.33	0.60	0.180	(0.269)	0.081	0.099
5	0.42	0.60	0.180	(0.269)	0.081	0.099
6	0.50	0.70	0.210	(0.269)	0.095	0.115
7	0.58	0.70	0.210	(0.269)	0.095	0.115
8	0.67	0.70	0.210	(0.269)	0.095	0.115
9	0.75	0.70	0.210	(0.269)	0.095	0.115
10	0.83	0.70	0.210	(0.269)	0.095	0.115
11	0.92	0.70	0.210	(0.269)	0.095	0.115
12	1.00	0.80	0.240	(0.269)	0.108	0.132
13	1.08	0.80	0.240	(0.269)	0.108	0.132
14	1.17	0.80	0.240	(0.269)	0.108	0.132
15	1.25	0.80	0.240	(0.269)	0.108	0.132
16	1.33	0.80	0.240	(0.269)	0.108	0.132
17	1.42	0.80	0.240	(0.269)	0.108	0.132
18	1.50	0.80	0.240	(0.269)	0.108	0.132
19	1.58	0.80	0.240	(0.269)	0.108	0.132
20	1.67	0.80	0.240	(0.269)	0.108	0.132
21	1.75	0.80	0.240	(0.269)	0.108	0.132
22	1.83	0.80	0.240	(0.269)	0.108	0.132
23	1.92	0.80	0.240	(0.269)	0.108	0.132
24	2.00	0.90	0.270	(0.269)	0.122	0.148
25	2.08	0.80	0.240	(0.269)	0.108	0.132
26	2.17	0.90	0.270	(0.269)	0.122	0.148
27	2.25	0.90	0.270	(0.269)	0.122	0.148
28	2.33	0.90	0.270	(0.269)	0.122	0.148
29	2.42	0.90	0.270	(0.269)	0.122	0.148
30	2.50	0.90	0.270	(0.269)	0.122	0.148
31	2.58	0.90	0.270	(0.269)	0.122	0.148
32	2.67	0.90	0.270	(0.269)	0.122	0.148
33	2.75	1.00	0.300	(0.269)	0.136	0.164
34	2.83	1.00	0.300	(0.269)	0.136	0.164
35	2.92	1.00	0.300	(0.269)	0.136	0.164
36	3.00	1.00	0.300	(0.269)	0.136	0.164
37	3.08	1.00	0.300	(0.269)	0.136	0.164
38	3.17	1.10	0.330	(0.269)	0.149	0.181
39	3.25	1.10	0.330	(0.269)	0.149	0.181
40	3.33	1.10	0.330	(0.269)	0.149	0.181
41	3.42	1.20	0.360	(0.269)	0.163	0.197
42	3.50	1.30	0.390	(0.269)	0.176	0.214
43	3.58	1.40	0.420	(0.269)	0.190	0.230
44	3.67	1.40	0.420	(0.269)	0.190	0.230
45	3.75	1.50	0.450	(0.269)	0.203	0.247
46	3.83	1.50	0.450	(0.269)	0.203	0.247
47	3.92	1.60	0.480	(0.269)	0.217	0.263
48	4.00	1.60	0.480	(0.269)	0.217	0.263
49	4.08	1.70	0.510	(0.269)	0.231	0.279
50	4.17	1.80	0.540	(0.269)	0.244	0.296
51	4.25	1.90	0.570	(0.269)	0.258	0.312
52	4.33	2.00	0.600	0.269	(0.271)	0.331
53	4.42	2.10	0.630	0.269	(0.285)	0.361
54	4.50	2.10	0.630	0.269	(0.285)	0.361
55	4.58	2.20	0.660	0.269	(0.298)	0.391
56	4.67	2.30	0.690	0.269	(0.312)	0.421
57	4.75	2.40	0.720	0.269	(0.325)	0.451
58	4.83	2.40	0.720	0.269	(0.325)	0.451

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                                              PR6HR100YR
59   4.92     2.50      0.750           0.269    (  0.339)        0.481
60   5.00     2.60      0.780           0.269    (  0.353)        0.511
61   5.08     3.10      0.930           0.269    (  0.420)        0.661
62   5.17     3.60      1.080           0.269    (  0.488)        0.811
63   5.25     3.90      1.170           0.269    (  0.529)        0.901
64   5.33     4.20      1.260           0.269    (  0.570)        0.991
65   5.42     4.70      1.410           0.269    (  0.637)        1.141
66   5.50     5.60      1.680           0.269    (  0.759)        1.411
67   5.58     1.90      0.570        (  0.269)        0.258       0.312
68   5.67     0.90      0.270        (  0.269)        0.122       0.148
69   5.75     0.60      0.180        (  0.269)        0.081       0.099
70   5.83     0.50      0.150        (  0.269)        0.068       0.082
71   5.92     0.30      0.090        (  0.269)        0.041       0.049
72   6.00     0.20      0.060        (  0.269)        0.027       0.033
               (Loss Rate Not Used)
   Sum =     100.0                                     Sum =    18.6
      Flood volume = Effective rainfall      1.55(In)
       times area       8.7(Ac.)/[(In)/(Ft.)] =       1.1(Ac.Ft)
      Total soil loss =      0.95(In)
      Total soil loss =     0.685(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =       48775.2 Cubic Feet
      Total soil loss =       29857.3 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     10.871(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-------------------------------------------------------------------
  0+ 5       0.0023      0.33  Q         |         |         |         |
  0+10       0.0071      0.70  VQ        |         |         |         |
  0+15       0.0127      0.82  VQ        |         |         |         |
  0+20       0.0186      0.86  VQ        |         |         |         |
  0+25       0.0246      0.86  VQ        |         |         |         |
  0+30       0.0309      0.93  |Q        |         |         |         |
  0+35       0.0378      0.99  |Q        |         |         |         |
  0+40       0.0446      1.00  |VQ       |         |         |         |
  0+45       0.0516      1.01  |VQ       |         |         |         |
  0+50       0.0585      1.01  | Q       |         |         |         |
  0+55       0.0654      1.01  | Q       |         |         |         |
  1+ 0       0.0728      1.07  | Q       |         |         |         |
  1+ 5       0.0806      1.13  | Q       |         |         |         |
  1+10       0.0885      1.14  | QV      |         |         |         |
  1+15       0.0964      1.15  | QV      |         |         |         |
  1+20       0.1043      1.15  | QV      |         |         |         |
  1+25       0.1122      1.15  | Q V     |         |         |         |
  1+30       0.1201      1.15  | Q V     |         |         |         |
  1+35       0.1280      1.15  | Q V     |         |         |         |
  1+40       0.1360      1.15  | Q V     |         |         |         |
  1+45       0.1439      1.15  | Q  V    |         |         |         |
  1+50       0.1518      1.15  | Q  V    |         |         |         |
  1+55       0.1597      1.15  | Q  V    |         |         |         |
  2+ 0       0.1681      1.21  | Q   V   |         |         |         |
  2+ 5       0.1764      1.21  | Q   V   |         |         |         |
  2+10       0.1848      1.23  | Q   V   |         |         |         |
  2+15       0.1937      1.28  | Q   V   |         |         |         |
  2+20       0.2025      1.29  | Q    V  |         |         |         |
  2+25       0.2114      1.29  | Q    V  |         |         |         |
  2+30       0.2203      1.29  | Q    V  |         |         |         |
  2+35       0.2292      1.29  | Q     V |         |         |         |
  2+40       0.2381      1.29  | Q     V |         |         |         |
  2+45       0.2475      1.36  | Q     V |         |         |         |
  2+50       0.2573      1.42  | Q      V|         |         |         |
  2+55       0.2671      1.43  | Q      V|         |         |         |
  3+ 0       0.2770      1.44  | Q      V|         |         |         |
  3+ 5       0.2869      1.44  | Q       V         |         |         |
  3+10       0.2973      1.50  |  Q      V         |         |         |
  3+15       0.3080      1.56  |  Q      |V        |         |         |
  3+20       0.3189      1.57  |  Q      |V        |         |         |
  3+25       0.3302      1.65  |  Q      |V        |         |         |
  3+30       0.3424      1.77  |  Q      | V       |         |         |
  3+35       0.3556      1.91  |  Q      | V       |         |         |
  3+40       0.3693      1.99  |  Q      |  V      |         |         |
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                                               PR6HR100YR
    3+45       0.3835      2.07  |   Q     |  V      |         |         |
    3+50       0.3983      2.14  |   Q     |   V     |         |         |
    3+55       0.4135      2.22  |   Q     |   V     |         |         |
    4+ 0       0.4292      2.28  |   Q     |    V    |         |         |
    4+ 5       0.4455      2.36  |   Q     |    V    |         |         |
    4+10       0.4626      2.49  |   Q     |     V   |         |         |
    4+15       0.4807      2.63  |    Q    |      V  |         |         |
    4+20       0.4999      2.78  |    Q    |      V  |         |         |
    4+25       0.5205      2.99  |    Q    |       V |         |         |
    4+30       0.5420      3.12  |     Q   |        V|         |         |
    4+35       0.5645      3.27  |     Q   |         V         |         |
    4+40       0.5887      3.51  |      Q  |         |V        |         |
    4+45       0.6146      3.76  |      Q  |         |V        |         |
    4+50       0.6415      3.90  |      Q  |         | V       |         |
    4+55       0.6694      4.06  |       Q |         |  V      |         |
    5+ 0       0.6990      4.30  |       Q |         |   V     |         |
    5+ 5       0.7336      5.03  |         Q         |     V   |         |
    5+10       0.7764      6.22  |         | Q       |      V  |         |
    5+15       0.8264      7.25  |         |   Q     |        V|         |
    5+20       0.8821      8.10  |         |     Q   |         |V        |
    5+25       0.9451      9.14  |         |       Q |         |  V      |
    5+30       1.0199     10.87  |         |         |Q        |     V   |
    5+35       1.0723      7.60  |         |    Q    |         |       V |
    5+40       1.0938      3.12  |     Q   |         |         |        V|
    5+45       1.1049      1.61  |  Q      |         |         |        V|
    5+50       1.1111      0.90  |Q        |         |         |        V|
    5+55       1.1153      0.62  |Q        |         |         |        V|
    6+ 0       1.1181      0.40  Q         |         |         |        V|
    6+ 5       1.1194      0.18  Q         |         |         |        V|
    6+10       1.1197      0.04  Q         |         |         |        V|
    6+15       1.1197      0.01  Q         |         |         |        V|
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                                PR24HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  09/07/16 File: PR24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.72                  14.90

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            4.30                  37.26

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    4.300(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  53.0      0.541     0.560        0.269       1.000      0.269
                                                  Sum (F) =   0.269
Area averaged mean soil loss (F) (In/Hr) =  0.269
Minimum soil loss rate ((In/Hr)) =  0.134
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
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PR24HR100YR
U n i t   H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.034	(0.476)	0.016	0.019
2	0.17	0.07	0.034	(0.474)	0.016	0.019
3	0.25	0.07	0.034	(0.472)	0.016	0.019
4	0.33	0.10	0.052	(0.471)	0.023	0.028
5	0.42	0.10	0.052	(0.469)	0.023	0.028
6	0.50	0.10	0.052	(0.467)	0.023	0.028
7	0.58	0.10	0.052	(0.465)	0.023	0.028
8	0.67	0.10	0.052	(0.463)	0.023	0.028
9	0.75	0.10	0.052	(0.461)	0.023	0.028
10	0.83	0.13	0.069	(0.460)	0.031	0.038
11	0.92	0.13	0.069	(0.458)	0.031	0.038
12	1.00	0.13	0.069	(0.456)	0.031	0.038
13	1.08	0.10	0.052	(0.454)	0.023	0.028
14	1.17	0.10	0.052	(0.452)	0.023	0.028
15	1.25	0.10	0.052	(0.451)	0.023	0.028
16	1.33	0.10	0.052	(0.449)	0.023	0.028
17	1.42	0.10	0.052	(0.447)	0.023	0.028
18	1.50	0.10	0.052	(0.445)	0.023	0.028
19	1.58	0.10	0.052	(0.443)	0.023	0.028
20	1.67	0.10	0.052	(0.442)	0.023	0.028
21	1.75	0.10	0.052	(0.440)	0.023	0.028
22	1.83	0.13	0.069	(0.438)	0.031	0.038
23	1.92	0.13	0.069	(0.436)	0.031	0.038
24	2.00	0.13	0.069	(0.435)	0.031	0.038
25	2.08	0.13	0.069	(0.433)	0.031	0.038
26	2.17	0.13	0.069	(0.431)	0.031	0.038
27	2.25	0.13	0.069	(0.429)	0.031	0.038
28	2.33	0.13	0.069	(0.428)	0.031	0.038
29	2.42	0.13	0.069	(0.426)	0.031	0.038
30	2.50	0.13	0.069	(0.424)	0.031	0.038
31	2.58	0.17	0.086	(0.422)	0.039	0.047
32	2.67	0.17	0.086	(0.421)	0.039	0.047
33	2.75	0.17	0.086	(0.419)	0.039	0.047
34	2.83	0.17	0.086	(0.417)	0.039	0.047
35	2.92	0.17	0.086	(0.415)	0.039	0.047
36	3.00	0.17	0.086	(0.414)	0.039	0.047
37	3.08	0.17	0.086	(0.412)	0.039	0.047
38	3.17	0.17	0.086	(0.410)	0.039	0.047
39	3.25	0.17	0.086	(0.409)	0.039	0.047
40	3.33	0.17	0.086	(0.407)	0.039	0.047
41	3.42	0.17	0.086	(0.405)	0.039	0.047
42	3.50	0.17	0.086	(0.404)	0.039	0.047
43	3.58	0.17	0.086	(0.402)	0.039	0.047
44	3.67	0.17	0.086	(0.400)	0.039	0.047
45	3.75	0.17	0.086	(0.398)	0.039	0.047
46	3.83	0.20	0.103	(0.397)	0.047	0.057
47	3.92	0.20	0.103	(0.395)	0.047	0.057
48	4.00	0.20	0.103	(0.393)	0.047	0.057
49	4.08	0.20	0.103	(0.392)	0.047	0.057
50	4.17	0.20	0.103	(0.390)	0.047	0.057
51	4.25	0.20	0.103	(0.388)	0.047	0.057
52	4.33	0.23	0.120	(0.387)	0.054	0.066
53	4.42	0.23	0.120	(0.385)	0.054	0.066
54	4.50	0.23	0.120	(0.383)	0.054	0.066
55	4.58	0.23	0.120	(0.382)	0.054	0.066
56	4.67	0.23	0.120	(0.380)	0.054	0.066
57	4.75	0.23	0.120	(0.379)	0.054	0.066
58	4.83	0.27	0.138	(0.377)	0.062	0.075

59	4.92	0.27	0.138	(0.375)	0.062	0.075
60	5.00	0.27	0.138	(0.374)	0.062	0.075
61	5.08	0.20	0.103	(0.372)	0.047	0.057
62	5.17	0.20	0.103	(0.370)	0.047	0.057
63	5.25	0.20	0.103	(0.369)	0.047	0.057
64	5.33	0.23	0.120	(0.367)	0.054	0.066
65	5.42	0.23	0.120	(0.366)	0.054	0.066
66	5.50	0.23	0.120	(0.364)	0.054	0.066
67	5.58	0.27	0.138	(0.362)	0.062	0.075
68	5.67	0.27	0.138	(0.361)	0.062	0.075
69	5.75	0.27	0.138	(0.359)	0.062	0.075
70	5.83	0.27	0.138	(0.358)	0.062	0.075
71	5.92	0.27	0.138	(0.356)	0.062	0.075
72	6.00	0.27	0.138	(0.354)	0.062	0.075
73	6.08	0.30	0.155	(0.353)	0.070	0.085
74	6.17	0.30	0.155	(0.351)	0.070	0.085
75	6.25	0.30	0.155	(0.350)	0.070	0.085
76	6.33	0.30	0.155	(0.348)	0.070	0.085
77	6.42	0.30	0.155	(0.347)	0.070	0.085
78	6.50	0.30	0.155	(0.345)	0.070	0.085
79	6.58	0.33	0.172	(0.344)	0.078	0.094
80	6.67	0.33	0.172	(0.342)	0.078	0.094
81	6.75	0.33	0.172	(0.340)	0.078	0.094
82	6.83	0.33	0.172	(0.339)	0.078	0.094
83	6.92	0.33	0.172	(0.337)	0.078	0.094
84	7.00	0.33	0.172	(0.336)	0.078	0.094
85	7.08	0.33	0.172	(0.334)	0.078	0.094
86	7.17	0.33	0.172	(0.333)	0.078	0.094
87	7.25	0.33	0.172	(0.331)	0.078	0.094
88	7.33	0.37	0.189	(0.330)	0.086	0.104
89	7.42	0.37	0.189	(0.328)	0.086	0.104
90	7.50	0.37	0.189	(0.327)	0.086	0.104
91	7.58	0.40	0.206	(0.325)	0.093	0.113
92	7.67	0.40	0.206	(0.324)	0.093	0.113
93	7.75	0.40	0.206	(0.322)	0.093	0.113
94	7.83	0.43	0.224	(0.321)	0.101	0.123
95	7.92	0.43	0.224	(0.319)	0.101	0.123
96	8.00	0.43	0.224	(0.318)	0.101	0.123
97	8.08	0.50	0.258	(0.316)	0.117	0.141
98	8.17	0.50	0.258	(0.315)	0.117	0.141
99	8.25	0.50	0.258	(0.313)	0.117	0.141
100	8.33	0.50	0.258	(0.312)	0.117	0.141
101	8.42	0.50	0.258	(0.310)	0.117	0.141
102	8.50	0.50	0.258	(0.309)	0.117	0.141
103	8.58	0.53	0.275	(0.308)	0.124	0.151
104	8.67	0.53	0.275	(0.306)	0.124	0.151
105	8.75	0.53	0.275	(0.305)	0.124	0.151
106	8.83	0.57	0.292	(0.303)	0.132	0.160
107	8.92	0.57	0.292	(0.302)	0.132	0.160
108	9.00	0.57	0.292	(0.300)	0.132	0.160
109	9.08	0.63	0.327	(0.299)	0.148	0.179
110	9.17	0.63	0.327	(0.298)	0.148	0.179
111	9.25	0.63	0.327	(0.296)	0.148	0.179
112	9.33	0.67	0.344	(0.295)	0.155	0.189
113	9.42	0.67	0.344	(0.293)	0.155	0.189
114	9.50	0.67	0.344	(0.292)	0.155	0.189
115	9.58	0.70	0.361	(0.290)	0.163	0.198
116	9.67	0.70	0.361	(0.289)	0.163	0.198
117	9.75	0.70	0.361	(0.288)	0.163	0.198
118	9.83	0.73	0.378	(0.286)	0.171	0.207
119	9.92	0.73	0.378	(0.285)	0.171	0.207
120	10.00	0.73	0.378	(0.284)	0.171	0.207
121	10.08	0.50	0.258	(0.282)	0.117	0.141
122	10.17	0.50	0.258	(0.281)	0.117	0.141
123	10.25	0.50	0.258	(0.279)	0.117	0.141
124	10.33	0.50	0.258	(0.278)	0.117	0.141
125	10.42	0.50	0.258	(0.277)	0.117	0.141
126	10.50	0.50	0.258	(0.275)	0.117	0.141
127	10.58	0.67	0.344	(0.274)	0.155	0.189
128	10.67	0.67	0.344	(0.273)	0.155	0.189
129	10.75	0.67	0.344	(0.271)	0.155	0.189
130	10.83	0.67	0.344	(0.270)	0.155	0.189
131	10.92	0.67	0.344	(0.269)	0.155	0.189
132	11.00	0.67	0.344	(0.267)	0.155	0.189
133	11.08	0.63	0.327	(0.266)	0.148	0.179
134	11.17	0.63	0.327	(0.265)	0.148	0.179
135	11.25	0.63	0.327	(0.263)	0.148	0.179
136	11.33	0.63	0.327	(0.262)	0.148	0.179
137	11.42	0.63	0.327	(0.261)	0.148	0.179

138	11.50	0.63	0.327	(0.260)	0.148	0.179
139	11.58	0.57	0.292	(0.258)	0.132	0.160
140	11.67	0.57	0.292	(0.257)	0.132	0.160
141	11.75	0.57	0.292	(0.256)	0.132	0.160
142	11.83	0.60	0.310	(0.254)	0.140	0.170
143	11.92	0.60	0.310	(0.253)	0.140	0.170
144	12.00	0.60	0.310	(0.252)	0.140	0.170
145	12.08	0.83	0.430	(0.251)	0.194	0.236
146	12.17	0.83	0.430	(0.249)	0.194	0.236
147	12.25	0.83	0.430	(0.248)	0.194	0.236
148	12.33	0.87	0.447	(0.247)	0.202	0.245
149	12.42	0.87	0.447	(0.246)	0.202	0.245
150	12.50	0.87	0.447	(0.244)	0.202	0.245
151	12.58	0.93	0.482	(0.243)	0.218	0.264
152	12.67	0.93	0.482	(0.242)	0.218	0.264
153	12.75	0.93	0.482	(0.241)	0.218	0.264
154	12.83	0.97	0.499	(0.240)	0.225	0.273
155	12.92	0.97	0.499	(0.238)	0.225	0.273
156	13.00	0.97	0.499	(0.237)	0.225	0.273
157	13.08	1.13	0.585	0.236	(0.264)	0.349
158	13.17	1.13	0.585	0.235	(0.264)	0.350
159	13.25	1.13	0.585	0.234	(0.264)	0.351
160	13.33	1.13	0.585	0.232	(0.264)	0.352
161	13.42	1.13	0.585	0.231	(0.264)	0.354
162	13.50	1.13	0.585	0.230	(0.264)	0.355
163	13.58	0.77	0.396	(0.229)	0.179	0.217
164	13.67	0.77	0.396	(0.228)	0.179	0.217
165	13.75	0.77	0.396	(0.227)	0.179	0.217
166	13.83	0.77	0.396	(0.225)	0.179	0.217
167	13.92	0.77	0.396	(0.224)	0.179	0.217
168	14.00	0.77	0.396	(0.223)	0.179	0.217
169	14.08	0.90	0.464	(0.222)	0.210	0.254
170	14.17	0.90	0.464	(0.221)	0.210	0.254
171	14.25	0.90	0.464	(0.220)	0.210	0.254
172	14.33	0.87	0.447	(0.219)	0.202	0.245
173	14.42	0.87	0.447	(0.217)	0.202	0.245
174	14.50	0.87	0.447	(0.216)	0.202	0.245
175	14.58	0.87	0.447	(0.215)	0.202	0.245
176	14.67	0.87	0.447	(0.214)	0.202	0.245
177	14.75	0.87	0.447	(0.213)	0.202	0.245
178	14.83	0.83	0.430	(0.212)	0.194	0.236
179	14.92	0.83	0.430	(0.211)	0.194	0.236
180	15.00	0.83	0.430	(0.210)	0.194	0.236
181	15.08	0.80	0.413	(0.209)	0.187	0.226
182	15.17	0.80	0.413	(0.208)	0.187	0.226
183	15.25	0.80	0.413	(0.207)	0.187	0.226
184	15.33	0.77	0.396	(0.205)	0.179	0.217
185	15.42	0.77	0.396	(0.204)	0.179	0.217
186	15.50	0.77	0.396	(0.203)	0.179	0.217
187	15.58	0.63	0.327	(0.202)	0.148	0.179
188	15.67	0.63	0.327	(0.201)	0.148	0.179
189	15.75	0.63	0.327	(0.200)	0.148	0.179
190	15.83	0.63	0.327	(0.199)	0.148	0.179
191	15.92	0.63	0.327	(0.198)	0.148	0.179
192	16.00	0.63	0.327	(0.197)	0.148	0.179
193	16.08	0.13	0.069	(0.196)	0.031	0.038
194	16.17	0.13	0.069	(0.195)	0.031	0.038
195	16.25	0.13	0.069	(0.194)	0.031	0.038
196	16.33	0.13	0.069	(0.193)	0.031	0.038
197	16.42	0.13	0.069	(0.192)	0.031	0.038
198	16.50	0.13	0.069	(0.191)	0.031	0.038
199	16.58	0.10	0.052	(0.190)	0.023	0.028
200	16.67	0.10	0.052	(0.189)	0.023	0.028
201	16.75	0.10	0.052	(0.188)	0.023	0.028
202	16.83	0.10	0.052	(0.187)	0.023	0.028
203	16.92	0.10	0.052	(0.186)	0.023	0.028
204	17.00	0.10	0.052	(0.185)	0.023	0.028
205	17.08	0.17	0.086	(0.185)	0.039	0.047
206	17.17	0.17	0.086	(0.184)	0.039	0.047
207	17.25	0.17	0.086	(0.183)	0.039	0.047
208	17.33	0.17	0.086	(0.182)	0.039	0.047
209	17.42	0.17	0.086	(0.181)	0.039	0.047
210	17.50	0.17	0.086	(0.180)	0.039	0.047
211	17.58	0.17	0.086	(0.179)	0.039	0.047
212	17.67	0.17	0.086	(0.178)	0.039	0.047
213	17.75	0.17	0.086	(0.177)	0.039	0.047
214	17.83	0.13	0.069	(0.176)	0.031	0.038
215	17.92	0.13	0.069	(0.176)	0.031	0.038
216	18.00	0.13	0.069	(0.175)	0.031	0.038

217	18.08	0.13	0.069	(0.174)	0.031	0.038
218	18.17	0.13	0.069	(0.173)	0.031	0.038
219	18.25	0.13	0.069	(0.172)	0.031	0.038
220	18.33	0.13	0.069	(0.171)	0.031	0.038
221	18.42	0.13	0.069	(0.170)	0.031	0.038
222	18.50	0.13	0.069	(0.170)	0.031	0.038
223	18.58	0.10	0.052	(0.169)	0.023	0.028
224	18.67	0.10	0.052	(0.168)	0.023	0.028
225	18.75	0.10	0.052	(0.167)	0.023	0.028
226	18.83	0.07	0.034	(0.166)	0.016	0.019
227	18.92	0.07	0.034	(0.166)	0.016	0.019
228	19.00	0.07	0.034	(0.165)	0.016	0.019
229	19.08	0.10	0.052	(0.164)	0.023	0.028
230	19.17	0.10	0.052	(0.163)	0.023	0.028
231	19.25	0.10	0.052	(0.162)	0.023	0.028
232	19.33	0.13	0.069	(0.162)	0.031	0.038
233	19.42	0.13	0.069	(0.161)	0.031	0.038
234	19.50	0.13	0.069	(0.160)	0.031	0.038
235	19.58	0.10	0.052	(0.159)	0.023	0.028
236	19.67	0.10	0.052	(0.159)	0.023	0.028
237	19.75	0.10	0.052	(0.158)	0.023	0.028
238	19.83	0.07	0.034	(0.157)	0.016	0.019
239	19.92	0.07	0.034	(0.157)	0.016	0.019
240	20.00	0.07	0.034	(0.156)	0.016	0.019
241	20.08	0.10	0.052	(0.155)	0.023	0.028
242	20.17	0.10	0.052	(0.155)	0.023	0.028
243	20.25	0.10	0.052	(0.154)	0.023	0.028
244	20.33	0.10	0.052	(0.153)	0.023	0.028
245	20.42	0.10	0.052	(0.153)	0.023	0.028
246	20.50	0.10	0.052	(0.152)	0.023	0.028
247	20.58	0.10	0.052	(0.151)	0.023	0.028
248	20.67	0.10	0.052	(0.151)	0.023	0.028
249	20.75	0.10	0.052	(0.150)	0.023	0.028
250	20.83	0.07	0.034	(0.149)	0.016	0.019
251	20.92	0.07	0.034	(0.149)	0.016	0.019
252	21.00	0.07	0.034	(0.148)	0.016	0.019
253	21.08	0.10	0.052	(0.148)	0.023	0.028
254	21.17	0.10	0.052	(0.147)	0.023	0.028
255	21.25	0.10	0.052	(0.146)	0.023	0.028
256	21.33	0.07	0.034	(0.146)	0.016	0.019
257	21.42	0.07	0.034	(0.145)	0.016	0.019
258	21.50	0.07	0.034	(0.145)	0.016	0.019
259	21.58	0.10	0.052	(0.144)	0.023	0.028
260	21.67	0.10	0.052	(0.144)	0.023	0.028
261	21.75	0.10	0.052	(0.143)	0.023	0.028
262	21.83	0.07	0.034	(0.143)	0.016	0.019
263	21.92	0.07	0.034	(0.142)	0.016	0.019
264	22.00	0.07	0.034	(0.142)	0.016	0.019
265	22.08	0.10	0.052	(0.141)	0.023	0.028
266	22.17	0.10	0.052	(0.141)	0.023	0.028
267	22.25	0.10	0.052	(0.140)	0.023	0.028
268	22.33	0.07	0.034	(0.140)	0.016	0.019
269	22.42	0.07	0.034	(0.140)	0.016	0.019
270	22.50	0.07	0.034	(0.139)	0.016	0.019
271	22.58	0.07	0.034	(0.139)	0.016	0.019
272	22.67	0.07	0.034	(0.138)	0.016	0.019
273	22.75	0.07	0.034	(0.138)	0.016	0.019
274	22.83	0.07	0.034	(0.138)	0.016	0.019
275	22.92	0.07	0.034	(0.137)	0.016	0.019
276	23.00	0.07	0.034	(0.137)	0.016	0.019
277	23.08	0.07	0.034	(0.137)	0.016	0.019
278	23.17	0.07	0.034	(0.136)	0.016	0.019
279	23.25	0.07	0.034	(0.136)	0.016	0.019
280	23.33	0.07	0.034	(0.136)	0.016	0.019
281	23.42	0.07	0.034	(0.135)	0.016	0.019
282	23.50	0.07	0.034	(0.135)	0.016	0.019
283	23.58	0.07	0.034	(0.135)	0.016	0.019
284	23.67	0.07	0.034	(0.135)	0.016	0.019
285	23.75	0.07	0.034	(0.135)	0.016	0.019
286	23.83	0.07	0.034	(0.134)	0.016	0.019
287	23.92	0.07	0.034	(0.134)	0.016	0.019
288	24.00	0.07	0.034	(0.134)	0.016	0.019

(Loss Rate Not Used)

Sum = 100.0 Sum = 28.5

Flood volume = Effective rainfall 2.37(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 1.7(Ac.Ft)
Total soil loss = 1.93(In)
Total soil loss = 1.392(Ac.Ft)
Total rainfall = 4.30(In)

```
                                   PR24HR100YR
 Flood volume =        74610.1 Cubic Feet
 Total soil loss =        60639.6 Cubic Feet
 --------------------------------------------------------------------
  Peak flow rate of this hydrograph =       3.093(CFS)
 --------------------------------------------------------------------
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    24 - H O U R    S T O R M
               R u n o f f     H y d r o g r a p h
 --------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

 --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5      0.0005      0.08  Q          |         |         |         |
  0+10      0.0015      0.15  Q          |         |         |         |
  0+15      0.0026      0.16  Q          |         |         |         |
  0+20      0.0040      0.20  Q          |         |         |         |
  0+25      0.0056      0.24  Q          |         |         |         |
  0+30      0.0073      0.24  Q          |         |         |         |
  0+35      0.0090      0.25  Q          |         |         |         |
  0+40      0.0107      0.25  Q          |         |         |         |
  0+45      0.0124      0.25  Q          |         |         |         |
  0+50      0.0144      0.28  VQ         |         |         |         |
  0+55      0.0166      0.32  VQ         |         |         |         |
  1+ 0      0.0188      0.33  VQ         |         |         |         |
  1+ 5      0.0208      0.29  VQ         |         |         |         |
  1+10      0.0226      0.26  VQ         |         |         |         |
  1+15      0.0243      0.25  VQ         |         |         |         |
  1+20      0.0260      0.25  Q          |         |         |         |
  1+25      0.0277      0.25  Q          |         |         |         |
  1+30      0.0294      0.25  Q          |         |         |         |
  1+35      0.0311      0.25  Q          |         |         |         |
  1+40      0.0328      0.25  Q          |         |         |         |
  1+45      0.0345      0.25  Q          |         |         |         |
  1+50      0.0365      0.28  VQ         |         |         |         |
  1+55      0.0387      0.32  VQ         |         |         |         |
  2+ 0      0.0410      0.33  VQ         |         |         |         |
  2+ 5      0.0432      0.33  |Q         |         |         |         |
  2+10      0.0455      0.33  |Q         |         |         |         |
  2+15      0.0478      0.33  |Q         |         |         |         |
  2+20      0.0500      0.33  |Q         |         |         |         |
  2+25      0.0523      0.33  |Q         |         |         |         |
  2+30      0.0546      0.33  |Q         |         |         |         |
  2+35      0.0571      0.37  |Q         |         |         |         |
  2+40      0.0599      0.40  |Q         |         |         |         |
  2+45      0.0627      0.41  |Q         |         |         |         |
  2+50      0.0655      0.41  |Q         |         |         |         |
  2+55      0.0684      0.41  |Q         |         |         |         |
  3+ 0      0.0712      0.41  |Q         |         |         |         |
  3+ 5      0.0740      0.41  |Q         |         |         |         |
  3+10      0.0769      0.41  |Q         |         |         |         |
  3+15      0.0797      0.41  |Q         |         |         |         |
  3+20      0.0825      0.41  |Q         |         |         |         |
  3+25      0.0854      0.41  |Q         |         |         |         |
  3+30      0.0882      0.41  |QV        |         |         |         |
  3+35      0.0910      0.41  |QV        |         |         |         |
  3+40      0.0939      0.41  |QV        |         |         |         |
  3+45      0.0967      0.41  |QV        |         |         |         |
  3+50      0.0998      0.45  |QV        |         |         |         |
  3+55      0.1031      0.48  |QV        |         |         |         |
  4+ 0      0.1065      0.49  |QV        |         |         |         |
  4+ 5      0.1099      0.49  |QV        |         |         |         |
  4+10      0.1133      0.49  |QV        |         |         |         |
  4+15      0.1167      0.49  |QV        |         |         |         |
  4+20      0.1204      0.53  | Q        |         |         |         |
  4+25      0.1243      0.57  | Q        |         |         |         |
  4+30      0.1283      0.57  | Q        |         |         |         |
  4+35      0.1322      0.58  | QV       |         |         |         |
  4+40      0.1362      0.58  | QV       |         |         |         |
  4+45      0.1402      0.58  | QV       |         |         |         |
  4+50      0.1444      0.61  | QV       |         |         |         |
  4+55      0.1489      0.65  | QV       |         |         |         |
  5+ 0      0.1534      0.66  | QV       |         |         |         |
  5+ 5      0.1574      0.58  | QV       |         |         |         |
  5+10      0.1609      0.51  | QV       |         |         |         |
  5+15      0.1644      0.50  | QV       |         |         |         |
  5+20      0.1680      0.53  | QV       |         |         |         |
  5+25      0.1719      0.57  | Q V      |         |         |         |
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 5+30       0.1759      0.57  | Q V     |         |         |         |
 5+35       0.1801      0.61  | Q V     |         |         |         |
 5+40       0.1846      0.65  | Q V     |         |         |         |
 5+45       0.1891      0.66  | Q V     |         |         |         |
 5+50       0.1936      0.66  | Q V     |         |         |         |
 5+55       0.1982      0.66  | Q V     |         |         |         |
 6+ 0       0.2027      0.66  | Q V     |         |         |         |
 6+ 5       0.2075      0.70  | Q V     |         |         |         |
 6+10       0.2126      0.73  | Q V     |         |         |         |
 6+15       0.2176      0.74  | Q  V    |         |         |         |
 6+20       0.2227      0.74  | Q  V    |         |         |         |
 6+25       0.2279      0.74  | Q  V    |         |         |         |
 6+30       0.2330      0.74  | Q  V    |         |         |         |
 6+35       0.2383      0.78  |  Q V    |         |         |         |
 6+40       0.2439      0.81  |  Q V    |         |         |         |
 6+45       0.2496      0.82  |  Q V    |         |         |         |
 6+50       0.2552      0.82  |  Q V    |         |         |         |
 6+55       0.2609      0.82  |  Q  V   |         |         |         |
 7+ 0       0.2666      0.82  |  Q  V   |         |         |         |
 7+ 5       0.2723      0.82  |  Q  V   |         |         |         |
 7+10       0.2779      0.82  |  Q  V   |         |         |         |
 7+15       0.2836      0.82  |  Q  V   |         |         |         |
 7+20       0.2895      0.86  |  Q  V   |         |         |         |
 7+25       0.2957      0.90  |  Q  V   |         |         |         |
 7+30       0.3019      0.90  |  Q   V  |         |         |         |
 7+35       0.3084      0.94  |  Q   V  |         |         |         |
 7+40       0.3152      0.98  |  Q   V  |         |         |         |
 7+45       0.3220      0.99  |  Q   V  |         |         |         |
 7+50       0.3290      1.03  |   Q  V  |         |         |         |
 7+55       0.3363      1.06  |   Q  V  |         |         |         |
 8+ 0       0.3437      1.07  |   Q   V |         |         |         |
 8+ 5       0.3516      1.15  |   Q   V |         |         |         |
 8+10       0.3599      1.22  |   Q   V |         |         |         |
 8+15       0.3684      1.23  |   Q   V |         |         |         |
 8+20       0.3769      1.24  |   Q   V |         |         |         |
 8+25       0.3854      1.24  |   Q    V|         |         |         |
 8+30       0.3939      1.24  |   Q    V|         |         |         |
 8+35       0.4027      1.27  |    Q   V|         |         |         |
 8+40       0.4117      1.31  |    Q   V|         |         |         |
 8+45       0.4208      1.31  |    Q   V|         |         |         |
 8+50       0.4301      1.36  |    Q    V         |         |         |
 8+55       0.4397      1.39  |    Q    V         |         |         |
 9+ 0       0.4493      1.40  |    Q    V         |         |         |
 9+ 5       0.4595      1.48  |    Q    V         |         |         |
 9+10       0.4701      1.55  |     Q   V         |         |         |
 9+15       0.4808      1.56  |     Q   |V        |         |         |
 9+20       0.4919      1.60  |     Q   |V        |         |         |
 9+25       0.5031      1.64  |     Q   |V        |         |         |
 9+30       0.5145      1.64  |     Q   | V       |         |         |
 9+35       0.5261      1.68  |     Q   | V       |         |         |
 9+40       0.5379      1.72  |     Q   | V       |         |         |
 9+45       0.5498      1.73  |     Q   | V       |         |         |
 9+50       0.5620      1.77  |      Q  |  V      |         |         |
 9+55       0.5744      1.80  |      Q  |  V      |         |         |
10+ 0       0.5868      1.81  |      Q  |  V      |         |         |
10+ 5       0.5975      1.55  |     Q   |  V      |         |         |
10+10       0.6065      1.30  |    Q    |   V     |         |         |
10+15       0.6151      1.26  |    Q    |   V     |         |         |
10+20       0.6236      1.24  |   Q     |   V     |         |         |
10+25       0.6321      1.24  |   Q     |   V     |         |         |
10+30       0.6406      1.24  |   Q     |   V     |         |         |
10+35       0.6505      1.42  |    Q    |    V    |         |         |
10+40       0.6615      1.60  |     Q   |    V    |         |         |
10+45       0.6727      1.63  |     Q   |    V    |         |         |
10+50       0.6840      1.65  |     Q   |    V    |         |         |
10+55       0.6954      1.65  |     Q   |     V   |         |         |
11+ 0       0.7067      1.65  |     Q   |     V   |         |         |
11+ 5       0.7178      1.61  |     Q   |     V   |         |         |
11+10       0.7287      1.57  |     Q   |      V  |         |         |
11+15       0.7395      1.57  |     Q   |      V  |         |         |
11+20       0.7502      1.56  |     Q   |      V  |         |         |
11+25       0.7610      1.56  |     Q   |      V  |         |         |
11+30       0.7718      1.56  |     Q   |       V |         |         |
11+35       0.7820      1.49  |    Q    |       V |         |         |
11+40       0.7918      1.42  |    Q    |       V |         |         |
11+45       0.8015      1.41  |    Q    |       V |         |         |
11+50       0.8114      1.44  |    Q    |       V |         |         |
11+55       0.8215      1.47  |    Q    |        V|         |         |
12+ 0       0.8317      1.48  |    Q    |        V|         |         |
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                                            PR24HR100YR
12+ 5       0.8438      1.75  |     Q   |        V|         |         |
12+10       0.8575      1.99  |      Q  |         V         |         |
12+15       0.8715      2.04  |       Q |         V         |         |
12+20       0.8859      2.10  |       Q |         V         |         |
12+25       0.9006      2.13  |       Q |         |V        |         |
12+30       0.9154      2.14  |       Q |         |V        |         |
12+35       0.9306      2.22  |       Q |         |V        |         |
12+40       0.9464      2.29  |        Q|         | V       |         |
12+45       0.9622      2.30  |        Q|         | V       |         |
12+50       0.9783      2.34  |        Q|         | V       |         |
12+55       0.9947      2.38  |        Q|         |  V      |         |
13+ 0       1.0112      2.39  |        Q|         |  V      |         |
13+ 5       1.0297      2.69  |         Q         |   V     |         |
13+10       1.0502      2.97  |         |Q        |   V     |         |
13+15       1.0711      3.04  |         | Q       |    V    |         |
13+20       1.0923      3.07  |         | Q       |    V    |         |
13+25       1.1135      3.08  |         | Q       |     V   |         |
13+30       1.1348      3.09  |         | Q       |     V   |         |
13+35       1.1523      2.55  |         Q         |     V   |         |
13+40       1.1663      2.04  |       Q |         |      V  |         |
13+45       1.1797      1.94  |      Q  |         |      V  |         |
13+50       1.1927      1.89  |      Q  |         |      V  |         |
13+55       1.2058      1.89  |      Q  |         |       V |         |
14+ 0       1.2188      1.89  |      Q  |         |       V |         |
14+ 5       1.2329      2.05  |       Q |         |       V |         |
14+10       1.2479      2.18  |       Q |         |        V|         |
14+15       1.2632      2.21  |       Q |         |        V|         |
14+20       1.2782      2.19  |       Q |         |        V|         |
14+25       1.2930      2.15  |       Q |         |         V         |
14+30       1.3078      2.14  |       Q |         |         V         |
14+35       1.3226      2.14  |       Q |         |         V         |
14+40       1.3373      2.14  |       Q |         |         |V        |
14+45       1.3520      2.14  |       Q |         |         |V        |
14+50       1.3665      2.10  |       Q |         |         |V        |
14+55       1.3808      2.07  |       Q |         |         | V       |
15+ 0       1.3950      2.06  |       Q |         |         | V       |
15+ 5       1.4089      2.02  |       Q |         |         | V       |
15+10       1.4226      1.99  |      Q  |         |         |  V      |
15+15       1.4362      1.98  |      Q  |         |         |  V      |
15+20       1.4496      1.94  |      Q  |         |         |  V      |
15+25       1.4627      1.90  |      Q  |         |         |   V     |
15+30       1.4757      1.90  |      Q  |         |         |   V     |
15+35       1.4877      1.74  |     Q   |         |         |   V     |
15+40       1.4988      1.60  |     Q   |         |         |    V    |
15+45       1.5096      1.58  |     Q   |         |         |    V    |
15+50       1.5204      1.56  |     Q   |         |         |    V    |
15+55       1.5312      1.56  |     Q   |         |         |    V    |
16+ 0       1.5420      1.56  |     Q   |         |         |     V   |
16+ 5       1.5488      1.00  |  Q      |         |         |     V   |
16+10       1.5521      0.48  |Q        |         |         |     V   |
16+15       1.5547      0.37  |Q        |         |         |     V   |
16+20       1.5570      0.33  |Q        |         |         |     V   |
16+25       1.5592      0.33  |Q        |         |         |     V   |
16+30       1.5615      0.33  |Q        |         |         |     V   |
16+35       1.5635      0.29  |Q        |         |         |     V   |
16+40       1.5653      0.26  |Q        |         |         |     V   |
16+45       1.5670      0.25  |Q        |         |         |     V   |
16+50       1.5687      0.25  Q         |         |         |     V   |
16+55       1.5704      0.25  Q         |         |         |     V   |
17+ 0       1.5721      0.25  Q         |         |         |     V   |
17+ 5       1.5743      0.32  |Q        |         |         |     V   |
17+10       1.5770      0.39  |Q        |         |         |     V   |
17+15       1.5798      0.41  |Q        |         |         |     V   |
17+20       1.5827      0.41  |Q        |         |         |     V   |
17+25       1.5855      0.41  |Q        |         |         |      V  |
17+30       1.5883      0.41  |Q        |         |         |      V  |
17+35       1.5912      0.41  |Q        |         |         |      V  |
17+40       1.5940      0.41  |Q        |         |         |      V  |
17+45       1.5968      0.41  |Q        |         |         |      V  |
17+50       1.5994      0.37  |Q        |         |         |      V  |
17+55       1.6018      0.34  |Q        |         |         |      V  |
18+ 0       1.6040      0.33  |Q        |         |         |      V  |
18+ 5       1.6063      0.33  |Q        |         |         |      V  |
18+10       1.6086      0.33  |Q        |         |         |      V  |
18+15       1.6108      0.33  |Q        |         |         |      V  |
18+20       1.6131      0.33  |Q        |         |         |      V  |
18+25       1.6154      0.33  |Q        |         |         |      V  |
18+30       1.6177      0.33  |Q        |         |         |      V  |
18+35       1.6197      0.29  |Q        |         |         |      V  |
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PR24HR100YR

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18+40       1.6214      0.26  |Q        |         |         |      V  |
18+45       1.6232      0.25  |Q        |         |         |      V  |
18+50       1.6246      0.21  Q         |         |         |      V  |
18+55       1.6258      0.17  Q         |         |         |      V  |
19+ 0       1.6269      0.17  Q         |         |         |      V  |
19+ 5       1.6283      0.20  Q         |         |         |       V |
19+10       1.6300      0.24  Q         |         |         |       V |
19+15       1.6317      0.24  Q         |         |         |       V |
19+20       1.6336      0.28  |Q        |         |         |       V |
19+25       1.6358      0.32  |Q        |         |         |       V |
19+30       1.6381      0.33  |Q        |         |         |       V |
19+35       1.6401      0.29  |Q        |         |         |       V |
19+40       1.6418      0.26  |Q        |         |         |       V |
19+45       1.6436      0.25  |Q        |         |         |       V |
19+50       1.6450      0.21  Q         |         |         |       V |
19+55       1.6462      0.17  Q         |         |         |       V |
20+ 0       1.6474      0.17  Q         |         |         |       V |
20+ 5       1.6488      0.20  Q         |         |         |       V |
20+10       1.6504      0.24  Q         |         |         |       V |
20+15       1.6521      0.24  Q         |         |         |       V |
20+20       1.6538      0.25  Q         |         |         |       V |
20+25       1.6555      0.25  Q         |         |         |       V |
20+30       1.6572      0.25  Q         |         |         |       V |
20+35       1.6589      0.25  Q         |         |         |       V |
20+40       1.6606      0.25  Q         |         |         |       V |
20+45       1.6623      0.25  Q         |         |         |       V |
20+50       1.6637      0.21  Q         |         |         |       V |
20+55       1.6649      0.17  Q         |         |         |       V |
21+ 0       1.6661      0.17  Q         |         |         |       V |
21+ 5       1.6675      0.20  Q         |         |         |       V |
21+10       1.6691      0.24  Q         |         |         |       V |
21+15       1.6708      0.24  Q         |         |         |        V|
21+20       1.6722      0.21  Q         |         |         |        V|
21+25       1.6734      0.17  Q         |         |         |        V|
21+30       1.6746      0.17  Q         |         |         |        V|
21+35       1.6760      0.20  Q         |         |         |        V|
21+40       1.6776      0.24  Q         |         |         |        V|
21+45       1.6793      0.24  Q         |         |         |        V|
21+50       1.6807      0.21  Q         |         |         |        V|
21+55       1.6819      0.17  Q         |         |         |        V|
22+ 0       1.6831      0.17  Q         |         |         |        V|
22+ 5       1.6845      0.20  Q         |         |         |        V|
22+10       1.6861      0.24  Q         |         |         |        V|
22+15       1.6878      0.24  Q         |         |         |        V|
22+20       1.6892      0.21  Q         |         |         |        V|
22+25       1.6905      0.17  Q         |         |         |        V|
22+30       1.6916      0.17  Q         |         |         |        V|
22+35       1.6927      0.16  Q         |         |         |        V|
22+40       1.6939      0.16  Q         |         |         |        V|
22+45       1.6950      0.16  Q         |         |         |        V|
22+50       1.6961      0.16  Q         |         |         |        V|
22+55       1.6973      0.16  Q         |         |         |        V|
23+ 0       1.6984      0.16  Q         |         |         |        V|
23+ 5       1.6995      0.16  Q         |         |         |        V|
23+10       1.7007      0.16  Q         |         |         |        V|
23+15       1.7018      0.16  Q         |         |         |        V|
23+20       1.7029      0.16  Q         |         |         |        V|
23+25       1.7041      0.16  Q         |         |         |        V|
23+30       1.7052      0.16  Q         |         |         |        V|
23+35       1.7064      0.16  Q         |         |         |        V|
23+40       1.7075      0.16  Q         |         |         |        V|
23+45       1.7086      0.16  Q         |         |         |        V|
23+50       1.7098      0.16  Q         |         |         |        V|
23+55       1.7109      0.16  Q         |         |         |        V|
24+ 0       1.7120      0.16  Q         |         |         |        V|
24+ 5       1.7126      0.09  Q         |         |         |        V|
24+10       1.7128      0.02  Q         |         |         |        V|
24+15       1.7128      0.01  Q         |         |         |        V|
-----------------------------------------------------------------------
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RATIONAL METHOD

BASIN A

10 YEAR

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                                 PR10

                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
        Rational Hydrology Study        Date: 09/08/16  File:PR10.out
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6313

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.480(In.)
100 year, 1 hour precipitation =  1.200(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.776(In/Hr)
Slope of intensity duration curve = 0.4800




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance =   954.000(Ft.)
Top (of initial area) elevation =  1564.880(Ft.)
Bottom (of initial area) elevation =  1556.320(Ft.)
Difference in elevation =     8.560(Ft.)
Slope =    0.00897  s(percent)=       0.90
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   14.772 min.
Rainfall intensity =      1.521(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.804
Decimal fraction soil group A = 0.060
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.940
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  66.78
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      8.893(CFS)
Total initial stream area =        7.268(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** CONFLUENCE OF MAIN STREAMS ****

The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      7.268(Ac.)
Runoff from this stream =      8.893(CFS)
Time of concentration =   14.77 min.
Rainfall intensity =     1.521(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance =   810.000(Ft.)
Top (of initial area) elevation =  1563.490(Ft.)
Bottom (of initial area) elevation =  1556.320(Ft.)
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```
Difference in elevation =     7.170(Ft.)
Slope =    0.00885  s(percent)=       0.89
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.874 min.
Rainfall intensity =      1.568(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.773
Decimal fraction soil group A = 0.360
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.640
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  55.68
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      4.760(CFS)
Total initial stream area =        3.929(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        2.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      3.929(Ac.)
Runoff from this stream =      4.760(CFS)
Time of concentration =   13.87 min.
Rainfall intensity =     1.568(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1        8.893     14.77                 1.521
2        4.760     13.87                 1.568
Largest stream flow has longer time of concentration
Qp =      8.893 + sum of
          Qb          Ia/Ib
           4.760 *    0.970 =      4.619
Qp =     13.511

Total of 2 main streams to confluence:
Flow rates before confluence point:
       8.893       4.760
Area of streams before confluence:
        7.268        3.929


Results of confluence:
Total flow rate =     13.511(CFS)
Time of concentration =    14.772 min.
Effective stream area after confluence  =     11.197(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        4.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1553.730(Ft.)
Downstream point/station elevation =  1553.000(Ft.)
Pipe length  =    40.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.511(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    13.511(CFS)
Normal flow depth in pipe =   14.04(In.)
Flow top width inside pipe =   14.91(In.)
Critical Depth =   16.41(In.)
Pipe flow velocity =      9.14(Ft/s)
Travel time through pipe =    0.07 min.
Time of concentration (TC) =    14.84 min.
End of computations, total study area =           11.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.350
Area averaged RI index number =  62.9
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100 YEAR

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                              PR100

                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
        Rational Hydrology Study        Date: 09/08/16  File:PR10.out
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6313

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.480(In.)
100 year, 1 hour precipitation =  1.200(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.200(In/Hr)
Slope of intensity duration curve = 0.4800




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       1.000 to Point/Station       2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   954.000(Ft.)
Top (of initial area) elevation =  1564.880(Ft.)
Bottom (of initial area) elevation =  1556.320(Ft.)
Difference in elevation =     8.560(Ft.)
Slope =    0.00897  s(percent)=       0.90
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   14.772 min.
Rainfall intensity =      2.352(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.831
Decimal fraction soil group A = 0.060
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.940
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  66.78
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =     14.198(CFS)
Total initial stream area =        7.268(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       1.000 to Point/Station       2.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      7.268(Ac.)
Runoff from this stream =     14.198(CFS)
Time of concentration =   14.77 min.
Rainfall intensity =     2.352(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       3.000 to Point/Station       2.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   810.000(Ft.)
Top (of initial area) elevation =  1563.490(Ft.)
Bottom (of initial area) elevation =  1556.320(Ft.)
```

```
Difference in elevation =     7.170(Ft.)
Slope =    0.00885  s(percent)=       0.89
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.874 min.
Rainfall intensity =      2.424(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.804
Decimal fraction soil group A = 0.360
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.640
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  55.68
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      7.656(CFS)
Total initial stream area =        3.929(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        2.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      3.929(Ac.)
Runoff from this stream =      7.656(CFS)
Time of concentration =   13.87 min.
Rainfall intensity =     2.424(In/Hr)
Summary of stream data:

Stream   Flow rate      TC           Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       14.198     14.77                 2.352
2        7.656     13.87                 2.424
Largest stream flow has longer time of concentration
Qp =     14.198 + sum of
          Qb         Ia/Ib
           7.656 *    0.970 =      7.429
Qp =     21.627

Total of 2 main streams to confluence:
Flow rates before confluence point:
      14.198        7.656
Area of streams before confluence:
        7.268        3.929


Results of confluence:
Total flow rate =     21.627(CFS)
Time of concentration =    14.772 min.
Effective stream area after confluence  =     11.197(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        4.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1553.730(Ft.)
Downstream point/station elevation =  1553.000(Ft.)
Pipe length  =    40.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    21.627(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    21.627(CFS)
Normal flow depth in pipe =   17.41(In.)
Flow top width inside pipe =   15.80(In.)
Critical Depth =   19.57(In.)
Pipe flow velocity =     10.14(Ft/s)
Travel time through pipe =    0.07 min.
Time of concentration (TC) =    14.84 min.
End of computations, total study area =           11.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.350
Area averaged RI index number =  62.9
```

BASIN B

10 YEAR

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                                PR10

                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
        Rational Hydrology Study        Date: 09/08/16  File:PR10.out
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6313

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =   10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.480(In.)
100 year, 1 hour precipitation =  1.200(In.)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.776(In/Hr)
Slope of intensity duration curve = 0.4800




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       12.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance =   887.000(Ft.)
Top (of initial area) elevation =  1564.070(Ft.)
Bottom (of initial area) elevation =  1555.570(Ft.)
Difference in elevation =     8.500(Ft.)
Slope =    0.00958  s(percent)=       0.96
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   14.160 min.
Rainfall intensity =      1.552(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.780
Decimal fraction soil group A = 0.290
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.710
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  58.27
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      2.115(CFS)
Total initial stream area =        1.747(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       12.000
**** CONFLUENCE OF MAIN STREAMS ****

The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      1.747(Ac.)
Runoff from this stream =      2.115(CFS)
Time of concentration =   14.16 min.
Rainfall intensity =     1.552(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       14.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance =   847.000(Ft.)
Top (of initial area) elevation =  1564.360(Ft.)
Bottom (of initial area) elevation =  1556.180(Ft.)
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```
Difference in elevation =     8.180(Ft.)
Slope =    0.00966  s(percent)=       0.97
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.880 min.
Rainfall intensity =      1.567(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.733
Decimal fraction soil group A = 0.700
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.300
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  43.10
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      4.646(CFS)
Total initial stream area =        4.042(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       14.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      4.042(Ac.)
Runoff from this stream =      4.646(CFS)
Time of concentration =   13.88 min.
Rainfall intensity =     1.567(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       14.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   514.000(Ft.)
Top (of initial area) elevation =  1561.850(Ft.)
Bottom (of initial area) elevation =  1556.180(Ft.)
Difference in elevation =     5.670(Ft.)
Slope =    0.01103  s(percent)=       1.10
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.068 min.
Rainfall intensity =      1.747(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.792
Decimal fraction soil group A = 0.260
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.740
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  59.38
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      3.980(CFS)
Total initial stream area =        2.876(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       14.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      2.876(Ac.)
Runoff from this stream =      3.980(CFS)
Time of concentration =   11.07 min.
Rainfall intensity =     1.747(In/Hr)
Summary of stream data:

Stream   Flow rate      TC           Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        4.646     13.88                 1.567
2        3.980     11.07                 1.747
Largest stream flow has longer time of concentration
Qp =      4.646 + sum of
          Qb         Ia/Ib
           3.980 *    0.897 =      3.570
Qp =      8.216

Total of 2 streams to confluence:
Flow rates before confluence point:
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```
       4.646       3.980
Area of streams before confluence:
        4.042        2.876
Results of confluence:
Total flow rate =      8.216(CFS)
Time of concentration =    13.880 min.
Effective stream area after confluence =      6.918(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       16.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1553.870(Ft.)
Downstream point/station elevation =  1553.410(Ft.)
Pipe length  =    47.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     8.216(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =     8.216(CFS)
Normal flow depth in pipe =   12.07(In.)
Flow top width inside pipe =   16.92(In.)
Critical Depth =   13.32(In.)
Pipe flow velocity =      6.52(Ft/s)
Travel time through pipe =    0.12 min.
Time of concentration (TC) =    14.00 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       16.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      6.918(Ac.)
Runoff from this stream =      8.216(CFS)
Time of concentration =   14.00 min.
Rainfall intensity =     1.561(In/Hr)
Summary of stream data:

Stream   Flow rate      TC           Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        2.115     14.16                 1.552
2        8.216     14.00                 1.561
Largest stream flow has longer or shorter time of concentration
Qp =      8.216 + sum of
          Qa          Tb/Ta
           2.115 *    0.989 =      2.091
Qp =     10.307

Total of 2 main streams to confluence:
Flow rates before confluence point:
       2.115       8.216
Area of streams before confluence:
        1.747        6.918


Results of confluence:
Total flow rate =     10.307(CFS)
Time of concentration =    14.000 min.
Effective stream area after confluence  =      8.665(Ac.)
End of computations, total study area =           8.66 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.350
Area averaged RI index number =  51.6
```

100 YEAR

```
                              PR100

                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
        Rational Hydrology Study        Date: 09/08/16  File:PR10.out
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6313

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.480(In.)
100 year, 1 hour precipitation =  1.200(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.200(In/Hr)
Slope of intensity duration curve = 0.4800




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       12.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   887.000(Ft.)
Top (of initial area) elevation =  1564.070(Ft.)
Bottom (of initial area) elevation =  1555.570(Ft.)
Difference in elevation =     8.500(Ft.)
Slope =    0.00958  s(percent)=       0.96
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   14.160 min.
Rainfall intensity =      2.400(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.810
Decimal fraction soil group A = 0.290
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.710
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  58.27
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      3.397(CFS)
Total initial stream area =        1.747(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       12.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      1.747(Ac.)
Runoff from this stream =      3.397(CFS)
Time of concentration =   14.16 min.
Rainfall intensity =     2.400(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       14.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   847.000(Ft.)
Top (of initial area) elevation =  1564.360(Ft.)
Bottom (of initial area) elevation =  1556.180(Ft.)
```

```
Difference in elevation =     8.180(Ft.)
Slope =    0.00966  s(percent)=       0.97
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.880 min.
Rainfall intensity =      2.423(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.767
Decimal fraction soil group A = 0.700
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.300
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  43.10
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      7.516(CFS)
Total initial stream area =        4.042(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       14.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      4.042(Ac.)
Runoff from this stream =      7.516(CFS)
Time of concentration =   13.88 min.
Rainfall intensity =     2.423(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       14.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Initial area flow distance =   514.000(Ft.)
Top (of initial area) elevation =  1561.850(Ft.)
Bottom (of initial area) elevation =  1556.180(Ft.)
Difference in elevation =     5.670(Ft.)
Slope =    0.01103  s(percent)=       1.10
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.068 min.
Rainfall intensity =      2.701(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.820
Decimal fraction soil group A = 0.260
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.740
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  59.38
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      6.374(CFS)
Total initial stream area =        2.876(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       14.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      2.876(Ac.)
Runoff from this stream =      6.374(CFS)
Time of concentration =   11.07 min.
Rainfall intensity =     2.701(In/Hr)
Summary of stream data:

Stream   Flow rate      TC           Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        7.516     13.88                 2.423
2        6.374     11.07                 2.701
Largest stream flow has longer time of concentration
Qp =      7.516 + sum of
          Qb          Ia/Ib
           6.374 *    0.897 =      5.718
Qp =     13.234

Total of 2 streams to confluence:
Flow rates before confluence point:
```

```
       7.516       6.374
Area of streams before confluence:
        4.042        2.876
Results of confluence:
Total flow rate =     13.234(CFS)
Time of concentration =    13.880 min.
Effective stream area after confluence =      6.918(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       16.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =  1553.870(Ft.)
Downstream point/station elevation =  1553.410(Ft.)
Pipe length  =    47.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.234(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    13.234(CFS)
Normal flow depth in pipe =   14.79(In.)
Flow top width inside pipe =   19.17(In.)
Critical Depth =   16.26(In.)
Pipe flow velocity =      7.31(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =    13.99 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       16.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      6.918(Ac.)
Runoff from this stream =     13.234(CFS)
Time of concentration =   13.99 min.
Rainfall intensity =     2.414(In/Hr)
Summary of stream data:

Stream   Flow rate      TC           Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        3.397     14.16                 2.400
2       13.234     13.99                 2.414
Largest stream flow has longer or shorter time of concentration
Qp =     13.234 + sum of
          Qa           Tb/Ta
           3.397 *    0.988 =      3.356
Qp =     16.590

Total of 2 main streams to confluence:
Flow rates before confluence point:
       3.397      13.234
Area of streams before confluence:
        1.747        6.918


Results of confluence:
Total flow rate =     16.590(CFS)
Time of concentration =    13.987 min.
Effective stream area after confluence  =      8.665(Ac.)
End of computations, total study area =           8.66 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.350
Area averaged RI index number =  51.6
```

ATTACHMENT 5

HYDROLOGIC SUMMARY

Basin A - CENTROID

Maximum Flow Rate For Different Rain Events (CFS)

Year/Event	Pre/Post	Q max 1 hr	Q max 3 hr	Q max 6 hr	Q max 24 hr
2	Pre	7.94	4.46	3.57	0.26
	Post	8.87	4.91	4.41	1.51
	Difference	0.93	0.44	0.83	1.25
5	Pre	11.86	6.71	5.60	0.76
	Post	13.08	7.27	6.41	2.04
	Difference	1.22	0.56	0.81	1.28
10	Pre	16.47	10.05	8.78	2.87
	Post	17.39	10.14	9.19	2.44
	Difference	0.91	0.08	0.41	-0.43
100	Pre	26.34	15.71	13.88	5.19
	Post	28.18	16.22	14.88	4.56
	Difference	1.84	0.50	1.00	-0.63

Maximum Volume (Ac.Ft)

Year/Event	Pre/Post	Q max 1 hr	Q max 3 hr	Q max 6 hr	Q max 24 hr
2	Pre	0.1401	0.1488	0.1549	0.1046
	Post	0.2001	0.3553	0.5420	0.6077
	Difference	0.0600	0.2065	0.3871	0.5031
5	Pre	0.2503	0.2530	0.2743	0.1536
	Post	0.2821	0.4728	0.7100	0.8212
	Difference	0.0318	0.2198	0.4357	0.6676
10	Pre	0.4477	0.6127	0.6879	0.4999
	Post	0.3798	0.5934	0.8840	0.9827
	Difference	-0.0679	-0.0193	0.1961	0.4828
100	Pre	0.7489	1.0732	1.3437	1.1661
	Post	0.6629	0.9628	1.4231	1.5576
	Difference	-0.0860	-0.1104	0.0794	0.3915

Basin B - CENTROID

Maximum Flow Rate For Different Rain Events (CFS)

Year/Event	Pre/Post	Q max 1 hr	Q max 3 hr	Q max 6 hr	Q max 24 hr
2	Pre	5.53	2.84	2.20	0.20
	Post	6.24	3.46	3.19	1.12
	Difference	0.70	0.62	0.99	0.92
5	Pre	8.56	4.57	3.78	0.28
	Post	9.26	5.06	4.43	1.51
	Difference	0.70	0.50	0.65	1.24
10	Pre	12.40	7.42	6.52	1.88
	Post	12.45	7.24	6.52	1.81
	Difference	0.06	-0.18	0.00	-0.07
100	Pre	20.06	11.81	10.53	3.68
	Post	20.53	11.87	10.87	3.09
	Difference	0.48	0.06	0.34	-0.59

Maximum Volume (Ac.Ft)

Year/Event	Pre/Post	Q max 1 hr	Q max 3 hr	Q max 6 hr	Q max 24 hr
2	Pre	0.0928	0.0959	0.0994	0.0811
	Post	0.1442	0.2607	0.3998	0.4500
	Difference	0.0514	0.1648	0.3004	0.3689
5	Pre	0.1625	0.1557	0.1637	0.1096
	Post	0.2030	0.3434	0.5211	0.6080
	Difference	0.0405	0.1877	0.3574	0.4984
10	Pre	0.3295	0.4016	0.4380	0.2662
	Post	0.2668	0.4278	0.6403	0.7276
	Difference	-0.0627	0.0262	0.2023	0.4614
100	Pre	0.5684	0.7572	0.8815	0.7178
	Post	0.4691	0.6835	1.0199	1.1348
	Difference	-0.0993	-0.0737	0.1384	0.4170

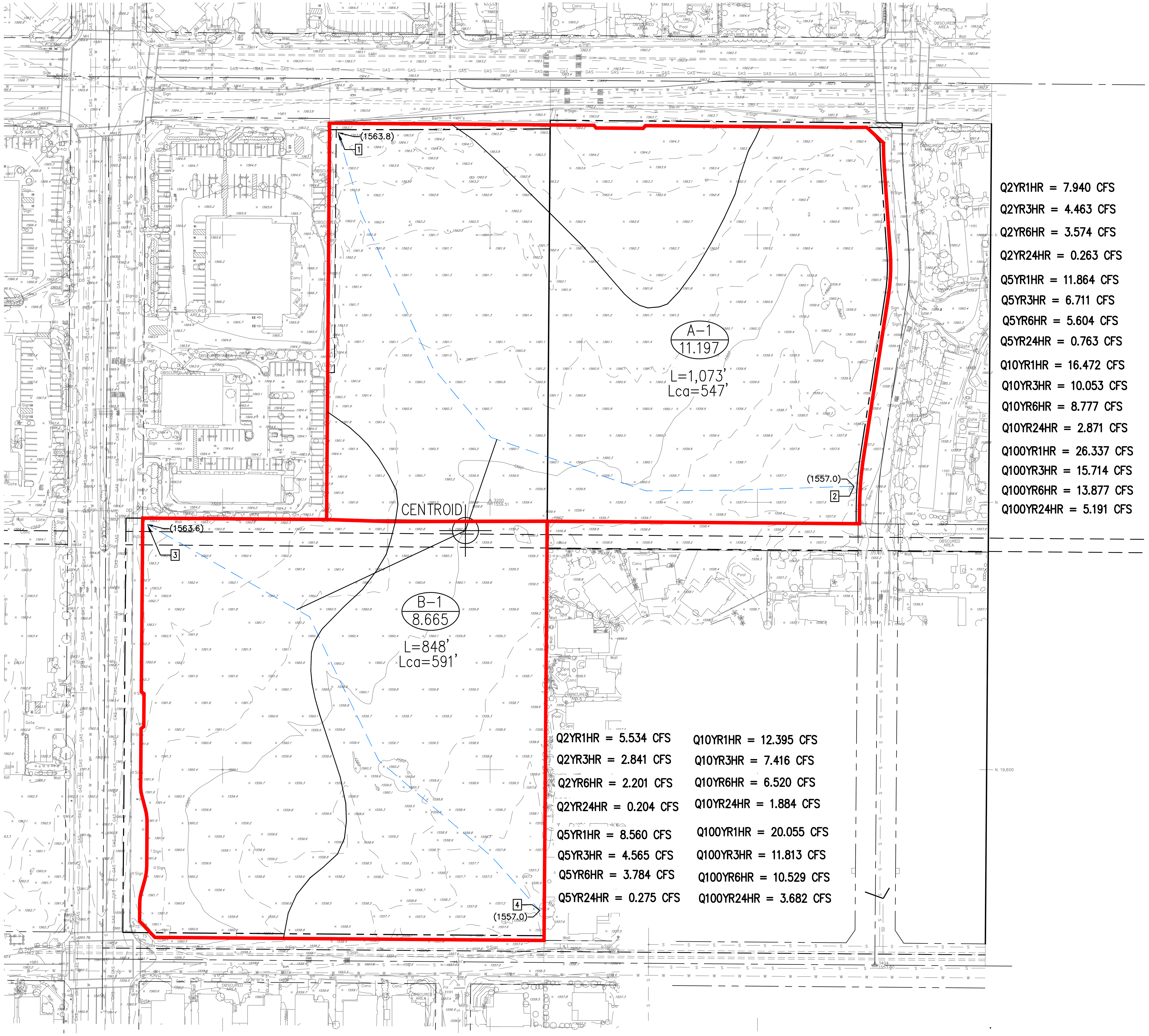
Rational Method

Basin	Q10 -1 Hour			Q100 - 1 Hour		
	Existing	Proposed	Difference	Existing	Proposed	Difference
Basin A	10.144	13.511	-3.367	16.834	21.627	-4.793
Basin B	8.665	10.307	-1.642	12.991	16.590	-3.599

ATTACHMENT 6A

EXISTING HYDROLOGIC MAP CENTROID

ATTACHMENT 6A
EXISTING HYDROLOGIC CENTROID CONDITIONS



LEGEND

- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- HYDROLOGIC BASIN BOUNDARY
- HYDROLOGIC FLOW PATH
- 1 NODE NUMBER
- (150.00) ELEVATION (FEET)
- L=715' SURFACE FLOW LENGTH/ LENGTH OF LONGEST WATERCOURSE
- Lca=336' LENGTH OF CENTROID ALONG THE LONGEST WATERCOURSE
- A-1 SUB-AREA
- 5.843 SUB-AREA (ACRES)

80 0 80 160
GRAPHIC SCALE
SCALE: 1"= 80'

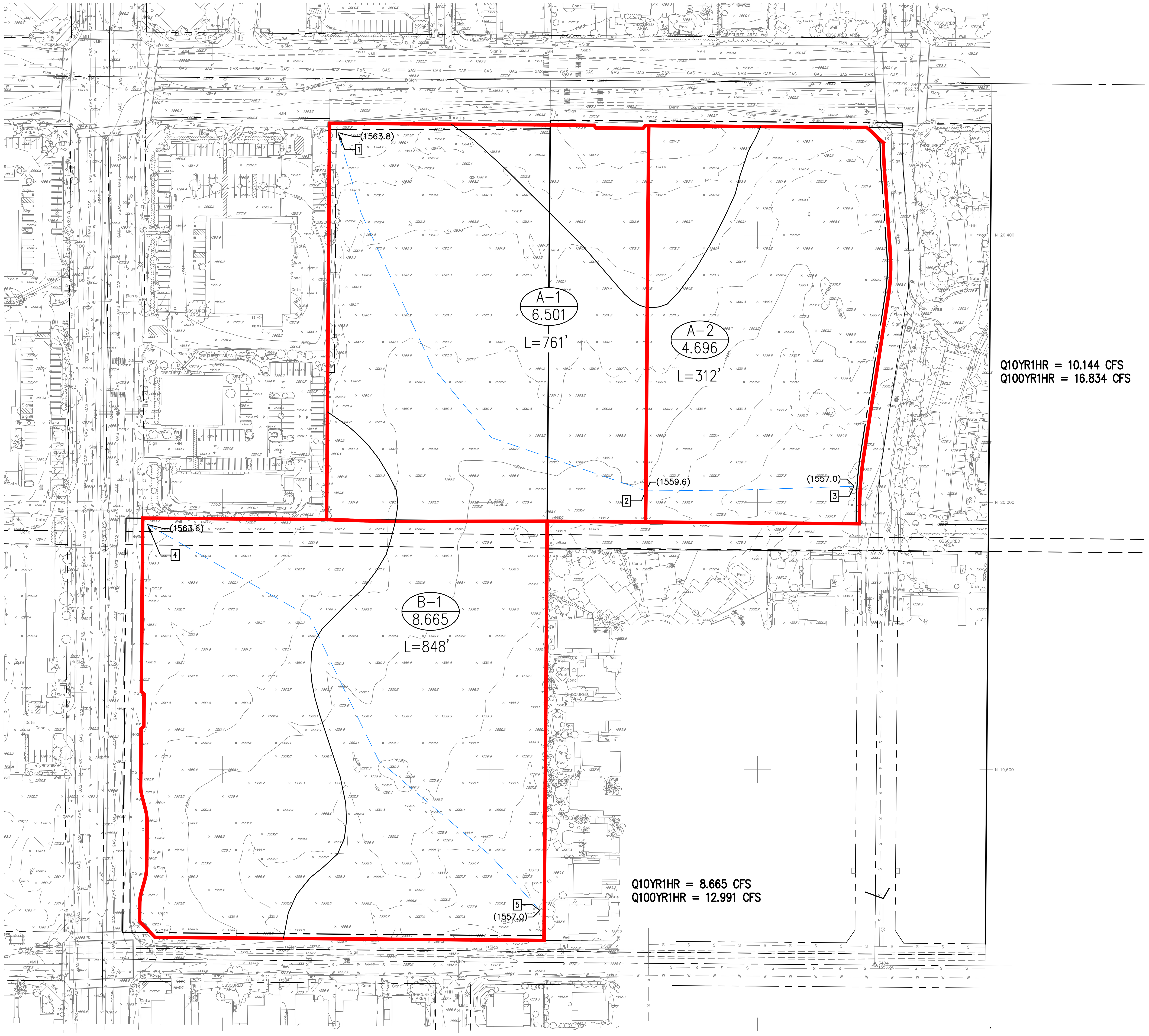
Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 ● info@civillandworks.com

9/7/16

ATTACHMENT 6B

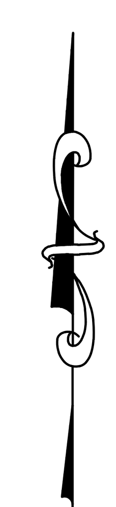
EXISTING HYDROLOGIC MAP
RATIONAL

ATTACHMENT 6B
EXISTING HYDROLOGIC RATIONAL METHOD



LEGEND

EXISTING CONTOUR (MAJOR)
EXISTING CONTOUR (MINOR)
HYDROLOGIC BASIN BOUNDARY
HYDROLOGIC FLOW PATH
1 NODE NUMBER
(150.00) ELEVATION (FEET)
L=715' SURFACE FLOW LENGTH/ LENGTH OF LONGEST WATERCOURSE
A-1 SUB-AREA
5.843 SUB-AREA (ACRES)



GRAPHIC SCALE
SCALE: 1" = 80'

Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 • info@civillandworks.com

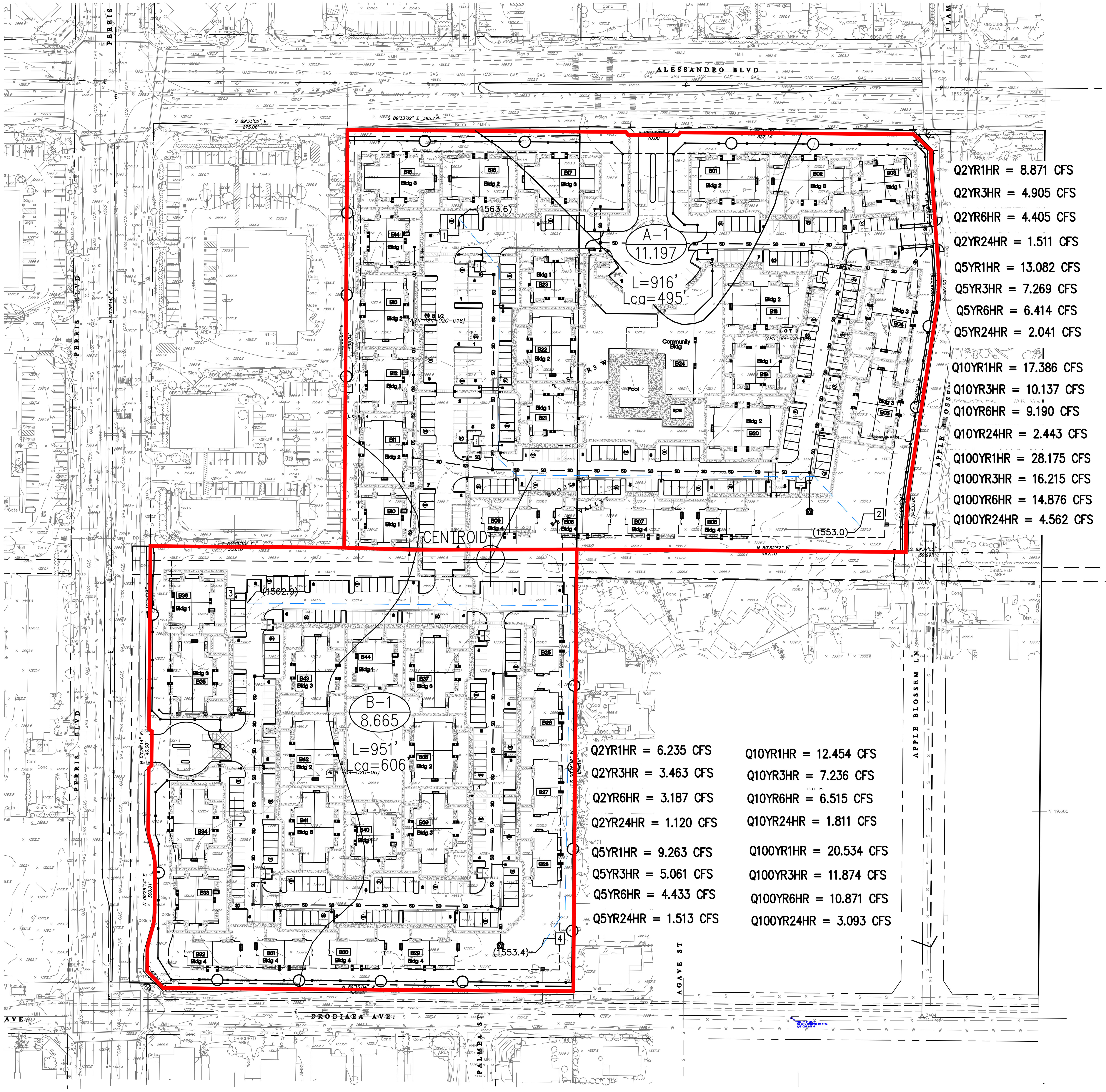
Attachment: Appendix C - Hydrology Report (2340 : PA16-0039 Plot Plan)

9/8/16

ATTACHMENT 7A

PROPOSED HYDROLOGIC MAP
CENTROID

ATTACHMENT 7A
PROPOSED HYDROLOGIC CENTROID CONDITIONS



LEGEND

- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- HYDROLOGIC BASIN BOUNDARY
- HYDROLOGIC FLOW PATH
- 1 — NODE NUMBER
- (1560.00) — ELEVATION (FEET)
- L=715' — SURFACE FLOW LENGTH/ LENGTH OF LONGEST WATERCOURSE
- Lca=336' — LENGTH OF CENTROID ALONG THE LONGEST WATERCOURSE
- A-1 — SUB-AREA
- 5.843 — SUB-AREA (ACRES)

80 0 80 160

GRAPHIC SCALE
SCALE: 1"= 80'

Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 ● info@civillandworks.com

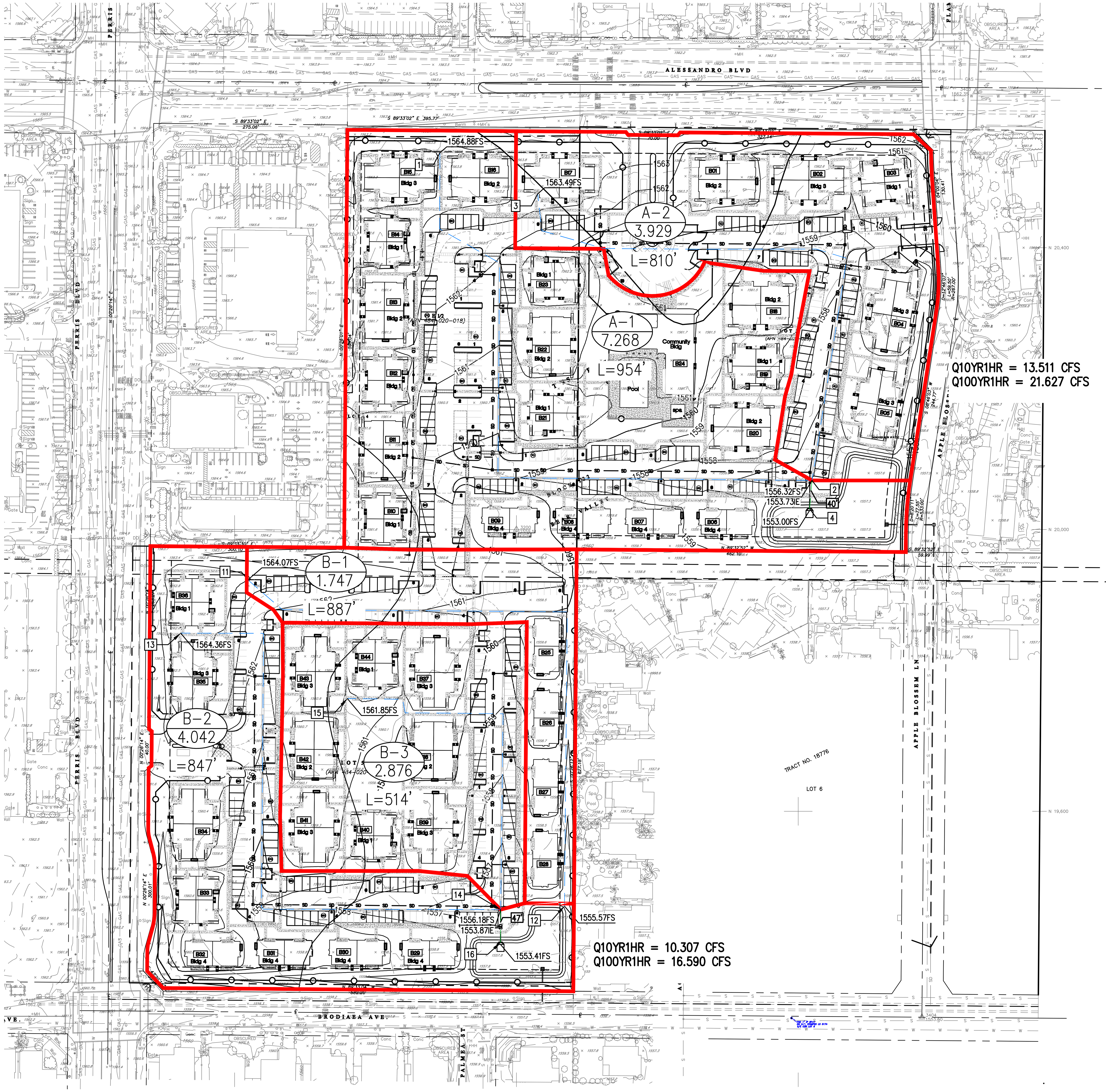
9/7/16

Attachment: Appendix C - Hydrology Report (2340 : PA16-0039 Plot Plan)

ATTACHMENT 7B

PROPOSED HYDROLOGIC MAP
RATIONAL

ATTACHMENT 7B
PROPOSED HYDROLOGIC RATIONAL METHODS



LEGEND

1560	EXISTING CONTOUR (MAJOR)
	EXISTING CONTOUR (MINOR)
	HYDROLOGIC BASIN BOUNDARY
	HYDROLOGIC FLOW PATH
1	NODE NUMBER
(1560.00)	ELEVATION (FEET)
L=715'	SURFACE FLOW LENGTH/ LENGTH OF LONGEST WATERCOURSE
A-1	SUB-AREA
5.843	SUB-AREA (ACRES)

80 0 80 160

GRAPHIC SCALE
SCALE: 1"= 80'

Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 ● info@civillandworks.com

9/8/16

Appendix E: Noise Impact Analysis

NOISE IMPACT ANALYSIS

ALESSANDRO APARTMENTS PROJECT

CITY OF MORENO VALLEY

LEAD AGENCY:
CITY OF MORENO VALLEY

PREPARED BY:
VISTA ENVIRONMENTAL
1021 DIDRIKSON WAY
LAGUNA BEACH, CALIFORNIA 92651
GREG TONKOVICH, INCE
TELEPHONE (949) 510-5355
FACSIMILE (949) 715-3629

PROJECT NO. 16038

SEPTEMBER 13, 2016

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APPENDIX

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
BNSF	Burlington Northern Santa Fe Corporation
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
EPA	Environmental Protection Agency
Hz	Hertz
Ldn	Day-night average noise level
Leq	Equivalent sound level
Lmax	Maximum noise level
ONAC	Federal Office of Noise Abatement and Control
OSB	Oriented Strand Board
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
RMS	Root mean square
SEL	Single Event Level or Sound Exposure Level
STC	Sound Transmission Class
UMTA	Federal Urban Mass Transit Administration

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared to determine the noise impacts associated with the proposed Alessandro Apartments Project (proposed project). The following is provided in this report:

- A description of the study area and the proposed project;
- Information regarding the fundamentals of noise;
- Information regarding the fundamentals of vibration;
- A description of the local noise guidelines and standards;
- An evaluation of the current noise environment;
- An analysis of the potential short-term construction-related noise impacts from the proposed project; and,
- An analysis of long-term operations-related noise impacts from the proposed project.

1.2 Site Location and Study Area

The approximately 19.47-acre project site is located in the central portion of the City of Moreno Valley (City) on a vacant parcel located behind a commercial retail center on the southeast corner of the intersection of Alessandro Boulevard and Perris Boulevard. The project site is bounded by Alessandro Boulevard, commercial retail and single-family residential uses to the north, Apple Blossom Lane, single-family homes and multi-family homes to the east, Brodiaea Avenue and single-family homes to the south, and Perris Boulevard, commercial retail, self-storage and vacant land to the west. The Project Location Map is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest offsite sensitive receptors to the north section of the project site consist of single-family homes, located as near as 50 feet south of the project site, multi-family homes located on the east side of Apple Blossom Lane and as near as 110 feet east of the project site, and single-family homes located on the north side of Alessandro Boulevard and as near as 140 feet north of the project site.

The nearest offsite sensitive receptors to the south section of the project site consist of single-family homes located as near as 25 feet to the east and single-family homes located on the south side of Brodiaea Avenue and as near as 60 feet south of the project site.

The nearest schools to the project site are Hendrick Ranch Elementary School, that is located as near as 1,600 feet east of the project site and Moreno Valley Community Learning Center that is located as near as 1,200 feet north of the project site.

1.3 Proposed Project Description

The proposed project would consist of development of a residential apartment complex with 272 apartment dwelling units, a community building with a pool and spa, open space with a tot lot, onsite roadways and parking areas, and two retention basins. Construction of the proposed project is anticipated to begin around February 2017 and project buildout is expected to be completed by mid-2018. The northern section of the proposed site plan is shown in Figure 2 and the southern section of the proposed site plan is shown in Figure 3.

1.4 Standard Noise Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the City of Moreno Valley and State of California.

City of Moreno Valley Municipal Code

The following lists the City of Moreno Valley Municipal Code regulations that are applicable to all development projects in the City.

Section 9.10.170 Vibration

Section 9.10.170 of the City's Municipal Code limits vibration that is created on the project site to not exceed the level that can be felt at or beyond the property line. Compliance with this regulation will reduce the construction-related vibration impacts to the nearby sensitive receptors.

Section 11.80.030(B)(1) Sound Level Limits

Section 11.80.030(B)(1) of the City's Municipal Code limits all noise sources in the City to the noise levels where a high probability hearing loss would occur as determined by the Center for Disease Control and Prevention and OSHA. The noise levels thresholds are shown in Section 4.3 below in Table B and some notable noise level thresholds are 90 dBA for eight continuous hours and 105 dBA for one continuous hour. Compliance with this regulation will reduce the construction noise impacts to the nearby sensitive receptors.

Section 11.80.030(D)(7) Construction Prohibitions

Section 11.80.030(D)(7) of the City's Municipal Code provides additional prohibitions on construction activities by restricting construction activities from occurring between the hours of 8:00 p.m. and 7:00 a.m.. Compliance with this regulation will reduce the construction noise impacts to the nearby sensitive receptors.

State of California Rules

The following lists the State of California rules that are applicable to all industrial projects in the State.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle. Compliance with this regulation will reduce the construction noise impacts to the nearby sensitive receptors.

California Vehicle Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California. 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle. Compliance with this regulation will reduce the construction noise impacts to the nearby sensitive receptors.

1.5 Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines noise checklist questions.

Expose persons to noise levels in excess of standards?

Potentially significant impact. Implementation of Mitigation Measures 1 and 2 would reduce the impact to less than significant levels.

Expose persons to excessive groundborne vibration?

Less than significant impact.

Result in a substantial permanent increase in ambient noise levels above existing levels without the proposed project?

Less than significant impact.

Result in a substantial temporary increase in ambient noise levels above existing levels without the proposed project?

Less than significant impact.

Expose persons to excessive noise levels from aircraft?

Less than significant impact.

1.6 Mitigation Measures Required for the Proposed Project

This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 above and through implementation of the following mitigation all noise and vibration impacts would be reduced to less than significant levels.

Mitigation Measure 1:
The project applicant shall construct the following sound walls: (1) A minimum 4.5-foot high wall around all private west facing ground floor patios on Buildings B33, B34, B35, and B36; (2) A minimum 3.5-foot high wall around all private west facing second floor balconies on Buildings B33, B34, B35, and B36; and (3) A minimum 4.0-foot high wall around all private north facing ground floor patios on Buildings B01, B02, B03, B15, B16, and B17. The sound walls shall be required to be constructed of a solid material (e.g., glass, wood or plaster) that are free of any cutouts or openings.

Mitigation Measure 2:
The project applicant shall provide a "windows closed" condition for each proposed residential apartment unit. A "windows closed" condition requires a means of mechanical ventilation per Chapter 12, Section 1205 of the Uniform Building Code. This shall be achieved with a standard forced air conditioning and heating system with a filtered outside air intake vent for each residential unit.

SOURCE: Google Earth.

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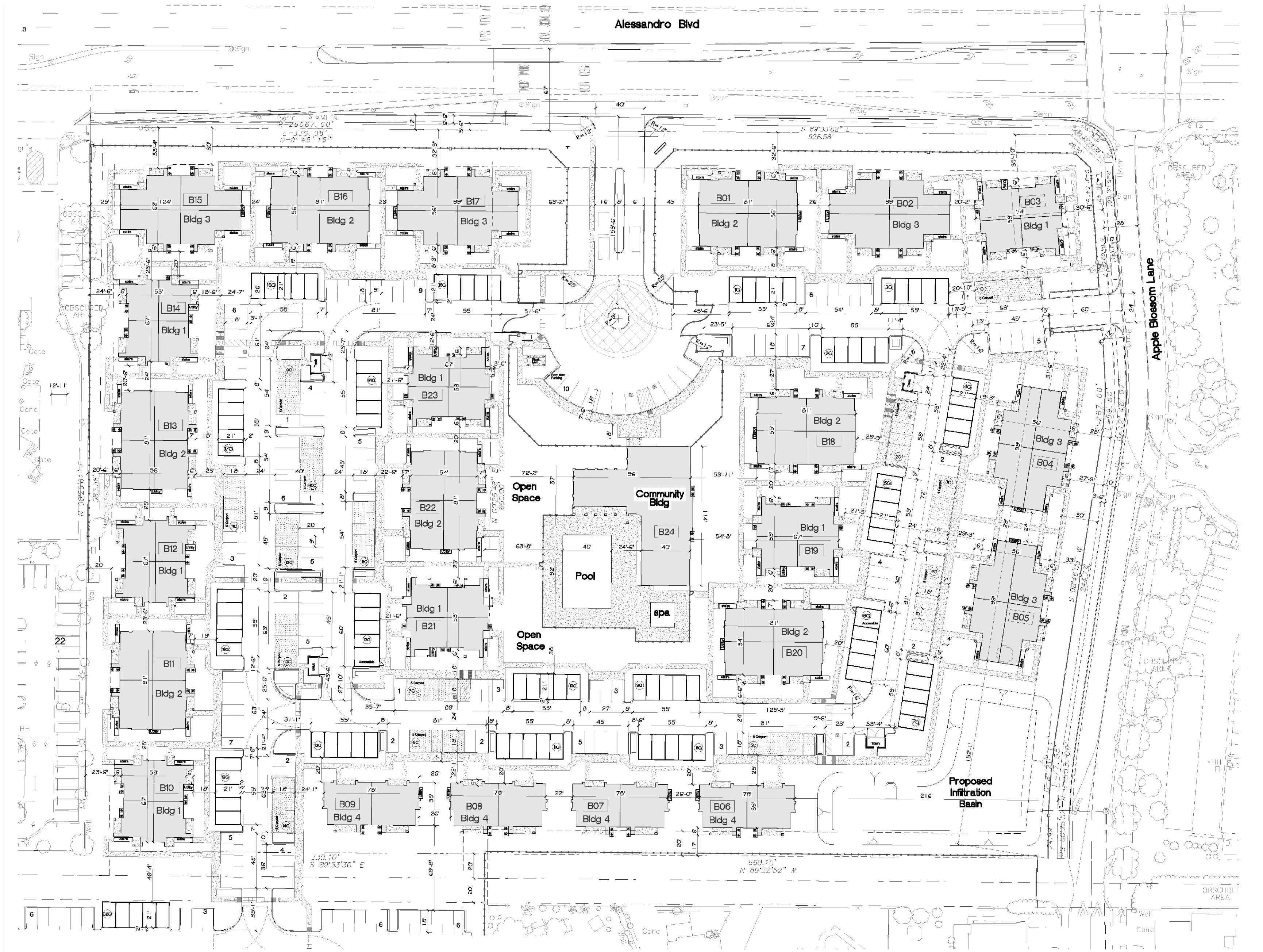
VISTA ENVIRONMENTAL

Figure 1

Projec

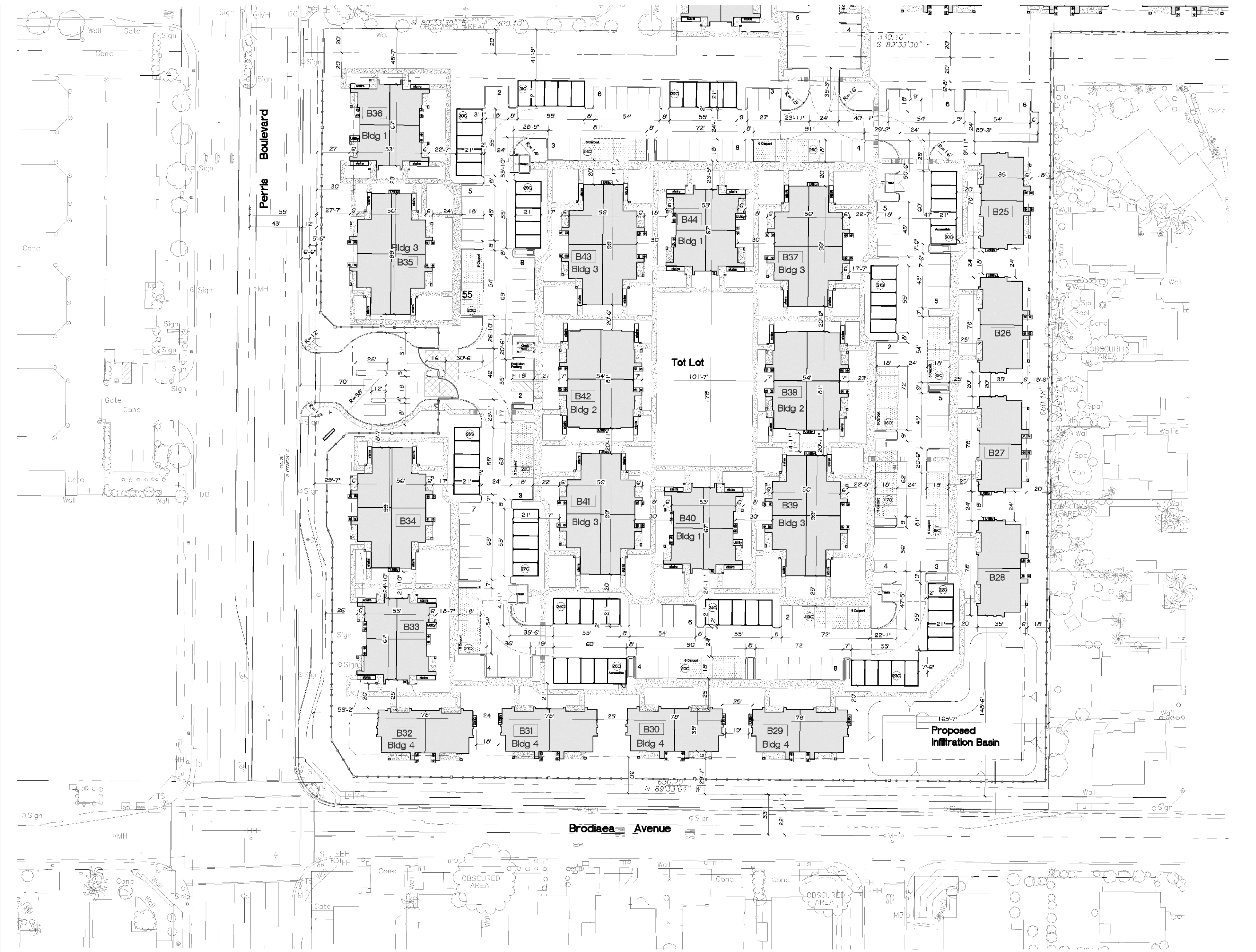


SOURCE: The Vernal Group.

VISTA ENVIRONMENTAL

Figure 2

Proposed Site Plan - North Section



SOURCE: The Vernal Group.

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Figure 3
Proposed Site Plan - South Section

Attachment: Appendix E - Noise Report (2340 : PA16-0039 Plot Plan)

2.0 NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

2.1 Noise Descriptors

Noise Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak traffic hour Leq is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the Ldn, except that it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason the sound appears louder in the evening and nighttime hours and is weighted accordingly. The City of Moreno Valley relies on the CNEL noise standard to assess transportation-related impacts on noise sensitive land uses.

2.2 Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown that humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a "pure tone," there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to "stand out" against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

2.3 Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiate uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

2.4 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

3.0 GROUND-BORNE VIBRATION FUNDAMENTALS

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

3.1 Vibration Descriptors

There are several different methods that are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is "VdB", which in this text, is when L_v is based on the reference quantity of 1 micro inch per second.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

3.3 Vibration Propagation

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is due to the fact that noise in the air travels through a relatively uniform median, while ground-borne vibrations travel through the earth which may contain significant geological differences. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation."

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 REGULATORY SETTING

The project site is located in the City of Moreno Valley. Noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the proposed project is not under the jurisdiction of the FTA, the FTA is the only agency that has defined what constitutes a significant noise impact from implementing a project. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings are provided below in Table A.

Table A – FTA Project Effects on Cumulative Noise Exposure

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration, 2006.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Noise Standards

California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise and which is shown below in Figure 4.

California Noise Insulation Standards

Section 1092 of Title 25, Chapter 1, Subchapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

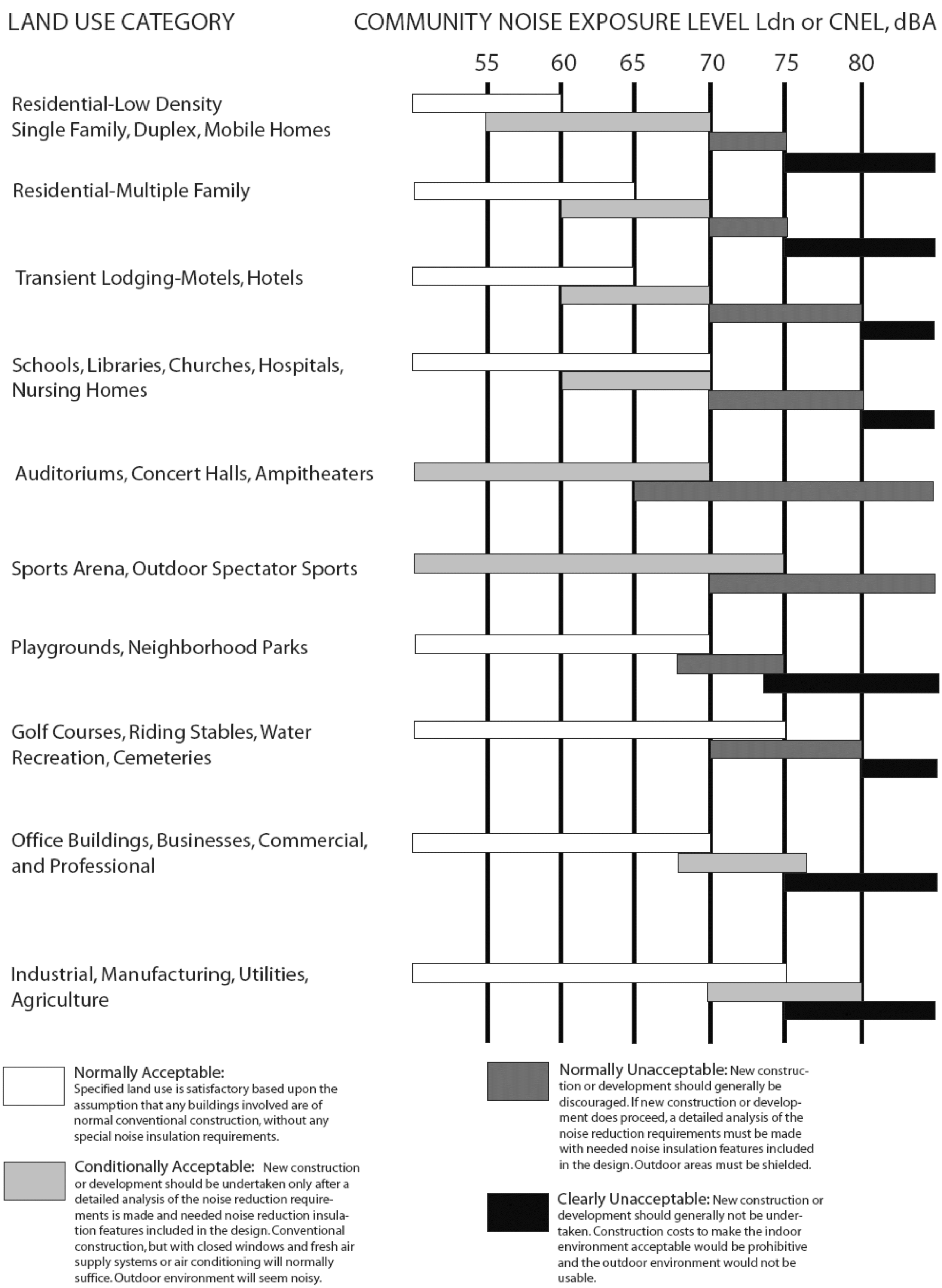
Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the state that quantifies the level at which excessive groundborne vibration occurs.

Caltrans issued the *Transportation- and Construction-Induced Vibration Guidance Manual* in 2004. The manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous and transient sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.



Source: California Office of Noise Control (as adopted from Wiley Labs for the Environmental Protection Agency, 1976).

VISTA ENVIRONMENTAL

Figure 4

Land Use Com

4.3 Local Regulations

The City of Moreno Valley General Plan and Municipal Code establishes the following applicable policies related to noise and vibration.

City of Moreno Valley General Plan

Objective 6.3 Provide noise compatible land use relationships by establishing noise standards utilized for design and siting purposes.

Policy 6.3.1 The following uses shall require mitigation to reduce noise exposure where current or future exterior noise levels exceed 20 CNEL above the desired interior noise level:

a. Single and multiple family residential buildings shall achieve an interior noise level of 45 CNEL or less. Such buildings shall include sound-insulating windows, walls, roofs and ventilation systems. Sound barriers shall also be installed (e.g. masonry walls or walls with berms) between single-family residences and major roadways.

Policy 6.3.2 Discourage residential uses where current or projected exterior noise due to aircraft over flights will exceed 65 CNEL.

Policy 6.3.5 Enforce the California Administrative Code, Title 24 noise insulation standards for new multi-family housing developments, motels and hotels.

Policy 6.3.6 Building shall be limited in areas of sensitive receptors.

Objective 6.4 Review noise issues during the planning process and require noise attenuation measures to minimize acoustic impacts to existing and future surrounding land uses.

Policy 6.4.1 Site, landscape and architectural design features shall be encouraged to mitigate noise impacts for new developments, with a preference for noise barriers that avoid freeway sound barrier walls.

Objective 6.5 Minimize noise impacts from significant noise generators such as, but not limited to, motor vehicles, trains, aircraft, commercial, industrial, construction, and other activities.

Policy 6.5.2 Construction activities shall be operated in a manner that limits noise impacts on surrounding uses.

City of Moreno Valley Municipal Code

The City of Moreno Valley Municipal Code establishes the following applicable standards related to noise.

Section 9.10.170 Vibration

No vibration shall be permitted which can be felt at or beyond the property line.

Section 11.80.030 Prohibited Acts

A. General Prohibition. It is unlawful and a violation of this chapter to maintain, make, cause, or allow the making of any sound that causes a noise disturbance, as defined in Section 11.80.020.

B. Sound causing permanent hearing loss.

1. Sound level limits. Based on statistics from the Center for Disease Control and Prevention and the National Institute for Occupational Safety and Health, Table 1 and Table 1-A specify sound level limits which if exceeded, will have a high probability of producing permanent hearing loss in anyone in the area where the sound levels are being exceeded. No sound shall be permitted within the city which exceeds the parameters set forth in Tables 11.80.030-1 [Table B] and 11.80.030-1-A [Table C] of this chapter:

Table B – City of Moreno Valley Maximum Continuous Sound Levels

Duration per Day (Continuous Hours)	Sound Level [dB(A)]
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
.5	110
.25	115

Source: Section 11.80.030 of the City of Moreno Valley Municipal Code.

Table C – City of Moreno Valley Maximum Impulsive Sound Levels

Number of Repetitions per 24-Hour Period	Sound Level [dB(A)]
1	145
10	135
100	125

Source: Section 11.80.030 of the City of Moreno Valley Municipal Code.

C. Nonimpulsive Sound Decibel Limits. No person shall maintain, create, operate or cause to be operated on private property any source of sound in such a manner as to create any nonimpulsive sound which exceeds the limits set forth for the source land use category (as defined in Section 11.80.020) in Table 11.80.030-2 [Table D] when measured at a distance of two hundred (200) feet or more from the real property line of the source of the sound, if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space or other publicly owned property. Any source of sound in violation of this subsection shall be deemed prima facie to be a noise disturbance.

Table D – City of Moreno Valley Maximum Sound Levels for Source Land Uses

Residential		Commercial	
Daytime[1]	Nighttime[2]	Daytime	Nighttime
60	55	65	60

Notes:
[1] Daytime defined as 8:00 a.m. to 10:00 p.m.
[2] Nighttime defined as 10:01 p.m. to 7:59 a.m. the following day.
Source: Section 11.80.030 of the City of Moreno Valley Municipal Code.

D. Specific Prohibitions. In addition to the general prohibitions set out in subsection A of this section, and unless otherwise exempted by this chapter, the following specific acts, or the causing or permitting thereof, are regulated as follows:

7. Construction and Demolition. No person shall operate or cause the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between the hours of eight p.m. and seven a.m. the following day such that the sound there from creates a noise disturbance, except for emergency work by public service utilities or for other work approved by the city manager or designee. This section shall not apply to the use of power tools as provided in subsection (D)(9) of this section.

E. Exemptions. The following uses and activities shall be exempt from the sound level regulations except the maximum sound levels provided in Tables 11.80.030-1 [Table B] and 11.80.030-1A [Table C]:

5. Sounds from the operation of motor vehicles, to the extent they are regulated by the California Vehicle Code.

5.0 EXISTING NOISE CONDITIONS

To determine the existing noise level environment noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicular traffic on Perris Boulevard and Alessandro Boulevard. The following describes the measurement procedures, measurement locations, noise measurement results, and the modeling of the existing noise environment.

5.1 Noise Measurement Equipment

The noise measurements were taken using two Extech Model 407780 Type 2 integrating sound level meters and one Larson Davis Model LXT1 Type 1 sound level meter. All sound level meters were programmed in "slow" mode. The two Extech meters recoded the sound pressure level at 3-second intervals and the Larson Davis meter recorded the sound pressure level at 1-second intervals and recorded the sound pressure level for approximately 24 hours in "A" weighted form. In addition, the L_{eq} averaged over the entire measuring time and L_{max} were recorded. The sound level meters and microphones were mounted between four and seven feet above the ground and were equipped with a windscreen. The Extech meters were calibrated before and after the monitoring using an Extech calibrator, Model 407766 and the Larson Davis meter was calibrated before and after the monitoring using a Larson Davis Cal200 calibrator. The noise level measurement equipment meets American National Standards Institute specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Locations

The noise monitoring locations were selected in order to obtain noise measurements of the current noise levels in the project study area and to provide a baseline for any potential noise impacts that may be created by development of the proposed project. The noise measurement sites were selected to provide a representative sampling of the noise levels created by nearby noise sources. Descriptions of the noise monitoring sites are provided below in Table E. Appendix A includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 12:09 p.m. on Tuesday May 31, 2016 and 12:36 p.m. on Wednesday June 1, 2016. When the noise measurements were started the sky was partly cloudy, the temperature was 79 degrees Fahrenheit, the humidity was 51 percent, barometric pressure was 28.18 inches of mercury, and the wind was blowing around eight miles per hour. Overnight, it was partly cloudy and the temperature reached a low of 55 degrees Fahrenheit. At the conclusion of the noise measurements, the sky was hazy, the temperature was 80 degrees Fahrenheit, the humidity was 49 percent, barometric pressure was 28.25 inches of mercury, and the wind was blowing around seven miles per hour.

5.2 Noise Measurement Results

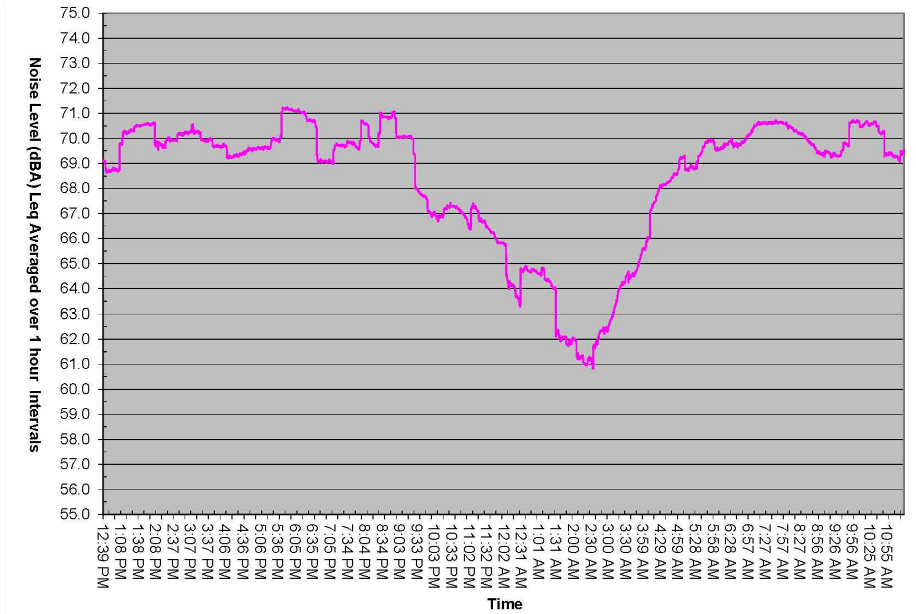
The results of the noise level measurements are presented in Table E. The measured sound pressure levels in dBA have been used to calculate the minimum and maximum L_{eq} averaged over 1-hour intervals. Table E also shows the Leq, Lmax, and CNEL, based on the entire measurement time. The noise monitoring data printouts are included in Appendix B. Figure 5 shows a graph of the 24-hour noise measurements.

Table E – Existing (Ambient) Noise Level Measurements

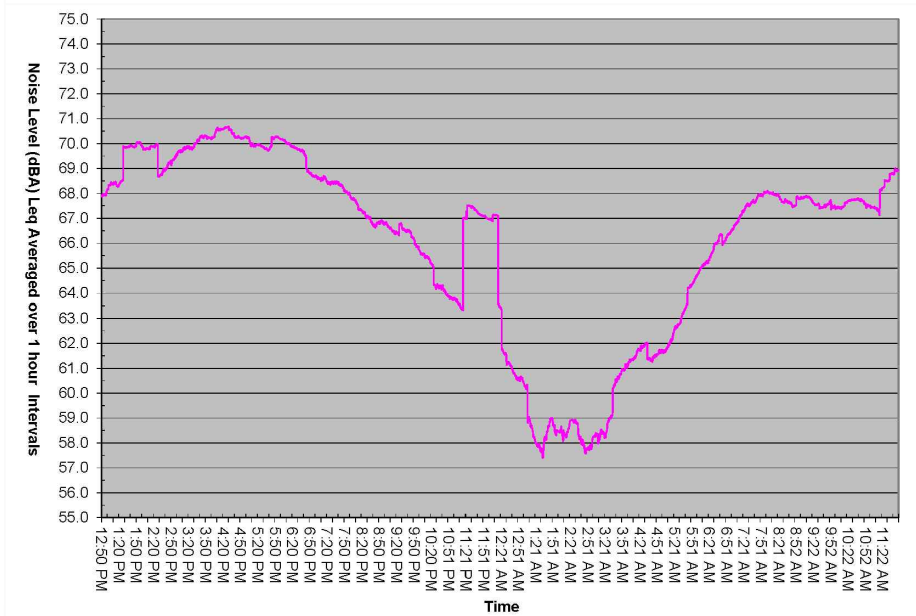
Site No.	Site Description	Average (dBA L_{eq})	Maximum (dBA L_{max})	Min. 1-Hour Interval (dBA L_{eq}/Time)	Max. 1-Hour Interval (dBA L_{eq}/Time)	Average (dBA CNEL)
A	Located on a sign near the southwest corner of the project site approximately 75 feet east of Perris Boulevard centerline.	69.0	94.2	60.8 2:34 AM	71.2 5:44 PM	74.1
B	Located on a sign on the northern portion of the project site approximately 75 feet south of Alessandro Boulevard centerline.	67.3	95.1	57.4 1:32 AM	70.7 4:23 PM	71.4
C	Located on a tree approximately 3 feet west of the project site and 420 feet south of Alessandro Boulevard centerline.	56.8	87.6	46.2 2:35 AM	64.6 10:33 A`M	66.8

Source: Noise measurements taken with two Extech Model 407780 Type 2 integrating sound level meters and one Larson Davis LXT1 sound level meter between Tuesday May 31, 2016 and Wednesday June 1, 2016.

Site A



Site B



Site C

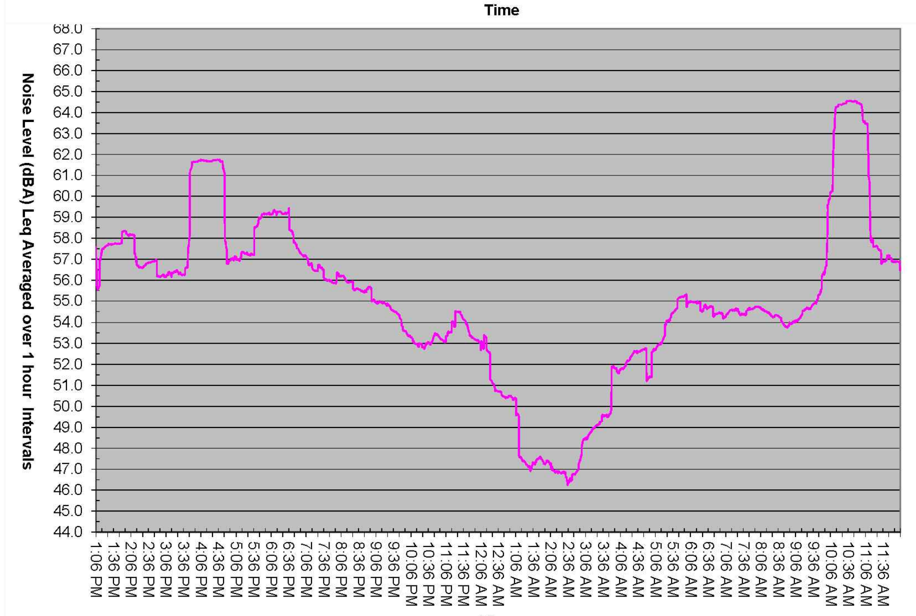


Figure 5

Field Noise Measu

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Construction Noise

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table F below provides a list of the construction equipment anticipated to be used for each phase of construction as detailed in *Air Quality and Greenhouse Gas Emissions Impact Analysis Alessandro Apartments Project*, prepared by Vista Environmental, July 18, 2016.

Table F – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor[1] (percent)	Spec 721.560 Lmax at 50 feet[2] (dBA, slow[3])	Actual Measured Lmax at 50 feet[4] (dBA, slow[3])
Grading				
Excavator	2	40	85	81
Grader	1	40	85	83
Dozer	1	40	85	82
Scraper	2	40	85	84
Tractor, Loader or Backhoe[5]	2	40	84	N/A
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	3	40	85	83
Generator	1	50	82	81
Welder	1	40	73	74
Tractor, Loader or Backhoe[5]	3	40	84	N/A
Paving				
Paver	2	50	85	77
Paving Equipment	2	50	85	77
Roller	2	20	85	80
Architectural Coating				
Air Compressor	1	40	80	78

Notes:
[1] Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[2] Spec 721.560 is the equipment noise level utilized by the RCNM program.
[3] The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.
[4] Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.
[5] For the tractor/loader/backhoe, the tractor noise level was utilized, since it is the loudest of the three types of equipment.
Source: Federal Highway Administration, 2006 and CalEEMod default equipment mix.

Table F also shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearby sensitive receptors have been calculated according to the equipment noise levels and usage factors listed in Table F and through use of the RCNM. For each phase of construction, the nearest piece of equipment was placed at the shortest distance of the proposed activity to the nearest home and each subsequent piece of equipment was placed an additional 50 feet away

6.2 Operations-Related Noise

The proposed project would result in increases in traffic noise to the nearby roadways as well as introduce new sensitive receptors to the project site. The project impacts to the offsite roadways and onsite noise impacts to the proposed residential units were analyzed through use of the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108 (FHWA Model). The following section provides a discussion of the software and modeling input parameters used in this analysis and a discussion of the resultant existing noise model.

FHWA Model Methodology

In order to quantify the potential noise impacts created and received by the proposed project and compare them to the existing noise levels, the existing roadway noise environment was modeled using the FHWA Model. The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the reference energy mean emission level to account for: the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT) and the percentage of ADT which flows during the day, evening and night, the travel speed, the vehicle mix on the roadway, which is a percentage of the volume of automobiles, medium trucks and heavy trucks, the roadway grade, the angle of view of the observer exposed to the roadway and site conditions ("hard" or "soft" relates to the absorption of the ground, pavement or landscaping). The following section provides a discussion of the software and modeling input parameters used in this analysis and a discussion of the resultant existing noise model.

FHWA Model Traffic Noise Prediction Model Inputs

The roadway parameters used for this study are presented in Table G. The roadway classifications are based on the City's General Plan Circulation Element. The roadway speeds are based on the posted speed limits. The distance to the nearest sensitive receptor was determined by measuring the distance from the roadway centerline to the nearest residence. Since the study area is located in a suburban environment and landscaping exists along the sides of all analyzed roadways, soft site conditions were modeled.

Table G – FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (MPH)	Distance to Nearest Receptor (feet)
Perris Boulevard	North of Cottonwood Avenue	Divided Arterial - 6 Lane	40	190
Perris Boulevard	North of Bay Avenue	Divided Arterial - 6 Lane	40	75
Perris Boulevard	North of Alessandro Boulevard	Divided Arterial - 6 Lane	40	75
Perris Boulevard	South of Alessandro Boulevard	Divided Arterial - 6 Lane	40	75
Apple Blossom Lane	South of Alessandro Boulevard	Local	25	85
Alessandro Boulevard	West of Indian Street	Divided Major Arterial	45	90
Alessandro Boulevard	West of Perris Boulevard	Divided Major Arterial	45	90
Alessandro Boulevard	East of Perris Boulevard	Divided Major Arterial	45	95

Source: Transpogroup, 2016; and City of Moreno Valley, 2006.

The average daily traffic (ADT) volumes on the study area roadways were obtained from the *Draft Traffic Impact Analysis Alessandro Apartments City of Moreno Valley, California* (Traffic Impact Analysis), prepared by Transpogroup, August 10, 2016. The ADT volumes used in this analysis are shown in Table H.

Table H – Average Daily Traffic Volumes

Roadway	Segment	Average Daily Traffic Volumes			
		Existing	Existing + Project	2021 No Project	2021 + Project
Perris Boulevard	North of Cottonwood Avenue	30,090	30,628	34,560	35,098
Perris Boulevard	North of Bay Avenue	27,910	28,448	32,650	33,188
Perris Boulevard	North of Alessandro Boulevard	27,720	28,258	32,440	32,978
Perris Boulevard	South of Alessandro Boulevard	29,160	29,921	34,700	35,461
Apple Blossom Lane	South of Alessandro Boulevard	1,260	1,260	1,390	1,390
Alessandro Boulevard	West of Indian Street	26,800	27,338	30,890	31,428
Alessandro Boulevard	West of Perris Boulevard	28,620	27,537	30,920	31,637
Alessandro Boulevard	East of Perris Boulevard	21,560	22,592	25,640	26,672

Source: Transpogroup, 2016.

The vehicle mixes used in the FHWA-RD-77-108 Model are shown in Table I. The Local and Major Arterial vehicle mixes are based on typical vehicle mixes observed in Southern California.

Table I – Roadway Vehicle Mix

Vehicle Type	Traffic Flow Distributions			
	Day (7 a.m. to 7 p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	Overall
Local				
Automobiles	73.60%	13.60%	10.22%	97.42%
Medium Trucks	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%
Major Arterials				
Automobiles	69.50%	12.90%	9.60%	92.00%
Medium Trucks	1.44%	0.06%	1.50%	3.00%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%

Source: Vista Environmental.

FHWA Model Source Assumptions

To assess the roadway noise generation in a uniform manner, all vehicles are analyzed at the single lane equivalent acoustic center of the roadway being analyzed. In order to determine the height above the road grade where the noise is being emitted from, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

6.3 Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table J gives approximate vibration levels for particular construction activities. The data in Table J provides a reasonable estimate for a wide range of soil conditions.

Table J – Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v)at 25 feet
Pile driver (impact)	Upper range	1.518	112
	typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration, May 2006.

The construction-related and operational vibration impacts have been calculated through the vibration levels shown above in Table J and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table F.

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

Consistent with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the proposed project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above noise levels existing without the proposed project; or
- Exposure of persons residing or working in the project area to excessive noise levels from aircraft.

7.2 Generation of Noise Levels in Excess of Standards

The proposed project would not expose persons to or generate noise levels in excess of standards established in the General Plan or Noise Ordinance or applicable standards of other agencies. The following section calculates the potential noise emissions associated with the construction and operations of the proposed project and compares the noise levels to the County standards.

Construction-Related Noise

The construction activities for the proposed project are anticipated to include grading of the 19.47 acre project site, building construction of a residential apartment complex with 272 residential apartment units, paving of the onsite roads and parking spaces, and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest offsite sensitive receptors to the south section of the project site are single-family homes located as near as 25 feet to the east and the nearest sensitive receptors to the north section of the project site are single-family homes, located as near as 50 feet south.

Section 11.80.030(B) of the City's Municipal Code limits all noise sources in the City to the noise levels where a high probability hearing loss would occur as determined by the Center for Disease Control and Prevention and OSHA. The noise levels thresholds are shown above in Table B and some notable noise level thresholds are 90 dBA for eight hours and 105 dBA for one hour. Section 11.80.030(D)(7) of the City's Municipal Code provides additional prohibitions on construction activities by restricting construction activities from occurring between the hours of 8:00 p.m. and 7:00 a.m..

The construction noise impacts at the nearby homes have been calculated through use of the RCNM and the parameters and assumptions detailed in Section 6.1 of this report including Table F, in order to determine if the proposed construction activities would exceed the City noise standards. According to the project applicant, the grading activities that would occur near the homes would consist of the use of dozers, graders and scrappers that would make several passes over each portion of the project site, which will limit grading activities near any particular sensitive receptor to less than one hour intervals. However the building construction, paving and painting activities would have the potential to occur in the proximity of the same sensitive receptor for 8 continuous hours. Therefore, the one hour standard of 105 dB has been utilized as the threshold for grading activities and the eight hour standard of 90 dB has been utilized as the threshold for building construction, paving, and painting activities. The results are shown below in Table K and the RCNM printouts are provided in Appendix C.

Table K – Worst-Case Construction Noise Levels at Nearest Offsite Homes

Construction Phase	Distance to Nearest Sensitive Receptor (feet)	Construction Noise Level (dBA Leq)	Threshold[1] (dBA Leq)
Grading	25	84	105
Building Construction	45	79	90
Paving	60	75	90
Painting	45	75	90

Notes:
[1] Threshold for grading activities based on Section 11.80.030(B) of the Municipal Code's one hour standard of 105 dB and threshold for building construction, paving, and painting activities based on OSHA eight hour standard of 90 dB.
Source: RCNM, Federal Highway Administration, 2006

Table K shows that greatest noise impacts would occur during the grading phase of construction, with a noise level as high as 84 dBA Leq at the nearest offsite home. Table K also shows that none of the construction phases would exceed the City's noise standards for each particular use, which is based on the anticipated duration of each impact. Through adherence to the limitation of allowable construction times provided in Section 11.80.030(D)(7) of the City's Municipal Code, the construction-related noise levels would not exceed any standards. Impact would be less than significant.

Operational-Related Noise

The proposed project would consist of the development of a residential apartment complex with 272 residential apartment units. The proposed development would be adjacent to Perris Boulevard and Alessandro Boulevard, which may create noise levels in excess of City standards at the proposed residential uses.

The City's General Plan Policy 6.3.1 requires that sound mitigation be provided for new multiple-family residential buildings that are exposed to future exterior noise levels that exceed 20 dBA CNEL above the 45 dBA CNEL interior noise standard, or exceed 65 dBA CNEL at the exterior of the proposed residential apartment units.

Exterior Noise Impacts

In order to quantify the traffic noise impacts at the locations of the proposed homes, the exterior noise levels were calculated through use of the FHWA RD-77-108 traffic noise prediction model. The model was based on the nearest location that a home may be placed to Perris Boulevard and Alessandro Boulevard for the year 2021 with project traffic conditions provided in the Traffic Impact Analysis. A summary of the results are shown below in Table L and the FHWA model printouts of the proposed exterior patio noise calculations are provided in Appendix D.

Table L – Proposed Exterior Patio and Balcony Noise Levels

Roadway	Distance to Nearest Patio/Balcony[1] (Feet)	Exterior Area[2]	Exterior Patio and Balcony Noise Levels (dBA CNEL)		Sound Wall Height (feet)
			Without Sound Wall	With Sound Wall	
Perris Boulevard	90	Patio	**66**	63	4.5
		Balcony	**66**	65	3.5
Alessandro Boulevard	105	Patio	**66**	65	4.0
		Balcony	65	--	--

Notes:
[1] Measured from centerline of road.
[2] Patio located on ground floor and balcony located on second floor.
Exceedance of City's 65 dBA CNEL noise standard shown in bold.
Source: FHWA RD-77-108 Model.

Table L shows that the proposed ground floor exterior patios that face Perris Boulevard and Alessandro Boulevard would exceed the City's 65 dBA CNEL noise standard. Table L also shows that the second floor balconies that face Perris Boulevard would exceed the City's 65 dBA CNEL noise standard. This would result in a significant impact.

Mitigation Measure 1 is provided that would require the applicant to construct the following sound walls: (1) A minimum 4.5-foot high wall around all private west facing ground floor patios on Buildings B33, B34, B35, and B36; (2) A minimum 3.5-foot high wall around all private west facing second floor balconies on Buildings B33, B34, B35, and B36; and (3) A minimum 4.0-foot high wall around all private north facing ground floor patios on Buildings B01, B02, B03, B15, B16, and B17. The sound walls shall be required to be constructed of a solid material (e.g., glass, wood or plaster) that are free of any cutouts or openings.

The exterior balcony and patio noise levels have been recalculated based on construction of the wall locations and heights detailed in Mitigation Measure 1 and the results are shown above in Table L. Table L shows that with application of the sound walls specified in Mitigation Measure 1, the noise levels at the proposed patios and second floor balconies would be reduced to within the City's exterior residential noise standard. Impacts would be less than significant after implementation of the recommended mitigation.

Interior Noise

To assess the interior noise levels related to the compliance with the City's 45 dBA CNEL interior noise standard, the same units analyzed for the exterior patio analysis were also analyzed for their interior noise levels. According to *Highway Traffic Noise: Analysis and Abatement Guidance*, prepared by U.S. Department of Transportation, December, 2011, a new residential building provides a minimum of 10 dB of noise attenuation with windows open and a minimum of 25 dB of noise attenuation with windows closed and dual-paned windows. The proposed residential structures will be required to be designed to meet the CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings 2013 Building Standards, that require the installation of dual paned windows in the climate zone where the proposed project is located. The exterior noise level at the façade of the first floor and possible second floors were calculated for each analyzed unit and are shown below in Table M and the FHWA model printouts are provided in Appendix D.

Table M – Proposed Residential Interior Noise Levels

Roadway	Distance to Nearest Home[1] (Feet)	Floor	Exterior Noise Level at Façade (dBA CNEL)	Interior Noise Levels (dBA CNEL) Windows Open	Windows Closed
Perris Boulevard	88	1	63	**51**	38
		2	67	**55**	42
Alessandro Boulevard	105	1	65	**53**	40
		2	66	**54**	41

Notes:
[1] Measured from centerline of road.
Exceedance of City's residential interior noise standard shown in **bold**.
Source: FHWA RD-77-108 Model.

Table M shows that the apartments facing Perris Boulevard and Alessandro Boulevard would exceed the City's 45 dBA CNEL interior noise standard for the windows open condition. This would be considered a significant impact.

Mitigation Measure 2 is provided that would require all proposed apartments to be designed for a "windows closed" condition. A "windows closed" condition requires a means of mechanical ventilation per Chapter 12, Section 1205 of the Uniform Building Code. This shall be achieved with a standard forced air conditioning and heating system for each residential unit. Table M shows that with implementation of Mitigation Measure 2 the interior areas of the proposed homes would be mitigated to less than significant levels.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Mitigation Measure 1:

The project applicant shall construct the following sound walls: (1) A minimum 4.5-foot high wall around all private west facing ground floor patios on Buildings B33, B34, B35, and B36; (2) A minimum 3.5-foot high wall around all private west facing second floor balconies on Buildings B33, B34, B35, and B36; and (3) A minimum 4.0-foot high wall around all private north facing ground floor patios on Buildings B01, B02, B03, B15, B16, and B17. The sound walls shall be required to be constructed of a solid material (e.g., glass, wood or plaster) that are free of any cutouts or openings.

Mitigation Measure 2:

The project applicant shall provide a "windows closed" condition for each proposed residential apartment unit. A "windows closed" condition requires a means of mechanical ventilation per Chapter 12, Section 1205 of the Uniform Building Code. This shall be achieved with a standard forced air conditioning and heating system with a filtered outside air intake vent for each residential unit.

Level of Significance After Mitigation

Less than significant impact.

7.3 Generation of Excessive Groundborne Vibration

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

The construction activities for the proposed project are anticipated to include grading of the 19.47 acre project site, building construction of a residential apartment complex with 272 residential apartment units, paving of the onsite roads and parking spaces, and application of architectural coatings. The nearest offsite sensitive receptors to the south section of the project site are single-family homes located as near as 25 feet to the east and the nearest sensitive receptors to the north section of the project site are single-family homes, located as near as 50 feet south.

Section 9.10.170 of the City's Municipal Code limits vibration levels created on the project site from being felt at or beyond the property line. Since the City's Municipal does not provide a quantifiable vibration level, Caltrans guidance that is detailed above in Section 4.2 has been utilized, which defines the threshold of perception from transient sources at 0.25 inch per second PPV.

The primary source of vibration during construction would be from the operation of a bulldozer. From Table J above a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet, which is the approximate distance to the nearest offsite home. The vibration level at the nearest offsite home is within the 0.25 inch per second PPV threshold detailed above. Therefore, a less than significant vibration impact is anticipated from construction of the proposed project.

Operations-Related Vibration Impacts

The on-going operation of the proposed project would not include the operation of any known vibration sources. Therefore, a less than significant vibration impact is anticipated from the operation of the proposed project.

Level of Significance

Less than significant impact.

7.4 Permanent Noise Level Increase

The ongoing operation of the proposed project may result in a potential substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the proposed project. Potential noise impacts associated with the operations of the proposed project would be from project-generated vehicular traffic on the project vicinity roadways.

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed project does not propose any uses that would require a substantial number of truck trips and the proposed project would not alter the speed limit on any existing roadway so the proposed project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the proposed project.

Objective 6.5 of the City's General Plan Noise Element, requires the City to minimize noise impacts from significant noise generators including roadway noise impacts. However neither the General Plan nor the CEQA Guidelines define what constitutes a "substantial permanent increase to ambient noise levels", as such, this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact that has been detailed above in Table A.

The potential offsite traffic noise impacts created by the on-going operations of the proposed project have been analyzed through utilization of the FHWA model and parameters described above in Section 6.2 and the FHWA model noise calculation spreadsheets are provided in Appendix E. The proposed project's offsite traffic noise impacts have been analyzed for the existing and near-term year 2021 conditions and are discussed below.

Existing Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison of the Existing scenario to the Existing With Project scenario. The results of this comparison are shown in Table N.

Table N – Existing Project Traffic Noise Contributions

		dBA CNEL at Nearest Receptor[1]			
Roadway	**Segment**	**Existing**	**Existing Plus Project**	**Project Contribution**	**Increase Threshold[2]**
Perris Boulevard	North of Cottonwood Avenue	60.7	60.8	0.1	+2 dBA
Perris Boulevard	North of Bay Avenue	67.2	67.3	0.1	+1 dBA
Perris Boulevard	North of Alessandro Boulevard	67.2	67.2	0.0	+1 dBA
Perris Boulevard	South of Alessandro Boulevard	67.4	67.5	0.1	+1 dBA
Apple Blossom Lane	South of Alessandro Boulevard	46.0	46.0	0.0	+7 dBA
Alessandro Boulevard	West of Indian Street	67.2	67.2	0.0	+1 dBA
Alessandro Boulevard	West of Perris Boulevard	67.2	67.3	0.1	+1 dBA
Alessandro Boulevard	East of Perris Boulevard	65.8	66.0	0.2	+1 dBA

Notes:
[1] Distance to nearest residential or school use shown in Table G, does not take into account existing noise barriers.
[2] Increase threshold based on the significance thresholds defined in *Transit Noise and Vibration Impact Assessment,* prepared by Federal Transit Administration, 2006, for a moderate impact.
Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table N shows that for the Existing conditions, the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the existing conditions. Impacts would be less than significant.

Near-Term Year 2021 Conditions

The proposed project's potential offsite noise impacts have been calculated through a comparison of the year 2021 without project scenario to the year 2021 with project scenario. The results of this comparison are shown in Table O.

Table O – Near-Term Year 2021 Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor[1] 2021 No Project	2021 Plus Project	Project Contribution	Increase Threshold[2]
Perris Boulevard	North of Cottonwood Avenue	61.3	61.4	0.1	+2 dBA
Perris Boulevard	North of Bay Avenue	67.9	67.9	0.0	+1 dBA
Perris Boulevard	North of Alessandro Boulevard	67.8	67.9	0.1	+1 dBA
Perris Boulevard	South of Alessandro Boulevard	68.1	68.2	0.1	+1 dBA
Apple Blossom Lane	South of Alessandro Boulevard	46.4	46.4	0.0	+7 dBA
Alessandro Boulevard	West of Indian Street	67.8	67.9	0.1	+1 dBA
Alessandro Boulevard	West of Perris Boulevard	67.8	67.9	0.1	+1 dBA
Alessandro Boulevard	East of Perris Boulevard	66.5	66.7	0.2	+1 dBA

Notes:
[1] Distance to nearest residential or school use shown in Table G, does not take into account existing noise barriers.
[2] Increase threshold based on the significance thresholds defined in *Transit Noise and Vibration Impact Assessment,* prepared by Federal Transit Administration, 2006, for a moderate impact.
Source: FHWA Traffic Noise Prediction Model- FHWA-RD-77-108.

Table O shows that for the near-term year 2021 conditions, the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the near-term year 2021 conditions. Impacts would be less than significant.

Level of Significance

Less than significant impact.

7.5 Temporary Noise Level Increase

The proposed project may create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above noise levels existing without the proposed project. The construction activities for the proposed project are anticipated to include grading of the 19.47 acre project site, building construction of a residential apartment complex with 272 residential apartment units, paving of the onsite roads and parking spaces, and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest offsite sensitive receptors to the south section of the project site are single-family homes located as near as 25 feet to the east and the nearest sensitive receptors to the north section of the project site are single-family homes, located as near as 50 feet south.

The construction noise impacts to the nearby sensitive receptors has been previously analyzed above in Section 7.2, which found that that greatest noise impacts would occur during the grading phase of construction, with a noise level as high as 84 dBA Leq at the nearest offsite home. The analysis in Section 7.2 also found that none of the construction phases would exceed the City's noise standards for each particular use, which is based on the anticipated duration of each impact. The City noise standards were developed based on a standard where a high probability hearing loss would occur as determined by the Center for Disease Control and Prevention and OSHA and represent the City's standard for determining what constitutes a substantial temporary increase in ambient noise levels. Therefore, through adherence to the limitation of construction activities to between 7:00 a.m. and 8:00 p.m. as detailed in Section

11.80.030(D)(7) of the City's Municipal Code, the proposed project would not create a substantial temporary or periodic increase in ambient noise levels. Impact would be less than significant.

Level of Significance

Less than significant impact.

7.6 Aircraft Noise

The proposed project may expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is March Air Reserve Base that is located as near as two miles southwest of the project site. The runways for March Air Reserve Base are oriented in northwest to southeast and run perpendicular to the project site, and therefore no aircraft would fly over the project site during typical take-off and landing patterns. The project site is located outside of the 65 dBA CNEL noise contours of March Air Reserve Base and site observations during the noise measurements did not observe any aircraft flights over the project site. Therefore, the proposed project would not expose people to excessive noise levels from aircraft. Impact would be less than significant.

Level of Significance

Less than significant impact.

8.0 REFERENCES

California Department of Transportation, *2014 Annual Average Daily Truck Traffic on the California State Highway System*, 2015.

California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

California Department of Transportation, *Transportation- and Construction-Induced Vibration Guidance Manual*, June, 2004

City of Moreno Valley, *General Plan,* July 11, 2006.

City of Moreno Valley, *Moreno Valley Municipal Code,* May 2014.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

March Joint Powers Authority, *MIP General Aviation Facilities Development Environmental Impact Report,* May 2012.

Transpogroup, *Draft Traffic Impact Analysis Alessandro Apartments City of Moreno Valley, California*, August 10, 2016.

U.S. Department of Transportation, *FHWA Roadway Construction Noise Model User's Guide,* January, 2006.

Vista Environmental, *Air Quality and Greenhouse Gas Emissions Impact Analysis Alessandro Apartments Project City of Moreno Valley,* July 18, 2016.

APPENDIX A

Study Area Photo Index

Noise Measurement Site A - looking north

Noise Measurement Site A - looking northeast

Noise Measurement Site A - looking east

Noise Measurement Site A - looking southeast

Noise Measurement Site A - looking south

Noise Measurement Site A - looking southwest

Noise Measurement Site A - looking west

Noise Measurement Site A - looking northwest

Noise Measurement Site B - looking north

Noise Measurement Site B - looking northeast

Noise Measurement Site B - looking east

Noise Measurement Site B - looking southeast

Noise Measurement Site B - looking south

Noise Measurement Site B - looking southwest

Noise Measurement Site B - looking west

Noise Measurement Site B - looking northwest

Noise Measurement Site C - looking northeast

Noise Measurement Site C - looking east

Noise Measurement Site C - looking southeast

Noise Measurement Site C - looking south

Noise Measurement Site C - looking southwest

Noise Measurement Site C - looking west

Noise Measurement Site C - looking northwest

APPENDIX B

Field Noise Measurement Printouts

Site A - On sign 75 feet east of Perris Blvd CL

Date Time=05/31/16 12:09:00 PM
Sampling Time=3 Weighting=A
Record Num= 29200 Weighting=Slow CNEL(24hr)= 74.1
Leq 69.0 SEL Value=118.5 Ldn(24hr)= 73.7
MAX 94.2 Min Leq1hr = 60.8 2:34 AM
MIN 37.8 Max Leqhr = 71.2 5:44 PM

Site B - On sign 75 feet south of Alessandro Blvd

Date Time=05/31/16 12:20:00 PM
Sampling Time=3 Freq Weighting=A
Record Num= 29200 Weighting=Slow CNEL(24hr)= 71.4
Leq 67.3 SEL Value=116.8 Ldn(24hr)= 70.9
MAX 95.1 Min Leq1hr = 57.4 1:32 AM
MIN 39.8 Max Leqhr = 70.7 4:23 PM

Site C - On tree 3' west of project & 420' south of

Date Time=05/31/16 12:36:13 PM
Sampling T 1 Freq Weighting=A
Record Num = 86678 Detector=Slow CNEL(24hr)= 66.8
Leq = 56.8 Ldn(24hr)= 66.8
Max = 87.6 Min Leq1hr = 46.2 2:35 AM
Min = 38.1 Max Leqhr = 64.6 10:33 AM

Site A - On sign 75 feet east of Perris Blvd CL

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
56.2	12:09:00		56.2	56.2
72.9	12:09:03		72.9	72.9
70.8	12:09:06		70.8	70.8
65.5	12:09:09		65.5	65.5
57.2	12:09:12		57.2	57.2
62.2	12:09:15		62.2	62.2
69.5	12:09:18		69.5	69.5
65.5	12:09:21		65.5	65.5
61.6	12:09:24		61.6	61.6
65.8	12:09:27		65.8	65.8
68.3	12:09:30		68.3	68.3
74.8	12:09:33		74.8	74.8
71.8	12:09:36		71.8	71.8
69.3	12:09:39		69.3	69.3
72	12:09:42		72	72
69.3	12:09:45		69.3	69.3
68	12:09:48		68	68
69.6	12:09:51		69.6	69.6
69.9	12:09:54		69.9	69.9
72.6	12:09:57		72.6	72.6
68.6	12:10:00		68.6	68.6
70.3	12:10:03		70.3	70.3
65.8	12:10:06		65.8	65.8
66.9	12:10:09		66.9	66.9
67.6	12:10:12		67.6	67.6
65.8	12:10:15		65.8	65.8
62	12:10:18		62	62
58.5	12:10:21		58.5	58.5
59.4	12:10:24		59.4	59.4
57.6	12:10:27		57.6	57.6
58.5	12:10:30		58.5	58.5
57.7	12:10:33		57.7	57.7
66.9	12:10:36		66.9	66.9
64.2	12:10:39		64.2	64.2
61.1	12:10:42		61.1	61.1
73.1	12:10:45		73.1	73.1
66.8	12:10:48		66.8	66.8
69.4	12:10:51		69.4	69.4
69.3	12:10:54		69.3	69.3
68.6	12:10:57		68.6	68.6
73.2	12:11:00		73.2	73.2
68.6	12:11:03		68.6	68.6
65.4	12:11:06		65.4	65.4
70.2	12:11:09		70.2	70.2
69.4	12:11:12		69.4	69.4
61	12:11:15		61	61
57.9	12:11:18		57.9	57.9
71.7	12:11:21		71.7	71.7
68.1	12:11:24		68.1	68.1
66.2	12:11:27		66.2	66.2
75.8	12:11:30		75.8	75.8
74.4	12:11:33		74.4	74.4
66.3	12:11:36		66.3	66.3
73.7	12:11:39		73.7	73.7
71.7	12:11:42		71.7	71.7
69.9	12:11:45		69.9	69.9
69.8	12:11:48		69.8	69.8
66.1	12:11:51		66.1	66.1
67.1	12:11:54		67.1	67.1
64.3	12:11:57		64.3	64.3
63.6	12:12:00		63.6	63.6
70.2	12:12:03		70.2	70.2
68.8	12:12:06		68.8	68.8
69.4	12:12:09		69.4	69.4
66.1	12:12:12		66.1	66.1
62.1	12:12:15		62.1	62.1
56.6	12:12:18		56.6	56.6
63.6	12:12:21		63.6	63.6
60.6	12:12:24		60.6	60.6
61.1	12:12:27		61.1	61.1
61.9	12:12:30		61.9	61.9
57.9	12:12:33		57.9	57.9
56.6	12:12:36		56.6	56.6
57.2	12:12:39		57.2	57.2
55.2	12:12:42		55.2	55.2
63.3	12:12:45		63.3	63.3
60.1	12:12:48		60.1	60.1
58.9	12:12:51		58.9	58.9
65	12:12:54		65	65
66.1	12:12:57		66.1	66.1
61.5	12:13:00		61.5	61.5
67.8	12:13:03		67.8	67.8
65.3	12:13:06		65.3	65.3
66.4	12:13:09		66.4	66.4
67.6	12:13:12		67.6	67.6
58	12:13:15		58	58
61	12:13:18		61	61
74.6	12:13:21		74.6	74.6
86	12:13:24		86	86
82.4	12:13:27		82.4	82.4
77.7	12:13:30		77.7	77.7
76	12:13:33		76	76
74	12:13:36		74	74
75.8	12:13:39		75.8	75.8
75	12:13:42		75	75
74.6	12:13:45		74.6	74.6
72.6	12:13:48		72.6	72.6
73.8	12:13:51		73.8	73.8
76.7	12:13:54		76.7	76.7
78.4	12:13:57		78.4	78.4
73.4	12:14:00		73.4	73.4
69.7	12:14:03		69.7	69.7
68.1	12:14:06		68.1	68.1
65.5	12:14:09		65.5	65.5
64.3	12:14:12		64.3	64.3
65.9	12:14:15		65.9	65.9
68.4	12:14:18		68.4	68.4
60.6	12:14:21		60.6	60.6
59.5	12:14:24		59.5	59.5
56.5	12:14:27		56.5	56.5
59.2	12:14:30		59.2	59.2
58.7	12:14:33		58.7	58.7
65.9	12:14:36		65.9	65.9
67.1	12:14:39		67.1	67.1
65.1	12:14:42		65.1	65.1
61.9	12:14:45		61.9	61.9
59.1	12:14:48		59.1	59.1
64.7	12:14:51		64.7	64.7
68.6	12:14:54		68.6	68.6
59.3	12:14:57		59.3	59.3
67.3	12:15:00		67.3	67.3
68.2	12:15:03		68.2	68.2
66.6	12:15:06		66.6	66.6
60.2	12:15:09		60.2	60.2
61.9	12:15:12		61.9	61.9
70	12:15:15		70	70
72.6	12:15:18		72.6	72.6
72.4	12:15:21		72.4	72.4
72.5	12:15:24		72.5	72.5
75.6	12:15:27		75.6	75.6
74.4	12:15:30		74.4	74.4
75.8	12:15:33		75.8	75.8

Site B - On sign 75 feet south of Alessandro Blvd

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
56.6	12:20:00		56.6	56.6
68	12:20:03		68	68
73.9	12:20:06		73.9	73.9
68.4	12:20:09		68.4	68.4
66.3	12:20:12		66.3	66.3
69.5	12:20:15		69.5	69.5
67.9	12:20:18		67.9	67.9
61.4	12:20:21		61.4	61.4
60.5	12:20:24		60.5	60.5
68.5	12:20:27		68.5	68.5
71.3	12:20:30		71.3	71.3
67.6	12:20:33		67.6	67.6
67.3	12:20:36		67.3	67.3
66.2	12:20:39		66.2	66.2
67.7	12:20:42		67.7	67.7
65.4	12:20:45		65.4	65.4
59.4	12:20:48		59.4	59.4
62.3	12:20:51		62.3	62.3
62.7	12:20:54		62.7	62.7
68.3	12:20:57		68.3	68.3
67.1	12:21:00		67.1	67.1
71.1	12:21:03		71.1	71.1
68.9	12:21:06		68.9	68.9
66.5	12:21:09		66.5	66.5
61.2	12:21:12		61.2	61.2
56.6	12:21:15		56.6	56.6
63.5	12:21:18		63.5	63.5
60.6	12:21:21		60.6	60.6
61.3	12:21:24		61.3	61.3
63.1	12:21:27		63.1	63.1
60.4	12:21:30		60.4	60.4
57.1	12:21:33		57.1	57.1
55.8	12:21:36		55.8	55.8
61.1	12:21:39		61.1	61.1
56.1	12:21:42		56.1	56.1
57.3	12:21:45		57.3	57.3
62.8	12:21:48		62.8	62.8
68.3	12:21:51		68.3	68.3
63.2	12:21:54		63.2	63.2
61.2	12:21:57		61.2	61.2
64.2	12:22:00		64.2	64.2
62.6	12:22:03		62.6	62.6
70.7	12:22:06		70.7	70.7
64.8	12:22:09		64.8	64.8
60.5	12:22:12		60.5	60.5
60.4	12:22:15		60.4	60.4
65.1	12:22:18		65.1	65.1
65.7	12:22:21		65.7	65.7
66.7	12:22:24		66.7	66.7
72.5	12:22:27		72.5	72.5
72.1	12:22:30		72.1	72.1
68.5	12:22:33		68.5	68.5
65.6	12:22:36		65.6	65.6
63.3	12:22:39		63.3	63.3
63	12:22:42		63	63
61.7	12:22:45		61.7	61.7
59.6	12:22:48		59.6	59.6
69.7	12:22:51		69.7	69.7
69.8	12:22:54		69.8	69.8
63.4	12:22:57		63.4	63.4
62.5	12:23:00		62.5	62.5
63.9	12:23:03		63.9	63.9
71.7	12:23:06		71.7	71.7
67.8	12:23:09		67.8	67.8
59.4	12:23:12		59.4	59.4
59.4	12:23:15		59.4	59.4
62.9	12:23:18		62.9	62.9
65	12:23:21		65	65
63.9	12:23:24		63.9	63.9
63.2	12:23:27		63.2	63.2
65.7	12:23:30		65.7	65.7
65.9	12:23:33		65.9	65.9
64.1	12:23:36		64.1	64.1
64.6	12:23:39		64.6	64.6
63.3	12:23:42		63.3	63.3
58.3	12:23:45		58.3	58.3
59.9	12:23:48		59.9	59.9
61.6	12:23:51		61.6	61.6
57.9	12:23:54		57.9	57.9
58.7	12:23:57		58.7	58.7
59.5	12:24:00		59.5	59.5
58.4	12:24:03		58.4	58.4
57.6	12:24:06		57.6	57.6
57.9	12:24:09		57.9	57.9
59.4	12:24:12		59.4	59.4
60.8	12:24:15		60.8	60.8
62.1	12:24:18		62.1	62.1
74.6	12:24:21		74.6	74.6
74.5	12:24:24		74.5	74.5
74.2	12:24:27		74.2	74.2
72.1	12:24:30		72.1	72.1
71.9	12:24:33		71.9	71.9
72.6	12:24:36		72.6	72.6
68.8	12:24:39		68.8	68.8
66	12:24:42		66	66
66.3	12:24:45		66.3	66.3
61.8	12:24:48		61.8	61.8
69.6	12:24:51		69.6	69.6
68.1	12:24:54		68.1	68.1
60.9	12:24:57		60.9	60.9
57.9	12:25:00		57.9	57.9
70.4	12:25:03		70.4	70.4
65.2	12:25:06		65.2	65.2
66.9	12:25:09		66.9	66.9
69.2	12:25:12		69.2	69.2
73.9	12:25:15		73.9	73.9
66.2	12:25:18		66.2	66.2
66.3	12:25:21		66.3	66.3
64.8	12:25:24		64.8	64.8
64.6	12:25:27		64.6	64.6
64	12:25:30		64	64
61.8	12:25:33		61.8	61.8
61	12:25:36		61	61
58.7	12:25:39		58.7	58.7
57.8	12:25:42		57.8	57.8
59.1	12:25:45		59.1	59.1
59.2	12:25:48		59.2	59.2
57.9	12:25:51		57.9	57.9
57.2	12:25:54		57.2	57.2
62	12:25:57		62	62
61.6	12:26:00		61.6	61.6
59.8	12:26:03		59.8	59.8
56	12:26:06		56	56
55.2	12:26:09		55.2	55.2
55.4	12:26:12		55.4	55.4
64.6	12:26:15		64.6	64.6
62.1	12:26:18		62.1	62.1
68.6	12:26:21		68.6	68.6
66.2	12:26:24		66.2	66.2
75	12:26:27		75	75
69.4	12:26:30		69.4	69.4
71.5	12:26:33		71.5	71.5

Site C - On tree 3' west of project & 420' south of Alessandro

SPL	Time	Leq (1 hour Avg.)	Ldn	C
57.1	12:36:13		67.1	
59.4	12:36:14		69.4	
69.4	12:36:15		79.4	
69.1	12:36:16		79.1	
77.7	12:36:17		87.7	
77.5	12:36:18		87.5	
70.6	12:36:19		80.6	
77.2	12:36:20		87.2	
73.1	12:36:21		83.1	
68.9	12:36:22		78.9	
74.7	12:36:23		84.7	
70.5	12:36:24		80.5	
66.3	12:36:25		76.3	
64.3	12:36:26		74.3	
61.4	12:36:27		71.4	
57.6	12:36:28		67.6	
54.7	12:36:29		64.7	
53.0	12:36:30		63.0	
52.5	12:36:31		62.5	
51.4	12:36:32		61.4	
62.2	12:36:33		72.2	
65.0	12:36:34		75.0	
63.5	12:36:35		73.5	
64.1	12:36:36		74.1	
68.7	12:36:37		78.7	
69.5	12:36:38		79.5	
67.4	12:36:39		77.4	
65.2	12:36:40		75.2	
65.0	12:36:41		75.0	
62.8	12:36:42		72.8	
63.7	12:36:43		73.7	
64.7	12:36:44		74.7	
70.5	12:36:45		80.5	
66.3	12:36:46		76.3	
72.1	12:36:47		82.1	
68.0	12:36:48		78.0	
64.3	12:36:49		74.3	
61.5	12:36:50		71.5	
60.9	12:36:51		70.9	
58.0	12:36:52		68.0	
56.6	12:36:53		66.6	
71.6	12:36:54		81.6	
68.9	12:36:55		78.9	
65.2	12:36:56		75.2	
61.6	12:36:57		71.6	
58.9	12:36:58		68.9	
57.0	12:36:59		67.0	
57.2	12:37:00		67.2	
59.2	12:37:01		69.2	
58.7	12:37:02		68.7	
65.9	12:37:03		75.9	
70.3	12:37:04		80.3	
67.0	12:37:05		77.0	
73.7	12:37:06		83.7	
70.0	12:37:07		80.0	
66.4	12:37:08		76.4	
64.7	12:37:09		74.7	
62.2	12:37:10		72.2	
58.8	12:37:11		68.8	
56.7	12:37:12		66.7	
54.8	12:37:13		64.8	
54.5	12:37:14		64.5	
56.2	12:37:15		66.2	
56.7	12:37:16		66.7	
58.4	12:37:17		68.4	
59.2	12:37:18		69.2	
58.6	12:37:19		68.6	
58.6	12:37:20		68.6	
58.5	12:37:21		68.5	
58.4	12:37:22		68.4	
59.8	12:37:23		69.8	
62.0	12:37:24		72.0	
61.5	12:37:25		71.5	
58.8	12:37:26		68.8	
67.9	12:37:27		77.9	
65.5	12:37:28		75.5	
65.9	12:37:29		75.9	
62.8	12:37:30		72.8	
61.1	12:37:31		71.1	
59.3	12:37:32		69.3	
60.9	12:37:33		70.9	
62.8	12:37:34		72.8	
61.7	12:37:35		71.7	
62.3	12:37:36		72.3	
62.7	12:37:37		72.7	
66.4	12:37:38		76.4	
68.0	12:37:39		78.0	
69.7	12:37:40		79.7	
68.9	12:37:41		78.9	
66.1	12:37:42		76.1	
63.3	12:37:43		73.3	
60.9	12:37:44		70.9	
59.9	12:37:45		69.9	
59.0	12:37:46		69.0	
74.9	12:37:47		84.9	
76.6	12:37:48		86.6	
72.5	12:37:49		82.5	
70.3	12:37:50		80.3	
69.8	12:37:51		79.8	
69.1	12:37:52		79.1	
69.2	12:37:53		79.2	
67.7	12:37:54		77.7	
73.9	12:37:55		83.9	
73.6	12:37:56		83.6	
73.9	12:37:57		83.9	
70.2	12:37:58		80.2	
66.6	12:37:59		76.6	
67.3	12:38:00		77.3	
73.2	12:38:01		83.2	
71.4	12:38:02		81.4	
69.1	12:38:03		79.1	
65.6	12:38:04		75.6	
62.9	12:38:05		72.9	
64.9	12:38:06		74.9	
61.7	12:38:07		71.7	
58.7	12:38:08		68.7	
56.0	12:38:09		66.0	
53.6	12:38:10		63.6	
52.5	12:38:11		62.5	
51.6	12:38:12		61.6	
51.5	12:38:13		61.5	
51.7	12:38:14		61.7	
51.9	12:38:15		61.9	
52.0	12:38:16		62.0	
52.9	12:38:17		62.9	
53.5	12:38:18		63.5	
52.8	12:38:19		62.8	62.8
52.5	12:38:20		62.5	62.5
52.7	12:38:21		62.7	62.7
52.8	12:38:22		[illegible]	[illegible]
52.8	12:38:23		[illegible]	
53.5	12:38:24		[illegible]	

Attachment: Appendix E - Noise Report (2340 : PA16-0039 Plot Plan)

Site A - On sign 75 feet east of Perris Blvd CL					Site B - On sign 75 feet south of Alessandro Blvd					Site C - On tree 3' west of project & 420' south of				
SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
74	12:15:36		74	74	71.9	12:26:36		71.9	71.9	53.8	12:38:25		63.8	63.8
70.6	12:15:39		70.6	70.6	73.5	12:26:39		73.5	73.5	54.0	12:38:26		64.0	64.0
68.6	12:15:42		68.6	68.6	68.5	12:26:42		68.5	68.5	53.2	12:38:27		63.2	63.2
69.7	12:15:45		69.7	69.7	68.8	12:26:45		68.8	68.8	52.6	12:38:28		62.6	
65.7	12:15:48		65.7	65.7	70.5	12:26:48		70.5	70.5	52.7	12:38:29		62.7	
65.1	12:15:51		65.1	65.1	59.3	12:26:51		59.3	59.3	52.6	12:38:30		62.6	
62	12:15:54		62	62	60.4	12:26:54		60.4	60.4	52.7	12:38:31		62.7	
59.5	12:15:57		59.5	59.5	68.5	12:26:57		68.5	68.5	52.0	12:38:32		62.0	
62.7	12:16:00		62.7	62.7	62.7	12:27:00		62.7	62.7	51.9	12:38:33		61.9	
66.9	12:16:03		66.9	66.9	70.8	12:27:03		70.8	70.8	52.3	12:38:34		62.3	
60.8	12:16:06		60.8	60.8	74.2	12:27:06		74.2	74.2	52.5	12:38:35		62.5	
59.7	12:16:09		59.7	59.7	68.1	12:27:09		68.1	68.1	52.5	12:38:36		62.5	
62.6	12:16:12		62.6	62.6	69	12:27:12		69	69	52.2	12:38:37		62.2	
60.5	12:16:15		60.5	60.5	71.6	12:27:15		71.6	71.6	52.1	12:38:38		62.1	
56.3	12:16:18		56.3	56.3	69	12:27:18		69	69	51.8	12:38:39		61.8	
54.9	12:16:21		54.9	54.9	67.1	12:27:21		67.1	67.1	52.1	12:38:40		62.1	
62.3	12:16:24		62.3	62.3	63.9	12:27:24		63.9	63.9	52.0	12:38:41		62.0	
68	12:16:27		68	68	71.4	12:27:27		71.4	71.4	52.0	12:38:42		62.0	
71.1	12:16:30		71.1	71.1	70.2	12:27:30		70.2	70.2	52.0	12:38:43		62.0	
73.4	12:16:33		73.4	73.4	61.8	12:27:33		61.8	61.8	52.3	12:38:44		62.3	
66.2	12:16:36		66.2	66.2	58.1	12:27:36		58.1	58.1	52.4	12:38:45		62.4	
63.5	12:16:39		63.5	63.5	57.7	12:27:39		57.7	57.7	52.0	12:38:46		62.0	
57	12:16:42		57	57	58.6	12:27:42		58.6	58.6	52.0	12:38:47		62.0	
53.4	12:16:45		53.4	53.4	59.8	12:27:45		59.8	59.8	52.6	12:38:48		62.6	
50.6	12:16:48		50.6	50.6	65.1	12:27:48		65.1	65.1	53.2	12:38:49		63.2	
49.6	12:16:51		49.6	49.6	60.6	12:27:51		60.6	60.6	53.1	12:38:50		63.1	
47.9	12:16:54		47.9	47.9	58.9	12:27:54		58.9	58.9	54.0	12:38:51		64.0	
47.5	12:16:57		47.5	47.5	64.4	12:27:57		64.4	64.4	55.2	12:38:52		65.2	
48.6	12:17:00		48.6	48.6	61.4	12:28:00		61.4	61.4	55.2	12:38:53		65.2	
51.8	12:17:03		51.8	51.8	57.2	12:28:03		57.2	57.2	55.2	12:38:54		65.2	
61.8	12:17:06		61.8	61.8	58.2	12:28:06		58.2	58.2	55.6	12:38:55		65.6	
72.4	12:17:09		72.4	72.4	58.7	12:28:09		58.7	58.7	56.5	12:38:56		66.5	
72.8	12:17:12		72.8	72.8	60	12:28:12		60	60	56.7	12:38:57		66.7	
72.8	12:17:15		72.8	72.8	63	12:28:15		63	63	55.2	12:38:58		65.2	
73.1	12:17:18		73.1	73.1	64.6	12:28:18		64.6	64.6	53.9	12:38:59		63.9	
71.2	12:17:21		71.2	71.2	72.3	12:28:21		72.3	72.3	53.4	12:39:00		63.4	
67.8	12:17:24		67.8	67.8	74.1	12:28:24		74.1	74.1	53.0	12:39:01		63.0	
68.8	12:17:27		68.8	68.8	72.5	12:28:27		72.5	72.5	54.0	12:39:02		64.0	
67.7	12:17:30		67.7	67.7	70.6	12:28:30		70.6	70.6	54.7	12:39:03		64.7	
69.4	12:17:33		69.4	69.4	71.6	12:28:33		71.6	71.6	55.7	12:39:04		65.7	
66.9	12:17:36		66.9	66.9	70.1	12:28:36		70.1	70.1	57.6	12:39:05		67.6	
69.1	12:17:39		69.1	69.1	70.8	12:28:39		70.8	70.8	57.9	12:39:06		67.9	
64.2	12:17:42		64.2	64.2	69.2	12:28:42		69.2	69.2	57.3	12:39:07		67.3	
63.1	12:17:45		63.1	63.1	67.7	12:28:45		67.7	67.7	55.9	12:39:08		65.9	
58.4	12:17:48		58.4	58.4	64.9	12:28:48		64.9	64.9	54.7	12:39:09		64.7	
55.6	12:17:51		55.6	55.6	71.6	12:28:51		71.6	71.6	53.9	12:39:10		63.9	
59.7	12:17:54		59.7	59.7	65.4	12:28:54		65.4	65.4	53.8	12:39:11		63.8	
66.6	12:17:57		66.6	66.6	61.7	12:28:57		61.7	61.7	54.0	12:39:12		64.0	
65.4	12:18:00		65.4	65.4	62.8	12:29:00		62.8	62.8	53.3	12:39:13		63.3	
66.7	12:18:03		66.7	66.7	68.1	12:29:03		68.1	68.1	52.8	12:39:14		62.8	
58.6	12:18:06		58.6	58.6	67.2	12:29:06		67.2	67.2	51.6	12:39:15		61.6	
56.5	12:18:09		56.5	56.5	60.6	12:29:09		60.6	60.6	50.8	12:39:16		60.8	
57.9	12:18:12		57.9	57.9	62.1	12:29:12		62.1	62.1	50.7	12:39:17		60.7	
64.6	12:18:15		64.6	64.6	60.8	12:29:15		60.8	60.8	50.8	12:39:18		60.8	
70.6	12:18:18		70.6	70.6	61.2	12:29:18		61.2	61.2	50.7	12:39:19		60.7	
64.1	12:18:21		64.1	64.1	72.3	12:29:21		72.3	72.3	51.1	12:39:20		61.1	
62.4	12:18:24		62.4	62.4	62.7	12:29:24		62.7	62.7	50.9	12:39:21		60.9	
63.8	12:18:27		63.8	63.8	60.2	12:29:27		60.2	60.2	51.1	12:39:22		61.1	
64.2	12:18:30		64.2	64.2	58.3	12:29:30		58.3	58.3	51.5	12:39:23		61.5	
67.2	12:18:33		67.2	67.2	59.4	12:29:33		59.4	59.4	52.5	12:39:24		62.5	
65.7	12:18:36		65.7	65.7	60	12:29:36		60	60	53.9	12:39:25		63.9	
70	12:18:39		70	70	60.5	12:29:39		60.5	60.5	54.4	12:39:26		64.4	
70.1	12:18:42		70.1	70.1	64	12:29:42		64	64	54.4	12:39:27		64.4	
63.6	12:18:45		63.6	63.6	64.5	12:29:45		64.5	64.5	54.8	12:39:28		64.8	
62.1	12:18:48		62.1	62.1	63.2	12:29:48		63.2	63.2	54.3	12:39:29		64.3	
57.9	12:18:51		57.9	57.9	60.2	12:29:51		60.2	60.2	54.0	12:39:30		64.0	
55.7	12:18:54		55.7	55.7	59.7	12:29:54		59.7	59.7	53.9	12:39:31		63.9	
67.5	12:18:57		67.5	67.5	63.8	12:29:57		63.8	63.8	53.3	12:39:32		63.3	
71.5	12:19:00		71.5	71.5	61.4	12:30:00		61.4	61.4	53.3	12:39:33		63.3	
72.4	12:19:03		72.4	72.4	58.4	12:30:03		58.4	58.4	52.8	12:39:34		62.8	
70.9	12:19:06		70.9	70.9	60.9	12:30:06		60.9	60.9	52.5	12:39:35		62.5	
78.6	12:19:09		78.6	78.6	63.8	12:30:09		63.8	63.8	53.0	12:39:36		63.0	
74.8	12:19:12		74.8	74.8	62.2	12:30:12		62.2	62.2	53.9	12:39:37		63.9	
72.9	12:19:15		72.9	72.9	61.7	12:30:15		61.7	61.7	55.2	12:39:38		65.2	
73.2	12:19:18		73.2	73.2	63.4	12:30:18		63.4	63.4	54.9	12:39:39		64.9	
71.9	12:19:21		71.9	71.9	70.2	12:30:21		70.2	70.2	54.1	12:39:40		64.1	
69.2	12:19:24		69.2	69.2	73.8	12:30:24		73.8	73.8	54.9	12:39:41		64.9	
71.5	12:19:27		71.5	71.5	71.9	12:30:27		71.9	71.9	56.9	12:39:42		66.9	
70	12:19:30		70	70	71.7	12:30:30		71.7	71.7	58.4	12:39:43		68.4	
65.1	12:19:33		65.1	65.1	71.1	12:30:33		71.1	71.1	58.2	12:39:44		68.2	
63.6	12:19:36		63.6	63.6	73	12:30:36		73	73	56.3	12:39:45		66.3	
59.7	12:19:39		59.7	59.7	69	12:30:39		69	69	54.7	12:39:46		64.7	
56.1	12:19:42		56.1	56.1	60.9	12:30:42		60.9	60.9	53.4	12:39:47		63.4	
55.8	12:19:45		55.8	55.8	58.7	12:30:45		58.7	58.7	52.5	12:39:48		62.5	
58.2	12:19:48		58.2	58.2	60.2	12:30:48		60.2	60.2	52.9	12:39:49		62.9	
62.5	12:19:51		62.5	62.5	57.4	12:30:51		57.4	57.4	52.8	12:39:50		62.8	
63.1	12:19:54		63.1	63.1	58.8	12:30:54		58.8	58.8	53.2	12:39:51		63.2	
66.2	12:19:57		66.2	66.2	61.5	12:30:57		61.5	61.5	52.2	12:39:52		62.2	
66.2	12:20:00		66.2	66.2	65.2	12:31:00		65.2	65.2	51.9	12:39:53		61.9	
66	12:20:03		66	66	70	12:31:03		70	70	51.5	12:39:54		61.5	
64.1	12:20:06		64.1	64.1	64.1	12:31:06		64.1	64.1	50.8	12:39:55		60.8	
69.2	12:20:09		69.2	69.2	63.7	12:31:09		63.7	63.7	50.5	12:39:56		60.5	
72.1	12:20:12		72.1	72.1	68.5	12:31:12		68.5	68.5	51.2	12:39:57		61.2	
66.8	12:20:15		66.8	66.8	63.5	12:31:15		63.5	63.5	52.5	12:39:58		62.5	
64.4	12:20:18		64.4	64.4	61.7	12:31:18		61.7	61.7	53.1	12:39:59		63.1	
62.1	12:20:21		62.1	62.1	65.6	12:31:21		65.6	65.6	53.9	12:40:00		63.9	
60	12:20:24		60	60	67.1	12:31:24		67.1	67.1	54.0	12:40:01		64.0	
58	12:20:27		58	58	66.4	12:31:27		66.4	66.4	53.2	12:40:02		63.2	
52.3	12:20:30		52.3	52.3	67.5	12:31:30		67.5	67.5	53.0	12:40:03		63.0	
57.6	12:20:33		57.6	57.6	62.5	12:31:33		62.5	62.5	53.6	12:40:04		63.6	
67.2	12:20:36		67.2	67.2	62	12:31:36		62	62	53.3	12:40:05		63.3	
64.9	12:20:39		64.9	64.9	60.2	12:31:39		60.2	60.2	52.7	12:40:06		62.7	
64	12:20:42		64	64	62.8	12:31:42		62.8	62.8	52.4	12:40:07		62.4	
59.7	12:20:45		59.7	59.7	57.7	12:31:45		57.7	57.7	52.3	12:40:08		62.3	
71.3	12:20:48		71.3	71.3	57.8	12:31:48		57.8	57.8	52.8	12:40:09		62.8	
72.9	12:20:51		72.9	72.9	59	12:31:51		59	59	52.8	12:40:10		62.8	
74.4	12:20:54		74.4	74.4	65.8	12:31:54		65.8	65.8	53.2	12:40:11		63.2	
72.9	12:20:57		72.9	72.9	71.1	12:31:57		71.1	71.1	53.0	12:40:12		63.0	
73.3	12:21:00		73.3	73.3	65.7	12:32:00		65.7	65.7	52.7	12:40:13		62.7	
71.1	12:21:03		71.1	71.1	71.1	12:32:03		71.1	71.1	52.6	12:40:14		62.6	
73.1	12:21:06		73.1	73.1	64.8	12:32:06		64.8	64.8	53.7	12:40:15		63.7	
73	12:21:09		73	73	64.8	12:32:09		64.8	64.8	53.0	12:40:16		63.0	
70.6	12:21:12		70.6	70.6	69.4	12:32:12		69.4	69.4	52.1	12:40:17		62.1	
69.9	12:21:15		69.9	69.9	68.4	12:32:15		68.4	68.4	52.0	12:40:18		62.0	
70.2	12:21:18		70.2	70.2	70.6	12:32:18		70.6	70.6	51.8	12:40:19		61.8	
65.2	12:21:21		65.2	65.2	73.1	12:32:21		73.1	73.1	51.7	12:40:20		61.7	
64.3	12:21:24		64.3	64.3	73.4	12:32:24		73.4	73.4	52.0	12:40:21		62.0	
64.8	12:21:27		64.8	64.8	71	12:32:27		71	71	51.4	12:40:22		61.4	
65.2	12:21:30		65.2	65.2	68.3	12:32:30		68.3	68.3	51.4	12:40:23		61.4	
67.5	12:21:33		67.5	67.5	74	12:32:33		74	74	51.6	12:40:24		61.6	
64.6	12:21:36		64.6	64.6	70.4	12:32:36		70.4	70.4	51.6	12:40:25		61.6	
62.7	12:21:39		62.7	62.7	65.6	12:32:39		65.6	65.6	51.6	12:40:26		61.6	
61	12:21:42		61	61	65.3	12:32:42		65.3	65.3	51.7	12:40:27		61.7	
60	12:21:45		60	60	70.5	12:32:45		70.5	70.5	51.7	12:40:28		61.7	
59.6	12:21:48		59.6	59.6	67.1	12:32:48		67.1	67.1	51.6	12:40:29		61.6	
62.5	12:21:51		62.5	62.5	59.5	12:32:51		59.5	59.5	51.7	12:40:30		61.7	
64.6	12:21:54		64.6	64.6	62	12:32:54		62	62	52.1	12:40:31		62.1	
65.9	12:21:57		65.9	65.9	58.5	12:32:57		58.5	58.5	53.0	12:40:32		63.0	
69.2	12:22:00		69.2	69.2	60.2	12:33:00		60.2	60.2	54.0	12:40:33		64.0	
69.4	12:22:03		69.4	69.4	60.9	12:33:03		60.9	60.9	53.3	12:40:34		63.3	
69.3	12:22:06		69.3	69.3	61.3	12:33:06		61.3	61.3	52.1	12:40:35		62.1	
66.7	12:22:09		66.7	66.7	68	12:33:09		68	68	52.2	12:40:36		62.2	
66.2	12:22:12		66.2	66.2	69.9	12:33:12		69.9	69.9	51.7	12:40:37		61.7	
66.5	12:22:15		66.5	66.5	69.7	12:33:15		69.7	69.7	52.1	12:40:38		62.1	
67.2	12:22:18		67.2	67.2	60.4	12:33:18		60.4	60.4	52.2	12:40:39		62.2	
63.3	12:22:21		63.3	63.3	57.9	12:33:21		57.9	57.9	51.8	12:40:40		61.8	
65.6	12:22:24		65.6	65.6	59.7	12:33:24		59.7	59.7	51.3	12:40:41		61.3	
67.4	12:22:27		67.4	67.4	65	12:33:27		65	65	50.3	12:40:42		60.3	60.3
67.9	12:22:30		67.9	67.9	60.9	12:33:30		60.9	60.9	49.4	12:40:43		59.4	59.4
64	12:22:33		64	64	58.4	12:33:33		58.4	58.4	49.3	12:40:44		59.3	59.3
62.3	12:22:36		62.3	62.3	63.1	12:33:36		63.1	63.1	49.3	12:40:45		59.3	59.3
69	12:22:39		69	69	68.8	12:33:39		68.8	68.8	49.2	12:40:46			
73.7	12:22:42		73.7	73.7	66.4	12:33:42		66.4	66.4	49.6	12:40:47			

Attachment: Appendix E - Noise Report (2340 : PA16-0039 Plot Plan)

Site A - On sign 75 feet east of Perris Blvd CL

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
73.2	12:22:45		73.2	73.2
73.6	12:22:48		73.6	73.6
70.4	12:22:51		70.4	70.4
72.1	12:22:54		72.1	72.1
75.8	12:22:57		75.8	75.8
71.1	12:23:00		71.1	71.1
64.9	12:23:03		64.9	64.9
60.2	12:23:06		60.2	60.2
58.7	12:23:09		58.7	58.7
58.5	12:23:12		58.5	58.5
59.3	12:23:15		59.3	59.3
66.3	12:23:18		66.3	66.3
65.8	12:23:21		65.8	65.8
65.6	12:23:24		65.6	65.6
64.2	12:23:27		64.2	64.2
63.1	12:23:30		63.1	63.1
61.1	12:23:33		61.1	61.1
59.6	12:23:36		59.6	59.6
59.1	12:23:39		59.1	59.1
59.7	12:23:42		59.7	59.7
68.3	12:23:45		68.3	68.3
71.7	12:23:48		71.7	71.7
66.1	12:23:51		66.1	66.1
63.7	12:23:54		63.7	63.7
62.1	12:23:57		62.1	62.1
62.4	12:24:00		62.4	62.4
58.4	12:24:03		58.4	58.4
56.4	12:24:06		56.4	56.4
57.3	12:24:09		57.3	57.3
61.5	12:24:12		61.5	61.5
64.3	12:24:15		64.3	64.3
65.5	12:24:18		65.5	65.5
59.5	12:24:21		59.5	59.5
63.5	12:24:24		63.5	63.5
61.6	12:24:27		61.6	61.6
68.2	12:24:30		68.2	68.2
65.5	12:24:33		65.5	65.5
72.4	12:24:36		72.4	72.4
74.3	12:24:39		74.3	74.3
72	12:24:42		72	72
69.1	12:24:45		69.1	69.1
66.3	12:24:48		66.3	66.3
68.6	12:24:51		68.6	68.6
66.6	12:24:54		66.6	66.6
65.5	12:24:57		65.5	65.5
59	12:25:00		59	59
55.6	12:25:03		55.6	55.6
54.5	12:25:06		54.5	54.5
55.3	12:25:09		55.3	55.3
56.8	12:25:12		56.8	56.8
61.6	12:25:15		61.6	61.6
63.5	12:25:18		63.5	63.5
68.2	12:25:21		68.2	68.2
63.6	12:25:24		63.6	63.6
65.1	12:25:27		65.1	65.1
66.5	12:25:30		66.5	66.5
70.2	12:25:33		70.2	70.2
71.3	12:25:36		71.3	71.3
71.6	12:25:39		71.6	71.6
70.9	12:25:42		70.9	70.9
69.4	12:25:45		69.4	69.4
64.5	12:25:48		64.5	64.5
65.6	12:25:51		65.6	65.6
71	12:25:54		71	71
71.2	12:25:57		71.2	71.2
65	12:26:00		65	65
59	12:26:03		59	59
60.4	12:26:06		60.4	60.4
64.4	12:26:09		64.4	64.4
65.5	12:26:12		65.5	65.5
70.4	12:26:15		70.4	70.4
73.2	12:26:18		73.2	73.2
72.9	12:26:21		72.9	72.9
72	12:26:24		72	72
72.4	12:26:27		72.4	72.4
69.8	12:26:30		69.8	69.8
67.2	12:26:33		67.2	67.2
63.1	12:26:36		63.1	63.1
71.1	12:26:39		71.1	71.1
69.6	12:26:42		69.6	69.6
66.1	12:26:45		66.1	66.1
62.7	12:26:48		62.7	62.7
55.9	12:26:51		55.9	55.9
53.6	12:26:54		53.6	53.6
56.8	12:26:57		56.8	56.8
62.2	12:27:00		62.2	62.2
65.8	12:27:03		65.8	65.8
65.3	12:27:06		65.3	65.3
62.2	12:27:09		62.2	62.2
63.4	12:27:12		63.4	63.4
68.1	12:27:15		68.1	68.1
63.8	12:27:18		63.8	63.8
68.7	12:27:21		68.7	68.7
69	12:27:24		69	69
65.9	12:27:27		65.9	65.9
66.8	12:27:30		66.8	66.8
66.8	12:27:33		66.8	66.8
67.3	12:27:36		67.3	67.3
67	12:27:39		67	67
65.4	12:27:42		65.4	65.4
63.9	12:27:45		63.9	63.9
68	12:27:48		68	68
67.4	12:27:51		67.4	67.4
78.5	12:27:54		78.5	78.5
78.1	12:27:57		78.1	78.1
72.6	12:28:00		72.6	72.6
72.8	12:28:03		72.8	72.8
74.1	12:28:06		74.1	74.1
71.4	12:28:09		71.4	71.4
70.1	12:28:12		70.1	70.1
70	12:28:15		70	70
74.5	12:28:18		74.5	74.5
69	12:28:21		69	69
65.1	12:28:24		65.1	65.1
58	12:28:27		58	58
54.9	12:28:30		54.9	54.9
66	12:28:33		66	66
61.9	12:28:36		61.9	61.9
61.7	12:28:39		61.7	61.7
62.6	12:28:42		62.6	62.6
59.8	12:28:45		59.8	59.8
59.7	12:28:48		59.7	59.7
60.7	12:28:51		60.7	60.7
60	12:28:54		60	60
59.9	12:28:57		59.9	59.9
61.9	12:29:00		61.9	61.9
66.1	12:29:03		66.1	66.1
56.5	12:29:06		56.5	56.5
54.3	12:29:09		54.3	54.3
57.5	12:29:12		57.5	57.5
58.4	12:29:15		58.4	58.4
58.3	12:29:18		58.3	58.3
64.6	12:29:21		64.6	64.6
62.6	12:29:24		62.6	62.6
65.6	12:29:27		65.6	65.6
68.1	12:29:30		68.1	68.1
70.5	12:29:33		70.5	70.5
69.7	12:29:36		69.7	69.7
69.1	12:29:39		69.1	69.1
71.3	12:29:42		71.3	71.3
70	12:29:45		70	70
70.4	12:29:48		70.4	70.4
74	12:29:51		74	74

Site B - On sign 75 feet south of Alessandro Blvd

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
62.6	12:33:45		62.6	62.6
61.6	12:33:48		61.6	61.6
58.1	12:33:51		58.1	58.1
59.3	12:33:54		59.3	59.3
60	12:33:57		60	60
57.4	12:34:00		57.4	57.4
58.2	12:34:03		58.2	58.2
62.3	12:34:06		62.3	62.3
61.9	12:34:09		61.9	61.9
59.7	12:34:12		59.7	59.7
68.8	12:34:15		68.8	68.8
72	12:34:18		72	72
73.9	12:34:21		73.9	73.9
73.3	12:34:24		73.3	73.3
69.7	12:34:27		69.7	69.7
71.9	12:34:30		71.9	71.9
72	12:34:33		72	72
70	12:34:36		70	70
68.3	12:34:39		68.3	68.3
72.6	12:34:42		72.6	72.6
68.4	12:34:45		68.4	68.4
69	12:34:48		69	69
63.3	12:34:51		63.3	63.3
60.1	12:34:54		60.1	60.1
64.6	12:34:57		64.6	64.6
62.7	12:35:00		62.7	62.7
66.8	12:35:03		66.8	66.8
64.1	12:35:06		64.1	64.1
69.5	12:35:09		69.5	69.5
63.3	12:35:12		63.3	63.3
70.1	12:35:15		70.1	70.1
67.7	12:35:18		67.7	67.7
68.9	12:35:21		68.9	68.9
68.4	12:35:24		68.4	68.4
63.9	12:35:27		63.9	63.9
61.5	12:35:30		61.5	61.5
61.6	12:35:33		61.6	61.6
62.2	12:35:36		62.2	62.2
62.6	12:35:39		62.6	62.6
58.1	12:35:42		58.1	58.1
61	12:35:45		61	61
63.8	12:35:48		63.8	63.8
64.3	12:35:51		64.3	64.3
69.1	12:35:54		69.1	69.1
66.1	12:35:57		66.1	66.1
66.8	12:36:00		66.8	66.8
60.3	12:36:03		60.3	60.3
55.9	12:36:06		55.9	55.9
56.6	12:36:09		56.6	56.6
59	12:36:12		59	59
61.5	12:36:15		61.5	61.5
61.8	12:36:18		61.8	61.8
65	12:36:21		65	65
59.1	12:36:24		59.1	59.1
57.9	12:36:27		57.9	57.9
62.8	12:36:30		62.8	62.8
57.2	12:36:33		57.2	57.2
54.1	12:36:36		54.1	54.1
53.6	12:36:39		53.6	53.6
53.2	12:36:42		53.2	53.2
54.8	12:36:45		54.8	54.8
56.7	12:36:48		56.7	56.7
61.3	12:36:51		61.3	61.3
71.1	12:36:54		71.1	71.1
71.8	12:36:57		71.8	71.8
73.4	12:37:00		73.4	73.4
72.6	12:37:03		72.6	72.6
73.1	12:37:06		73.1	73.1
74.2	12:37:09		74.2	74.2
70	12:37:12		70	70
66.9	12:37:15		66.9	66.9
59.4	12:37:18		59.4	59.4
56.3	12:37:21		56.3	56.3
56.9	12:37:24		56.9	56.9
61.7	12:37:27		61.7	61.7
66.7	12:37:30		66.7	66.7
67.6	12:37:33		67.6	67.6
69.1	12:37:36		69.1	69.1
64.3	12:37:39		64.3	64.3
59.1	12:37:42		59.1	59.1
58.4	12:37:45		58.4	58.4
62	12:37:48		62	62
67.8	12:37:51		67.8	67.8
68.9	12:37:54		68.9	68.9
77.8	12:37:57		77.8	77.8
71.4	12:38:00		71.4	71.4
63	12:38:03		63	63
63.2	12:38:06		63.2	63.2
66.8	12:38:09		66.8	66.8
65.1	12:38:12		65.1	65.1
66	12:38:15		66	66
66.8	12:38:18		66.8	66.8
63.4	12:38:21		63.4	63.4
63.1	12:38:24		63.1	63.1
64.6	12:38:27		64.6	64.6
67.7	12:38:30		67.7	67.7
71.4	12:38:33		71.4	71.4
70.3	12:38:36		70.3	70.3
72.3	12:38:39		72.3	72.3
73.6	12:38:42		73.6	73.6
71.6	12:38:45		71.6	71.6
70.3	12:38:48		70.3	70.3
72.4	12:38:51		72.4	72.4
76	12:38:54		76	76
72.2	12:38:57		72.2	72.2
69.8	12:39:00		69.8	69.8
63.3	12:39:03		63.3	63.3
62.8	12:39:06		62.8	62.8
61	12:39:09		61	61
62.4	12:39:12		62.4	62.4
60.5	12:39:15		60.5	60.5
66.8	12:39:18		66.8	66.8
67.7	12:39:21		67.7	67.7
61.1	12:39:24		61.1	61.1
57.4	12:39:27		57.4	57.4
57.8	12:39:30		57.8	57.8
55.9	12:39:33		55.9	55.9
55.9	12:39:36		55.9	55.9
56.1	12:39:39		56.1	56.1
79.1	12:39:42		79.1	79.1
66.7	12:39:45		66.7	66.7
66	12:39:48		66	66
62.6	12:39:51		62.6	62.6
59.3	12:39:54		59.3	59.3
54.5	12:39:57		54.5	54.5
54.4	12:40:00		54.4	54.4
54.9	12:40:03		54.9	54.9
56.9	12:40:06		56.9	56.9
53.2	12:40:09		53.2	53.2
53.6	12:40:12		53.6	53.6
55.2	12:40:15		55.2	55.2
63	12:40:18		63	63
72.9	12:40:21		72.9	72.9
73.4	12:40:24		73.4	73.4
71.3	12:40:27		71.3	71.3
68.9	12:40:30		68.9	68.9
68.7	12:40:33		68.7	68.7
68.9	12:40:36		68.9	68.9
71	12:40:39		71	71
65.4	12:40:42		65.4	65.4
57.2	12:40:45		57.2	57.2
61.5	12:40:48		61.5	61.5
63.2	12:40:51		63.2	63.2

Site C - On tree 3' west of project & 420' south of

SPL	Time	Leq (1 hour Avg.)		
49.6	12:40:48		59.6	59.6
49.4	12:40:49		59.4	59.4
49.9	12:40:50		59.9	59.9
49.8	12:40:51		59.8	
49.7	12:40:52		59.7	
49.7	12:40:53		59.7	
50.0	12:40:54		60.0	
50.2	12:40:55		60.2	
50.7	12:40:56		60.7	
51.1	12:40:57		61.1	
51.5	12:40:58		61.5	
52.0	12:40:59		62.0	
52.6	12:41:00		62.6	
53.1	12:41:01		63.1	
54.7	12:41:02		64.7	
54.4	12:41:03		64.4	
53.5	12:41:04		63.5	
52.5	12:41:05		62.5	
52.4	12:41:06		62.4	
52.1	12:41:07		62.1	
51.5	12:41:08		61.5	
51.8	12:41:09		61.8	
51.7	12:41:10		61.7	
51.3	12:41:11		61.3	
50.8	12:41:12		60.8	
50.4	12:41:13		60.4	
50.3	12:41:14		60.3	
50.2	12:41:15		60.2	
50.7	12:41:16		60.7	
51.3	12:41:17		61.3	
51.9	12:41:18		61.9	
51.9	12:41:19		61.9	
52.9	12:41:20		62.9	
53.7	12:41:21		63.7	
53.5	12:41:22		63.5	
53.1	12:41:23		63.1	
53.4	12:41:24		63.4	
54.0	12:41:25		64.0	
54.3	12:41:26		64.3	
54.9	12:41:27		64.9	
55.4	12:41:28		65.4	
55.4	12:41:29		65.4	
55.6	12:41:30		65.6	
54.8	12:41:31		64.8	
53.9	12:41:32		63.9	
53.4	12:41:33		63.4	
54.0	12:41:34		64.0	
54.4	12:41:35		64.4	
54.2	12:41:36		64.2	
53.6	12:41:37		63.6	
54.1	12:41:38		64.1	
54.3	12:41:39		64.3	
54.4	12:41:40		64.4	
54.4	12:41:41		64.4	
55.2	12:41:42		65.2	
55.2	12:41:43		65.2	
55.5	12:41:44		65.5	
55.9	12:41:45		65.9	
54.9	12:41:46		64.9	
55.5	12:41:47		65.5	
56.8	12:41:48		66.8	
62.8	12:41:49		72.8	
61.8	12:41:50		71.8	
58.9	12:41:51		68.9	
55.7	12:41:52		65.7	
53.4	12:41:53		63.4	
51.9	12:41:54		61.9	
50.8	12:41:55		60.8	
50.3	12:41:56		60.3	
50.8	12:41:57		60.8	
50.8	12:41:58		60.8	
50.8	12:41:59		60.8	
51.5	12:42:00		61.5	
51.9	12:42:01		61.9	
52.3	12:42:02		62.3	
53.8	12:42:03		63.8	
52.4	12:42:04		62.4	
51.3	12:42:05		61.3	
50.6	12:42:06		60.6	
50.1	12:42:07		60.1	
49.8	12:42:08		59.8	
50.1	12:42:09		60.1	
49.8	12:42:10		59.8	
50.2	12:42:11		60.2	
51.1	12:42:12		61.1	
51.3	12:42:13		61.3	
51.4	12:42:14		61.4	
51.6	12:42:15		61.6	
51.3	12:42:16		61.3	
50.8	12:42:17		60.8	
50.8	12:42:18		60.8	
50.8	12:42:19		60.8	
52.5	12:42:20		62.5	
52.3	12:42:21		62.3	
51.9	12:42:22		61.9	
52.0	12:42:23		62.0	
51.9	12:42:24		61.9	
51.4	12:42:25		61.4	
51.1	12:42:26		61.1	
50.9	12:42:27		60.9	
50.5	12:42:28		60.5	
49.9	12:42:29		59.9	
49.8	12:42:30		59.8	
50.0	12:42:31		60.0	
50.0	12:42:32		60.0	
49.9	12:42:33		59.9	
49.7	12:42:34		59.7	
50.3	12:42:35		60.3	
50.3	12:42:36		60.3	
50.4	12:42:37		60.4	
49.9	12:42:38		59.9	
49.8	12:42:39		59.8	
49.6	12:42:40		59.6	
49.7	12:42:41		59.7	
50.2	12:42:42		60.2	
50.7	12:42:43		60.7	
51.0	12:42:44		61.0	
51.6	12:42:45		61.6	
51.8	12:42:46		61.8	
52.1	12:42:47		62.1	
52.0	12:42:48		62.0	
51.8	12:42:49		61.8	
51.3	12:42:50		61.3	
50.9	12:42:51		60.9	
50.8	12:42:52		60.8	
51.2	12:42:53		61.2	
51.6	12:42:54		61.6	
52.1	12:42:55		62.1	
52.7	12:42:56		62.7	
53.3	12:42:57		63.3	
53.4	12:42:58		63.4	
53.6	12:42:59		63.6	
54.0	12:43:00		64.0	
54.1	12:43:01		64.1	
53.8	12:43:02		63.8	
53.7	12:43:03		63.7	
53.4	12:43:04		63.4	
53.0	12:43:05		63.0	63.0
53.0	12:43:06		63.0	63.0
53.7	12:43:07		63.7	63.7
53.8	12:43:08		63.8	63.8
53.6	12:43:09			
53.8	12:43:10			

Attachment: Appendix E - Noise Report (2340 : PA16-0039 Plot Plan)

Site A - On sign 75 feet east of Perris Blvd CL					Site B - On sign 75 feet south of Alessandro Blvd					Site C - On tree 3' west of project & 420' south of				
SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL	SPL	Time	Leq (1 hour Avg.)		
73.3	12:29:54		73.3	73.3	54	12:40:54		54	54	53.9	12:43:11		63.9	63.9
72.3	12:29:57		72.3	72.3	54	12:40:57		54	54	54.3	12:43:12		64.3	64.3
69.1	12:30:00		69.1	69.1	60	12:41:00		60	60	54.3	12:43:13		64.3	64.3
72.4	12:30:03		72.4	72.4	68.9	12:41:03		68.9	68.9	55.5	12:43:14		65.5	
76.1	12:30:06		76.1	76.1	68.8	12:41:06		68.8	68.8	55.1	12:43:15		65.1	
74	12:30:09		74	74	72.8	12:41:09		72.8	72.8	55.1	12:43:16		65.1	
75.1	12:30:12		75.1	75.1	69.3	12:41:12		69.3	69.3	55.2	12:43:17		65.2	
71.2	12:30:15		71.2	71.2	63.2	12:41:15		63.2	63.2	55.6	12:43:18		65.6	
69.1	12:30:18		69.1	69.1	56	12:41:18		56	56	55.6	12:43:19		65.6	
65.6	12:30:21		65.6	65.6	54.4	12:41:21		54.4	54.4	56.8	12:43:20		66.8	
61.6	12:30:24		61.6	61.6	54.7	12:41:24		54.7	54.7	56.4	12:43:21		66.4	
56.8	12:30:27		56.8	56.8	55.2	12:41:27		55.2	55.2	56.1	12:43:22		66.1	
55.6	12:30:30		55.6	55.6	55.5	12:41:30		55.5	55.5	55.4	12:43:23		65.4	
55	12:30:33		55	55	54.8	12:41:33		54.8	54.8	63.6	12:43:24		73.6	
52	12:30:36		52	52	56	12:41:36		56	56	61.7	12:43:25		71.7	
46.6	12:30:39		46.6	46.6	58.8	12:41:39		58.8	58.8	58.9	12:43:26		68.9	
47.6	12:30:42		47.6	47.6	55.5	12:41:42		55.5	55.5	57.6	12:43:27		67.6	
50.1	12:30:45		50.1	50.1	55.2	12:41:45		55.2	55.2	56.3	12:43:28		66.3	
53.9	12:30:48		53.9	53.9	61.2	12:41:48		61.2	61.2	56.1	12:43:29		66.1	
60.8	12:30:51		60.8	60.8	67.1	12:41:51		67.1	67.1	55.8	12:43:30		65.8	
61.5	12:30:54		61.5	61.5	69	12:41:54		69	69	54.9	12:43:31		64.9	
60.1	12:30:57		60.1	60.1	66.9	12:41:57		66.9	66.9	54.2	12:43:32		64.2	
62.8	12:31:00		62.8	62.8	65.4	12:42:00		65.4	65.4	54.0	12:43:33		64.0	
62.4	12:31:03		62.4	62.4	65.9	12:42:03		65.9	65.9	54.0	12:43:34		64.0	
55.3	12:31:06		55.3	55.3	67.1	12:42:06		67.1	67.1	53.8	12:43:35		63.8	
52.2	12:31:09		52.2	52.2	65.4	12:42:09		65.4	65.4	54.3	12:43:36		64.3	
50.2	12:31:12		50.2	50.2	61.3	12:42:12		61.3	61.3	55.2	12:43:37		65.2	
53.1	12:31:15		53.1	53.1	59.4	12:42:15		59.4	59.4	69.3	12:43:38		79.3	
62.2	12:31:18		62.2	62.2	72.3	12:42:18		72.3	72.3	67.0	12:43:39		77.0	
62.5	12:31:21		62.5	62.5	71.6	12:42:21		71.6	71.6	63.3	12:43:40		73.3	
63.1	12:31:24		63.1	63.1	73.2	12:42:24		73.2	73.2	59.9	12:43:41		69.9	
69.4	12:31:27		69.4	69.4	71.3	12:42:27		71.3	71.3	57.0	12:43:42		67.0	
71.2	12:31:30		71.2	71.2	73.5	12:42:30		73.5	73.5	54.9	12:43:43		64.9	
66.6	12:31:33		66.6	66.6	70.2	12:42:33		70.2	70.2	53.4	12:43:44		63.4	
70.9	12:31:36		70.9	70.9	71	12:42:36		71	71	52.6	12:43:45		62.6	
70.2	12:31:39		70.2	70.2	69.4	12:42:39		69.4	69.4	52.2	12:43:46		62.2	
71	12:31:42		71	71	70.9	12:42:42		70.9	70.9	68.8	12:43:47		78.8	
74.4	12:31:45		74.4	74.4	70.1	12:42:45		70.1	70.1	65.5	12:43:48		75.5	
74.4	12:31:48		74.4	74.4	64.4	12:42:48		64.4	64.4	61.6	12:43:49		71.6	
74.1	12:31:51		74.1	74.1	70.8	12:42:51		70.8	70.8	58.0	12:43:50		68.0	
73.6	12:31:54		73.6	73.6	65.8	12:42:54		65.8	65.8	55.1	12:43:51		65.1	
70.9	12:31:57		70.9	70.9	65.5	12:42:57		65.5	65.5	53.9	12:43:52		63.9	
68.3	12:32:00		68.3	68.3	68.8	12:43:00		68.8	68.8	61.3	12:43:53		71.3	
67.8	12:32:03		67.8	67.8	70	12:43:03		70	70	61.4	12:43:54		71.4	
70.1	12:32:06		70.1	70.1	72.6	12:43:06		72.6	72.6	58.1	12:43:55		68.1	
68.3	12:32:09		68.3	68.3	69.9	12:43:09		69.9	69.9	55.3	12:43:56		65.3	
62.8	12:32:12		62.8	62.8	66	12:43:12		66	66	53.5	12:43:57		63.5	
63.2	12:32:15		63.2	63.2	66.4	12:43:15		66.4	66.4	53.1	12:43:58		63.1	
66.5	12:32:18		66.5	66.5	63.3	12:43:18		63.3	63.3	53.5	12:43:59		63.5	
63.7	12:32:21		63.7	63.7	62.3	12:43:21		62.3	62.3	53.7	12:44:00		63.7	
56.8	12:32:24		56.8	56.8	62.8	12:43:24		62.8	62.8	67.6	12:44:01		77.6	
55.3	12:32:27		55.3	55.3	68.5	12:43:27		68.5	68.5	71.6	12:44:02		81.6	
54.4	12:32:30		54.4	54.4	64.7	12:43:30		64.7	64.7	67.5	12:44:03		77.5	
60	12:32:33		60	60	63.5	12:43:33		63.5	63.5	63.6	12:44:04		73.6	
65.7	12:32:36		65.7	65.7	63.4	12:43:36		63.4	63.4	60.1	12:44:05		70.1	
61.9	12:32:39		61.9	61.9	65.6	12:43:39		65.6	65.6	57.4	12:44:06		67.4	
62.3	12:32:42		62.3	62.3	67.4	12:43:42		67.4	67.4	56.1	12:44:07		66.1	
64.4	12:32:45		64.4	64.4	64.2	12:43:45		64.2	64.2	56.1	12:44:08		66.1	
65	12:32:48		65	65	62.7	12:43:48		62.7	62.7	56.4	12:44:09		66.4	
69	12:32:51		69	69	60.2	12:43:51		60.2	60.2	56.8	12:44:10		66.8	
66.7	12:32:54		66.7	66.7	62.1	12:43:54		62.1	62.1	58.9	12:44:11		68.9	
71.8	12:32:57		71.8	71.8	64.8	12:43:57		64.8	64.8	63.2	12:44:12		73.2	
64.5	12:33:00		64.5	64.5	65.3	12:44:00		65.3	65.3	59.9	12:44:13		69.9	
54.2	12:33:03		54.2	54.2	63.2	12:44:03		63.2	63.2	57.4	12:44:14		67.4	
49.7	12:33:06		49.7	49.7	63.5	12:44:06		63.5	63.5	56.2	12:44:15		66.2	
48.6	12:33:09		48.6	48.6	65.1	12:44:09		65.1	65.1	55.3	12:44:16		65.3	
55.5	12:33:12		55.5	55.5	67.8	12:44:12		67.8	67.8	54.7	12:44:17		64.7	
58.5	12:33:15		58.5	58.5	66.6	12:44:15		66.6	66.6	54.2	12:44:18		64.2	
60	12:33:18		60	60	65.9	12:44:18		65.9	65.9	54.2	12:44:19		64.2	
57	12:33:21		57	57	66.2	12:44:21		66.2	66.2	54.4	12:44:20		64.4	
63.9	12:33:24		63.9	63.9	74.5	12:44:24		74.5	74.5	53.6	12:44:21		63.6	
70.4	12:33:27		70.4	70.4	74.8	12:44:27		74.8	74.8	52.8	12:44:22		62.8	
75.5	12:33:30		75.5	75.5	72.5	12:44:30		72.5	72.5	52.7	12:44:23		62.7	
73.8	12:33:33		73.8	73.8	69.1	12:44:33		69.1	69.1	53.0	12:44:24		63.0	
73.8	12:33:36		73.8	73.8	68.6	12:44:36		68.6	68.6	52.9	12:44:25		62.9	
74.1	12:33:39		74.1	74.1	64.7	12:44:39		64.7	64.7	52.6	12:44:26		62.6	
74.9	12:33:42		74.9	74.9	61.6	12:44:42		61.6	61.6	52.5	12:44:27		62.5	
76.1	12:33:45		76.1	76.1	58	12:44:45		58	58	53.1	12:44:28		63.1	
71.5	12:33:48		71.5	71.5	57.6	12:44:48		57.6	57.6	52.8	12:44:29		62.8	
70.5	12:33:51		70.5	70.5	58.2	12:44:51		58.2	58.2	52.3	12:44:30		62.3	
69.1	12:33:54		69.1	69.1	61	12:44:54		61	61	52.1	12:44:31		62.1	
62.2	12:33:57		62.2	62.2	62.1	12:44:57		62.1	62.1	52.0	12:44:32		62.0	
66.9	12:34:00		66.9	66.9	61.7	12:45:00		61.7	61.7	51.9	12:44:33		61.9	
67.9	12:34:03		67.9	67.9	68	12:45:03		68	68	51.7	12:44:34		61.7	
66.3	12:34:06		66.3	66.3	76.5	12:45:06		76.5	76.5	50.6	12:44:35		60.6	
60.3	12:34:09		60.3	60.3	77.3	12:45:09		77.3	77.3	50.3	12:44:36		60.3	
58.7	12:34:12		58.7	58.7	68.1	12:45:12		68.1	68.1	50.4	12:44:37		60.4	
60.5	12:34:15		60.5	60.5	66.4	12:45:15		66.4	66.4	50.1	12:44:38		60.1	
60.7	12:34:18		60.7	60.7	63.9	12:45:18		63.9	63.9	50.2	12:44:39		60.2	
60.2	12:34:21		60.2	60.2	66.1	12:45:21		66.1	66.1	50.4	12:44:40		60.4	
59.2	12:34:24		59.2	59.2	69.2	12:45:24		69.2	69.2	50.8	12:44:41		60.8	
62.4	12:34:27		62.4	62.4	68.8	12:45:27		68.8	68.8	51.3	12:44:42		61.3	
66.1	12:34:30		66.1	66.1	66	12:45:30		66	66	50.6	12:44:43		60.6	
69.2	12:34:33		69.2	69.2	68.6	12:45:33		68.6	68.6	50.0	12:44:44		60.0	
66.9	12:34:36		66.9	66.9	66.6	12:45:36		66.6	66.6	49.7	12:44:45		59.7	
59.4	12:34:39		59.4	59.4	68.2	12:45:39		68.2	68.2	51.0	12:44:46		61.0	
55.6	12:34:42		55.6	55.6	77.2	12:45:42		77.2	77.2	50.3	12:44:47		60.3	
54.1	12:34:45		54.1	54.1	66.4	12:45:45		66.4	66.4	50.5	12:44:48		60.5	
52.6	12:34:48		52.6	52.6	68.6	12:45:48		68.6	68.6	50.7	12:44:49		60.7	
64	12:34:51		64	64	66.4	12:45:51		66.4	66.4	50.8	12:44:50		60.8	
68.6	12:34:54		68.6	68.6	61.2	12:45:54		61.2	61.2	55.3	12:44:51		65.3	
66.3	12:34:57		66.3	66.3	60	12:45:57		60	60	54.3	12:44:52		64.3	
59.6	12:35:00		59.6	59.6	58.5	12:46:00		58.5	58.5	54.8	12:44:53		64.8	
57.8	12:35:03		57.8	57.8	60.7	12:46:03		60.7	60.7	58.3	12:44:54		68.3	
62.5	12:35:06		62.5	62.5	62.9	12:46:06		62.9	62.9	58.9	12:44:55		68.9	
61.8	12:35:09		61.8	61.8	64.3	12:46:09		64.3	64.3	58.8	12:44:56		68.8	
61.6	12:35:12		61.6	61.6	61.4	12:46:12		61.4	61.4	60.1	12:44:57		70.1	
56.5	12:35:15		56.5	56.5	62.9	12:46:15		62.9	62.9	59.3	12:44:58		69.3	
55.7	12:35:18		55.7	55.7	71.4	12:46:18		71.4	71.4	58.4	12:44:59		68.4	
55.7	12:35:21		55.7	55.7	72.4	12:46:21		72.4	72.4	57.0	12:45:00		67.0	
69.9	12:35:24		69.9	69.9	72.3	12:46:24		72.3	72.3	56.3	12:45:01		66.3	
73.1	12:35:27		73.1	73.1	72.6	12:46:27		72.6	72.6	55.9	12:45:02		65.9	
74.3	12:35:30		74.3	74.3	80.8	12:46:30		80.8	80.8	55.3	12:45:03		65.3	
75.5	12:35:33		75.5	75.5	72.6	12:46:33		72.6	72.6	55.1	12:45:04		65.1	
76.7	12:35:36		76.7	76.7	69.6	12:46:36		69.6	69.6	54.9	12:45:05		64.9	
73.1	12:35:39		73.1	73.1	66.1	12:46:39		66.1	66.1	55.3	12:45:06		65.3	
72	12:35:42		72	72	64.5	12:46:42		64.5	64.5	55.1	12:45:07		65.1	
67.2	12:35:45		67.2	67.2	64.2	12:46:45		64.2	64.2	54.5	12:45:08		64.5	
65.3	12:35:48		65.3	65.3	71.6	12:46:48		71.6	71.6	54.1	12:45:09		64.1	
70.1	12:35:51		70.1	70.1	64.1	12:46:51		64.1	64.1	53.8	12:45:10		63.8	
72.4	12:35:54		72.4	72.4	61.3	12:46:54		61.3	61.3	54.1	12:45:11		64.1	
74	12:35:57		74	74	65.2	12:46:57		65.2	65.2	54.5	12:45:12		64.5	
66.9	12:36:00		66.9	66.9	65.3	12:47:00		65.3	65.3	54.4	12:45:13		64.4	
64.4	12:36:03		64.4	64.4	68.7	12:47:03		68.7	68.7	54.6	12:45:14		64.6	
59.3	12:36:06		59.3	59.3	70.6	12:47:06		70.6	70.6	55.4	12:45:15		65.4	
59.8	12:36:09		59.8	59.8	71.6	12:47:09		71.6	71.6	54.9	12:45:16		64.9	
58.7	12:36:12		58.7	58.7	73.6	12:47:12		73.6	73.6	54.8	12:45:17		64.8	
58.4	12:36:15		58.4	58.4	68.6	12:47:15		68.6	68.6	54.9	12:45:18		64.9	
58.6	12:36:18		58.6	58.6	68	12:47:18		68	68	54.9	12:45:19		64.9	
57.8	12:36:21		57.8	57.8	71.3	12:47:21		71.3	71.3	54.9	12:45:20		64.9	
63.2	12:36:24		63.2	63.2	72.9	12:47:24		72.9	72.9	56.3	12:45:21		66.3	
65.2	12:36:27		65.2	65.2	67.7	12:47:27		67.7	67.7	55.8	12:45:22		65.8	
66.1	12:36:30		66.1	66.1	66.2	12:47:30		66.2	66.2	55.9	12:45:23		65.9	
71.6	12:36:33		71.6	71.6	64.7	12:47:33		64.7	64.7	57.2	12:45:24		67.2	
66.2	12:36:36		66.2	66.2	66.1	12:47:36		66.1	66.1	59.3	12:45:25		69.3	
64.5	12:36:39		64.5	64.5	66.7	12:47:39		66.7	66.7	60.5	12:45:26		70.5	
60.5	12:36:42		60.5	60.5	64.8	12:47:42		64.8	64.8	62.0	12:45:27		72.0	
64.6	12:36:45		64.6	64.6	65.1	12:47:45		65.1	65.1	59.4	12:45:28		69.4	
64.3	12:36:48		64.3	64.3	74.4	12:47:48		74.4	74.4	57.3	12:45:29		67.3	
62.3	12:36:51		62.3	62.3	63.7	12:47:51		63.7	63.7	56.1	12:45:30		66.1	
62.8	12:36:54		62.8	62.8	61.7	12:47:54		61.7	61.7	55.9	12:45:31		65.9	
66.2	12:36:57		66.2	66.2	62.7	12:47:57		62.7	62.7	56.4	12:45:32		66.4	
62.4	12:37:00		62.4	62.4	64.6	12:48:00		64.6	64.6	56.6	12:45:33		66.6	
57.4	12:37:03		57.4	57.4	66.9	12:48:03		66.9	66.9	56.8	12:45:34		66.8	
62.5	12:37:06		62.5	62.5	65.8	12:48:06		65.8	65.8	55.7	12:45:35		65.7	
61.7	12:37:09		61.7	61.7	64.1	12:48:09		64.1	64.1	55.1	12:45:36		65.1	
54.3	12:37:12		54.3	54.3	69.2	12:48:12		69.2	69.2	54.4	12:45:37		64.4	
56.2	12:37:15		56.2	56.2	66.6	12:48:15		66.6	66.6	53.9	12:45:38		63.9	
67.4	12:37:18		67.4	67.4	73.6	12:48:18		73.6	73.6	53.9	12:45:39		63.9	
70	12:37:21		70	70	72.6	12:48:21		72.6	72.6	54.2	12:45:40		64.2	64.2
71.4	12:37:24		71.4	71.4	70.8	12:48:24		70.8	70.8	54.8	12:45:41		64.8	64.8
73	12:37:27		73	73	72.2	12:48:27		72.2	72.2	53.7	12:45:42		63.7	63.7
72.6	12:37:30		72.6	72.6	73.1	12:48:30		73.1	73.1	52.7	12:45:43		62.7	62.7
72.6	12:37:33		72.6	72.6	70.2	12:48:33		70.2	70.2	54.2	12:45:44			
72.2	12:37:36		72.2	72.2	64.4	12:48:36		64.4	64.4	55.2	12:45:45			
71.6	12:37:39		71.6	71.6	63.3	12:48:39		63.3	63.3	54.9	12:45:46			

Site A - On sign 75 feet east of Perris Blvd CL					Site B - On sign 75 feet south of Alessandro Blvd					Site C - On tree 3' west of project & 420' south of				
SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL	SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
71.2	12:37:42		71.2	71.2	61.1	12:48:42		61.1	61.1	53.8	12:45:47		63.8	63.8
70.6	12:37:45		70.6	70.6	71.8	12:48:45		71.8	71.8	52.7	12:45:48		62.7	62.7
74.4	12:37:48		74.4	74.4	69.8	12:48:48		69.8	69.8	52.3	12:45:49		62.3	62.3
68.5	12:37:51		68.5	68.5	66.3	12:48:51		66.3	66.3	51.8	12:45:50		61.8	61.8
66.4	12:37:54		66.4	66.4	66.6	12:48:54		66.6	66.6	51.0	12:45:51		61.0	
66.2	12:37:57		66.2	66.2	63.4	12:48:57		63.4	63.4	50.3	12:45:52		60.3	
67.3	12:38:00		67.3	67.3	63.8	12:49:00		63.8	63.8	50.5	12:45:53		60.5	
65.7	12:38:03		65.7	65.7	70.6	12:49:03		70.6	70.6	50.7	12:45:54		60.7	
60.4	12:38:06		60.4	60.4	66.9	12:49:06		66.9	66.9	50.7	12:45:55		60.7	
54.8	12:38:09		54.8	54.8	60.5	12:49:09		60.5	60.5	51.6	12:45:56		61.6	
69.8	12:38:12		69.8	69.8	60.8	12:49:12		60.8	60.8	52.8	12:45:57		62.8	
67.7	12:38:15		67.7	67.7	61.9	12:49:15		61.9	61.9	52.4	12:45:58		62.4	
67.8	12:38:18		67.8	67.8	62.6	12:49:18		62.6	62.6	52.4	12:45:59		62.4	
68.2	12:38:21		68.2	68.2	64.3	12:49:21		64.3	64.3	52.0	12:46:00		62.0	
63.7	12:38:24		63.7	63.7	65.7	12:49:24		65.7	65.7	51.8	12:46:01		61.8	
63.1	12:38:27		63.1	63.1	68.4	12:49:27		68.4	68.4	52.0	12:46:02		62.0	
73	12:38:30		73	73	68.2	12:49:30		68.2	68.2	52.3	12:46:03		62.3	
63.5	12:38:33		63.5	63.5	67.4	12:49:33		67.4	67.4	52.7	12:46:04		62.7	
63.7	12:38:36		63.7	63.7	64.6	12:49:36		64.6	64.6	53.8	12:46:05		63.8	
68	12:38:39		68	68	62.3	12:49:39		62.3	62.3	53.7	12:46:06		63.7	
63.5	12:38:42		63.5	63.5	62	12:49:42		62	62	53.3	12:46:07		63.3	
62.1	12:38:45		62.1	62.1	62.4	12:49:45		62.4	62.4	52.7	12:46:08		62.7	
58	12:38:48		58	58	62.6	12:49:48		62.6	62.6	54.7	12:46:09		64.7	
55	12:38:51		55	55	61.9	12:49:51		61.9	61.9	66.7	12:46:10		76.7	
53.2	12:38:54		53.2	53.2	63.4	12:49:54		63.4	63.4	63.9	12:46:11		73.9	
54	12:38:57		54	54	62.9	12:49:57		62.9	62.9	60.6	12:46:12		70.6	
59.5	12:39:00	69.1	59.5	59.5	65.4	12:50:00	67.9	65.4	65.4	62.6	12:46:13		72.6	
63.8	12:39:03	69.1	63.8	63.8	60.7	12:50:03	67.9	60.7	60.7	59.8	12:46:14		69.8	
69.9	12:39:06	69.1	69.9	69.9	61.2	12:50:06	67.9	61.2	61.2	56.7	12:46:15		66.7	
74	12:39:09	69.1	74	74	66.6	12:50:09	67.9	66.6	66.6	60.2	12:46:16		70.2	
71.3	12:39:12	69.1	71.3	71.3	68.6	12:50:12	67.9	68.6	68.6	58.1	12:46:17		68.1	
68.7	12:39:15	69.1	68.7	68.7	65.5	12:50:15	67.9	65.5	65.5	56.9	12:46:18		66.9	
70.3	12:39:18	69.1	70.3	70.3	62.3	12:50:18	67.9	62.3	62.3	57.0	12:46:19		67.0	
70.3	12:39:21	69.1	70.3	70.3	71	12:50:21	67.9	71	71	56.5	12:46:20		66.5	
77.9	12:39:24	69.1	77.9	77.9	73.8	12:50:24	67.9	73.8	73.8	55.6	12:46:21		65.6	
73.1	12:39:27	69.1	73.1	73.1	71.1	12:50:27	67.9	71.1	71.1	55.8	12:46:22		65.8	
71.8	12:39:30	69.1	71.8	71.8	71.8	12:50:30	67.9	71.8	71.8	55.8	12:46:23		65.8	
71.9	12:39:33	69.1	71.9	71.9	71	12:50:33	67.9	71	71	55.3	12:46:24		65.3	
70.2	12:39:36	69.1	70.2	70.2	67.8	12:50:36	67.9	67.8	67.8	54.5	12:46:25		64.5	
69.8	12:39:39	69.1	69.8	69.8	64.4	12:50:39	67.9	64.4	64.4	53.6	12:46:26		63.6	
65.5	12:39:42	69.1	65.5	65.5	67	12:50:42	67.9	67	67	53.2	12:46:27		63.2	
66.4	12:39:45	69.1	66.4	66.4	62.4	12:50:45	67.9	62.4	62.4	53.4	12:46:28		63.4	
61.6	12:39:48	69.1	61.6	61.6	62.8	12:50:48	67.9	62.8	62.8	53.2	12:46:29		63.2	
65.5	12:39:51	69.1	65.5	65.5	61.3	12:50:51	67.9	61.3	61.3	53.2	12:46:30		63.2	
65.4	12:39:54	69.1	65.4	65.4	64.6	12:50:54	67.9	64.6	64.6	53.1	12:46:31		63.1	
64.1	12:39:57	69.1	64.1	64.1	60.4	12:50:57	67.9	60.4	60.4	52.7	12:46:32		62.7	
67.7	12:40:00	69.1	67.7	67.7	57.7	12:51:00	67.9	57.7	57.7	52.8	12:46:33		62.8	
66.9	12:40:03	69.1	66.9	66.9	60	12:51:03	67.9	60	60	52.8	12:46:34		62.8	
69.8	12:40:06	69.1	69.8	69.8	65.4	12:51:06	67.9	65.4	65.4	53.1	12:46:35		63.1	
66.1	12:40:09	69.1	66.1	66.1	63.1	12:51:09	67.9	63.1	63.1	53.0	12:46:36		63.0	
65.5	12:40:12	69.1	65.5	65.5	65.6	12:51:12	67.9	65.6	65.6	52.8	12:46:37		62.8	
69.3	12:40:15	69.1	69.3	69.3	58.9	12:51:15	67.9	58.9	58.9	53.5	12:46:38		63.5	
67.5	12:40:18	69.1	67.5	67.5	58.1	12:51:18	67.9	58.1	58.1	54.0	12:46:39		64.0	
66.4	12:40:21	69.1	66.4	66.4	60.8	12:51:21	67.9	60.8	60.8	54.6	12:46:40		64.6	
69.6	12:40:24	69.1	69.6	69.6	61.6	12:51:24	67.9	61.6	61.6	55.5	12:46:41		65.5	
61.9	12:40:27	69.1	61.9	61.9	61.5	12:51:27	67.9	61.5	61.5	54.5	12:46:42		64.5	
63.2	12:40:30	69.1	63.2	63.2	63.9	12:51:30	67.9	63.9	63.9	54.0	12:46:43		64.0	
60.6	12:40:33	69.1	60.6	60.6	61.6	12:51:33	67.9	61.6	61.6	54.1	12:46:44		64.1	
56.2	12:40:36	69.1	56.2	56.2	61.6	12:51:36	67.9	61.6	61.6	54.5	12:46:45		64.5	
53.5	12:40:39	69.1	53.5	53.5	63.4	12:51:39	67.9	63.4	63.4	54.2	12:46:46		64.2	
58.3	12:40:42	69.1	58.3	58.3	64.9	12:51:42	67.9	64.9	64.9	54.2	12:46:47		64.2	
65.7	12:40:45	69.1	65.7	65.7	67.4	12:51:45	67.9	67.4	67.4	53.9	12:46:48		63.9	
72.8	12:40:48	69.1	72.8	72.8	68.8	12:51:48	67.9	68.8	68.8	53.8	12:46:49		63.8	
72.4	12:40:51	69.1	72.4	72.4	65.1	12:51:51	67.9	65.1	65.1	54.0	12:46:50		64.0	
71.6	12:40:54	69.1	71.6	71.6	66	12:51:54	67.9	66	66	53.9	12:46:51		63.9	
72.5	12:40:57	69.1	72.5	72.5	63.7	12:51:57	67.9	63.7	63.7	54.8	12:46:52		64.8	
70.4	12:41:00	69.1	70.4	70.4	64.1	12:52:00	67.9	64.1	64.1	56.6	12:46:53		66.6	
75.8	12:41:03	69.1	75.8	75.8	64.5	12:52:03	67.9	64.5	64.5	56.7	12:46:54		66.7	
69.1	12:41:06	69.1	69.1	69.1	65.2	12:52:06	67.9	65.2	65.2	57.0	12:46:55		67.0	
68.1	12:41:09	69.1	68.1	68.1	69.4	12:52:09	67.9	69.4	69.4	57.2	12:46:56		67.2	
70.8	12:41:12	69.1	70.8	70.8	73.2	12:52:12	67.9	73.2	73.2	57.8	12:46:57		67.8	
66.5	12:41:15	69.1	66.5	66.5	71.7	12:52:15	67.9	71.7	71.7	58.1	12:46:58		68.1	
63	12:41:18	69.1	63	63	72.6	12:52:18	67.9	72.6	72.6	57.5	12:46:59		67.5	
68.2	12:41:21	69.1	68.2	68.2	68.2	12:52:21	67.9	68.2	68.2	56.4	12:47:00		66.4	
65.8	12:41:24	69.1	65.8	65.8	67.8	12:52:24	67.9	67.8	67.8	55.4	12:47:01		65.4	
68.2	12:41:27	69.1	68.2	68.2	71.5	12:52:27	67.9	71.5	71.5	54.8	12:47:02		64.8	
68.6	12:41:30	69.1	68.6	68.6	67.4	12:52:30	67.9	67.4	67.4	54.7	12:47:03		64.7	
67.1	12:41:33	69.1	67.1	67.1	67.5	12:52:33	68.0	67.5	67.5	54.7	12:47:04		64.7	
63.4	12:41:36	69.1	63.4	63.4	70.6	12:52:36	68.0	70.6	70.6	54.6	12:47:05		64.6	
61.6	12:41:39	69.1	61.6	61.6	65	12:52:39	68.0	65	65	54.0	12:47:06		64.0	
59.1	12:41:42	69.1	59.1	59.1	65	12:52:42	68.0	65	65	53.7	12:47:07		63.7	
62.7	12:41:45	69.0	62.7	62.7	59.9	12:52:45	68.0	59.9	59.9	53.4	12:47:08		63.4	
64.2	12:41:48	69.0	64.2	64.2	59.3	12:52:48	68.0	59.3	59.3	53.3	12:47:09		63.3	
63.6	12:41:51	69.0	63.6	63.6	58.7	12:52:51	68.0	58.7	58.7	53.3	12:47:10		63.3	
58.6	12:41:54	69.0	58.6	58.6	64	12:52:54	68.0	64	64	53.4	12:47:11		63.4	
54.7	12:41:57	69.0	54.7	54.7	58.4	12:52:57	68.0	58.4	58.4	54.9	12:47:12		64.9	
59.7	12:42:00	69.0	59.7	59.7	56.6	12:53:00	68.0	56.6	56.6	55.6	12:47:13		65.6	
56.2	12:42:03	69.0	56.2	56.2	60.3	12:53:03	68.0	60.3	60.3	56.2	12:47:14		66.2	
54.1	12:42:06	69.0	54.1	54.1	63.3	12:53:06	68.0	63.3	63.3	56.1	12:47:15		66.1	
56.4	12:42:09	69.0	56.4	56.4	67.6	12:53:09	68.0	67.6	67.6	57.1	12:47:16		67.1	
57	12:42:12	69.0	57	57	62.2	12:53:12	68.0	62.2	62.2	58.0	12:47:17		68.0	
58.7	12:42:15	69.0	58.7	58.7	66.9	12:53:15	68.0	66.9	66.9	58.1	12:47:18		68.1	
62.8	12:42:18	69.1	62.8	62.8	61.1	12:53:18	68.0	61.1	61.1	57.5	12:47:19		67.5	
67	12:42:21	69.1	67	67	59.2	12:53:21	68.0	59.2	59.2	59.4	12:47:20		69.4	
63.4	12:42:24	69.1	63.4	63.4	60.4	12:53:24	68.0	60.4	60.4	62.0	12:47:21		72.0	
62.6	12:42:27	69.1	62.6	62.6	61.6	12:53:27	68.0	61.6	61.6	64.1	12:47:22		74.1	
63.4	12:42:30	69.1	63.4	63.4	64.2	12:53:30	68.0	64.2	64.2	65.2	12:47:23		75.2	
60.3	12:42:33	69.1	60.3	60.3	60.3	12:53:33	68.0	60.3	60.3	65.7	12:47:24		75.7	
59.6	12:42:36	69.1	59.6	59.6	61.2	12:53:36	68.0	61.2	61.2	63.8	12:47:25		73.8	
57.5	12:42:39	69.1	57.5	57.5	64	12:53:39	68.0	64	64	60.6	12:47:26		70.6	
65.8	12:42:42	69.1	65.8	65.8	64.9	12:53:42	68.0	64.9	64.9	57.8	12:47:27		67.8	
72.2	12:42:45	69.1	72.2	72.2	61.6	12:53:45	68.0	61.6	61.6	55.8	12:47:28		65.8	
71.1	12:42:48	69.1	71.1	71.1	58.7	12:53:48	68.0	58.7	58.7	54.6	12:47:29		64.6	
72.2	12:42:51	69.1	72.2	72.2	58.5	12:53:51	68.0	58.5	58.5	53.9	12:47:30		63.9	
69.4	12:42:54	69.1	69.4	69.4	60.4	12:53:54	68.0	60.4	60.4	53.5	12:47:31		63.5	
72.7	12:42:57	69.1	72.7	72.7	58.3	12:53:57	68.0	58.3	58.3	53.4	12:47:32		63.4	
73.1	12:43:00	69.1	73.1	73.1	57.8	12:54:00	68.0	57.8	57.8	53.1	12:47:33		63.1	
69	12:43:03	69.1	69	69	57.9	12:54:03	68.0	57.9	57.9	53.2	12:47:34		63.2	
68.6	12:43:06	69.1	68.6	68.6	57.7	12:54:06	68.0	57.7	57.7	52.6	12:47:35		62.6	
65.5	12:43:09	69.1	65.5	65.5	56.1	12:54:09	68.0	56.1	56.1	51.6	12:47:36		61.6	
62	12:43:12	69.1	62	62	58.4	12:54:12	68.0	58.4	58.4	51.2	12:47:37		61.2	
57.8	12:43:15	69.1	57.8	57.8	61.6	12:54:15	68.0	61.6	61.6	51.0	12:47:38		61.0	
58.4	12:43:18	69.1	58.4	58.4	69.3	12:54:18	68.0	69.3	69.3	51.1	12:47:39		61.1	
55.3	12:43:21	69.1	55.3	55.3	71	12:54:21	68.0	71	71	51.3	12:47:40		61.3	
58.5	12:43:24	69.1	58.5	58.5	73	12:54:24	68.0	73	73	51.6	12:47:41		61.6	
58.7	12:43:27	68.9	58.7	58.7	73	12:54:27	68.0	73	73	52.6	12:47:42		62.6	
57.5	12:43:30	68.8	57.5	57.5	65.8	12:54:30	68.0	65.8	65.8	53.5	12:47:43		63.5	
58	12:43:33	68.8	58	58	65.7	12:54:33	68.0	65.7	65.7	53.0	12:47:44		63.0	
59	12:43:36	68.8	59	59	73.8	12:54:36	68.0	73.8	73.8	52.9	12:47:45		62.9	
60.4	12:43:39	68.8	60.4	60.4	68.1	12:54:39	68.0	68.1	68.1	53.1	12:47:46		63.1	
59.9	12:43:42	68.8	59.9	59.9	69.9	12:54:42	68.0	69.9	69.9	52.6	12:47:47		62.6	
59.2	12:43:45	68.8	59.2	59.2	65.4	12:54:45	68.0	65.4	65.4	51.5	12:47:48		61.5	
58.1	12:43:48	68.7	58.1	58.1	67.3	12:54:48	68.0	67.3	67.3	51.4	12:47:49		61.4	
60.4	12:43:51	68.7	60.4	60.4	59.7	12:54:51	68.0	59.7	59.7	51.3	12:47:50		61.3	
62.2	12:43:54	68.7	62.2	62.2	56.8	12:54:54	68.0	56.8	56.8	51.8	12:47:51		61.8	
63.1	12:43:57	68.7	63.1	63.1	61.8	12:54:57	67.9	61.8	61.8	52.5	12:47:52		62.5	
69.7	12:44:00	68.7	69.7	69.7	65.2	12:55:00	67.9	65.2	65.2	52.8	12:47:53		62.8	
68.2	12:44:03	68.7	68.2	68.2	62.6	12:55:03	67.9	62.6	62.6	52.9	12:47:54		62.9	
65.2	12:44:06	68.7	65.2	65.2	61.9	12:55:06	67.9	61.9	61.9	53.4	12:47:55		63.4	
65.4	12:44:09	68.7	65.4	65.4	72.1	12:55:09	67.9	72.1	72.1	54.2	12:47:56		64.2	
66.5	12:44:12	68.7	66.5	66.5	68.1	12:55:12	67.9	68.1	68.1	54.6	12:47:57		64.6	
68.8	12:44:15	68.7	68.8	68.8	65.3	12:55:15	67.9	65.3	65.3	54.0	12:47:58		64.0	
68	12:44:18	68.7	68	68	66.1	12:55:18	67.9	66.1	66.1	53.8	12:47:59		63.8	
68.2	12:44:21	68.7	68.2	68.2	68.1	12:55:21	67.9	68.1	68.1	53.6	12:48:00		63.6	
63.5	12:44:24	68.7	63.5	63.5	72.2	12:55:24	67.9	72.2	72.2	52.9	12:48:01		62.9	
62.1	12:44:27	68.7	62.1	62.1	71.8	12:55:27	67.9	71.8	71.8	52.5	12:48:02		62.5	
63.3	12:44:30	68.7	63.3	63.3	67.2	12:55:30	67.9	67.2	67.2	52.9	12:48:03		62.9	
66.4	12:44:33	68.7	66.4	66.4	66.5	12:55:33	67.9	66.5	66.5	53.0	12:48:04		63.0	
64.4	12:44:36	68.7	64.4	64.4	62.2	12:55:36	67.9	62.2	62.2	53.0	12:48:05		63.0	
63.3	12:44:39	68.7	63.3	63.3	57.1	12:55:39	67.9	57.1	57.1	53.4	12:48:06		63.4	
65.5	12:44:42	68.7	65.5	65.5	56.5	12:55:42	67.9	56.5	56.5	53.6	12:48:07		63.6	
70.9	12:44:45	68.7	70.9	70.9	58	12:55:45	67.9	58	58	53.9	12:48:08		63.9	
73	12:44:48	68.7	73	73	63.7	12:55:48	67.9	63.7	63.7	53.9	12:48:09		63.9	
73.9	12:44:51	68.7	73.9	73.9	63	12:55:51	67.9	63	63	53.7	12:48:10		63.7	
73.6	12:44:54	68.7	73.6	73.6	66.1	12:55:54	67.9	66.1	66.1	53.4	12:48:11		63.4	
72	12:44:57	68.7	72	72	66	12:55:57	67.9	66	66	53.3	12:48:12		63.3	
70.3	12:45:00	68.7	70.3	70.3	62.1	12:56:00	67.9	62.1	62.1	53.0	12:48:13		63.0	
71.2	12:45:03	68.7	71.2	71.2	56	12:56:03	67.9	56	56	52.8	12:48:14		62.8	
71.6	12:45:06	68.7	71.6	71.6	58.8	12:56:06	67.9	58.8	58.8	52.9	12:48:15		62.9	
72.1	12:45:09	68.7	72.1	72.1	60.3	12:56:09	67.9	60.3	60.3	53.5	12:48:16		63.5	
66.1	12:45:12	68.7	66.1	66.1	59.4	12:56:12	68.0	59.4	59.4	54.1	12:48:17		64.1	
65.2	12:45:15	68.7	65.2	65.2	66.7	12:56:15	68.0	66.7	66.7	55.8	12:48:18		65.8	
60.5	12:45:18	68.7	60.5	60.5	69.3	12:56:18	68.0	69.3	69.3	58.7	12:48:19		68.7	
61.4	12:45:21	68.7	61.4	61.4	70.8	12:56:21	68.0	70.8	70.8	59.0	12:48:20		69.0	
62.9	12:45:24	68.7	62.9	62.9	73.3	12:56:24	68.0	73.3	73.3	58.6	12:48:21		68.6	
69	12:45:27	68.7	69	69	74	12:56:27	68.0	74	74	58.3	12:48:22		68.3	
79.4	12:45:30	68.7	79.4	79.4	74.1	12:56:30	67.9	74.1	74.1	58.5	12:48:23		68.5	
72.2	12:45:33	68.7	72.2	72.2	72.7	12:56:33	68.0	72.7	72.7	59.9	12:48:24		69.9	
70.1	12:45:36	68.6	70.1	70.1	70.4	12:56:36	68.0	70.4	70.4	61.5	12:48:25		71.5	
62.7	12:45:39	68.6	62.7	62.7	70.9	12:56:39	68.0	70.9	70.9	61.8	12:48:26		71.8	71.8
60.3	12:45:42	68.6	60.3	60.3	63.1	12:56:42	68.0	63.1	63.1	60.6	12:48:27		70.6	70.6
65.9	12:45:45	68.6	65.9	65.9	57	12:56:45	68.0	57	57	58.3	12:48:28		68.3	68.3
66.8	12:45:48	68.6	66.8	66.8	57.3	12:56:48	68.0	57.3	57.3	56.7	12:48:29		66.7	66.7
70.1	12:45:51	68.6	70.1	70.1	57.7	12:56:51	67.9	57.7	57.7	56.1	12:48:30		[illegible]	[illegible]
68.9	12:45:54	68.7	68.9	68.9	58.3	12:56:54	68.0	58.3	58.3	56.0	12:48:31		[illegible]	
67.3	12:45:57	68.7	67.3	67.3	59.8	12:56:57	68.0	59.8	59.8	55.4	12:48:32		[illegible]	

Attachment: Appendix E - Noise Report (2340 : PA16-0039 Plot Plan)

APPENDIX C

RCNM Model Construction Noise Calculations

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/19/2016
Case Description: Alessandro Apartments - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Offsite Home	Residential	60	60	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	25	0
Excavator	No	40		80.7	75	0
Grader	No	40	85		125	0
Dozer	No	40		81.7	175	0
Scraper	No	40		83.6	225	0
Scraper	No	40		83.6	275	0
Tractor	No	40	84		325	0
Tractor	No	40	84		375	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq
Excavator		86.7	82.8	N/A	N/A	N/A	N/A
Excavator		77.2	73.2	N/A	N/A	N/A	N/A
Grader		77.0	73.1	N/A	N/A	N/A	N/A
Dozer		70.8	66.8	N/A	N/A	N/A	N/A
Scraper		70.5	66.5	N/A	N/A	N/A	N/A
Scraper		68.8	64.8	N/A	N/A	N/A	N/A
Tractor		67.7	63.8	N/A	N/A	N/A	N/A
Tractor		66.5	62.5	N/A	N/A	N/A	N/A
	Total	**87**	**84**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/19/2016
Case Description: Alessandro Apartments - Building Construction

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Offsite Home	Residential	60	60	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	45	0
Gradall	No	40		83.4	95	0
Gradall	No	40		83.4	145	0
Gradall	No	40		83.4	195	0
Tractor	No	40	84		245	0
Tractor	No	40	84		295	0
Tractor	No	40	84		345	0
Generator	No	50		80.6	395	0
Welder / Torch	No	40		74	445	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		81.5	73.5	N/A	N/A	N/A	N/A
Gradall		77.8	73.8	N/A	N/A	N/A	N/A
Gradall		74.2	70.2	N/A	N/A	N/A	N/A
Gradall		71.6	67.6	N/A	N/A	N/A	N/A
Tractor		70.2	66.2	N/A	N/A	N/A	N/A
Tractor		68.6	64.6	N/A	N/A	N/A	N/A
Tractor		67.2	63.2	N/A	N/A	N/A	N/A
Generator		62.7	59.7	N/A	N/A	N/A	N/A
Welder / Torch		55.0	51.0	N/A	N/A	N/A	N/A
	Total	**82**	**79**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/19/2016
Case Description: Alessandro Apartments - Paving

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Offsite Home	Residential	60	60	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	60	0
Paver	No	50		77.2	110	0
Paver	No	50		77.2	160	0
Paver	No	50		77.2	210	0
Roller	No	20		80	260	0
Roller	No	20		80	310	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		75.6	72.6	N/A	N/A	N/A	N/A
Paver		70.4	67.4	N/A	N/A	N/A	N/A
Paver		67.1	64.1	N/A	N/A	N/A	N/A
Paver		64.8	61.7	N/A	N/A	N/A	N/A
Roller		65.7	58.7	N/A	N/A	N/A	N/A
Roller		64.2	57.2	N/A	N/A	N/A	N/A
	Total	**76**	**75**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/19/2016
Case Description: Alessandro Apartments - Painting

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Offsite Home	Residential	60	60	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	45	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		78.6	74.6	N/A	N/A	N/A	N/A
	Total	**79**	**75**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX D

FHWA Model Proposed Residential Noise Calculations

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Perris Boulevard
Building: Nearest Building to Road

Project Name: Alessandro Apartments
Job Number: 16038

NOISE MODEL INPUTS

Highway Data

Average Daily Traffic:	35,461 vehicles
Peak Hour Volume:	3,546 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	73 feet

Vehicle Mix

	Day	Evening	Night	Daily
Autos:	69.5%	12.9%	9.6%	92.0%
Medium Trucks:	1.4%	0.1%	1.5%	3.0%
Heavy Trucks:	2.4%	0.1%	2.5%	5.0%

Site Data

Barrier Height:	**4.5 feet**
Barrier Type(Wall/Berm):	Wall
Site Conditions(Hard/Soft):	Soft
Centerline (C.L.) Dist. to Barrier:	82 feet
C.L. Dist. To Observer (Backyard):	85 feet
Barrier Dist. To Observer (Backyard):	3 feet
C.L. Dist. To Observer (Structure):	88 feet
Barrier Dist. To Observer (Structure):	6 feet
Road Grade:	0.00 %
Left View:	-90 degrees
Right View:	90 degrees

Elevations

Barrier Base Elevation:	0.0 feet
Road Elevation:	0.0 feet
Noise Source Elevation above Road	
Autos:	0 feet
Med Trucks:	2.3 feet
Hvy Trucks:	8 feet
Pad Elevation:	0.0 feet
Observer Heights Above Pad Elevation	
Exterior:	5 feet
First Floor:	5.5 feet
Second Floor:	14 feet

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation Exterior	Barrier Attenuation 1st Flr	Barrier Attenuation 2nd Flr
Autos:	67.36	3.81	-2.91	-1.20	0.00	-4.5	-4.1	0
Med Trucks:	76.31	-11.06	-2.91	-1.20	0.00	-4.1	-2.9	0
Hvy Trucks:	81.16	-8.84	-2.91	-1.20	0.00	-2.5	-0.905	0

UNMITIGATED NOISE LEVELS (with topographical and existing barrier attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	64.7	63.4	57.3	65.8	66.4
Med Trucks:	61.1	41.9	34.2	43.4	49.5	49.6
Hvy Trucks:	68.2	51.2	43.4	52.6	58.8	58.8
Traffic Noise:	**71.1**	**64.9**	**63.4**	**58.7**	**66.7**	**67.2**

MITIGATED NOISE LEVELS (Backyard)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	60.2	58.9	52.8	61.3	61.9
Med Trucks:	57.0	37.8	30.1	39.3	45.4	45.5
Hvy Trucks:	65.7	48.7	40.9	50.1	56.3	56.3
Traffic Noise:	**67.8**	**60.5**	**59.0**	**54.8**	**62.6**	**63.0**

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	60.3	59.0	53.0	61.4	62.0
Med Trucks:	58.0	38.8	31.0	40.2	46.3	46.4
Hvy Trucks:	67.0	50.0	42.3	51.5	57.6	57.7
Traffic Noise:	**68.8**	**60.7**	**59.1**	**55.4**	**63.0**	**63.5**

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	64.3	63.0	57.0	65.4	66.0
Med Trucks:	60.8	41.6	33.8	43.0	49.2	49.2
Hvy Trucks:	67.8	50.9	43.1	52.3	58.4	58.5
Traffic Noise:	**70.8**	**64.5**	**63.1**	**58.4**	**66.3**	**66.8**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Alessandro Boulevard
Building: Nearest Building to Road
Project Name: Alessandro Apartments
Job Number: 16038

NOISE MODEL INPUTS

Highway Data

Average Daily Traffic:	26,672 vehicles
Peak Hour Volume:	2,667 vehicles
Vehicle Speed:	45 mph
Near/Far Lane Distance:	88 feet

Vehicle Mix

	Day	Evening	Night	Daily
Autos:	69.5%	12.9%	9.6%	92.0%
Medium Trucks:	1.4%	0.1%	1.5%	3.0%
Heavy Trucks:	2.4%	0.1%	2.5%	5.0%

Site Data

Barrier Height:	**4 feet**
Barrier Type(Wall/Berm):	Wall
Site Conditions(Hard/Soft):	Soft
Centerline (C.L.) Dist. to Barrier:	99 feet
C.L. Dist. To Observer (Backyard):	102 feet
Barrier Dist. To Observer (Backyard):	3 feet
C.L. Dist. To Observer (Structure):	105 feet
Barrier Dist. To Observer (Structure):	6 feet
Road Grade:	0.00 %
Left View:	-90 degrees
Right View:	90 degrees

Elevations

Barrier Base Elevation:	0.0 feet
Road Elevation:	0.0 feet
Noise Source Elevation above Road	
Autos:	0 feet
Med Trucks:	2.3 feet
Hvy Trucks:	8 feet
Pad Elevation:	0.0 feet
Observer Heights Above Pad Elevation	
Exterior:	5 feet
First Floor:	5.5 feet
Second Floor:	14 feet

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation Exterior	Barrier Attenuation 1st Flr	Barrier Attenuation 2nd Flr
Autos:	69.34	2.06	-4.09	-1.20	0.00	-1.22	-1.22	0
Med Trucks:	77.62	-12.81	-4.09	-1.20	0.00	-0.78	-0.74	0
Hvy Trucks:	82.14	-10.59	-4.09	-1.20	0.00	-0.5	-0.41	0

UNMITIGATED NOISE LEVELS (with topographical and existing barrier attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	63.7	62.5	56.4	64.8	65.5
Med Trucks:	59.5	40.3	32.5	41.7	47.9	47.9
Hvy Trucks:	66.3	49.3	41.5	50.7	56.9	56.9
Traffic Noise:	**69.6**	**63.9**	**62.5**	**57.6**	**65.5**	**66.1**

MITIGATED NOISE LEVELS (Backyard)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	62.5	61.2	55.2	63.6	64.2
Med Trucks:	58.7	39.5	31.8	41.0	47.1	47.2
Hvy Trucks:	65.8	48.8	41.0	50.2	56.4	56.4
Traffic Noise:	**68.8**	**62.7**	**61.3**	**56.5**	**64.4**	**65.0**

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	62.3	61.0	54.9	63.4	64.0
Med Trucks:	58.6	39.3	31.6	40.8	46.9	47.0
Hvy Trucks:	65.6	48.6	40.9	50.1	56.2	56.3
Traffic Noise:	**68.6**	**62.5**	**61.0**	**56.3**	**64.2**	**64.8**

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	63.5	62.2	56.1	64.5	65.2
Med Trucks:	59.2	40.0	32.2	41.5	47.6	47.6
Hvy Trucks:	66.0	49.0	41.2	50.4	56.6	56.6
Traffic Noise:	**69.4**	**63.6**	**62.2**	**57.3**	**65.3**	**65.8**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Perris Boulevard — Project Name: Alessandro Apartments
Building: Nearest 2nd Floor Balcony to Road — Job Number: 16038

NOISE MODEL INPUTS

Highway Data			Vehicle Mix	Day	Evening	Night	Daily
Average Daily Traffic:	35,461	vehicles					
Peak Hour Volume:	3,546	vehicles	Autos:	69.5%	12.9%	9.6%	92.0%
Vehicle Speed:	40	mph	Medium Trucks:	1.4%	0.1%	1.5%	3.0%
Near/Far Lane Distance:	73	feet	Heavy Trucks:	2.4%	0.1%	2.5%	5.0%

Site Data			Elevations		
Barrier Height:	**3.5**	**feet**	Barrier Base Elevation:	9.0	feet
Barrier Type(Wall/Berm):	Wall		Road Elevation:	0.0	feet
Site Conditions(Hard/Soft):	Soft		Noise Source Elevation above Road		
Centerline (C.L.) Dist. to Barrier:	82	feet	Autos:	0	feet
C.L. Dist. To Observer (Backyard):	85	feet	Med Trucks:	2.3	feet
Barrier Dist. To Observer (Backyard):	3	feet	Hvy Trucks:	8	feet
C.L. Dist. To Observer (Structure):	112	feet	Pad Elevation:	9.0	feet
Barrier Dist. To Observer (Structure):	30	feet	Observer Heights Above Pad Elevation		
Road Grade:	0.00	%	Exterior:	5	feet
Left View:	-45	degrees	First Floor:	5.5	feet
Right View:	90	degrees	Second Floor:	14	feet

FHWA NOISE MODEL CALCULATIONS

						Barrier Attenuation		
	REMEL	Traffic Flow	Distance	Finite Road	Grade	Exterior	1st Flr	2nd Flr
Autos:	67.36	3.81	-3.00	-2.10	0.00	-0.905	-6.4	-0.29
Med Trucks:	76.31	-11.06	-3.00	-2.10	0.00	-0.58	-5.8	-0.151
Hvy Trucks:	81.16	-8.84	-3.00	-2.10	0.00	-0.4	-4.9	0

UNMITIGATED NOISE LEVELS (with topographical and existing barrier attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	63.7	62.4	56.3	64.8	65.4
Med Trucks:	60.2	40.9	33.2	42.4	48.5	48.6
Hvy Trucks:	67.2	50.2	42.4	51.7	57.8	57.8
Traffic Noise:	**70.1**	**63.9**	**62.4**	**57.7**	**65.7**	**66.2**

MITIGATED NOISE LEVELS (Balcony)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	62.8	61.5	55.4	63.9	64.5
Med Trucks:	59.6	40.4	32.6	41.8	47.9	48.0
Hvy Trucks:	66.8	49.8	42.0	51.3	57.4	57.4
Traffic Noise:	**69.5**	**63.0**	**61.6**	**57.0**	**64.8**	**65.4**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Alessandro Boulevard | Project Name: Alessandro Apartments

Lot Number: Nearest 2nd Floor Balcony to Road | Job Number: 16038

NOISE MODEL INPUTS

Highway Data

Average Daily Traffic:	26,672	vehicles
Peak Hour Volume:	2,667	vehicles
Vehicle Speed:	45	mph
Near/Far Lane Distance:	88	feet

Vehicle Mix

	Day	Evening	Night	Daily
Autos:	69.5%	12.9%	9.6%	92.0%
Medium Trucks:	1.4%	0.1%	1.5%	3.0%
Heavy Trucks:	2.4%	0.1%	2.5%	5.0%

Site Data

Barrier Height:	**0**	**feet**
Barrier Type(Wall/Berm):	Wall	
Site Conditions(Hard/Soft):	Soft	
Centerline (C.L.) Dist. to Barrier:	99	feet
C.L. Dist. To Observer (Backyard):	102	feet
Barrier Dist. To Observer (Backyard):	3	feet
C.L. Dist. To Observer (Structure):	119	feet
Barrier Dist. To Observer (Structure):	20	feet
Road Grade:	0.00	%
Left View:	-45	degrees
Right View:	90	degrees

Elevations

Barrier Base Elevation:	9.0	feet
Road Elevation:	0.0	feet
Noise Source Elevation above Road		
Autos:	0	feet
Med Trucks:	2.3	feet
Hvy Trucks:	8	feet
Pad Elevation:	9.0	feet
Observer Heights Above Pad Elevation		
Exterior:	5	feet
First Floor:	5.5	feet
Second Floor:	14	feet

FHWA NOISE MODEL CALCULATIONS

						Barrier Attenuation		
	REMEL	Traffic Flow	Distance	Finite Road	Grade	Exterior	1st Flr	2nd Flr
Autos:	69.34	2.06	-4.15	-2.10	0.00	0	-0.47	0
Med Trucks:	77.62	-12.81	-4.15	-2.10	0.00	0	-0.3	0
Hvy Trucks:	82.14	-10.59	-4.15	-2.10	0.00	0	-0.158	0

UNMITIGATED NOISE LEVELS (with topographical and existing barrier attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	62.8	61.5	55.4	63.9	64.5
Med Trucks:	58.6	39.4	31.6	40.8	46.9	47.0
Hvy Trucks:	65.3	48.3	40.5	49.7	55.9	55.9
Traffic Noise:	**68.7**	**63.0**	**61.5**	**56.6**	**64.6**	**65.1**

MITIGATED NOISE LEVELS (Balcony)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	62.8	61.5	55.4	63.9	64.5
Med Trucks:	58.6	39.4	31.6	40.8	46.9	47.0
Hvy Trucks:	65.3	48.3	40.5	49.7	55.9	55.9
Traffic Noise:	**68.7**	**63.0**	**61.5**	**56.6**	**64.6**	**65.1**

APPENDIX E

FHWA Model Traffic Noise Contour Calculations

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterial)				Vehicle Mix 3 (SR-60)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	61.95%	12.70%	14.85%	89.50%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	2.68%	0.48%	1.35%	4.52%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	3.28%	0.31%	2.39%	5.99%

Road Name: Perris Boulevard **Segment: North of Cottonwood Avenue**
Average Daily Traffic: 30090 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

	NOISE PARAMETERS AT 190 FEET FROM CENTERLINE (Equiv. Lane Dist: 186.46 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.10	-8.68	-1.20	60.58	58.21	56.91	50.86	59.29	59.92	70 dBA:	**42**	**46**
Medium Trucks	76.31	-11.77	-8.68	-1.20	54.66	35.46	27.67	36.88	43.04	43.07	65 dBA:	**91**	**98**
Heavy Trucks	81.16	-9.55	-8.68	-1.20	61.73	44.74	36.96	46.17	52.32	52.36	60 dBA:	**195**	**211**
				Total:	**64.66**	**58.42**	**56.96**	**52.26**	**60.17**	**60.70**	55 dBA:	**420**	**456**

Road Name: Perris Boulevard **Segment: North of Bay Avenue**
Average Daily Traffic: 27910 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

	NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.77	-1.86	-1.20	67.07	64.69	63.40	57.35	65.78	66.41	70 dBA:	**45**	**49**
Medium Trucks	76.31	-12.10	-1.86	-1.20	61.15	41.94	34.16	43.37	49.52	49.56	65 dBA:	**97**	**105**
Heavy Trucks	81.16	-9.88	-1.86	-1.20	68.22	51.23	43.45	52.65	58.81	58.84	60 dBA:	**208**	**226**
				Total:	**71.15**	**64.91**	**63.45**	**58.74**	**66.66**	**67.18**	55 dBA:	**449**	**487**

Road Name: Perris Boulevard **Segment: North of Alessandro Boulevard**
Average Daily Traffic: 27720 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

	NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.74	-1.86	-1.20	67.04	64.66	63.37	57.32	65.75	66.38	70 dBA:	**45**	**48**
Medium Trucks	76.31	-12.13	-1.86	-1.20	61.12	41.91	34.13	43.34	49.49	49.53	65 dBA:	**96**	**104**
Heavy Trucks	81.16	-9.91	-1.86	-1.20	68.19	51.20	43.42	52.62	58.78	58.81	60 dBA:	**207**	**225**
				Total:	**71.12**	**64.88**	**63.42**	**58.71**	**66.63**	**67.15**	55 dBA:	**447**	**485**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

Road Name: **Perris Boulevard** — **Segment:** **South of Alessandro Boulevard**
Average Daily Traffic: 29160 Vehicles — Vehicle Speed: 40 MPH — Vehicle Mix: 2 — Roadway Classification: Divided Arterial - 6 Lane

NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.96	-1.86	-1.20	67.26	64.88	63.59	57.54	65.97	66.60	70 dBA:	**46**	**50**
Medium Trucks	76.31	-11.91	-1.86	-1.20	61.34	42.13	34.35	43.56	49.71	49.75	65 dBA:	**100**	**108**
Heavy Trucks	81.16	-9.69	-1.86	-1.20	68.41	51.42	43.64	52.84	59.00	59.03	60 dBA:	**215**	**233**
				Total:	**71.34**	**65.10**	**63.64**	**58.93**	**66.85**	**67.37**	55 dBA:	**462**	**501**

Road Name: **Apple Blossom Lane** — **Segment:** **South of Alessandro Boulevard**
Average Daily Traffic: 1260 Vehicles — Vehicle Speed: 25 MPH — Vehicle Mix: 1 — Roadway Classification: Local

NOISE PARAMETERS AT 85 FEET FROM CENTERLINE (Equiv. Lane Dist: 84.71 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-8.39	-3.54	-1.20	46.31	44.18	42.87	36.86	45.28	45.91	70 dBA:	**2**	**2**
Medium Trucks	71.09	-25.63	-3.54	-1.20	40.72	19.47	25.49	7.19	20.34	23.09	65 dBA:	**4**	**5**
Heavy Trucks	78.74	-29.59	-3.54	-1.20	44.41	19.06	15.66	20.31	26.51	26.61	60 dBA:	**9**	**10**
				Total:	**49.15**	**44.21**	**42.96**	**36.96**	**45.35**	**45.98**	55 dBA:	**19**	**21**

Road Name: **Alessandro Boulevard** — **Segment:** **West of Indian Street**
Average Daily Traffic: 26800 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 2 — Roadway Classification: Divided Major Arterial

NOISE PARAMETERS AT 90 FEET FROM CENTERLINE (Equiv. Lane Dist: 78.51 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.08	-3.04	-1.20	67.18	64.81	63.52	57.46	65.90	66.53	70 dBA:	**54**	**58**
Medium Trucks	77.62	-12.78	-3.04	-1.20	60.59	41.39	33.60	42.81	48.97	49.00	65 dBA:	**115**	**125**
Heavy Trucks	82.14	-10.57	-3.04	-1.20	67.33	50.34	42.56	51.77	57.92	57.96	60 dBA:	**248**	**270**
				Total:	**70.71**	**64.98**	**63.56**	**58.62**	**66.61**	**67.16**	55 dBA:	**535**	**582**

Road Name: **Alessandro Boulevard** — **Segment:** **West of Perris Boulevard**
Average Daily Traffic: 26820 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 2 — Roadway Classification: Divided Major Arterial

NOISE PARAMETERS AT 90 FEET FROM CENTERLINE (Equiv. Lane Dist: 78.51 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.08	-3.04	-1.20	67.19	64.81	63.52	57.47	65.90	66.53	70 dBA:	**54**	**58**
Medium Trucks	77.62	-12.78	-3.04	-1.20	60.60	41.39	33.61	42.82	48.97	49.00	65 dBA:	**115**	**125**
Heavy Trucks	82.14	-10.56	-3.04	-1.20	67.34	50.35	42.56	51.77	57.93	57.96	60 dBA:	**249**	**270**
				Total:	**70.72**	**64.99**	**63.56**	**58.62**	**66.62**	**67.16**	55 dBA:	**535**	**582**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

Road Name: Alessandro Boulevard **Segment: East of Perris Boulevard**

Average Daily Traffic: 21560 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Divided Major Arterial

	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 84.2 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	1.14	-3.50	-1.20	65.78	63.41	62.12	56.06	64.50	65.13	70 dBA:	**46**	**50**
Medium Trucks	77.62	-13.73	-3.50	-1.20	59.19	39.99	32.20	41.41	47.57	47.60	65 dBA:	**98**	**107**
Heavy Trucks	82.14	-11.51	-3.50	-1.20	65.93	48.94	41.16	50.37	56.52	56.56	60 dBA:	**211**	**230**
				Total:	**69.31**	**63.58**	**62.16**	**57.22**	**65.21**	**65.76**	55 dBA:	**456**	**495**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Local) Day	Evening	Night	Daily	Vehicle Mix 2 (Arterial) Day	Evening	Night	Daily	Vehicle Mix 3 (SR-60) Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	61.95%	12.70%	14.85%	89.50%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	2.68%	0.48%	1.35%	4.52%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	3.28%	0.31%	2.39%	5.99%

Road Name: Perris Boulevard **Segment: North of Cottonwood Avenue**
Average Daily Traffic: 30628 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

NOISE PARAMETERS AT 190 FEET FROM CENTERLINE (Equiv. Lane Dist: 186.46 ft)

	Noise Adjustments				**Unmitigated Noise Levels**						**Centerline Distance to Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.17	-8.68	-1.20	60.66	58.28	56.99	50.94	59.37	60.00	70 dBA:	**43**	**46**
Medium Trucks	76.31	-11.69	-8.68	-1.20	54.74	35.53	27.75	36.96	43.11	43.15	65 dBA:	**92**	**99**
Heavy Trucks	81.16	-9.48	-8.68	-1.20	61.81	44.82	37.04	46.24	52.40	52.43	60 dBA:	**197**	**214**
				Total:	**64.74**	**58.50**	**57.04**	**52.33**	**60.25**	**60.77**	55 dBA:	**425**	**461**

Road Name: Perris Boulevard **Segment: North of Bay Avenue**
Average Daily Traffic: 28448 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)

	Noise Adjustments				**Unmitigated Noise Levels**						**Centerline Distance to Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.85	-1.86	-1.20	67.15	64.78	63.48	57.43	65.86	66.49	70 dBA:	**45**	**49**
Medium Trucks	76.31	-12.01	-1.86	-1.20	61.23	42.03	34.24	43.45	49.61	49.64	65 dBA:	**98**	**106**
Heavy Trucks	81.16	-9.80	-1.86	-1.20	68.30	51.31	43.53	52.74	58.89	58.92	60 dBA:	**211**	**229**
				Total:	**71.23**	**64.99**	**63.53**	**58.83**	**66.74**	**67.27**	55 dBA:	**455**	**493**

Road Name: Perris Boulevard **Segment: North of Alessandro Boulevard**
Average Daily Traffic: 28258 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)

	Noise Adjustments				**Unmitigated Noise Levels**						**Centerline Distance to Noise Contour (in feet)**		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	2.82	-1.86	-1.20	67.12	64.75	63.45	57.40	65.83	66.46	70 dBA:	**45**	**49**
Medium Trucks	76.31	-12.04	-1.86	-1.20	61.21	42.00	34.22	43.42	49.58	49.61	65 dBA:	**98**	**106**
Heavy Trucks	81.16	-9.82	-1.86	-1.20	68.27	51.28	43.50	52.71	58.86	58.90	60 dBA:	**210**	**228**
				Total:	**71.20**	**64.96**	**63.50**	**58.80**	**66.71**	**67.24**	55 dBA:	**453**	**491**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

Road Name: Perris Boulevard — **Segment: South of Alessandro Boulevard**

Average Daily Traffic: 29921 Vehicles — Vehicle Speed: 40 MPH — Vehicle Mix: 2 — Roadway Classification: Divided Arterial - 6 Lane

NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.07	-1.86	-1.20	67.37	65.00	63.70	57.65	66.08	66.71	70 dBA:	**47**	**51**
Medium Trucks	76.31	-11.80	-1.86	-1.20	61.45	42.25	34.46	43.67	49.83	49.86	65 dBA:	**101**	**110**
Heavy Trucks	81.16	-9.58	-1.86	-1.20	68.52	51.53	43.75	52.96	59.11	59.14	60 dBA:	**218**	**237**
				Total:	**71.45**	**65.21**	**63.75**	**59.04**	**66.96**	**67.49**	55 dBA:	**470**	**510**

Road Name: Apple Blossom Lane — **Segment: South of Alessandro Boulevard**

Average Daily Traffic: 1260 Vehicles — Vehicle Speed: 25 MPH — Vehicle Mix: 1 — Roadway Classification: Local

NOISE PARAMETERS AT 85 FEET FROM CENTERLINE (Equiv. Lane Dist: 84.71 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-8.39	-3.54	-1.20	46.31	44.18	42.87	36.86	45.28	45.91	70 dBA:	**2**	**2**
Medium Trucks	71.09	-25.63	-3.54	-1.20	40.72	19.47	25.49	7.19	20.34	23.09	65 dBA:	**4**	**5**
Heavy Trucks	78.74	-29.59	-3.54	-1.20	44.41	19.06	15.66	20.31	26.51	26.61	60 dBA:	**9**	**10**
				Total:	**49.15**	**44.21**	**42.96**	**36.96**	**45.35**	**45.98**	55 dBA:	**19**	**21**

Road Name: Alessandro Boulevard — **Segment: West of Indian Street**

Average Daily Traffic: 27338 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 2 — Roadway Classification: Divided Major Arterial

NOISE PARAMETERS AT 90 FEET FROM CENTERLINE (Equiv. Lane Dist: 78.51 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.17	-3.04	-1.20	67.27	64.90	63.60	57.55	65.98	66.61	70 dBA:	**54**	**59**
Medium Trucks	77.62	-12.70	-3.04	-1.20	60.68	41.47	33.69	42.90	49.05	49.09	65 dBA:	**117**	**127**
Heavy Trucks	82.14	-10.48	-3.04	-1.20	67.42	50.43	42.65	51.86	58.01	58.04	60 dBA:	**252**	**274**
				Total:	**70.80**	**65.07**	**63.64**	**58.70**	**66.70**	**67.24**	55 dBA:	**542**	**590**

Road Name: Alessandro Boulevard — **Segment: West of Perris Boulevard**

Average Daily Traffic: 27537 Vehicles — Vehicle Speed: 45 MPH — Vehicle Mix: 2 — Roadway Classification: Divided Major Arterial

NOISE PARAMETERS AT 90 FEET FROM CENTERLINE (Equiv. Lane Dist: 78.51 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.20	-3.04	-1.20	67.30	64.93	63.64	57.58	66.01	66.64	70 dBA:	**54**	**59**
Medium Trucks	77.62	-12.67	-3.04	-1.20	60.71	41.50	33.72	42.93	49.09	49.12	65 dBA:	**117**	**128**
Heavy Trucks	82.14	-10.45	-3.04	-1.20	67.45	50.46	42.68	51.89	58.04	58.08	60 dBA:	**253**	**275**
				Total:	**70.83**	**65.10**	**63.68**	**58.73**	**66.73**	**67.28**	55 dBA:	**545**	**592**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS **Project: Alessandro Apartments**
Site Conditions: Soft

Road Name: Alessandro Boulevard **Segment: East of Perris Boulevard**
Average Daily Traffic: 22592 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Divided Major Arterial

	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 84.2 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	1.34	-3.50	-1.20	65.99	63.61	62.32	56.27	64.70	65.33	70 dBA:	**47**	**51**
Medium Trucks	77.62	-13.53	-3.50	-1.20	59.40	40.19	32.41	41.62	47.77	47.80	65 dBA:	**101**	**110**
Heavy Trucks	82.14	-11.31	-3.50	-1.20	66.14	49.15	41.36	50.57	56.73	56.76	60 dBA:	**218**	**237**
				Total:	**69.52**	**63.79**	**62.36**	**57.42**	**65.42**	**65.96**	55 dBA:	**470**	**511**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2021 WITHOUT PROJECT CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterial)				Vehicle Mix 3 (SR-60)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	61.95%	12.70%	14.85%	89.50%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	2.68%	0.48%	1.35%	4.52%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	3.28%	0.31%	2.39%	5.99%

Road Name: Perris Boulevard **Segment: North of Cottonwood Avenue**
Average Daily Traffic: 34560 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

	NOISE PARAMETERS AT 190 FEET FROM CENTERLINE				(Equiv. Lane Dist: 186.46 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.70	-8.68	-1.20	61.18	58.81	57.51	51.46	59.89	60.52	70 dBA:	**46**	**50**
Medium Trucks	76.31	-11.17	-8.68	-1.20	55.27	36.06	28.28	37.48	43.64	43.67	65 dBA:	**99**	**108**
Heavy Trucks	81.16	-8.95	-8.68	-1.20	62.33	45.34	37.56	46.77	52.92	52.96	60 dBA:	**214**	**232**
				Total:	**65.26**	**59.02**	**57.56**	**52.86**	**60.77**	**61.30**	55 dBA:	**461**	**500**

Road Name: Perris Boulevard **Segment: North of Bay Avenue**
Average Daily Traffic: 32650 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

	NOISE PARAMETERS AT 75 FEET FROM CENTERLINE				(Equiv. Lane Dist: 65.52 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.45	-1.86	-1.20	67.75	65.37	64.08	58.03	66.46	67.09	70 dBA:	**50**	**54**
Medium Trucks	76.31	-11.42	-1.86	-1.20	61.83	42.62	34.84	44.05	50.21	50.24	65 dBA:	**107**	**116**
Heavy Trucks	81.16	-9.20	-1.86	-1.20	68.90	51.91	44.13	53.33	59.49	59.52	60 dBA:	**231**	**251**
				Total:	**71.83**	**65.59**	**64.13**	**59.42**	**67.34**	**67.87**	55 dBA:	**498**	**540**

Road Name: Perris Boulevard **Segment: North of Alessandro Boulevard**
Average Daily Traffic: 32440 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

	NOISE PARAMETERS AT 75 FEET FROM CENTERLINE				(Equiv. Lane Dist: 65.52 ft)						**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.42	-1.86	-1.20	67.72	65.35	64.05	58.00	66.43	67.06	70 dBA:	**50**	**54**
Medium Trucks	76.31	-11.44	-1.86	-1.20	61.80	42.60	34.81	44.02	50.18	50.21	65 dBA:	**107**	**116**
Heavy Trucks	81.16	-9.23	-1.86	-1.20	68.87	51.88	44.10	53.31	59.46	59.49	60 dBA:	**230**	**250**
				Total:	**71.80**	**65.56**	**64.10**	**59.40**	**67.31**	**67.84**	55 dBA:	**496**	**538**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2021 WITHOUT PROJECT CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

Road Name: Perris Boulevard | **Segment: South of Alessandro Boulevard**
Average Daily Traffic: 34700 Vehicles | Vehicle Speed: 40 MPH | Vehicle Mix: 2 | Roadway Classification: Divided Arterial - 6 Lane

NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.72	-1.86	-1.20	68.01	65.64	64.35	58.29	66.72	67.35	70 dBA:	**52**	**56**
Medium Trucks	76.31	-11.15	-1.86	-1.20	62.10	42.89	35.11	44.32	50.47	50.50	65 dBA:	**112**	**121**
Heavy Trucks	81.16	-8.93	-1.86	-1.20	69.16	52.17	44.39	53.60	59.75	59.79	60 dBA:	**241**	**261**
				Total:	**72.09**	**65.85**	**64.39**	**59.69**	**67.60**	**68.13**	55 dBA:	**519**	**563**

Road Name: Apple Blossom Lane | **Segment: South of Alessandro Boulevard**
Average Daily Traffic: 1390 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

NOISE PARAMETERS AT 85 FEET FROM CENTERLINE (Equiv. Lane Dist: 84.71 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-7.97	-3.54	-1.20	46.73	44.61	43.30	37.29	45.71	46.33	70 dBA:	**2**	**2**
Medium Trucks	71.09	-25.21	-3.54	-1.20	41.14	19.89	25.91	7.62	20.76	23.52	65 dBA:	**4**	**5**
Heavy Trucks	78.74	-29.16	-3.54	-1.20	44.84	19.49	16.09	20.74	26.94	27.03	60 dBA:	**10**	**11**
				Total:	**49.57**	**44.64**	**43.38**	**37.39**	**45.78**	**46.41**	55 dBA:	**21**	**23**

Road Name: Alessandro Boulevard | **Segment: West of Indian Street**
Average Daily Traffic: 30890 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Divided Major Arterial

NOISE PARAMETERS AT 90 FEET FROM CENTERLINE (Equiv. Lane Dist: 78.51 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.70	-3.04	-1.20	67.80	65.43	64.14	58.08	66.51	67.14	70 dBA:	**59**	**64**
Medium Trucks	77.62	-12.17	-3.04	-1.20	61.21	42.00	34.22	43.43	49.58	49.62	65 dBA:	**127**	**138**
Heavy Trucks	82.14	-9.95	-3.04	-1.20	67.95	50.96	43.18	52.39	58.54	58.57	60 dBA:	**273**	**297**
				Total:	**71.33**	**65.60**	**64.17**	**59.23**	**67.23**	**67.78**	55 dBA:	**588**	**640**

Road Name: Alessandro Boulevard | **Segment: West of Perris Boulevard**
Average Daily Traffic: 30920 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Divided Major Arterial

NOISE PARAMETERS AT 90 FEET FROM CENTERLINE (Equiv. Lane Dist: 78.51 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.70	-3.04	-1.20	67.80	65.43	64.14	58.08	66.52	67.15	70 dBA:	**59**	**64**
Medium Trucks	77.62	-12.16	-3.04	-1.20	61.22	42.01	34.23	43.43	49.59	49.62	65 dBA:	**127**	**138**
Heavy Trucks	82.14	-9.95	-3.04	-1.20	67.95	50.96	43.18	52.39	58.54	58.58	60 dBA:	**273**	**297**
				Total:	**71.33**	**65.60**	**64.18**	**59.24**	**67.23**	**67.78**	55 dBA:	**589**	**640**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2021 WITHOUT PROJECT CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

Road Name: Alessandro Boulevard **Segment: East of Perris Boulevard**

Average Daily Traffic: 25640 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Divided Major Arterial

	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 84.2 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	1.89	-3.50	-1.20	66.54	64.16	62.87	56.82	65.25	65.88	70 dBA:	**51**	**56**
Medium Trucks	77.62	-12.98	-3.50	-1.20	59.95	40.74	32.96	42.17	48.32	48.35	65 dBA:	**110**	**120**
Heavy Trucks	82.14	-10.76	-3.50	-1.20	66.68	49.70	41.91	51.12	57.28	57.31	60 dBA:	**237**	**258**
				Total:	**70.07**	**64.34**	**62.91**	**57.97**	**65.97**	**66.51**	55 dBA:	**511**	**556**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2021 WITH PROJECT CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterial)				Vehicle Mix 3 (SR-60)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	61.95%	12.70%	14.85%	89.50%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	2.68%	0.48%	1.35%	4.52%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	3.28%	0.31%	2.39%	5.99%

Road Name: Perris Boulevard **Segment: North of Cottonwood Avenue**
Average Daily Traffic: 35098 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

	NOISE PARAMETERS AT 190 FEET FROM CENTERLINE (Equiv. Lane Dist: 186.46 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.76	-8.68	-1.20	61.25	58.88	57.58	51.53	59.96	60.59	70 dBA:	**47**	**50**
Medium Trucks	76.31	-11.10	-8.68	-1.20	55.33	36.12	28.34	37.55	43.71	43.74	65 dBA:	**100**	**109**
Heavy Trucks	81.16	-8.88	-8.68	-1.20	62.40	45.41	37.63	46.84	52.99	53.02	60 dBA:	**216**	**234**
				Total:	**65.33**	**59.09**	**57.63**	**52.92**	**60.84**	**61.37**	55 dBA:	**466**	**505**

Road Name: Perris Boulevard **Segment: North of Bay Avenue**
Average Daily Traffic: 33188 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

	NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.52	-1.86	-1.20	67.82	65.45	64.15	58.10	66.53	67.16	70 dBA:	**50**	**55**
Medium Trucks	76.31	-11.34	-1.86	-1.20	61.90	42.70	34.91	44.12	50.28	50.31	65 dBA:	**109**	**118**
Heavy Trucks	81.16	-9.13	-1.86	-1.20	68.97	51.98	44.20	53.41	59.56	59.59	60 dBA:	**234**	**254**
				Total:	**71.90**	**65.66**	**64.20**	**59.49**	**67.41**	**67.94**	55 dBA:	**504**	**546**

Road Name: Perris Boulevard **Segment: North of Alessandro Boulevard**
Average Daily Traffic: 32978 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Divided Arterial - 6 Lane

	NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.49	-1.86	-1.20	67.79	65.42	64.12	58.07	66.50	67.13	70 dBA:	**50**	**54**
Medium Trucks	76.31	-11.37	-1.86	-1.20	61.88	42.67	34.89	44.09	50.25	50.28	65 dBA:	**108**	**117**
Heavy Trucks	81.16	-9.15	-1.86	-1.20	68.94	51.95	44.17	53.38	59.53	59.57	60 dBA:	**233**	**253**
				Total:	**71.87**	**65.63**	**64.17**	**59.47**	**67.38**	**67.91**	55 dBA:	**502**	**544**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2021 WITH PROJECT CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

Road Name: Perris Boulevard | **Segment: South of Alessandro Boulevard**
Average Daily Traffic: 35461 Vehicles | Vehicle Speed: 40 MPH | Vehicle Mix: 2 | Roadway Classification: Divided Arterial - 6 Lane

NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 65.52 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	67.36	3.81	-1.86	-1.20	68.10	65.73	64.44	58.39	66.82	67.45	70 dBA:	**53**	**57**
Medium Trucks	76.31	-11.06	-1.86	-1.20	62.19	42.98	35.20	44.41	50.56	50.60	65 dBA:	**113**	**123**
Heavy Trucks	81.16	-8.84	-1.86	-1.20	69.26	52.27	44.49	53.69	59.85	59.88	60 dBA:	**244**	**265**
				Total:	**72.19**	**65.95**	**64.49**	**59.78**	**67.70**	**68.22**	55 dBA:	**527**	**571**

Road Name: Apple Blossom Lane | **Segment: South of Alessandro Boulevard**
Average Daily Traffic: 1390 Vehicles | Vehicle Speed: 25 MPH | Vehicle Mix: 1 | Roadway Classification: Local

NOISE PARAMETERS AT 85 FEET FROM CENTERLINE (Equiv. Lane Dist: 84.71 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	59.44	-7.97	-3.54	-1.20	46.73	44.61	43.30	37.29	45.71	46.33	70 dBA:	**2**	**2**
Medium Trucks	71.09	-25.21	-3.54	-1.20	41.14	19.89	25.91	7.62	20.76	23.52	65 dBA:	**4**	**5**
Heavy Trucks	78.74	-29.16	-3.54	-1.20	44.84	19.49	16.09	20.74	26.94	27.03	60 dBA:	**10**	**11**
				Total:	**49.57**	**44.64**	**43.38**	**37.39**	**45.78**	**46.41**	55 dBA:	**21**	**23**

Road Name: Alessandro Boulevard | **Segment: West of Indian Street**
Average Daily Traffic: 31428 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Divided Major Arterial

NOISE PARAMETERS AT 90 FEET FROM CENTERLINE (Equiv. Lane Dist: 78.51 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.77	-3.04	-1.20	67.88	65.50	64.21	58.16	66.59	67.22	70 dBA:	**60**	**65**
Medium Trucks	77.62	-12.09	-3.04	-1.20	61.29	42.08	34.30	43.50	49.66	49.69	65 dBA:	**128**	**139**
Heavy Trucks	82.14	-9.87	-3.04	-1.20	68.02	51.03	43.25	52.46	58.62	58.65	60 dBA:	**276**	**300**
				Total:	**71.41**	**65.67**	**64.25**	**59.31**	**67.31**	**67.85**	55 dBA:	**595**	**647**

Road Name: Alessandro Boulevard | **Segment: West of Perris Boulevard**
Average Daily Traffic: 31637 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Divided Major Arterial

NOISE PARAMETERS AT 90 FEET FROM CENTERLINE (Equiv. Lane Dist: 78.51 ft)

	Noise Adjustments				Unmitigated Noise Levels						Centerline Distance to Noise Contour (in feet)		
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.80	-3.04	-1.20	67.90	65.53	64.24	58.18	66.62	67.25	70 dBA:	**60**	**65**
Medium Trucks	77.62	-12.06	-3.04	-1.20	61.32	42.11	34.33	43.53	49.69	49.72	65 dBA:	**129**	**140**
Heavy Trucks	82.14	-9.85	-3.04	-1.20	68.05	51.06	43.28	52.49	58.64	58.68	60 dBA:	**277**	**302**
				Total:	**71.43**	**65.70**	**64.28**	**59.34**	**67.33**	**67.88**	55 dBA:	**598**	**650**

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: YEAR 2021 WITH PROJECT CONDITIONS

Project: Alessandro Apartments
Site Conditions: Soft

Road Name: Alessandro Boulevard **Segment: East of Perris Boulevard**

Average Daily Traffic: 26672 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Divided Major Arterial

	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 84.2 ft)										**Centerline Distance to Noise Contour (in feet)**		
	Noise Adjustments				**Unmitigated Noise Levels**								
Vehicle Type	REMEL	Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		Ldn	CNEL
Automobiles	69.34	2.06	-3.50	-1.20	66.71	64.34	63.04	56.99	65.42	66.05	70 dBA:	**53**	**57**
Medium Trucks	77.62	-12.81	-3.50	-1.20	60.12	40.91	33.13	42.34	48.49	48.53	65 dBA:	**113**	**123**
Heavy Trucks	82.14	-10.59	-3.50	-1.20	66.86	49.87	42.08	51.29	57.45	57.48	60 dBA:	**244**	**265**
				Total:	**70.24**	**64.51**	**63.08**	**58.14**	**66.14**	**66.68**	55 dBA:	**525**	**571**

Appendix F: Preliminary Geotechnical Investigation

ALTA CALIFORNIA
GEOTECHNICAL INC.

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Corona, CA 92880
www.altageotechnical.com

LATCO SC, INC.
940 Calle Negocio, Suite 200
San Clemente, California 92673

June 27, 2016
Project Number 1-0192

Attention: Mr. Robert Lattanzio

Subject: **PRELIMINARY GEOTECHNICAL INVESTIGATION**
Alessandro Apartment Project, Southeast Corner
Alessandro Boulevard and Perris Boulevard
City of Moreno Valley, California

References: See Appendix A

Dear Mr. Lattanzio:

Presented herein is Alta California Geotechnical, Inc.'s (Alta) preliminary geotechnical investigation for the proposed Alessandro Apartment Project, located in the City of Moreno Valley, California. The conclusions and recommendations presented in this report are based on Alta's recent subsurface investigation, laboratory testing, review of the 40-scale preliminary grading plan, prepared by Civil Landworks (Plates 1 and 2), and a review of the referenced reports.

Alta's review of the data and grading plan indicates that the proposed development is feasible, from a geotechnical standpoint, provided that the recommendations presented in this report are incorporated into the grading and improvement plans and are implemented during site development. Included in this report are:

- Discussion of the site geotechnical conditions;
- Unsuitable soil removal and grading recommendations;
- Geotechnical site construction recommendations;
- Foundation design parameters.

If you have any questions or should you require any additional information, please contact the undersigned at (951) 509-7090. Alta appreciates the opportunity to provide geotechnical consulting services for your project.

Sincerely,
Alta California Geotechnical, Inc.

By: ______________________
MINA TAWFIK
Civil Engineer Associate

Reviewed by:

SCOTT A. GRAY/RGE 2857
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STATE OF CALIFORNIA

Distribution: (3) Addressee

MT: SAG: TJM: skt-1-0192, June 27, 2015 (Prelim Geo Investigation, Alessandro and Perris, Moreno Valley)

Table of Contents

1.0 INTRODUCTION

This report presents Alta California Geotechnical, Inc.'s (Alta's) findings, conclusions, and geotechnical recommendations for the construction of the proposed Alessandro Apartment Project, located in the City of Moreno Valley, California (Plates 1 and 2).

1.1 Purpose

The purpose of this report is to examine the existing geotechnical conditions and evaluate their impact on the proposed development that is depicted on the enclosed preliminary grading plan (Plates 1 and 2). This report is intended to be suitable for submittal to governing agencies and for use as a contractor bid document.

1.2 Scope of Work

Alta's *Scope of Work* for this geotechnical investigation includes the following:

- Reviewing the referenced reports and air photos (Appendix A);
- Site geologic mapping (Plates 1 and 2);
- Excavating, logging, and sampling thirteen (13) hollow-stem auger borings to a maximum of 51.5 feet below the existing surface (Appendix B);
- Excavating, logging, and sampling twelve (12) backhoe trenches to a maximum of 12.5 feet below the existing surface (Appendix B);
- Conducting laboratory testing on samples obtained during our investigation (Appendix C);
- Evaluating geologic and laboratory test data to develop recommendations for site grading, foundations, and utilities;
- Preparing this report and accompanying exhibits.

1.3 Report Limitations

The conclusions and recommendations in this report are based on the information generated during this investigation, our review of the referenced reports, and our review of the site plan. The materials immediately adjacent to or beneath those observed may have different characteristics than those observed and no representations are made as to the quality or extent of materials not observed.

2.0 PROJECT DESCRIPTION

2.1 Site Location and Existing Conditions

The site is located southeast of the intersection of Alessandro Boulevard and Perris Boulevard, in the City of Moreno Valley, Riverside County, California. The property is bounded by Alessandro Boulevard to the north, Apple Blossom Lane and existing single-family residential structures to the east, Brodiaea Avenue to the south and Perris Boulevard to the west.

The relatively flat property comprises approximately 19.5-acres of vacant land which was dry farmed in the past. The property is covered with a light growth of grass and weeds. The oldest historic aerial photo reviewed for the site dates to 1966 (Historic Aerials, 2016), and shows the site has been vacant since that time.

2.2 Proposed Development

The proposed development includes the construction of 44 apartment buildings, a community building and pool, parking lots, and an outdoor space. Alta anticipates that conventional cut-and-fill grading techniques will be used to develop the site for the support of wood-frame and stucco construction with shallow foundations and reinforced concrete slabs-on-grade, and associated improvements. No significant height slopes are proposed for the project. Proposed cuts and fills are less than 5 feet in depth.

3.0 SITE INVESTIGATION

3.1 Subsurface Investigation

Alta conducted a subsurface investigation of the site in June of 2016. The investigation consisted of excavating twelve (12) backhoe test pits, ranging in depth from 9.5 to 12.5 feet below the existing ground surface, and drilling, logging, and selective sampling of thirteen (13) hollow-stem auger borings, ranging in depth from 10 to 51.5 feet below the existing ground surface. The installation of four (4) ten-foot deep wells for infiltration testing was also accomplished. The locations of the test pits, borings, and infiltration wells are shown on the attached Plates 1 and 2, and the logs are presented in Appendix B of this report.

Laboratory testing was performed on bulk and ring samples obtained during the field investigation. A brief description of laboratory testing procedures and the test results are presented in Appendix C.

4.0 GEOLOGIC CONDITIONS

4.1 Geologic and Geomorphic Setting

Regionally, the site is located in the Peninsular Ranges geomorphic province, which characterizes the southwest portion of southern California. The Peninsular Ranges province is composed of plutonic and metamorphic rock, with lesser amounts of Tertiary volcanic and sedimentary rock, and Quaternary drainage in-fills and sedimentary veneers. The proposed project is located in the Riverside sub-block (Jennings and Bryant, 2010), which is bounded by the Elsinore fault zone to the west and by the San Jacinto fault zone to the east.

4.2 Stratigraphy

Based on a review of published geologic maps, the site is underlain early Pleistocene age "very old alluvial fan deposits," map symbol Qvof (Morton and

Matti, 2001). The site is covered by a thin veneer of tilled topsoil, which is underlain by very old alluvial fan deposits. The geologic units are briefly described below. Their distribution is shown on enclosed Plates 1 and 2.

4.2.1 Topsoil (no map symbol)

The upper foot of soil onsite has been tilled. The soil is composed of fine to coarse grained silty sand with a reddish brown color, in a dry, loose condition.

4.2.2 Very Old Alluvial Fan Deposits (map symbol Qvof)

Early Pleistocene age deposits, described by Morton and Matti (2001) as "very old alluvial fan deposits," underlie the site. The materials are composed of reddish brown silty sand, in a dry to slightly moist, moderately dense to dense condition. Porosity was observed in almost every test pit within the upper portions of the very old alluvial fan deposits. Generally, below the porous silty sand, a sandy and/or cemented layer was observed that lacked porosity.

4.3 Geologic Structure

4.3.1 Tectonic Framework

Jennings and Bryant (2010) defined eight structural provinces within California that have been classified by predominant regional fault trends and similar fold structure. These provinces are in turn divided into blocks and sub-blocks that are defined by "major Quaternary faults". These blocks and sub-blocks exhibit similar structural features. Within this framework, the subject site is located within Structural Province I, which is controlled by the dominant northwest trend of the San Andreas Fault and is divided into two blocks, the Coast Range Block and the Peninsular

Range Block. The Peninsular Range Block, on which this site is located, is characterized by a series of subparallel, northwest trending faults that exhibit right lateral dip-slip movement. These faults are terminated by the Transverse Range block to the north and extend southward to the Baja Peninsula. These northwest trending faults divide the Peninsular Range block into eight sub-blocks. The property is located on the Riverside Sub-block that is bounded on the west by the Elsinore fault zone and on the east by the San Jacinto fault zone.

The site is located on the northwest portion of the Riverside sub-block, approximately 4.7 miles southwest of the San Jacinto fault, 14.8 miles southwest of the San Andreas fault, and 17.8 miles northeast of the Elsinore fault. The property is not within an Alquist-Priolo earthquake fault zone.

4.3.2 Regionally Mapped Active Faults

Several large, active fault systems, including the San Jacinto, San Andreas, and Elsinore faults, occur in the region surrounding the subject site. These fault systems have been studied extensively and in a large part control the geologic structure of southern California.

4.3.3 Geologic Structure

Based upon our site investigation and literature review, the onsite alluvial deposits have not been folded, faulted or fractured. The deposits are typically massive with erosion/infill contacts and repeating fining upwards sequences.

4.4 Groundwater

Groundwater was encountered at a depth between 26 and 28 feet during our subsurface investigation. Groundwater in the vicinity is generally at a depth of approximately 60 feet, based on available data from a well located approximately 1.5 miles from the site (Department of Water Resources, 2016).

4.5 Earthquake Hazards

The subject site is located in southern California, which is a tectonically active area. The type and magnitude of seismic hazards affecting a site are dependent on the distance to the causative fault and the intensity and magnitude of the seismic event. The seismic hazard may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction and/or ground lurching.

4.5.1 Local and Regional Faulting

The nearest active fault is the San Jacinto fault, which is located approximately 4.7 miles to the northeast. This fault has been identified as a Fault Rupture Hazard Zone by the State of California (Hart, 2007). "Active" faults have not been identified on the site, and therefore the probability of primary surface rupture or deformation at the site is considered unlikely.

Ground shaking hazards caused by earthquakes along the San Jacinto fault and other active regional faults do exist. The 2013 California Building Code requires use-modified spectral accelerations and velocities for most structural designs. Seismic design parameters using soil profile types identified in the 2013 California Building Code are presented in Section 7.3.

4.5.2 Liquefaction

Seismic agitation of relatively loose saturated sands, silty sands, and some silts can result in a buildup of pore pressure. If the pore pressure exceeds the overburden stresses, a temporary quick condition known as liquefaction can occur. Liquefaction effects can manifest in several ways including: 1) loss of bearing; 2) lateral spread; 3) dynamic settlement; and 4) flow failure. Lateral spreading has typically been the most damaging mode of failure.

In general, the more recent that a sediment has been deposited, the more likely it will be susceptible to liquefaction. Other factors that must be considered are: groundwater, confining stresses, relative density, and the intensity and duration of seismically-induced ground shaking.

Groundwater was encountered 26 and 28 feet below existing ground surface in the hollow-stem auger borings. Alta utilized SPT data from our subsurface investigation to analyze the liquefaction potential onsite. As part of the analysis, groundwater was modeled at twenty-five (25) feet below the existing ground surface. The results of our findings are discussed below under the headings of the specific types of liquefaction which can be manifested during seismic shaking. Our liquefaction calculations are presented in Appendix D.

- **Loss of Bearing:**
  Liquefaction can potentially cause foundation bearing failure due to ground softening and near-failure in bearing. Based on the depth of the groundwater, Alta's removal recommendations, and the anticipated height of the design fills, Alta anticipates that the potential for loss of bearing will be minimal.

- **Lateral Spreading:**

  The lateral displacement of surficial blocks of sediment can occur as a result of liquefaction in a subsurface layer. The most pervasive forms of lateral spreading typically involve sites located near a "free-face" (large slopes, channels, etc.), however, it has been noted that lateral spreading can occur on sites with gently sloping (1% or more) ground.

  Given the flat and relatively confined nature of the site, lack of nearby "free-faces", and the depth to groundwater, the potential lateral movement that could occur is expected to be limited onsite.

- **Settlement:**

  Settlement due to seismic shaking can occur as a result of both liquefaction of saturated sediments or rearrangement of dry sand particles. Our liquefaction analysis was performed utilizing SPT data to analyze the potential amount of settlement. A description of Alta's analysis and calculations are presented in Appendix D of this report. In summary, the analysis showed that the amount of dynamic settlement varies to as much as 2.5 inches. Structures should be designed utilizing the dynamic settlement values presented in Table 7-1 of Section 7.1.

- **Flow Failure:**

  Due to the relatively flat nature of the site, and the relatively horizontal deposition of the underlying deposits, the potential for flow failure onsite is considered low.

4.5.3 Surface Rupture

Surface rupture is a break in the ground surface during or as a consequence of seismic activity. The potential for surface rupture at the site may be considered remote.

4.5.4 Seiches

A seiche is a free or standing-wave oscillation on the surface of water in an enclosed or semi-enclosed basin. The wave can be initiated by an earthquake and can vary in height from several centimeters to a few meters. The potential for a seiche impacting the property is considered to be non-existent.

4.5.5 Tsunami

A tsunami is a great sea wave produced by a submarine earthquake, landslide, or volcanic eruption. It is characterized by great speed of propagation and low observable amplitude on the open sea but can attain heights of several tens of feet upon encountering shallow water. Significant damage can occur along coastal areas subjected to such a wave. The site is not within the State of California Tsunami Inundation Zone (Department of Conservation, 1997) due to the considerable distance from the coastline.

4.5.6 Dry Sand Settlement

Dry sand settlement is the process of non-uniform settlement of the ground surface during a seismic event. Based on density of the underlying soil and the recommended unsuitable soil removals, dry sand settlement is not anticipated to be a significant design constraint.

4.5.7 Seismically Induced Landsliding

Due to a lack of slopes within or around the property seismically induced landsliding is not anticipated to pose a danger to the site.

5.0 ENGINEERING PROPERTIES AND ANALYSIS

5.1 Materials Properties

Presented herein is a general discussion of the engineering properties of the onsite materials that will be encountered during construction of the proposed project. Descriptions of the soil (Unified Soil Classification System) and in-place moisture/density results are presented on the boring logs in Appendix B.

5.1.1 Excavation Characteristics

Based on the data provided from the subsurface investigation, it is our opinion that the majority of the onsite materials possess favorable excavation characteristics.

5.1.2 Hydro-Consolidation

Laboratory testing presented in Appendix C indicates that the very old alluvial fan deposits have a potential for hydro-collapse. Differential surface manifestation of hydro-collapse settlements is dependent upon the simultaneous occurrence of several necessary conditions, namely:

1. The presence of partially saturated, hydro-collapse susceptible soils;
2. An increase in stress acting on the susceptible soils;
3. Wetting of the susceptible soils;
4. The presence of irregular subsurface geologic conditions and/or surface loading patterns.

While minimal fill loads are anticipated to be present upon the completion of grading, based on the anticipated loading from the proposed structures, there is a potential for differential settlement due to hydro-collapse in the soils underlying the site. To mitigate this, it is recommended that the upper soils be removed and replaced with engineered fill as discussed in Section 6.1.2. The overexcavation depths presented in Section 6.1.2 are intended to provide an engineered fill section that will encompass the majority of the loading from the proposed footings. This remedial grading combined with the fact that design fills are minimal should minimize the settlement effect of hydro-collapse to levels within foundation design tolerances.

5.1.3 Compressibility

The topsoil and upper portions of the very old alluvial fan deposits onsite are considered compressible and unsuitable to support the proposed improvements.

5.1.4 Expansion Potential

Expansion index testing was performed on samples taken during our subsurface investigation. Based on the results, it is anticipated that the majority of materials onsite are "very low" to "low" in expansion potential (0≤EI≤50, Appendix C) when tested per ASTM D: 4829.

5.1.5 Earthwork Adjustments

The values presented in Table 5-1 are deemed appropriate for estimating purposes and may be used in an effort to balance earthwork quantities. As is the case with every project, contingencies should be made to adjust the earthwork balance when grading is in-progress and actual conditions are better defined.

TABLE 5-1
Earthwork Adjustment Factors

Geologic Unit	Adjustment Factor Range	Recommended Average
Topsoil/Very Old Alluvial Fan Deposits	Shrink 18 to 22%	20%

5.1.6 Chemical Analyses

Chemical testing was performed on samples of material underlying the proposed site. Soluble sulfate test results indicate that the soluble sulfate concentrations of the soils tested are classified as negligible (Class S0) per ACI 318-11.

Negligible chloride levels were detected in the onsite soils. Resistivity testing conducted as part of this investigation, indicates that the soils are "mildly corrosive" to "moderately corrosive" to buried metals (per Romanoff, 1989). Additional discussions on corrosion are presented in Section 7.9. Corrosion tests results are presented in Appendix C.

5.2 Engineering Analysis

Presented below is a general discussion of the engineering analysis methods that were utilized to develop the conclusions and recommendations presented in this report.

5.2.1 Bearing Capacity and Lateral Earth Pressures

Ultimate bearing capacity values were obtained using the graphs and formula presented in NAVFAC DM-7.1. Allowable bearing was determined by applying a factor of safety of at least 3 to the ultimate bearing capacity. Static lateral earth pressures were calculated using Rankine methods for active and passive cases. If it is desired to use Coulomb forces, a separate analysis specific to the application can be conducted.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on Alta's findings during our subsurface investigation, the laboratory test results, our staff's previous experience in the area, it is Alta's opinion that the development of the site is feasible from a geotechnical perspective. Presented below are recommendations that should be incorporated into site development and construction plans.

6.1 General Earthwork Recommendations

All grading shall be accomplished under the observation and testing of the project geotechnical consultant in accordance with the recommendations contained herein and the City of Moreno Valley criteria.

6.1.1 Site Preparation

Vegetation, construction debris, and other deleterious materials are unsuitable as structural fill material and should be disposed of off-site prior to commencing grading/construction. Any septic tanks, seepage pits or wells should be abandoned as per the County of Riverside Department of Health Services.

6.1.2 Unsuitable Soil Removals/Overexcavation for Building Pads

Due to the potential for hydrocollapse, as discussed in Section 5.1.2, overexcavation and recompaction should be accomplished for structures utilizing shallow foundations. Based on the proposed structures and design grading, it is anticipated that the upper six (6) to eight (8) feet of the soil onsite will need to be removed as part of remedial grading or design cut. In cases of design cut, the proposed building pads should be underlain by a minimum of five (5) feet of fill, provided that also provides the minimum depth of removals. The removals/overexcavations should extend a minimum of five (5) feet outside the building envelopes. As noted in Section 6.3, additional removals may be required for the building pads (B05, B06, B28, B29) directly adjacent to the proposed infiltration basins if loose sands, or porous soils are encountered in the removal bottom.

The intention of the removals/overexcavation is to provide an engineered fill section that will encompass the majority of the loading from the proposed footings, such that the increase in loading on potentially hydro-collapsible soil will be minimal and within foundation design tolerances. The depth of removals/overexcavation should be reviewed once rough grading plans and foundation plans for the site are available to determine the ultimate loading and verify that a suitable thickness fill section is provided.

It is anticipated the overexcavated material will be suitable for re-use as engineered fill. The Project Geotechnical Consultant should observe the overexcavation bottom prior to placing fill. If unsuitable soils are exposed upon the completion of the removals/overexcavation, additional removals/overexcavation may be required.

6.1.1 Unsuitable Soil Removals for Flatwork, Street, or Parking Areas

The upper portions of the soils onsite are considered compressible, and as such, are not suitable to support the proposed improvements outside the building pads. Accordingly, it is recommended to conduct unsuitable soil removals extending two (2) feet below the subgrade for flatwork, streets, and parking areas. The Project Geotechnical Consultant should observe the removal bottom prior to placing fill to determine that suitable material is exposed.

6.1.2 Compaction Standards

All fill and processed natural ground shall be compacted to a minimum relative compaction of 90 percent, as determined by ASTM Test Method: D-1557. Fill material should be moisture conditioned to optimum moisture or above, and as generally discussed in Alta's Earthwork Specification Section presented in Appendix E. Compaction shall be achieved with the use of sheepsfoot rollers or similar kneading type equipment. Mixing and moisture conditioning will be required in order to achieve the recommended moisture conditions.

6.1.3 Groundwater/Seepage

It is anticipated that groundwater will not be encountered during construction. It is possible that perched water conditions could be encountered depending on the time of year construction occurs.

6.1.4 Documentation of Removals

All removal/over-excavation bottoms should be observed and approved by the project Geotechnical Consultant prior to fill placement. Consideration should be given to surveying the removal bottoms and undercuts after approval by the geotechnical consultant and prior to the placement of fill. Staking should be provided in order to verify undercut locations and depths.

6.1.5 Treatment of Removal Bottoms

At the completion of removals/over-excavation, the exposed removal bottom should be ripped to a minimum depth of eight (8) inches, moisture-conditioned to above optimum moisture content and compacted in-place to the project standards.

6.1.6 Fill Placement

After removals, scarification, and compaction of in-place materials are completed, additional fill may be placed. Fill should be placed in eight-inch bulk maximum lifts, moisture conditioned to optimum moisture content or above, compacted and tested as grading/construction progresses until final grades are attained.

6.1.7 Mixing

Mixing of materials may be necessary to prevent layering of different soil types and/or different moisture contents. The mixing should be accomplished prior to and as part of compaction of each fill lift.

6.1.8 Import Soils

Import soils, if necessary, should consist of clean, low expansive, structural quality, compactable materials similar to the on-site soils and should be free of trash, debris or other objectionable materials. The project Geotechnical Consultant should be notified not less than 72 hours in advance of the locations of any soils proposed for import. Import sources should be sampled, tested, and approved by the project Geotechnical Consultant at the source prior to the importation of the soils to the site. The project Civil Engineer should include these requirements on plans and specifications for the project.

6.1.9 Utility Trenches

6.1.9.1 Excavation

Utility trenches should be supported, either by laying back excavations or shoring, in accordance with applicable OSHA standards. In general, existing site soils are classified as Soil Types "B" and “C” per OSHA standards. Upon completion of the recommended removals and recompaction, the artificial fill will be classified as Soil Type "B". The Project Geotechnical Consulting should be consulted if geologic conditions vary from what is presented in this report.

6.1.9.2 Backfill

Trench backfill should be compacted to at least 90 percent of maximum dry density as determined by ASTM D-1557. Onsite soils will not be suitable for use as bedding material but will be suitable for use in backfill provided oversized materials are removed. No surcharge loads should be imposed above excavations. This includes spoil piles, lumber, concrete trucks, or other construction materials and equipment. Drainage above excavations should be directed away from the banks. Care should be taken to avoid saturation of the soils. Compaction should be accomplished by mechanical means. Jetting of native soils will not be acceptable.

Under-slab trenches should also be compacted to project specifications. If select granular backfill (SE > 30) is used, compaction by flooding will be acceptable.

6.1.10 Backcut Stability

Temporary backcuts, if required during unsuitable soil removals, should be made no steeper than 1:1 without review and approval of the geotechnical consultant. Flatter backcuts may be necessary where geologic conditions dictate and where minimum width dimensions are to be maintained.

Care should be taken during remedial grading operations in order to minimize risk of failure. Should failure occur, complete removal of the disturbed material will be required.

In consideration of the inherent instability created by temporary construction backcuts for removals, it is imperative that grading schedules are coordinated to minimize the unsupported exposure time of these excavations. Once started, these excavations and subsequent fill operations should be maintained to completion without intervening delays imposed by avoidable circumstances. In cases where five-day workweeks comprise a normal schedule, grading should be planned to avoid exposing at-grade or near-grade excavations through a non-work weekend. Where improvements may be affected by temporary instability, either on or offsite, further restrictions such as slot cutting, extending work days, implementing weekend schedules, and/or other requirements considered critical to serving specific circumstances may be imposed.

6.2 Boundary Conditions

The site is bounded to the north by Alessandro Boulevard, to the northwest by a commercial structure, to the west by Perris Boulevard, to the south by Brodiaea Avenue, to the southeast by residential structures, and to the east by Apple Blossom Lane. Construction of retaining/screen walls in these areas may require additional geotechnical recommendations concerning unsuitable soil removals and foundation design parameters. Boundary conditions for the project should be reviewed by the Project Geotechnical Consultant as the design progresses.

6.3 Storm Water Infiltration Systems

Two infiltration-type basins are depicted on the enclosed preliminary grading plans. Both basins include a connection to an existing offsite storm drain system. Infiltration testing within the basin areas will be conducted as part of a separate report.

It should be noted that introducing additional (storm) water into concentrated areas through an infiltration system will increase the potential for localized liquefaction. As such, additional unsuitable soil removals to remove loose sands prone to liquefaction and/or structural design recommendations may be required for the proposed structures adjacent to the basins (Buildings B05, B06, B28 and B29). The intention of additional mitigation in these areas is to meet the City of Moreno Valley requirements for infiltration-type systems that site specific geotechnical factors not preclude effective and safe infiltration. The need for additional recommendations should be determined as the design of the project progresses and based on conditions exposed during rough grading.

7.0 DESIGN CONSIDERATIONS

7.1 Structural Design

It is anticipated that 44 apartment buildings, a community building and pool, parking lots, and an outdoor space, wood-frame structures with slab on-grade and shallow foundations will be constructed. It is anticipated that the majority of onsite soils will possess "very low" to "low" expansion potential when tested in general accordance with ASTM Test Method D: 4829. Recommendations for conventional slabs/foundation systems are presented below.

Upon the completion of rough grading, finish grade samples should be collected and tested in order to provide specific recommendations as they relate to individual building pads. These test results and corresponding design recommendations should be presented in a final rough grading report. Final slab and foundation design recommendations should be made based upon specific structure sitings, loading conditions, and as-graded soil conditions.

7.1.1 Foundations

Foundations may be preliminary designed based on the values presented in Table 7-1 below.

Table 7-1
Foundation Design Parameters*

Allowable Bearing for Spread Footings	2000 lbs/ft^2 (assuming a minimum footing width and depth of 12 inches)
Allowable Bearing for Continuous Footings	1500 lbs/ft^2 (assuming a minimum footing width and depth of 12 inches)
Lateral Bearing	250 lbs/ft^2 at a depth of 12 inches plus 250 lbs/ft^2 for each additional 12 inches of embedment to a maximum of 2000 lbs/ft^2
Sliding Coefficient	0.30
Differential Settlement	Dynamic: Differential = 1.5-inches in 40 feet Static: Differential = 1-inch in 40 feet

*These values may be increased as allowed by Code to resist transient loads such as wind or seismic. Building code and structural design considerations may govern depth and reinforcement requirements and should be evaluated.

7.1.2 Conventional Foundation Systems

Based on the onsite soils conditions, expansion index and information supplied by the 2013 CBC, conventional foundation systems may be designed in accordance with Tables 7-1 and 7-2.

TABLE 7-2 CONVENTIONAL FOUNDATION DESIGN PARAMETERS	
Expansion Potential	***Very Low to Low***
Soil Category	I
Design Plasticity Index	12
Minimum Footing Embedment	12 inches*
*The minimum footing embedments presented herein are based on expansion indexes. The structural engineer should determine minimum embedments based on the number of floors supported by the footings, the structural loading, and the requirements of the latest California Building Code.	
Minimum Footing Width	12-inches-The structural engineer should determine the minimum footing width based on loading and the latest California Building Code.
Footing Reinforcement	No. 4 rebar, two (2) on top, two (2) on bottom
Slab Thickness	4 inches (actual)
Slab Reinforcement	No. 3 rebar spaced 18 inches on center, each way
Under-Slab Requirement	See Section 7.2
Slab Subgrade Moisture	Minimum of 110 percent of optimum moisture to a depth of 12 inches prior to placing concrete.
Footing Embedment Adjacent to Swales and Slopes	If exterior footings adjacent to drainage swales are to exist within five (5) feet horizontally of the swale, the footing should be embedded sufficiently to assure embedment below the swale bottom is maintained. Footings adjacent to slopes should be embedded such that at least five- (5) feet is provided horizontally from edge of the footing to the face of the slope.
Garages	A grade beam reinforced continuously with the garage footings shall be constructed across the garage entrance, tying together the ends of the perimeter footings and between individual spread footings. This grade beam should be embedded at the same depth as the adjacent perimeter footings. A thickened slab, separated by a cold joint from the garage beam, should be provided at the garage entrance. Minimum dimensions of the thickened edge shall be six (6) inches deep. Footing depth, width and reinforcement should be the same as the structure. Slab thickness, reinforcement and under-slab treatment should be the same as the structure.

7.2 Moisture Barrier

A moisture and vapor retarding system should be placed below the slabs-on-grade in portions of the structure considered to be moisture sensitive and should be capable of effectively preventing the migration of water and reducing the transmission of water vapor to acceptable levels. Historically, a 10-mil plastic membrane, such as Visqueen, placed between one to four inches of clean sand, has been used for this purpose. The use of this system or other systems can be considered, at the discretion of the designer, provided the system reduces the vapor transmission rates to acceptable levels.

7.3 Seismic Design

The following seismic design parameters are presented to be code compliant to the California Building Code (2013). The site has been identified as "D" site class in accordance with CBC, 2013, Table 1613.5.3 (1). Utilizing this information, the computer program USGS Seismic Design Maps Version 3.1.0 and ASCE 7-10 criterion, the spectral response accelerations are as follows.

Table 7-3
Seismic Design Parameters
Latitude 33.9155° N and Longitude -117.2246° W

Ss (period 0.2 sec)	1.573
SMs (period 0.2 sec)	1.573
SDs (period 0.2 sec)	1.048
S1 (period 1.0 sec)	0.681
SM1 (period 1.0 sec)	1.022
SD1 (period 1.0 sec)	0.681

These parameters should be verified by the structural engineer. Additional parameters should be determined by the structural engineer based on the Occupancy Category of the proposed structures

7.4 Retaining Wall Design

Retaining walls should be founded on compacted fill and should be backfilled with granular soils that allow for drainage behind the wall. Foundations may be designed in accordance with the recommendations presented in Table 7-1, above. Unrestrained walls, free to rotate at least 0.001 radians, may be designed to resist lateral pressures imposed by a fluid with a unit weight determined in accordance with the Table 7-4 below. The table also presents design parameters for restrained (at-rest) retaining walls. These parameters may be used to design retaining walls that may be considered as restrained due to the method of construction or location (corner sections of unrestrained retaining walls).

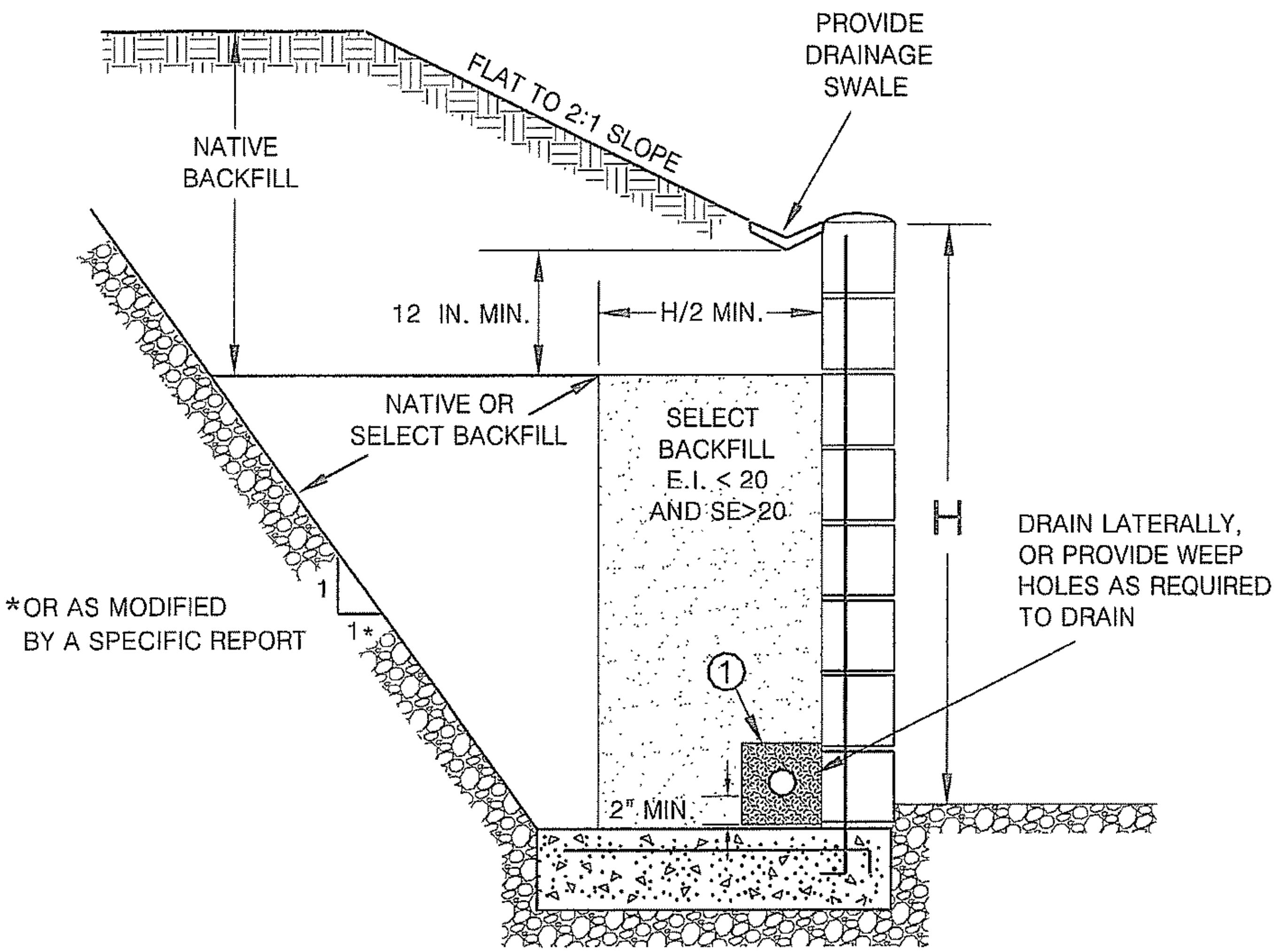
TABLE 7-4
Equivalent Fluid Pressures for 90% Compacted Select Fill

Backfill	Active (psf/ft)	At-Rest (psf/ft)
Level	35	55

Per the requirements of the 2013 CBC, the seismic force acting on the retaining walls may be resolved utilizing the formula $17H^2$ lb/lineal ft (H=height of the wall). This force acts at approximately 0.6H above the base of the wall. The seismic value can be converted as required by the retaining wall engineer. Retaining walls should be designed in general accordance with Section 1807A.2 of the 2013 CBC.

- Restrained retaining walls should be designed for "at-rest" conditions.
- The design loads presented in the above table are to be applied on the retaining wall in a horizontal fashion and as such friction between wall and retained soils should not be allowed in the retaining wall analyses.
- Additional allowances should be made in the retaining wall design to account for the influence of construction loads, temporary loads, and possible nearby structural footing loads.
- Select backfill should be granular, structural quality backfill with a Sand Equivalent of 20 or better and an ASCE Expansion Index of 20 or less. The backfill must encompass the full active wedge area; otherwise, the values presented in the Native Backfill column must be used for the design. Native backfill should have an ASCE Expansion Index of 50 or less. The upper one foot of backfill should be comprised of native on-site soils (see Plate A).
- The wall design should include waterproofing (where appropriate) and backdrains or weep holes for relieving possible hydrostatic pressures. The backdrain should be comprised of a 4-inch perforated PVC pipe in a 1 ft. by 1

RETAINING WALL BACKFILL DETAIL



(1)

PIPE: 4-INCH PERFORATED PVC, SCHEDULE 40, SDR35 OR APPROVED ALTERNATE MINIMUM 8 PERFORATIONS (1/4-IN. DIA.) PER LINEAL FT. IN BOTTOM HALF OF PIPE

ROCK: MINIMUM VOLUME OF 1 CU. FT. OF 3/4-IN. MAX. ROCK PER. LINEAL FOOT OF PIPE, OR APPROVED ALTERNATE

FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT

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VER. 1/10

PLATE A

PATH: S:\Drafting\ALTA GEOTECHNICAL\GRADING DETAILS\PLATE A.dwg ft., ¾-inch gravel matrix, wrapped with a geofabric. The backdrain should be installed with a minimum gradient of 2 percent and should be outletted to an appropriate location.

- No backfill should be placed against concrete until minimum design strengths are achieved in compression tests of cylinders.

It should be noted that the allowable bearing and passive resistance values presented in Table 7-1 are based on level conditions at the toe. Modified design parameters can be presented for retaining walls with descending slope conditions at the toe.

7.5 Fence Walls

Block walls, if used, should be embedded a minimum of 2 feet below the lowest adjacent grade. Construction joints (not more than 20 feet apart) should be included in the block wall construction. Side yard walls should be structurally separated from the rear yard wall.

7.6 Footing Excavations

Soils from the footing excavations should not be placed in slab-on-grade areas unless properly compacted and tested. The excavations should be cleaned of all loose/sloughed materials and be neatly trimmed at the time of concrete placement.

7.7 Exterior Slabs and Walkways

Exterior concrete slabs and walkways should be designed and constructed in consideration of the following recommendations.

7.7.1 Subgrade Compaction

The subgrade below exterior concrete slabs should be compacted to a minimum of 90 percent relative compaction as determined by ASTM Test Method: D 1557.

7.7.2 Subgrade Moisture

The subgrade below concrete slabs should be moisture conditioned to a minimum of 110 percent of optimum moisture content prior to concrete placement.

7.7.3 Concrete Slab Thickness

Concrete flatwork and driveways should be designed utilizing four-inch minimum thickness.

7.7.4 Concrete Slab Reinforcement

Utilization of reinforcement for flatwork and driveways is subject to a cost/benefit analysis. Reinforcement will decrease the amount of cracking that may occur in flatwork, however, planning for occasional repairs may be more cost effective. Utilizing closely spaced control joints is likely more cost-effective than utilizing reinforcement. The majority of the soils onsite are classified as very low in expansion potential. Consideration should be given to reinforcing flatwork with irregular (non-square/rectangular) shapes.

7.7.5 Control Joints

Weakened plane joints should be installed on walkways at intervals of approximately eight feet (maximum) or less. Exterior slabs should be designed to withstand shrinkage of the concrete.

7.8 Concrete Design

As stated in Section 5.1.6, negligible concentrations of sulfates were detected in the onsite soils. Therefore, the use of sulfate resistant concrete is not required per ACI 318-11. Post-grading conditions should be evaluated and final recommendations made at that time.

7.9 Corrosion

Based on preliminary testing, the onsite soils are mildly to moderately corrosive to buried metal objects. Buried ferrous metals should be protected against the effects of corrosive soils in accordance with the manufacture's recommendations. Typical measures may include using non-corrosive backfill, protective coatings, wrapping, plastic pipes, or a combination of these methods. A corrosion engineer should be consulted if specific design recommendations are required by the improvement designer.

Per ACI 318-11, an exposure class of C1 would be applicable to metals encased in concrete (rebar in footings) due to being exposed to moisture from surrounding soils.

7.10 Pavement Design

Pavement sections for the proposed drive aisles and parking stalls should be designed based on laboratory testing conducted on samples taken from the soil subgrade. Preliminarily, based on an assumed R-Value of 30 and a traffic index of 5.0, the drive aisles and parking stalls may be designed utilizing a pavement section of 3-inches of asphalt over 5-inches of aggregate base. This section should be verified upon the completion of grading, based on R-Value testing.

Construction of the streets should be accomplished in accordance with the current criteria of the City of Moreno Valley and under the observation and testing of the Project Geotechnical Consultant.

Prior to the placement of base material, the subgrade should be suitably moisture conditioned, processed and compacted to a minimum 95 percent of the laboratory maximum density (ASTM: D 1557) to at least twelve (12) inches below subgrade. After subgrade compaction, the exposed grade should then be "proof"-rolled with heavy equipment to ensure the grade does not "pump" and is verified as non-yielding. Aggregate base material should be placed on the compacted subgrade and compacted in-place to a minimum 95 percent of the laboratory standard obtained per ASTM: D 1557.

7.11 Site Drainage

Positive drainage away from the proposed structures should be provided and maintained. Roof, pad and lot drainage should be collected and directed away from the structures toward approved disposal areas through drainage terraces, gutters, down drains, and other devices. Design fine grade elevations should be maintained through the life of the structure or if design fine grade elevations are altered, adequate area drains should be installed in order to provide rapid discharge of water, away from structures. Owners should be made aware that they are responsible for maintenance and cleaning of all drainage terraces, down drains, and other devices that have been installed to promote site and structure drainage.

8.0 FUTURE PLAN REVIEWS

This report represents a geotechnical review of the grading plan. As the project design progresses, site specific geologic and geotechnical issues should be considered in the design and construction of the project. Consequently, future plan reviews may be necessary. These reviews may include reviews of:

- Grading Plans
- Foundation Plans
- Utility Plans

These plans should be forwarded to the project Geotechnical Consultant for review.

9.0 CLOSURE

9.1 Geotechnical Review

For the purposes of this report, multiple working hypotheses were established for the project, utilizing the available data and the most probable model is used for the analysis. Future information collected during the proposed grading operations is intended to evaluate the hypothesis and as such, some of the assumptions summarized in this report may need to be changed. Some modifications of the grading recommendations may become necessary, should the conditions encountered in the field differ from the conditions hypothesized in this report.

Plans and sections of the project specifications should be reviewed by Alta, to evaluate conformance with the intent of the recommendations contained in this report. If the project description or final design varies from that described in herein, Alta must be consulted regarding the applicability of the recommendations contained herein and whether any changes are required. Alta accepts no liability for any use of its recommendations if the project description or final design varies and Alta is not consulted regarding the alterations.

9.2 Limitations

This report is based on the following: 1) the project as presented on the attached plan; 2) the information obtained from the subsurface investigation at the approximate locations indicated on the plan included herein; 3) laboratory test results; and 4) from the information presented in the referenced reports. The findings and recommendations are based on the results of the subsurface investigation, laboratory testing, and office analysis combined with an interpolation and extrapolation of conditions between and beyond the subsurface excavation locations. However, the materials adjacent to or beneath those observed may have different characteristics than those observed and no precise representations are made as to the quality or extent of the materials not observed. The findings are also based on information from previous investigations/geotechnical reports contained in the references. The results reflect an interpretation of the direct evidence obtained. Work performed by Alta has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the geotechnical profession currently practicing in the same locality under similar conditions. No other representation, either expressed or implied, and no warranty or guarantee is included or intended.

The recommendations presented in this report are based on the assumption that an appropriate level of field review will be provided by a geotechnical consultant who is familiar with the design and site geologic conditions. That field review shall be sufficient to confirm that geotechnical and geologic conditions exposed during grading are consistent with the geologic representations and corresponding recommendations presented in this report.

The conclusions and recommendations included in this report are applicable to the specific design of this project as discussed in this report. They have no applicability to any other project or to any other location and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent of Alta.

Alta has no responsibility for construction means, methods, techniques, sequences, procedures, safety precautions, programs in connection with the construction, acts or omissions of the CONTRACTOR or any other person performing any of the construction, or for the failure of any of them to carry out the construction in accordance with the final design drawings and specifications.

APPENDIX A

REFERENCES

APPENDIX A

Selected References

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APPENDIX B

Subsurface Investigation

APPENDIX B

Subsurface Investigation

Alta's subsurface investigation consisted of excavating, logging, and sampling thirteen (13) hollow-stem auger borings and twelve (12) backhoe test pits. Details of the subsurface investigation are presented in Table B. The approximate locations of the exploratory excavations are shown on the accompanying site plan (Plate 1) and the Geotechnical Logs are attached. The results are presented in Table B-1.

TABLE B
SUBSURFACE INVESTIGATION DETAILS

Equipment	Range of Depths	Sampling Methods	Sample Locations
Hollow-Stem Auger	10 to 51 feet	1. Ring Sampler 2. Bulk Samples	1. Ring-Select Depths 2. Select Depths
Backhoe	9.5 to 12.5	1. Bulk Samples	1. Select Depths

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description
Coarse Grained Soils More than 50% retained on No. 200 sieve	Gravel and Gravelly Soils More than 50% of coarse fraction retained on No,. 4 sieve		GW	Well-graded gravels or gravel sand mixtures, little or no fines
			GP	Poorly-graded gravels or gravel sand mixture, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils More than 50% of coarse fraction passes on No,. 4 sieve		SW	Well-graded sands or gravelly sands, little or no fines
			SP	Poorly-graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, and-clay mixtures

Major Divisions		grf	ltr	
Fine Grained Soils More than 50% passes on No. 200 sieve	Silts And Clays LL,<50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silt-clays of low plasticity
	Silts And Clays LL,<50		MH	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
			VH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

BOUNDARY CLASSIFICATION: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

	U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENINGS		
	200	40	10	4	3/4"	3"	12"
Silts and Clays	Sand			Gravel		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

RELATIVE DENSITY

Sands and Gravels	Blows/Foot (SPT)
Very Loose	<4
Loose	4-10
Medium Dense	11-30
Dense	31-50
Very Dense	>50

CONSISTENCY CLASSIFICATION

Silts and Clays	Criteria
Very Soft	Thumb penetrates soil >1 in.
Soft	Thumb penetrates soil 1 in.
Firm	Thumb penetrates soil 1/4 in.
Stiff	Readily indented with thumbnail
Very Stiff	Thumbnail will not indent soil

HARDNESS

Bedrock
Soft
Moderately Hard
Hard
Very Hard

LABORATORY TESTS

Symbol	Test
DS	Direct Shear
DSR	Direct Shear (Remolded)
CON	
SA	Sieve Analysis
MAX	Maximum Density
RV	Resistance (R) Value
EI	Expansion Index
SE	Sand Equivalent
AL	Atterberg Limits
CHEM	Chemical Analysis
HY	Hydrometer Analysis

SOIL MOISTURE

Increasing Visual Moisture Content

- Dry - Dry to touch
- Moist - Damp, but no visible free water
- wet - Visible free water

SIZE PROPORTIONS

Trace - <5%

Few - 5 to 10%

Some - 15 to 25%

KEY TO EXPLORATORY BORING LOGS

ALTA CALIFORNIA GEOTECHNICAL INC.

PLATE B

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	B-1
DATE FINISHED	6/1/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to coarse grained, tannish brown, dry, loose, some gravel.				
					SM	@2 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SILTY SAND, fine grained, brown, damp, moderately dense, few gravel.				
5		R	15			@5 ft. fine to coarse grained, orangish brown, dry, some gravel.	2.2	127	19	
10		R	28		SP	@10 ft. SAND, fine to medium grained, yellowish brown, dry, medium dense, some coarse grained lithics.	2.5	104	11	
15		R	30			@15 ft. fine to coarse grained, dark yellowish brown, damp, trace clay.	4.7	107	23	
20		R	30		SC	@20 ft. CLAYEY SAND, fine grained, dark reddish brown, damp, medium dense, few coarse grained lithics fragments.	7.1	120	50	
25		R	39		SM	@25 ft. SILTY SAND, fine grained, dark yellowish brown, moist, dense.	15.2	114	89	

TOTAL DEPTH 26 FEET
NO GROUNDWATER ENCOUNTERED
NO CAVING OBSERVED

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE
T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	B-2
DATE FINISHED	6/1/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to coarse grained, tannish brown, dry, loose, some gravel.				
					SM	@1 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SILTY SAND, fine grained, brown, dry, loose, few coarse grained lithics.				
5		R	10			@5 ft. brown to dark brown, moist, porous.	4.9	101	20	
10		R	20			@10 ft. moderately dense.	6.5	112	36	CON, HY
15		R	24			@15 ft. dark reddish brown, porous.	9.9	117	64	
20		R	18		SP	@20 ft. SAND, fine to coarse grained, reddish brown, dry, moderately dense, non-cohesive.				
25		R	39		SM	@25 ft. SILTY SAND, fine grained, reddish brown, moist, dense, trace clay.	10.6	117	69	
						TOTAL DEPTH 26 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192

Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment
DATE STARTED	6/1/16	GROUND ELEV.	
DATE FINISHED	6/1/16	GW DEPTH (FT)	
DRILLER	Martini Drilling	DRIVE WT.	140 lbs
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches

BORING DESIG. B-3
LOGGED BY MT
NOTE

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	TOPSOIL: SILTY SAND, fine to coarse grained, tannish brown, dry, loose, some gravel.				
					ML	@1 ft. VERY OLD ALLUVIAL FAN DEPOSITS (Qvof): SANDY SILT, fine grained, very light brown, dry, soft.				
5		R	15		SM	@5 ft. SILTY SAND, fine to medium grained, brown, dry to damp, moderately dense, porous.	4.4	105	20	
10		R	11			@10 ft. dark tannish brown, moist, trace clay.	2.7	102	12	
15		R	31			@15 ft. fine grained, dark reddish brown, medium dense.	9.3	116	58	
20		R	40			@20 ft. fine to coarse grained, dark brownish red, damp, dense.	13.6	112	76	
						TOTAL DEPTH 21 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
[R] RING (DRIVE) SAMPLE
[S] SPT (SPLIT SPOON) SAMPLE
[B] BULK SAMPLE [T] TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.
P.N. 1-0192

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	B-4
DATE FINISHED	6/1/16	GW DEPTH (FT)	28	LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to coarse grained, tannish brown, dry, loose, some gravel.				
		B			SM	@1 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SILTY SAND, fine grained, very light brown, dry, loose.				MAX, EI, HY, CHEM
5		R	11			@5 ft. dark brown, damp, moderately dense.	4.5	106	21	CON, HY
10		R	20		SP	@10 ft. SAND, fine to coarse grained, orangish brown, dry, moderately dense, trace clay.	2.9	106	14	
15		R	36		SM	@15 ft. SILTY SAND, fine grained, dark reddish brown, moist, medium dense, trace coarse grained lithics.	10.5	123	80	
20		R	50			@20 ft. yellowish brown to dark brown, dense, porous, trace clay.	12.7	116	78	
25		R	59		SM	@25 ft. SILTY SAND and SAND, very fine to coarse grained, grayish brown and orangish brown, moist, dense.	6.3	113	36	
						@28 ft. GROUNDWATER ENCOUNTERED.				
30		R	59		SP	@30 ft. SAND, fine to medium grained, dark brown, wet, dense.	14.7	115	89	
35		S	5/7/12							
						Continued.				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.
P.N. 1-0192 PLATE B-4

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	B-4
DATE FINISHED	6/1/16	GW DEPTH (FT)	28	LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
		S	6/13/15		CL	**VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): Continued. @40 ft. CLAY, light brown mottled green, damp, very stiff.				
45		S	7/17/25			**DECOMPOSED GRANITE**: reddish brown, hard.				
						@49 ft. Refusal, no sample.				
						TOTAL DEPTH 49 FEET GROUNDWATER ENCOUNTERED AT 28 FEET NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE   T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.
P.N. 1-0192

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment
DATE STARTED	6/2/16	GROUND ELEV.	
DATE FINISHED	6/2/16	GW DEPTH (FT)	
DRILLER	Martini Drilling	DRIVE WT.	140 lbs
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches

BORING DESIG. B-5
LOGGED BY MT
NOTE

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to coarse grained, tannish brown, dry, loose, some gravel.				
					ML	@1 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SANDY SILT, fine grained, tan, dry, soft.				
5		R	21		SM	@5 ft. SILTY SAND, fine to coarse grained, dark brownish tan, damp, moderately dense.	3.0	112	17	
10		R	28			@10 ft. fine grained, dark brown, moist, medium dense.	13.3	108	67	
15		R	32			@15 ft. orangish brown to dark brown, trace clay.	8.0	111	44	
20		R	32			@20 ft. fine to medium grained, few gravels.	4.6	113	26	
						TOTAL DEPTH 21 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE
T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.
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PLATE B-5

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment	BORING DESIG.	B-6
DATE STARTED	6/2/16	GROUND ELEV.		LOGGED BY	MT
DATE FINISHED	6/2/16	GW DEPTH (FT)	26	NOTE	
DRILLER	Martini Drilling	DRIVE WT.	140 lbs		
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to coarse grained, tannish brown, dry, loose, some gravel.				
					SM	@1.5 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SILTY SAND, fine grained, brown, damp, loose, few coarse grained lithics.				
5		R	9			@5 ft. dark brown, moist.	5.0	103	22	
10		R	36			@10 ft. medium dense, small pores.	6.0	107	29	
15		R	26			@15 ft. dark reddish brown.	3.5	109	18	
20		R	20		SP	@20 ft. SAND, fine to coarse grained, orangish brown, dry to damp, moderately dense, gravel.	1.8	102	8	
25		R	29		SC	@25 ft. CLAYEY SAND, fine grained, dark brown, moist, medium dense. @26 ft. GROUNDWATER ENCOUNTERED.	13.4	120	94	
30		S	10/11/16			@30 ft. dark orangish brown, very moist.				
35		S	4/8/11		SP	@35 ft. SAND, fine grained, dark reddish brown, wet, medium dense.				
						Continued.				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192

PLATE B-6

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/2/16	GROUND ELEV.		BORING DESIG.	B-6
DATE FINISHED	6/2/16	GW DEPTH (FT)	26	LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
		S	4/14/22		CL	**VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): Continued. @40 ft. SANDY CLAY, fine to coarse grained, reddish brown, damp, stiff.				
45		S	15/26/42		SC	@45 ft. CLAYEY SAND, fine to medium grained, dark yellowish brown, moist to damp, very dense.				
50		S	11/25/50							

TOTAL DEPTH 51.5 FEET
GROUNDWATER ENCOUNTERED AT 26 FEET
NO CAVING OBSERVED

SAMPLE TYPES:
[R] RING (DRIVE) SAMPLE
[S] SPT (SPLIT SPOON) SAMPLE
[B] BULK SAMPLE [T] TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment
DATE STARTED	6/2/16	GROUND ELEV.	
DATE FINISHED	6/2/16	GW DEPTH (FT)	
DRILLER	Martini Drilling	DRIVE WT.	140 lbs
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches

BORING DESIG. B-7
LOGGED BY MT
NOTE

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY DENSITY (pcf)	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to coarse grained, tannish brown, dry, loose, some gravel.				
		R	15		SM	@1 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SILTY SAND, fine grained, dark brown, damp, loose, very porous, coarse grained lithics, few rootlets.	3.9	99	15	
		R	10			@3 ft. few pores.	4.7	102	20	
5		R	9			@5 ft. yellowish brown to dark brown, porous.	4.6	105	21	
		R	24			@7 ft. dark brown, moist, medium dense.	10.4	102	45	CON, HY
10		R	30				8.1	108	40	CON, HY

TOTAL DEPTH 11 FEET
NO GROUNDWATER ENCOUNTERED
NO CAVING OBSERVED

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.
P.N. 1-0192

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment
DATE STARTED	6/2/16	GROUND ELEV.	
DATE FINISHED	6/2/16	GW DEPTH (FT)	
DRILLER	Martini Drilling	DRIVE WT.	140 lbs
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches

BORING DESIG. B-8
LOGGED BY MT
NOTE

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to coarse grained, tannish brown, dry, loose, some gravel.				
					SM	@1 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof):				
		R	13			@3 ft. SILTY SAND, fine grained, brown, damp, moderately dense, porous, few coarse grained lithics.	4.6	103	20	
5		R	12			@5 ft. dark tannish brown.	3.7	104	17	
		R	8		SP	@7 ft. SAND, fine grained, dark yellowish brown, damp, moderately dense.	2.5	104	11	
10		R	15			@10 ft. orangish brown.	2.8	104	12	
		R	23		SM	@12 ft. SILTY SAND, fine grained, dark brown, moist, moderately dense, slightly porous.	13.7	113	79	
						TOTAL DEPTH 13 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE
T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment
DATE STARTED	6/2/16	GROUND ELEV.	
DATE FINISHED	6/2/16	GW DEPTH (FT)	
DRILLER	Martini Drilling	DRIVE WT.	140 lbs
TYPE OF DRILL RIG	Hollow stem auger	DROP	30 inches

BORING DESIG. B-9
LOGGED BY MT
NOTE

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to coarse grained, tannish brown, dry, loose, some gravel.				
					ML	@1 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SANDY SILT, fine grained, tan, dry, soft.				
5		R	19		SM	@5 ft. SILTY SAND, fine grained, dark tannish brown, damp, moderately dense, porous.	3.5	107	17	CON, HY
		R	15			@7 ft. dark brown.	2.7	105	12	CON, HY
10		R	16			@10 ft. fine to medium grained, dark orangish brown.	2.3	104	10	
		R	21		SM	@12 ft. SILTY SAND, fine grained, dark brown, moist, moderately dense, porous.	9.4	112	52	
15		R	44		CL	@15 ft. SANDY CLAY, fine grained, reddish brown, damp, stiff.	10.1	125	83	

TOTAL DEPTH 16 FEET
NO GROUNDWATER ENCOUNTERED
NO CAVING OBSERVED

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE
T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.
P.N. 1-0192

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	P-1
DATE FINISHED	6/1/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.		NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP			

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	<u>TOPSOIL</u>: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. <u>VERY OLD ALLUVIAL FAN DEPOSITS</u> (Qvof): SILTY SAND, fine grained, very light brown, dry, loose.				
						@4 ft. brown, fine grained, damp.				
5										
						@7 ft. orangish brown.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	P-2
DATE FINISHED	6/1/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.		NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP			

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SILTY SAND, fine grained, light tannish brown, dry, loose.				
						@3 ft. light brown, damp.				
5										
						@8 ft. orangish brown.				
10										
						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192

Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	P-3
DATE FINISHED	6/1/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.		NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP			

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SILTY SAND, fine grained, tannish brown, dry, loose.				
5						@5 ft. brown, damp.				
						@7 ft. dark brown to dark tannish brown, moist.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/13/16	GROUND ELEV.		BORING DESIG.	P-4
DATE FINISHED	6/13/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	2R Drilling	DRIVE WT.		NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP			

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL**: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. **VERY OLD ALLUVIAL FAN DEPOSITS** (Qvof): SILTY SAND, fine grained, dark tannish brown, damp, loose, coarse grained lithics.				
5						@5 ft. brown, moist.				
						@8 ft. dark brown.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE
T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.
P.N. 1-0192

Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

Project No.	1-0192
Date Excavated	June 2, 2016
Excavated by	SRG
Equipment	JD 410J

TABLE I

LOG OF TEST PITS

Test Pit No.	Depth (ft.)	USCS	Description
T-1	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-9.0	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, dry to slightly moist, moderately dense to dense, abundant porosity, some very large pores, not cemented, friable, easily excavated.
	9.0-11.5	SM	Dark reddish brown, fine-grained, some medium grained, trace coarse grained, slightly moist, dense, cemented, hard, trace very small pores.
			TOTAL DEPTH 11.5 FT NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED

Test Pit No.	Depth (ft.)	USCS	Description
T-2	0.0-1.0	SM	**<u>TOPSOIL</u>:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-10.0	SM	**<u>VERY OLD ALLUVIAL FAN (Qvof)</u>:** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, dry to slightly moist, moderately dense, abundant porosity, some very large pores, not cemented, slight caving of trench walls.
	10.0-11.0	SM	Dark reddish brown, fine to medium grained, slightly moist, dense, hard, cemented.
			TOTAL DEPTH 11.0 FT. NO GROUNDWATER ENCOUNTERED CAVING OBSERVED FROM 5 TO 10 FT

Test Pit No.	Depth (ft.)	USCS	Description
T-3	0.0-1.0	SM	**<u>TOPSOIL</u>:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-9.5	SM	**<u>VERY OLD ALLUVIAL FAN (Qvof)</u>:** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, slightly moist, moderately dense, abundant small pores, trace large pores, not cemented, friable, easily excavated.
	9.5-10.0	SM	Dark reddish brown, fine to medium grained, trace coarse and very coarse grained, slightly moist, very dense.
			TOTAL DEPTH 10.0 FT NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED

Test Pit No.	Depth (ft.)	USCS	Description
T-4	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-9.0	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, dry to slightly moist, moderately dense to dense, abundant porosity, some very large pores, not cemented, friable, easily excavated.
	9.0-9.5	SM	Dark reddish brown, fine to medium grained, trace coarse and very coarse grained, slightly moist, very dense.

TOTAL DEPTH 9.5 FT
NO GROUNDWATER ENCOUNTERED
NO CAVING OBSERVED

Test Pit No.	Depth (ft.)	USCS	Description
T-5	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-6.0	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, slightly moist, moderately dense, abundant porosity, some very large pores, not cemented, friable, easily excavated. @4 ft. Very old sewer line, running north-south. Dry, filled with dirt. Narrow trench filled with afu.
	6.0-11.5	SP	SAND, fine to coarse grained, some silt, slightly moist, loose to moderately dense.
	11.5-12.0	SM	Dark reddish brown, fine to medium grained, slightly moist, very dense, hard, trace very small pores.
			TOTAL DEPTH 12.0 FT NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED

Test Pit No.	Depth (ft.)	USCS	Description
T-6	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-7.5	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, dark reddish brown, moist, moderately dense, trace small pores, roots and rootlets.
	7.5-9.5	SP	SAND, fine to coarse grained, trace silt, light reddish brown, slightly moist, loose to moderately dense, slight caving.
	9.5-10	SM	Dark reddish brown, fine to medium grained, slightly moist, very dense, hard, trace very small pores.
			TOTAL DEPTH 10.0 FT NO GROUNDWATER ENCOUNTERED CAVING OBSERVED, 7.5 FT to 9.5 FT

Test Pit No.	Depth (ft.)	USCS	Description
T-7	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-5.0	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, dry to slightly moist, moderately dense, some small to medium size pores, not cemented, friable, easily excavated.
	5.0-12.5	SP	SAND, coarse grained, trace silt, reddish brown, dry to slightly moist, loose to moderately dense, slight caving.
			TOTAL DEPTH 12.5 FT NO GROUNDWATER ENCOUNTERED CAVING OBSERVED, 5 FT to 12.5 FT

Test Pit No.	Depth (ft.)	USCS	Description
T-8	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-6.0	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, dry to slightly moist, moderately dense to dense, abundant porosity, some large pores, trace roots and rootlets.
	6.0-8.0	SM	As above, dense, less porosity, trace small pores.
	8.0-11.0	SP	SAND, fine to medium grained, reddish brown, moist, dense.
			TOTAL DEPTH 11.0 FT NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED

Test Pit No.	Depth (ft.)	USCS	Description
T-9	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-8.5	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, dry to slightly moist, moderately dense, some small to medium size pores, not cemented, friable, easily excavated.
	8.5-12.5	SP	SAND, coarse grained, trace silt, reddish brown, dry to slightly moist, loose to moderately dense.
			TOTAL DEPTH 9.5 FT NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED

Test Pit No.	Depth (ft.)	USCS	Description
T-10	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-8.0	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, dry to slightly moist, moderately dense, some small to medium size pores, not cemented, friable, easily excavated.
	8.0-9.5	SP	SAND, coarse grained, trace silt, reddish brown, dry to slightly moist, loose to moderately dense.
			TOTAL DEPTH 9.5 FT NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED

Test Pit No.	Depth (ft.)	USCS	Description
T-11	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-9.0	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, dry to slightly moist, dense, porous, porosity decreases with depth.
	9.0-9.5	SM	Dark reddish brown, fine to medium grained, trace coarse grained, slightly moist, very dense, hard, trace small pores.
			TOTAL DEPTH 9.5 FT NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED

Test Pit No.	Depth (ft.)	USCS	Description
T-12	0.0-1.0	SM	**TOPSOIL:** SILTY SAND, fine to coarse grained, trace very coarse, light reddish brown, dry, loose, roots and rootlets.
	1.0-12.5	SM	**VERY OLD ALLUVIAL FAN (Qvof):** SILTY SAND, fine to coarse grained, some very coarse grained, trace gravel, reddish brown, dry to slightly moist, moderately dense to dense, abundant porosity, some very large pores, porosity decreases with depth.
			TOTAL DEPTH 12.5 FT NO GROUNDWATER ENCOUNTERED CAVING OBSERVED, 0 TO 5 FT

APPENDIX C

Laboratory Testing

LABORATORY TESTING

The following laboratory tests were performed on a representative sample in accordance with the applicable latest standards or methods from the ASTM, California Building Code (CBC) and California Department of Transportation.

Classification

Soils were classified with respect to the Unified Soil Classification System (USCS) in accordance with ASTM D-2487 and D-2488.

Particle Size Analysis

Modified hydrometer testing was conducted to aid in classification of the soil. The results of the particle size analysis are presented in Table C.

Maximum Density/Optimum Moisture

The maximum dry density and optimum moisture content of two representative bulk samples were evaluated in accordance with ASTM D-1557. The results are summarized in Table C.

Expansion Index Tests

Two (2) expansion index tests were performed to evaluate the expansion potential of typical on-site soil. Testing was carried out in general conformance with ASTM Test Method D-4829. The results are presented in Table C.

Consolidation Tests

Consolidation testing was performed on six (6) relatively "undisturbed" soil samples at their natural moisture content in accordance with procedures outlined in ASTM D-2435. The samples were placed in a consolidometer and loads were applied incrementally in geometric progression. The samples (2.42-inches in diameter and 1-inch in height) were permitted to consolidate under each load increment until the slope of the characteristic linear secondary compression portion of the thickness versus log of time plot was apparent. The percent consolidation for each load cycle was recorded as the ratio of the amount of vertical compression to the original 1-inch height. The consolidation test results are shown on Plates C-1 through C-6.

Chemical Analyses

Chemical testing of selected samples was performed by Group Delta. The results of these tests are presented on Plate C-7.

TABLE C
SUMMARY OF LABORATORY TEST DATA
P.N. 1-0192

Boring/Pit No.	Depth	Soil Description	Group Symbol - Unified Soil Classification System	Maximum Dry Density		Direct Shear	Grain Size Analysis				Expansion Index	Sulfate Content	Consolidation	Other Tests Remarks
				Maximum Density (pcf)	Optimum Moisture (%)		Gravel (% + No. 4 Screen)	% Sand	%Silt (0.074 to 0.005mm)	% Clay (-0.005 mm)				
B-2	10	Silty Sand (Qvof)	SM				0	73	16	11			See Plate C-1	
B-4	1-5	Silty Sand (Qvof)	SM	134.0	7.0		1	60	24	15	13			Chem: Plate C-7
B-4	5	Silty Sand (Qvof)	SM				2	69	21	8			See Plate C-2	
B-7	7	Silty Sand (Qvof)	SM				0	62	30	8			See Plate C-3	
B-7	10	Silty Sand (Qvof)	SM				0	77	16	7			See Plate C-4	
B-9	5	Silty Sand (Qvof)	SM				5	67	20	8			See Plate C-5	
B-9	7	Silty Sand (Qvof)	SM				4	84	7	5			See Plate C-6	
T-2	2-5	Silty Sand (Qvof)	SM	133.7	7.0		2	74	16	8	0			Chem: Plate C-7

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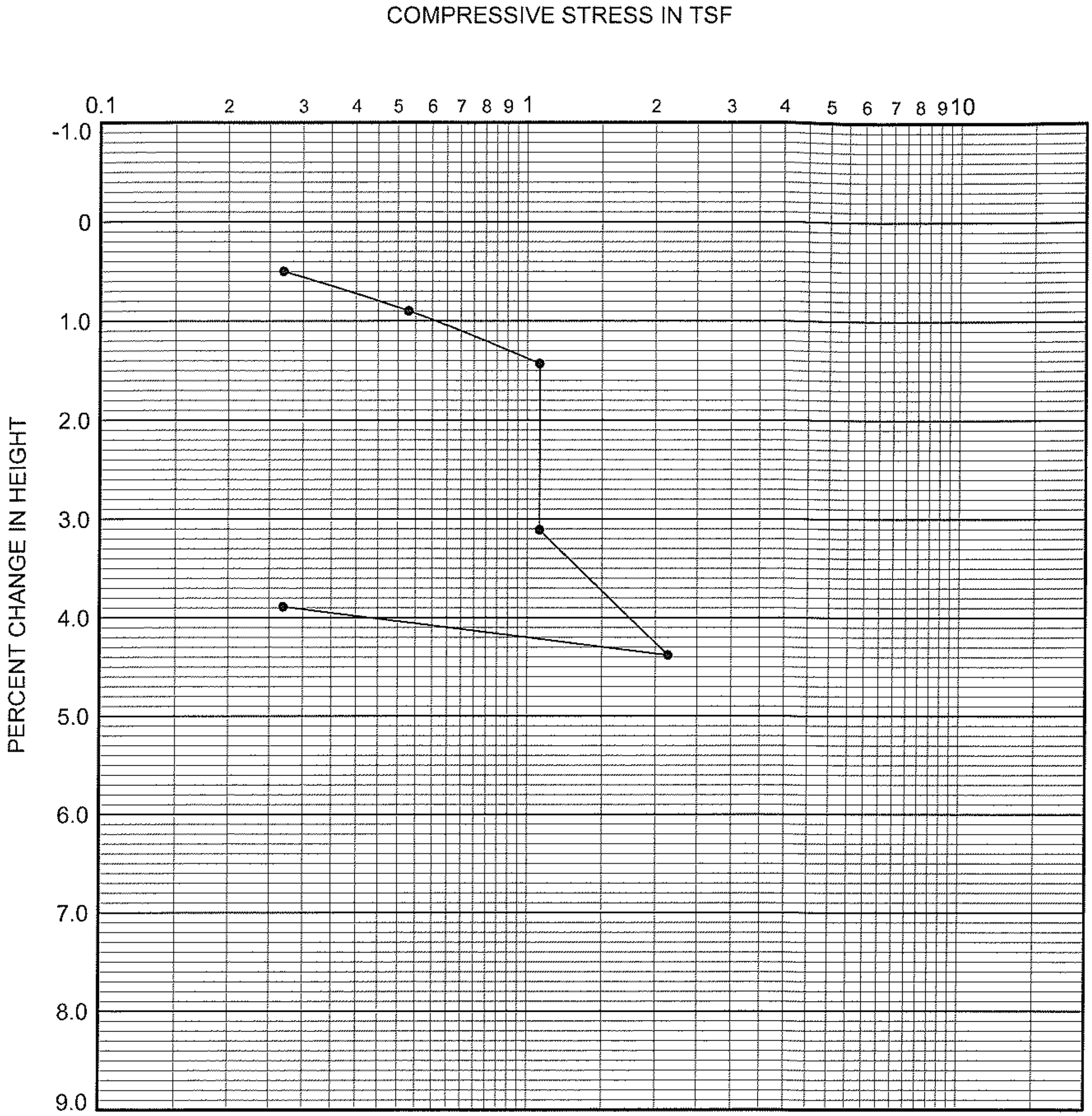


boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-2	10.0	112	6.5	36	27	SM	Silty sand (Qvof)

REMARKS: WATER ADDED AT 1.07 TSF

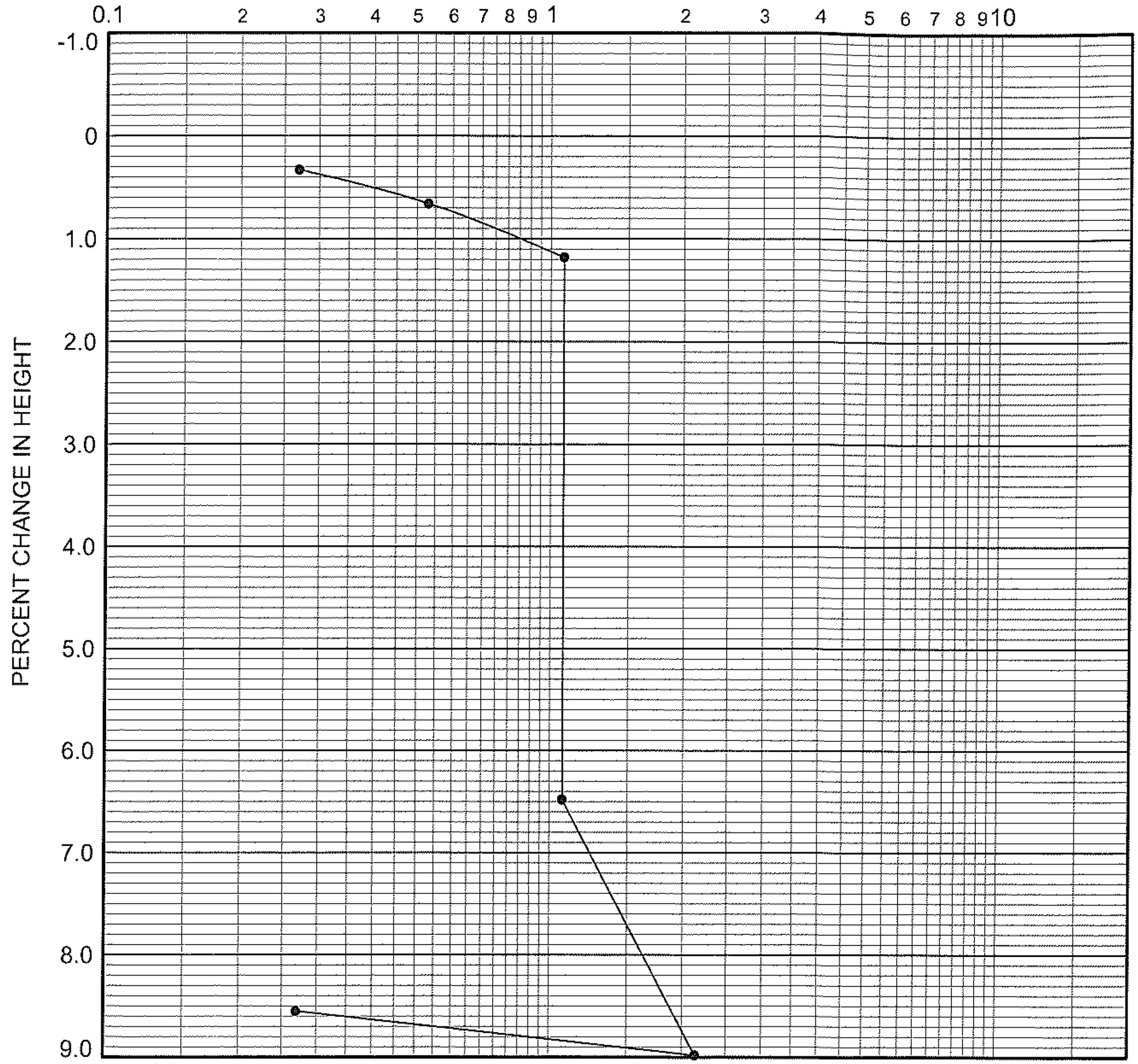
CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0192

PLATE C-1

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-4	5.0	106	4.5	21	29	SM	Silty sand (Qvof)

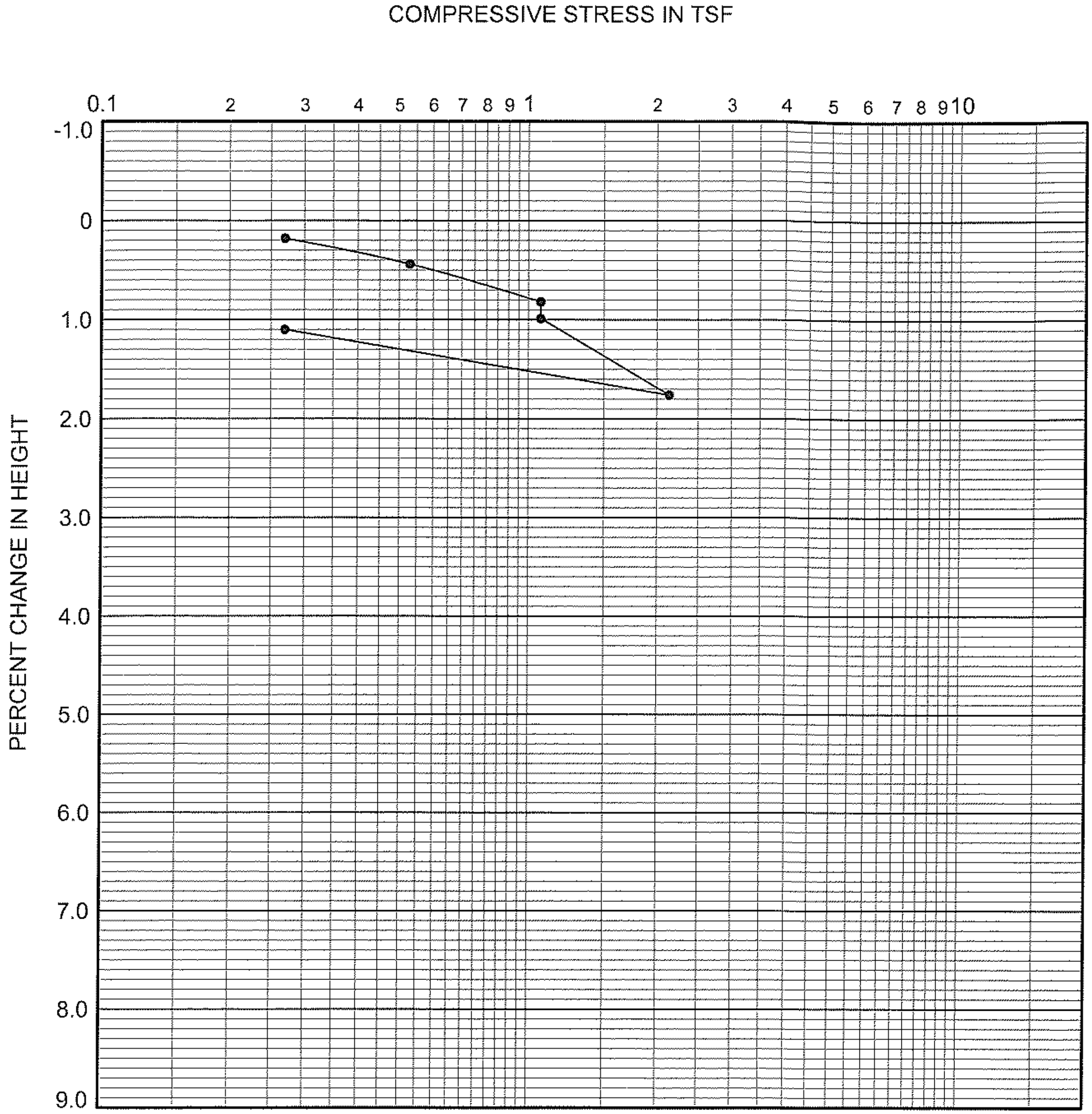
REMARKS: WATER ADDED AT 1.07 TSF

CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0192

PLATE C-2



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-7	7.0	102	10.4	45	38	SM	Silty sand (Qvof)

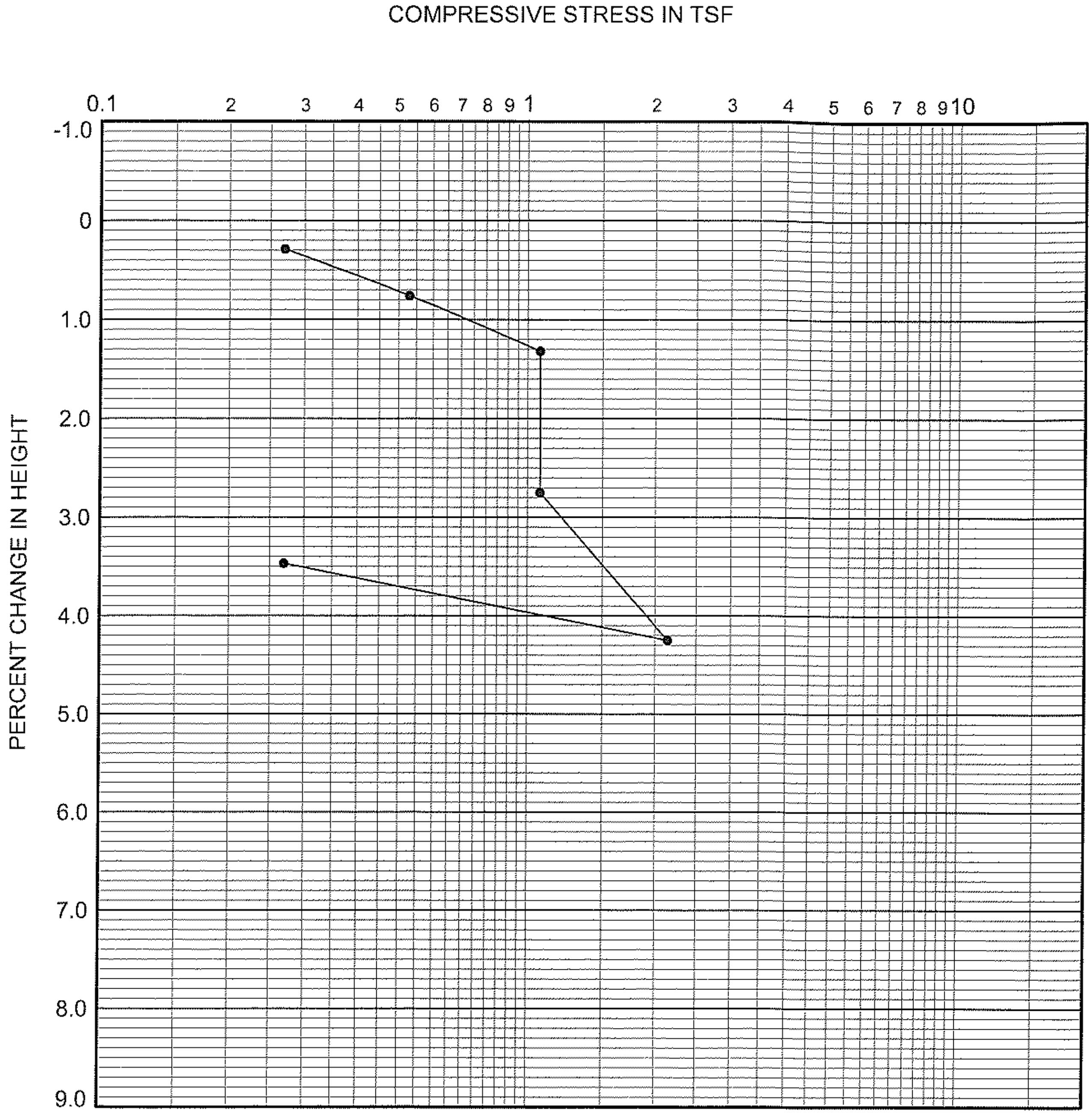
REMARKS: WATER ADDED AT 1.07 TSF

CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0192

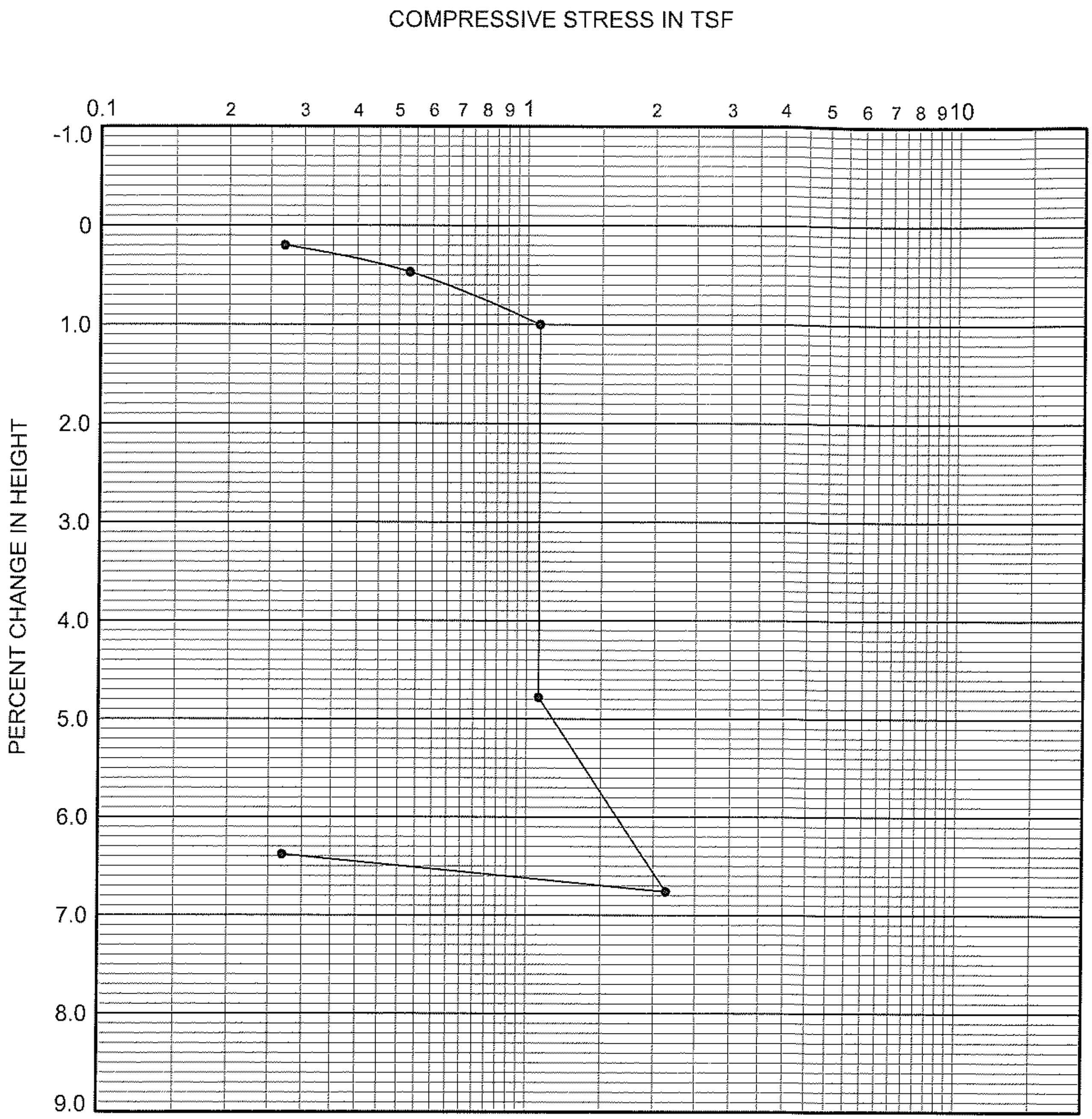
PLATE C-3



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-7	10.0	108	8.1	40	23	SM	Silty sand (Qvof)

REMARKS: WATER ADDED AT 1.07 TSF

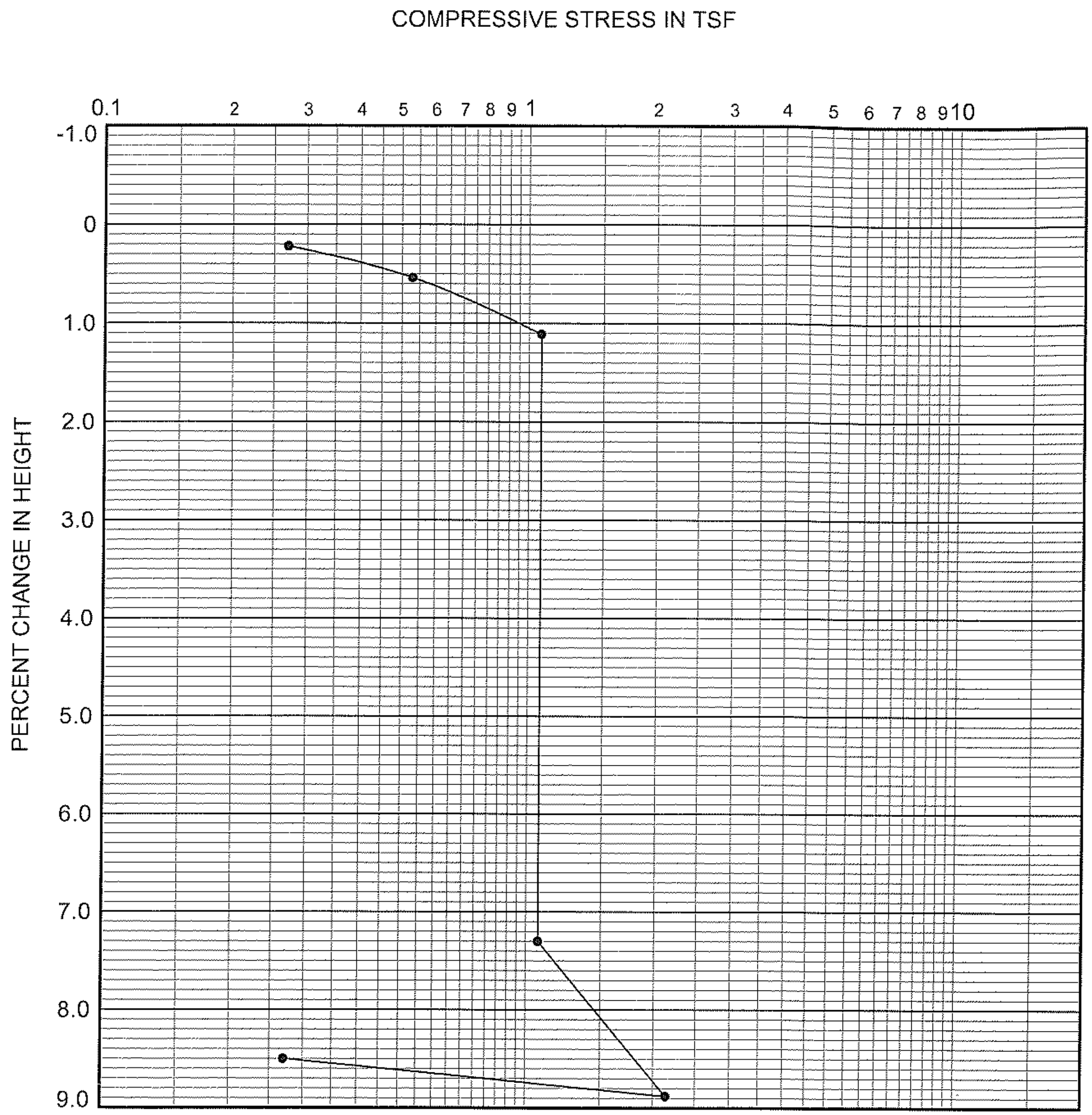
CONSOLIDATION CURVE	**Alta California Geotechnical, Inc.** P.N. 1-0192 PLATE C-4



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-9	5.0	107	3.5	17	28	SM	Silty sand (Qvof)

REMARKS: WATER ADDED AT 1.07 TSF

CONSOLIDATION CURVE	**Alta California Geotechnical, Inc.** P.N. 1-0192 PLATE C-5



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-9	7.0	105	2.7	12	12	SM	Silty sand (Qvof)

REMARKS: WATER ADDED AT 1.07 TSF

CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0192

PLATE C-6

Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

APPENDIX D

LIQUEFACTION CALCULATIONS

LIQUEFACTION ANALYSIS

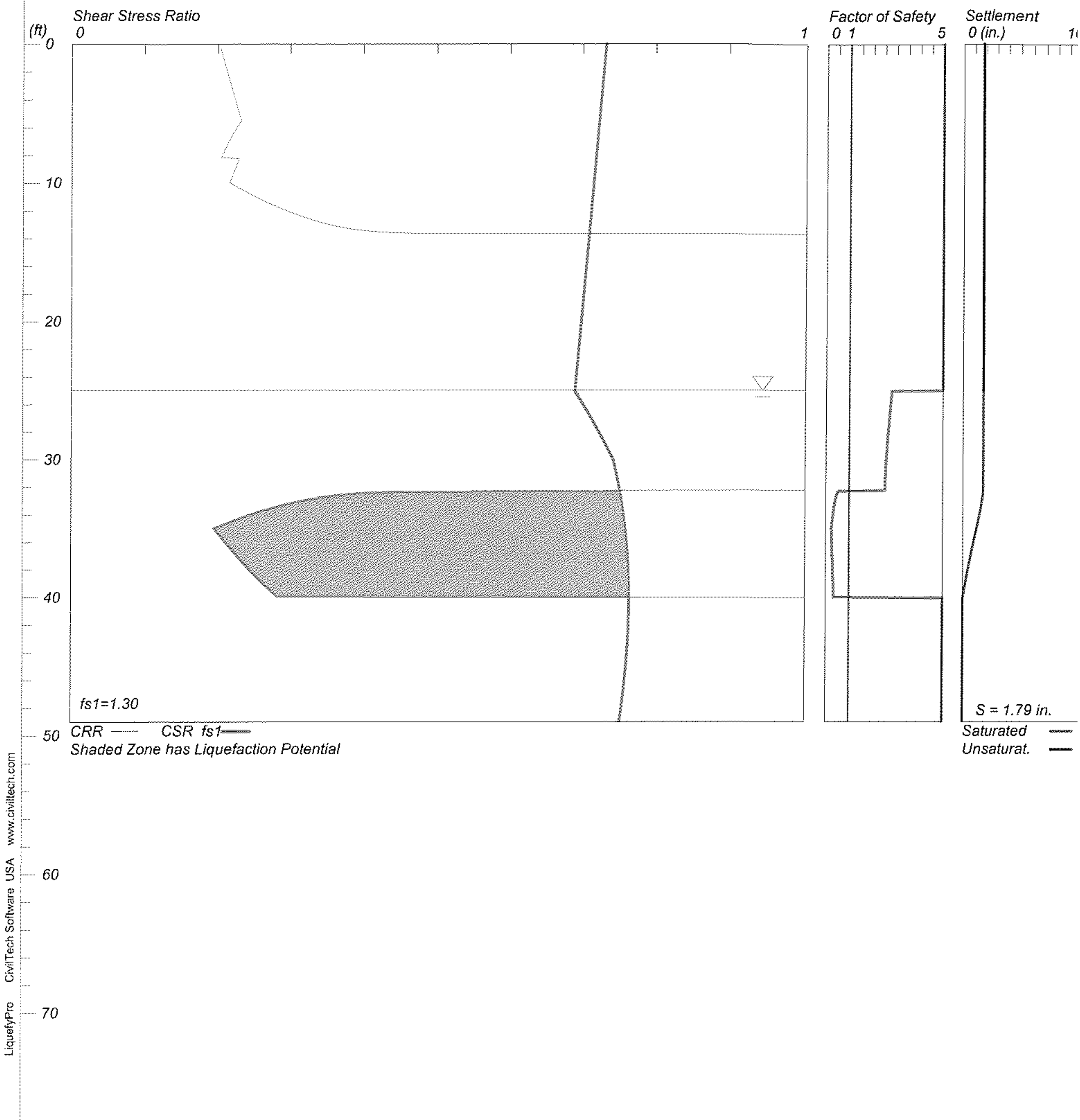
Liquefaction analysis were performed for the site based on SPT data presented in the attached boring logs. The calculations used the following constants: 0.866g for site acceleration, 7.6 for the magnitude of the earthquake, and a groundwater depth of 25 feet below existing grade. A factor of safety of 1.3 was utilized. The results are presented on Plates D-1 and D-2.

LIQUEFACTION ANALYSIS

Moreno Valley Apartments

Hole No.=B-4 Water Depth=25 ft

Magnitude=7.6
Acceleration=0.866g

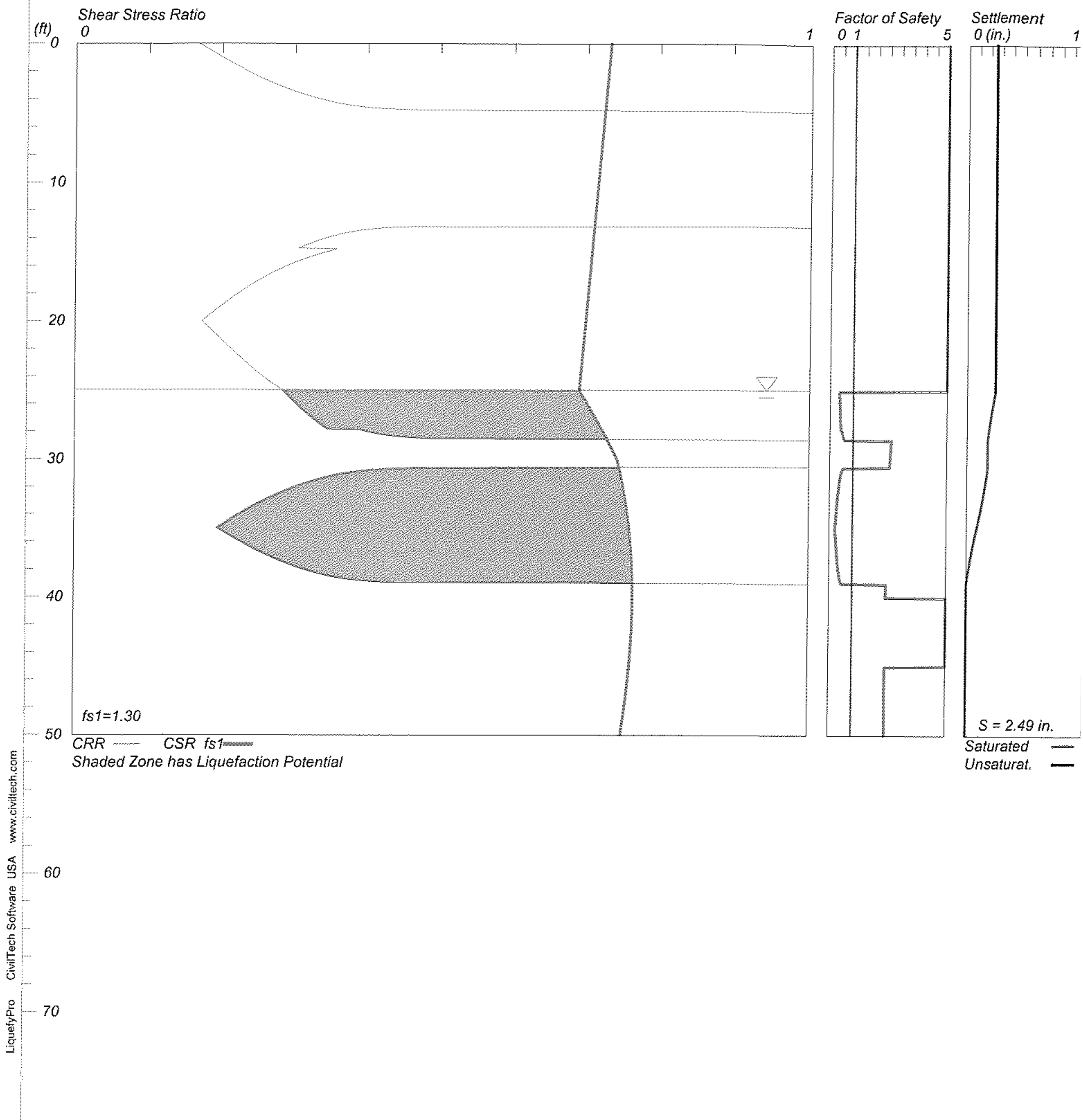


LIQUEFACTION ANALYSIS

1-0192

Hole No.=B-6   Water Depth=25 ft

Magnitude=7.6
Acceleration=0.866g



APPENDIX E

Earthwork Specifications

ALTA CALIFORNIA GEOTECHNICAL, INC.
EARTHWORK SPECIFICATIONS

These specifications present the generally accepted standards and minimum earthwork requirements for the development of the project. These specifications shall be the project guidelines for earthwork except where specifically superceded in preliminary geology and soils reports, grading plan review reports or by the prevailing grading codes or ordinances of the controlling agency.

A. GENERAL

1. The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications.

2. The project Geotechnical Engineer and Engineering Geologist, or their representatives, shall provide observation and testing services, and Geotechnical consultation for the duration of the project.

3. All clearing, grubbing, stripping and site preparation for the project shall be accomplished by the Contractor to the satisfaction of the Geotechnical Engineer/Engineering Geologist.

4. It is the Contractor's responsibility to prepare the ground surface to receive fill to the satisfaction of the Geotechnical Engineer and to place, spread, mix, moisture condition, and compact the fill in accordance with the job specifications and as required by the Geotechnical Engineer. The Contractor shall also remove all material considered by the Geotechnical Engineer to be unsuitable for use in the construction of engineered fills.

5. The Contractor shall have suitable and sufficient equipment in operation to handle the amount of fill being placed. When necessary, equipment will be shut down temporarily in order to permit the proper preparation of fills.

B. PREPARATION OF FILL AREAS

1. Excessive vegetation and all deleterious material should be disposed of offsite as required by the Geotechnical Engineer.

   Existing fill, soil, alluvium or rock materials determined by the Geotechnical Engineer as being unsuitable for placement in compacted fills shall be removed and hauled from the site. Where applicable, the Contractor may obtain the approval of the Soils Engineer and the controlling authorities for the project to dispose of the above described materials, or a portion thereof, in designated areas onsite.

After removal of the deleterious materials have been accomplished, earth materials deemed unsuitable in their natural, in-place condition, shall be removed as recommended by the Geotechnical Engineer/Engineering Geologist.

2. Upon achieving a suitable bottom for fill placement, the exposed removal bottom shall be disced or bladed by the Contractor to the satisfaction of the Geotechnical Engineer. The prepared ground surfaces shall then be brought to the specified moisture content mixed as required, and compacted and tested as specified. In localities where it is necessary to obtain the approval of the controlling agency prior to placing fill, it will be the Contractor's responsibility to contact the proper authorities to visit the site.

3. Any underground structure such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, pipelines or other structures not located prior to grading are to be removed or treated in a manner prescribed by the Geotechnical Engineer and/or the controlling agency for the project.

C. <u>ENGINEERED FILLS</u>

1. Any material imported or excavated on the property may be utilized as fill, provided the material has been determined to be suitable by the Geotechnical Engineer. Deleterious materials shall be removed from the fill as directed by the Geotechnical Engineer.

2. Rock or rock fragments less than twelve inches in the largest dimension may be utilized in the fill, provided they are not placed in concentrated pockets and the distribution of the rocks is approved by the Geotechnical Engineer.

3. Rocks greater than twelve inches in the largest dimension shall be taken offsite, or placed in accordance with the recommendations of the Geotechnical Engineer in areas designated as suitable for rock disposal.

4. All materials to be used as fill, shall be tested in the laboratory by the Geotechnical Engineer. Proposed import materials shall be approved by the Geotechnical Engineer 48 hours prior to importation.

5. The fill materials shall be placed by the Contractor in lifts, that when compacted, shall not exceed six inches. Each lift shall be spread evenly and shall be

thoroughly mixed to achieve a near uniform moisture condition and a uniform blend of materials.

All compaction shall be achieved at or above the optimum moisture content, as determined by the applicable laboratory standard. The Contractor will be notified if the fill materials are too wet or too dry to achieve the required compaction standard.

6. When the moisture content of the fill material is below the limit specified by the Geotechnical Engineer, water shall be added and the materials shall be blended until a uniform moisture content, within specified limits, is achieved. When the moisture content of the fill material is above the limits specified by the Geotechnical Engineer, the fill materials shall be aerated by discing, blading, mixed with dryer fill materials, or other satisfactory methods until the moisture content is within the specified limits.

7. Each fill lift shall be compacted to the minimum project standards, in compliance with the testing methods specified by the controlling governmental agency, and in accordance with recommendations of the Geotechnical Engineer.

   In the absence of specific recommendations by the Geotechnical Engineer to the contrary, the compaction standard shall be the most recent version of ASTM:D 1557.

8. Where a slope receiving fill exceeds a ratio of five-horizontal to one-vertical, the fill shall be keyed and benched through all unsuitable materials into sound bedrock or firm material, in accordance with the recommendations and approval of the Geotechnical Engineer.

9. Side hill fills shall have a minimum key width of 15 feet into bedrock or firm materials, unless otherwise specified in the soil report and approved by the Geotechnical Engineer in the field.

10. Drainage terraces and subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency and/or with the recommendations of the Geotechnical Engineer and Engineering Geologist.

11. The Contractor shall be required to maintain the specified minimum relative compaction out to the finish slope face of fill slopes, buttresses, and stabilization fills as directed by the Geotechnical Engineer and/or the governing agency for the project. This may be achieved by either overbuilding the slope and cutting

back to the compacted core; by direct compaction of the slope face with suitable equipment; or by any other procedure which produces the required result.

12. The fill portion of fill-over-cut slopes shall be properly keyed into rock or firm material; and the fill area shall be stripped of all soil or unsuitable materials prior to placing fill.

    The design cut portion of the slope should be made first and evaluated for suitability by the Engineering Geologist prior to placement of fill in the keyway above the cut slope.

13. Pad areas in cut or natural ground shall be approved by the Geotechnical Engineer. Finished surfaces of these pads may require scarification and recompaction, or over excavation as determined by the Geotechnical Engineer.

D. <u>CUT SLOPES</u>

1. The Engineering Geologist shall observe all cut slopes and shall be notified by the Contractor when cut slopes are to be started.

2. If, during the course of grading, unforeseen adverse or potentially adverse geologic conditions are encountered, the Engineering Geologist and Soil Engineer shall investigate, analyze and make recommendations to remediate these problems.

3. Non-erodible interceptor swales shall be placed at the top of cut slopes that face the same direction as the superjacent, prevailing drainage.

4. Unless otherwise specified in specific geotechnical reports, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies.

5. Drainage terraces shall be constructed in compliance with the ordinances of the controlling governmental agencies, and/or in accordance with the recommendations of the Geotechnical Engineer or Engineering Geologist.

E. <u>GRADING CONTROL</u>

1. Fill placement shall be observed and tested by the Geotechnical Engineer and/or his representative during grading.

   Field density tests shall be made by the Geotechnical Engineer and/or his representative to evaluate the compaction and moisture compliance of each fill lift. Density tests shall be conducted at intervals not to exceed two feet of fill height. Where sheepsfoot rollers are used, the fill may be disturbed to a depth of several inches. Density determinations shall be taken in the compacted material below the disturbed surface at a depth determined by the Geotechnical Engineer or his representative.

2. Where tests indicate that the density of any layer of fill, or portion thereof, is below the required relative compaction, or improper moisture content is in evidence, that particular layer or portion thereof shall be reworked until the required density and/or moisture content has been attained. Additional fills shall not be placed over an area until the previous lift of fill has been tested and found to meet the density and moisture requirements for the project and the previous lift is approved by the Geotechnical Engineer.

3. When grading activities are interrupted by heavy rains, fill operations shall not be resumed until field observations and tests by the Geotechnical Engineer indicate the moisture content and density of the fill are within the specified limits.

4. During construction, the Contractor shall properly grade all surfaces to maintain good drainage and prevent the ponding of water. The Contractor shall take remedial action to control surface water and to prevent erosion of graded areas until such time as a permanent drainage and erosion devices have been installed.

5. Observation and testing by the Geotechnical Engineer and/or his representative shall be conducted during filling and compacting operations in order that he will be able to state in his opinion that all cut and filled areas are graded in accordance with the approved specifications.

6. Upon the completion of grading activities and after the Geotechnical Engineer and Engineering Geologist have finished their observations of the work, final reports shall be submitted. No further excavation or fill placement shall be undertaken without prior notification of the Geotechnical Engineer and/or Engineering Geologist.

F. <u>FINISHED SLOPES</u>

All finished cut and fill slopes shall be planted and irrigated and/or protected from erosion in accordance with the project specifications, governing agencies, and/or as recommended by a landscape architect.

APPENDIX F

Grading Details

DETAIL FOR FILL SLOPE TOEING OUT ON FLAT ALLUVIATED CANYON

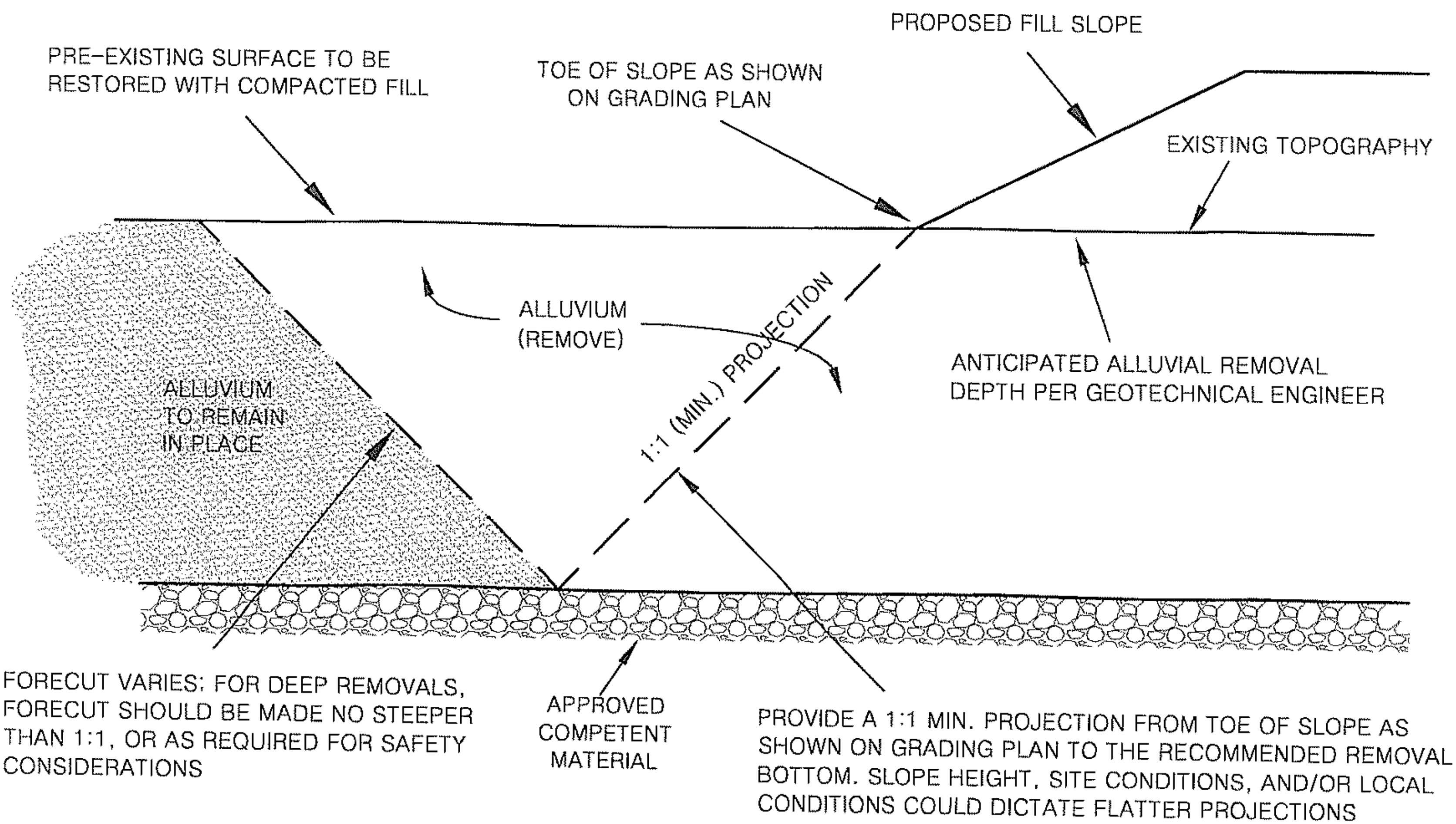


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PLATE G-1

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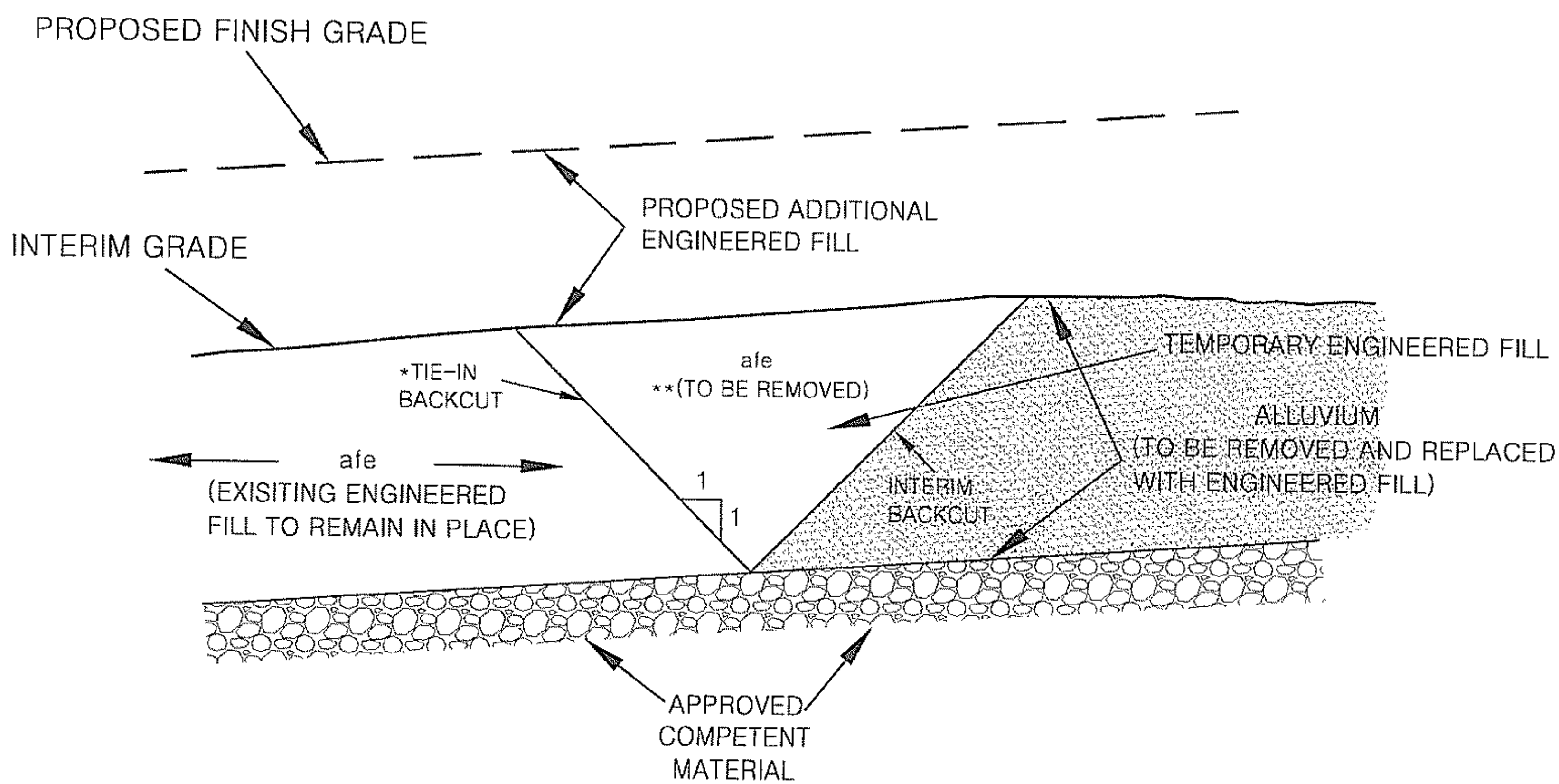
REMOVAL ADJACENT TO EXISTING FILL



*INITIATE 1:1 TIE-IN BACKCUT TO INTERCEPT TOE OF INTERIM BACKCUT

** AS PART OF TIE-IN FOR ADDITIONAL ENGINEERED FILL

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PLATE G-2

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CANYON SUBDRAIN

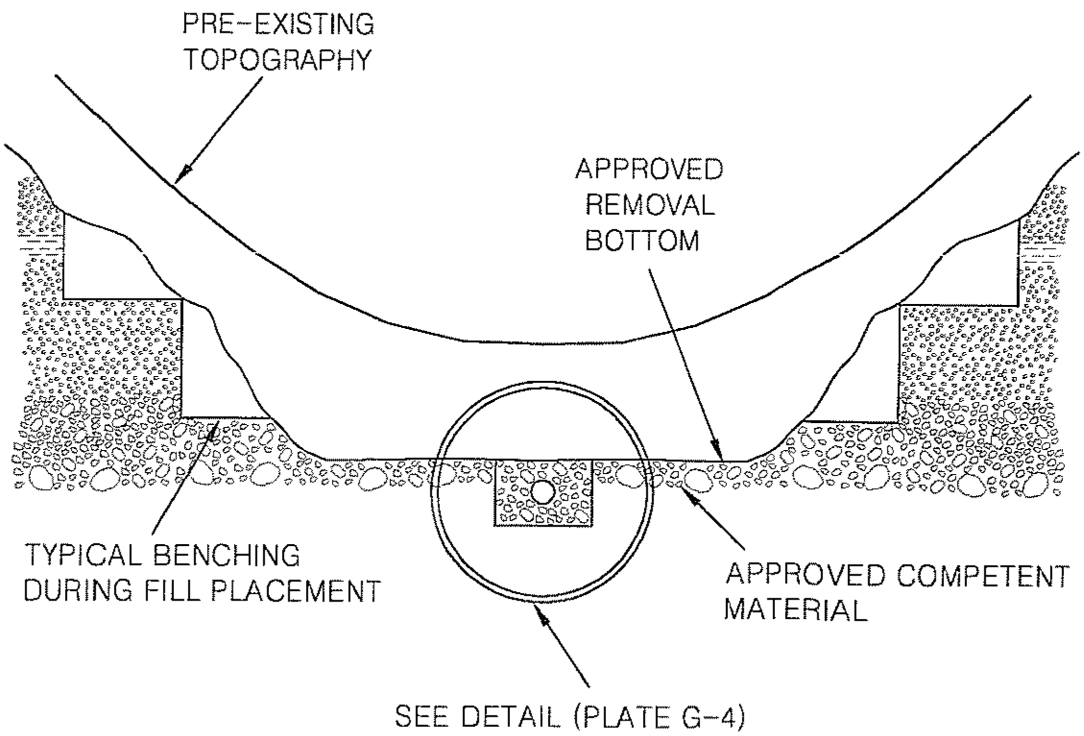

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PLATE G-3

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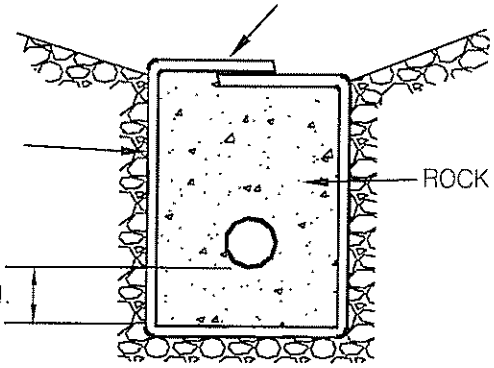
CANYON SUBDRAIN DETAIL



PERFORATED PIPE SURROUNDED WITH ROCK AND FILTER FABRIC

ROCK: MIN. VOLUME OF 9 CU.FT. PER LINEAR FT. OF 3/4 IN. MAX. ROCK
PIPE: 6 IN. ABS OR PVC PIPE WITH A MINIMUM OF 8 PERFORATIONS (1/4-IN. DIA.) PER LINEAL FT. IN BOTTOM HALF OF PIPE ASTM D2751, SDR 35, OR ASTM D3034 OR ASTM D1527, SCHD. 40 ASTM D1785, SCHD. 40
FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT

NOTE: FOR CONTINUOUS RUN IN EXCESS OF 500. FT USE 8 IN. DIA. PIPE

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PLATE G-4

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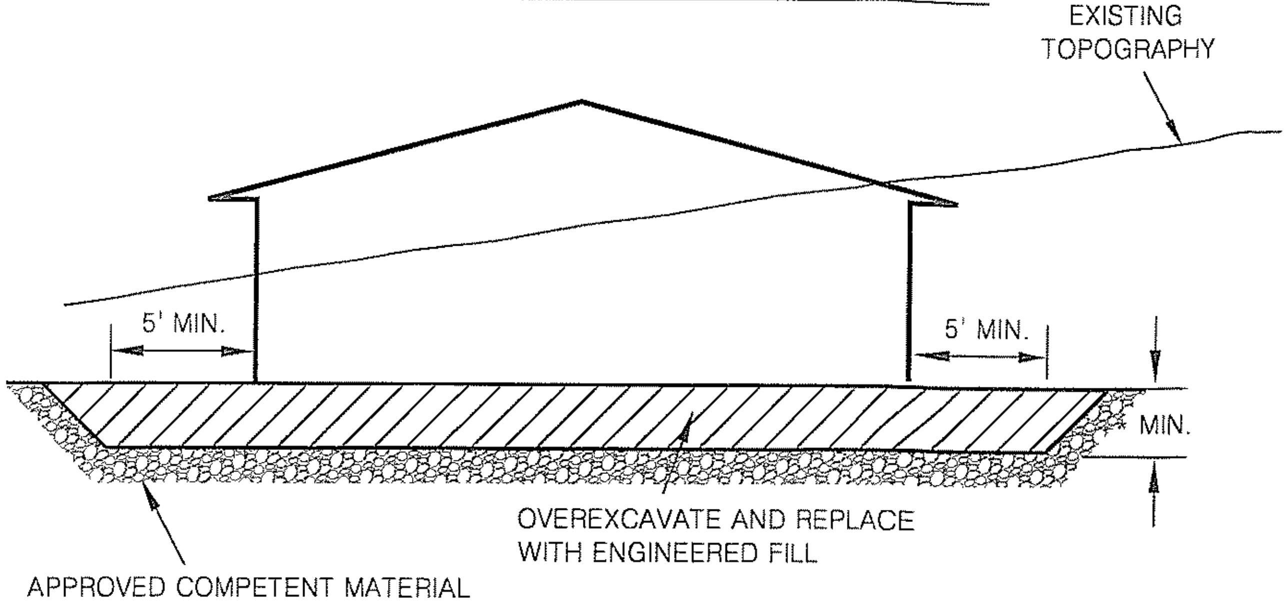
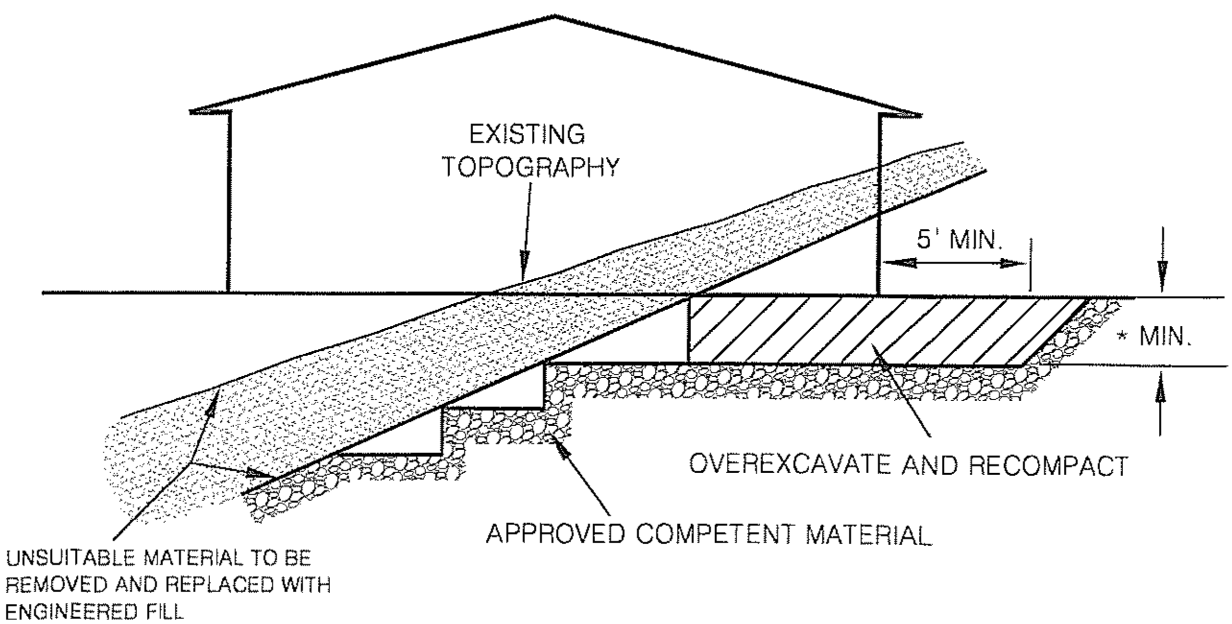
Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

OVEREXCAVATION CUT LOT



CUT-FILL LOT (TRANSITION)



*NOTE ALL BUILDING PADS SHALL BE OVER EXCAVATED TO A MINIMUM OF ⅓ OF THE MAXIMUM DEPTH OF FILL BELOW THE BUILDING PAD TO A MAXIMUM OF 17 FEET (SEE PLATE G-16)

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PLATE G-5

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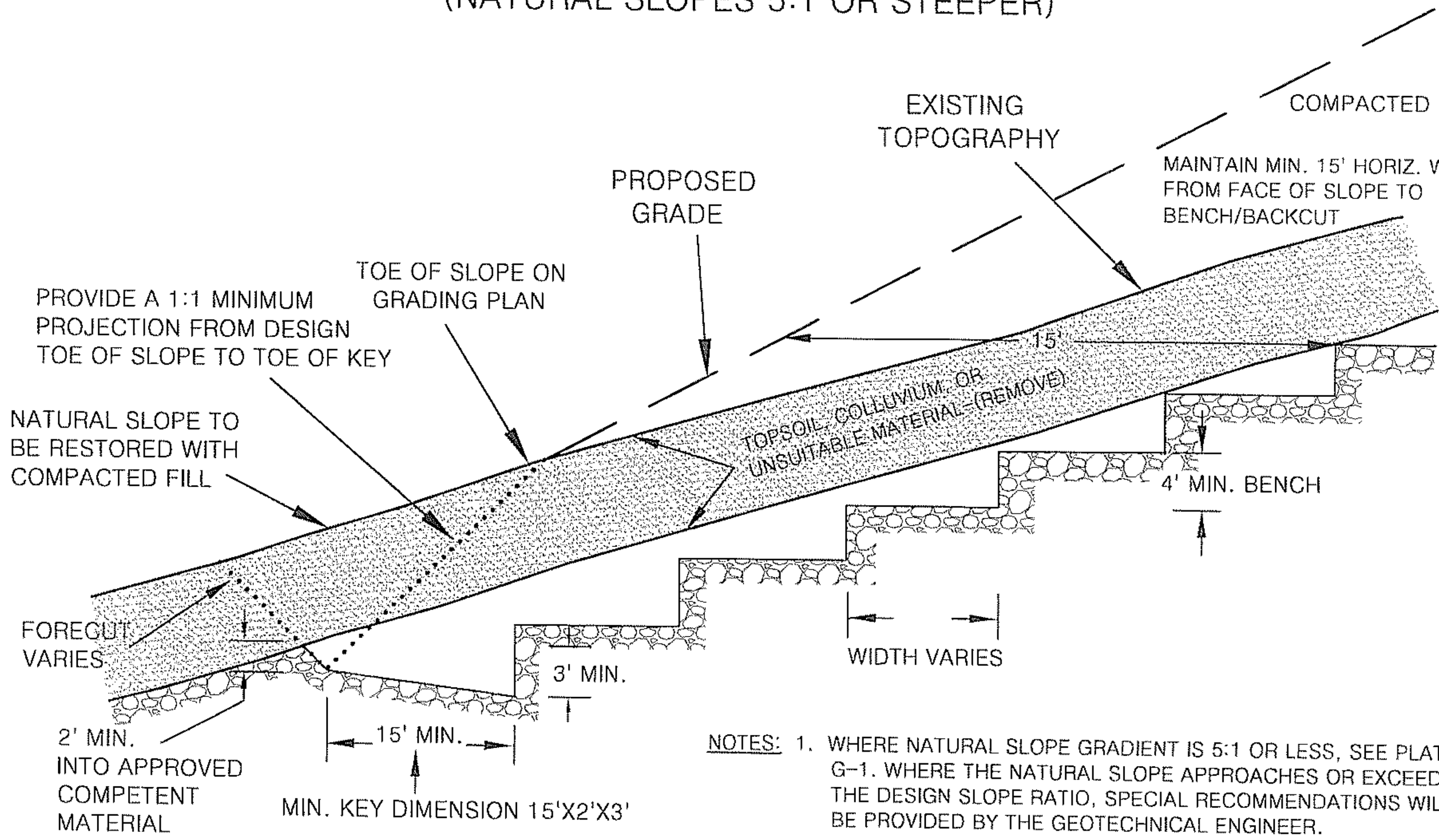
SIDE HILL SLOPE FILL DETAIL

(NATURAL SLOPES 5:1 OR STEEPER)



NOTES:

1. WHERE NATURAL SLOPE GRADIENT IS 5:1 OR LESS, SEE PLATE G-1. WHERE THE NATURAL SLOPE APPROACHES OR EXCEEDS THE DESIGN SLOPE RATIO, SPECIAL RECOMMENDATIONS WILL BE PROVIDED BY THE GEOTECHNICAL ENGINEER.
2. THE NEED FOR AND PLACEMENT OF DRAINS WILL BE DETERMINED BY THE GEOTECHNICAL ENGINEER OR GEOLOGIST BASED UPON EXPOSED FIELD CONDITIONS.

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PLATE G-6

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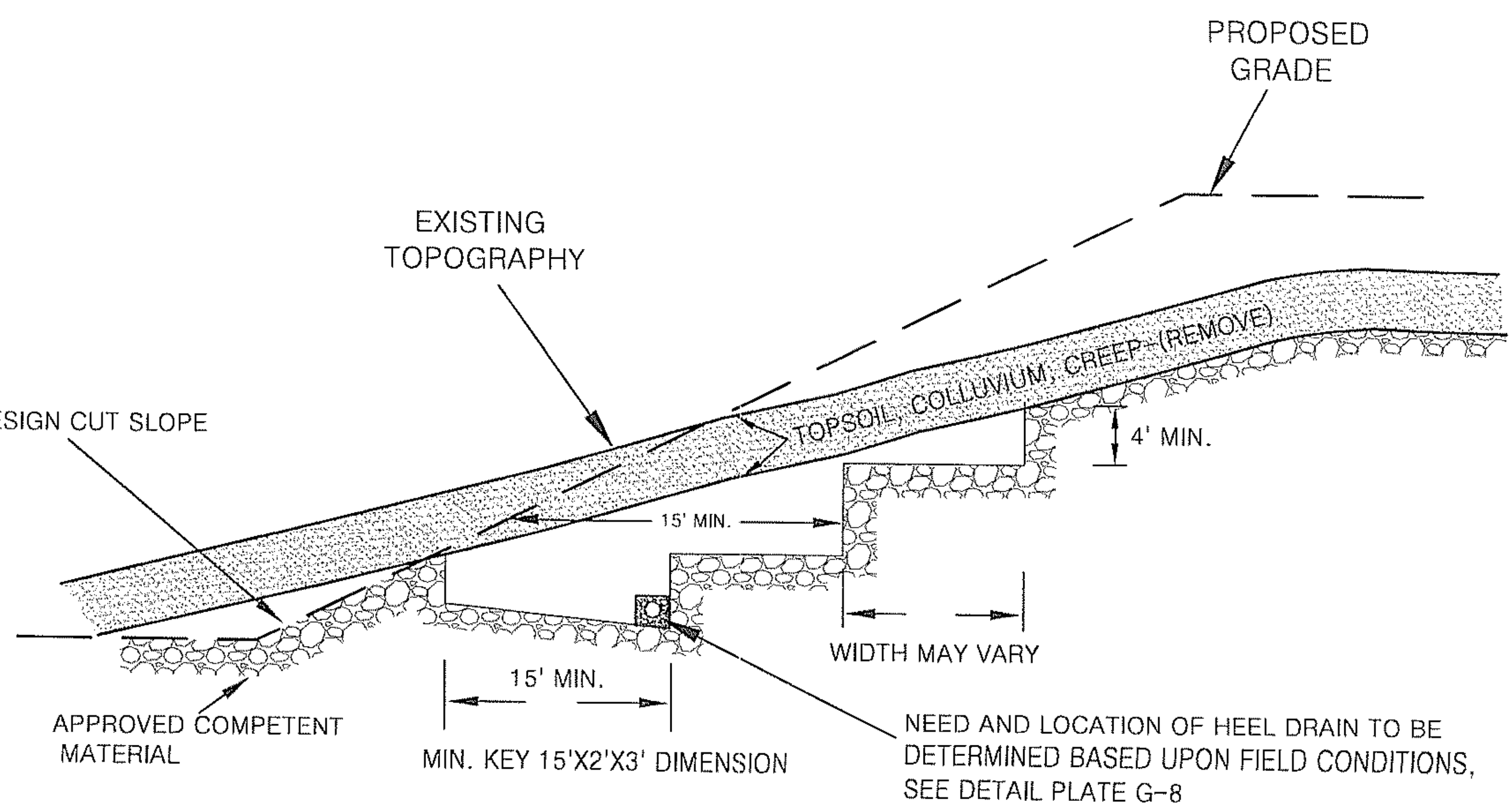
FILL OVER CUT SLOPE DETAIL



*THE CUT PORTION OF THE SLOPE SHOULD BE EXCAVATED AND EVALUATED BY THE ENGINEERING GEOLOGIST/GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTING THE FILL SLOPE

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PLATE G-7

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STABILIZATION/BUTTRESS FILL BACKDRAIN

NOTE:

1. ASTM D2751, SDR 35, OR ASTM D3034 OR ASTM D1527, SCHD. 40 ASTM D1785, SCHD. 40
2. SOLID PIPE OUTLETS TO BE PROVIDED EVERY 100 FT. AND JOINED TO PERFORATED BACKDRAIN PIPE WITH "L" OR "T"s. MIN. 2% GRADIENT.
3. GRAVEL TRENCH TO BE FILLED WITH 3/4 IN. MAXIMUM ROCK
4. THE NECESSITY FOR UPPER TIER BACKDRAINS SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER OR GEOLOGIST. UPPER TIER OUTLETS SHOULD DRAIN INTO PAVED TERRACE DRAINS.

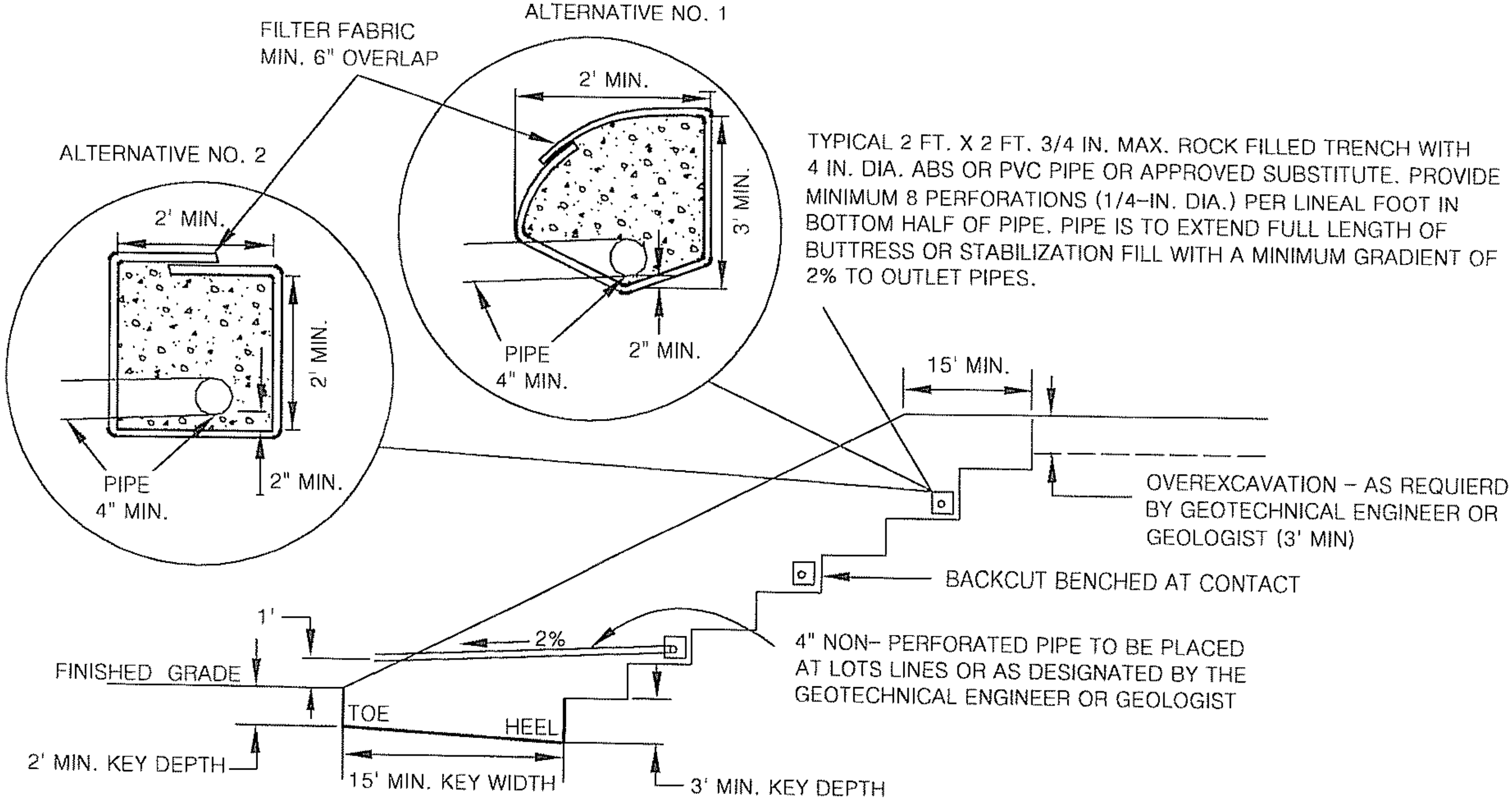

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PLATE G–8

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Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

STABILIZATION FILL

(UPSLOPE ALLUVIATED AREA)

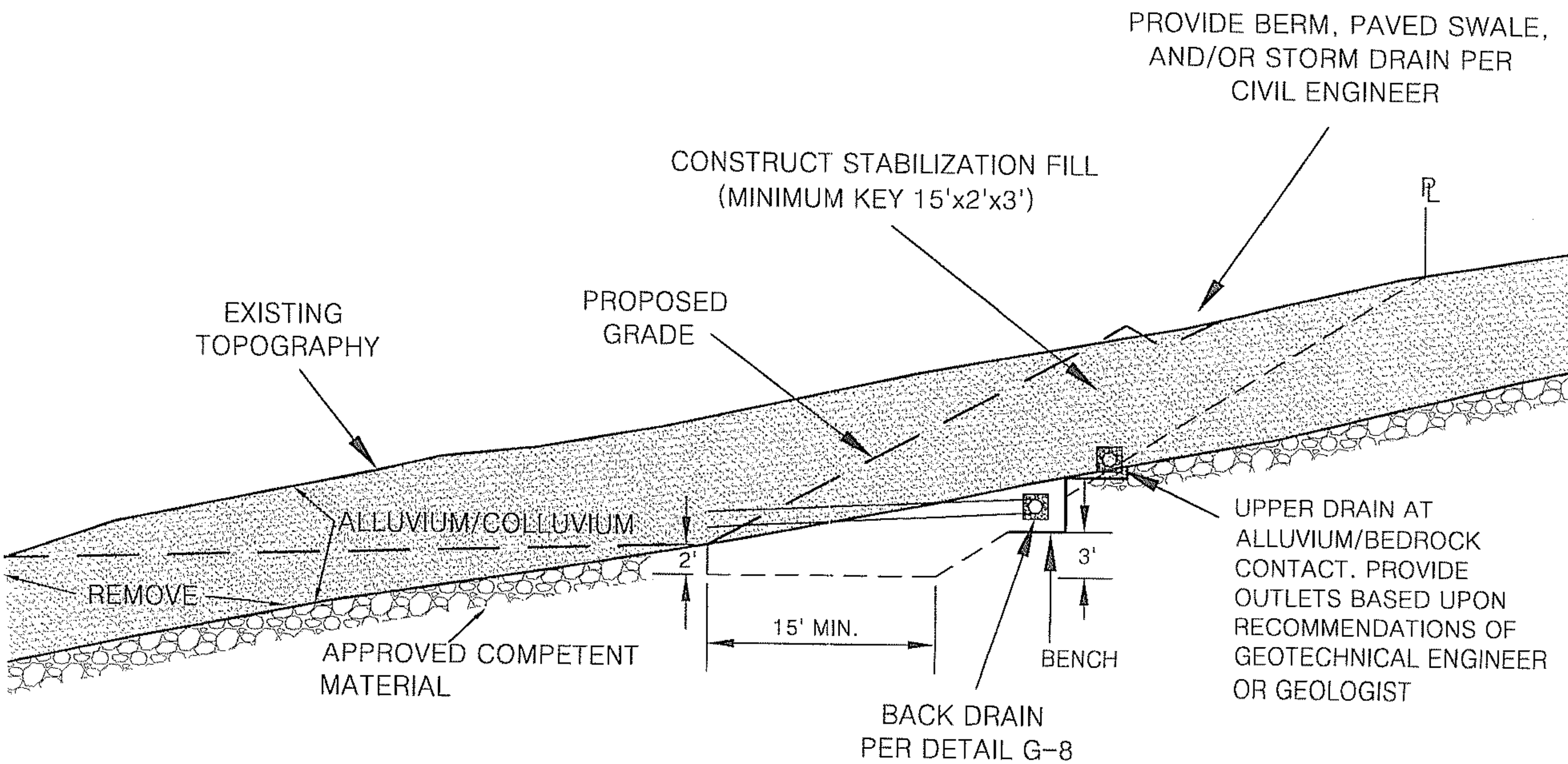

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PLATE G-9

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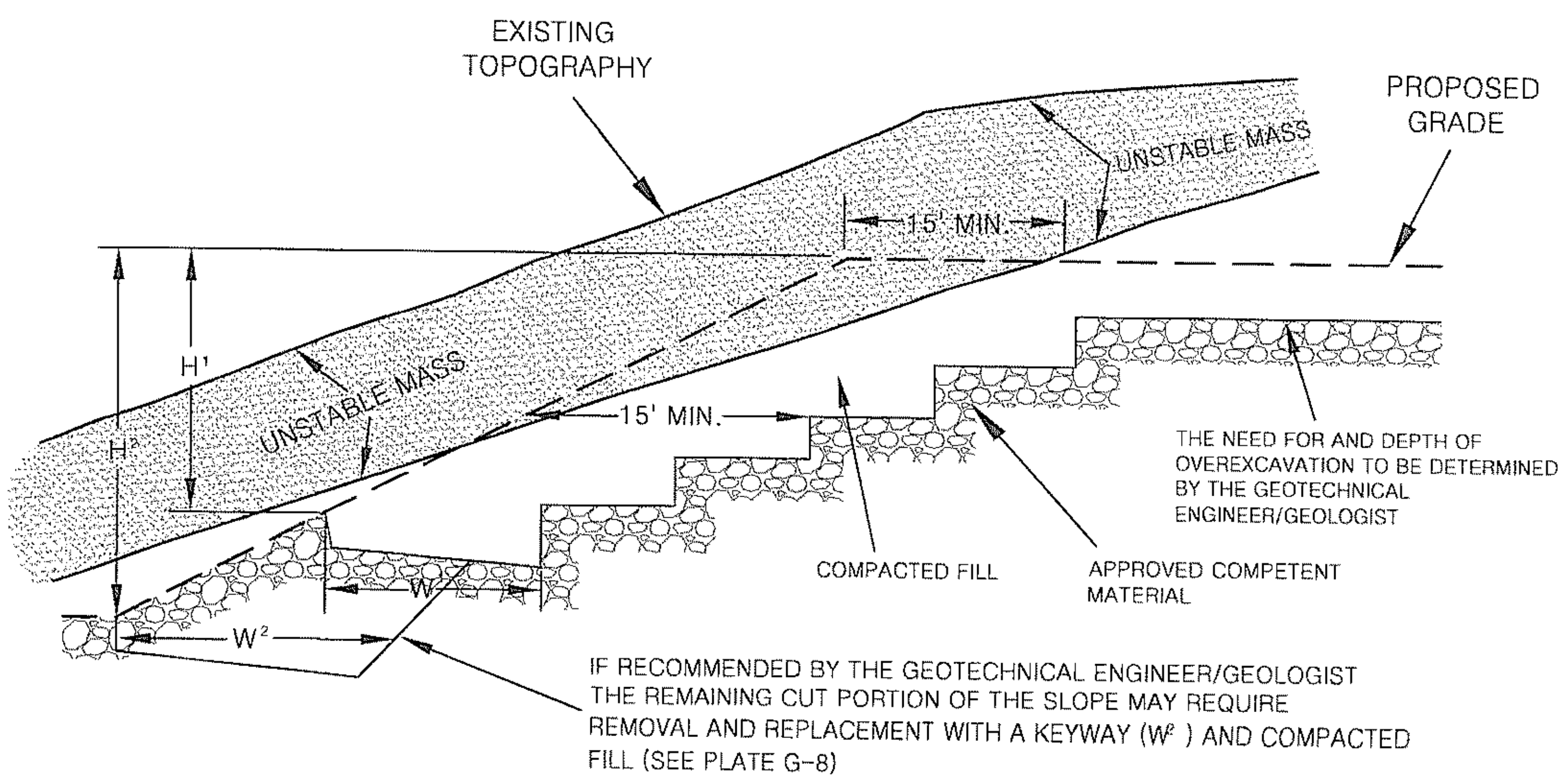
SELECTIVE GRADING DETAIL FOR STABILIZATION FILL
UNSTABLE MATERIAL EXPOSED IN PORTION OF CUT SLOPE



NOTES:

1. BACKDRAINS ARE NOT REQUIRED UNLESS SPECIFIED.
2. "W" SHALL BE EQUIPMENT WIDTH (15') FOR SLOPE HEIGHT LESS THAN 25 FEET. FOR SLOPES GREATER THAN 25 FEET, "W" SHALL BE DETERMINED BY THE PROJECT GEOTECHNICAL ENGINEER/GEOLOGIST. AT NO TIME SHALL "W" BE LESS THAN H/2.

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PLATE G-10

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SKIN FILL SLOPE OVER NATURAL GROUND

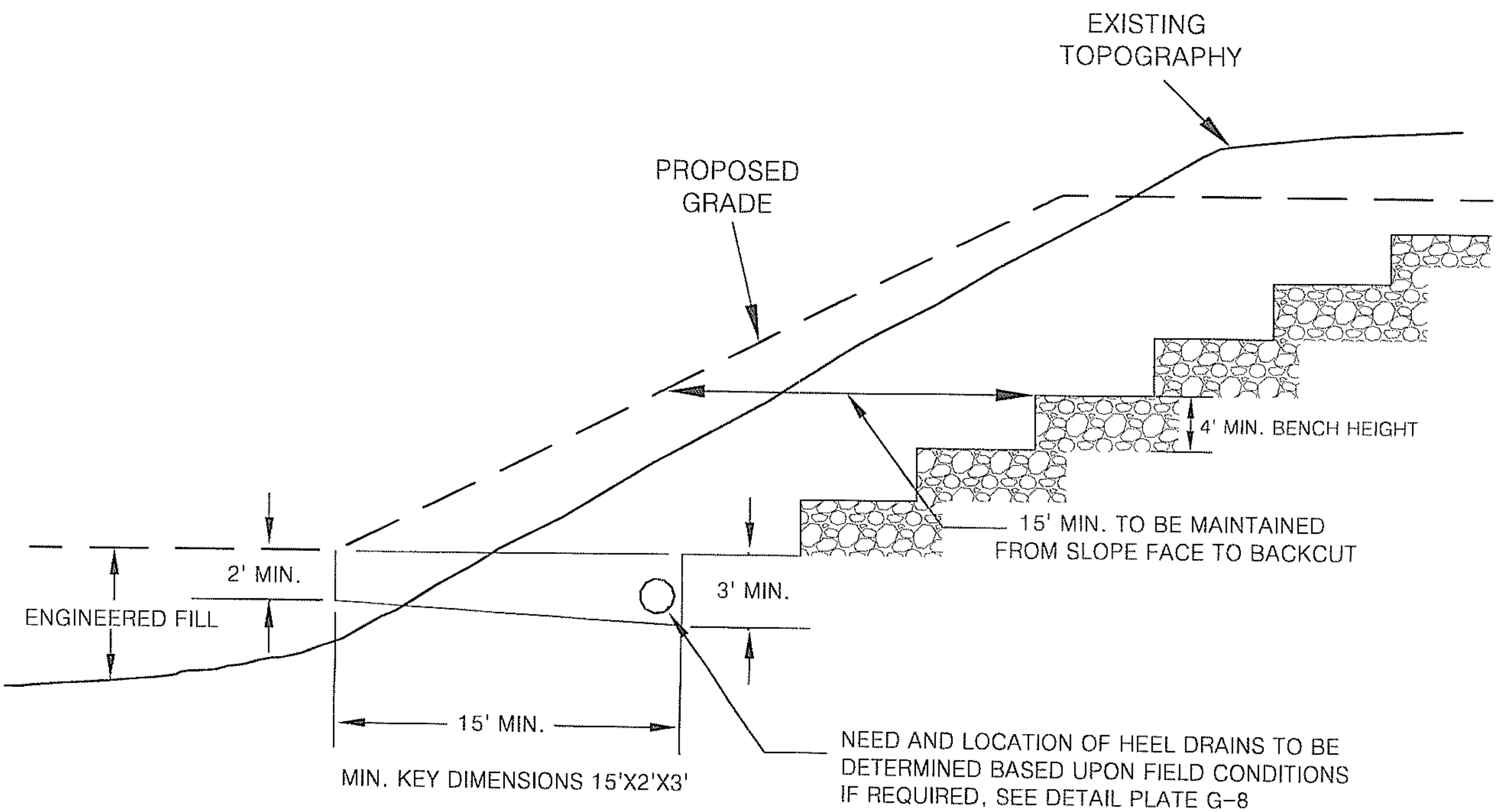

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PLATE G-11

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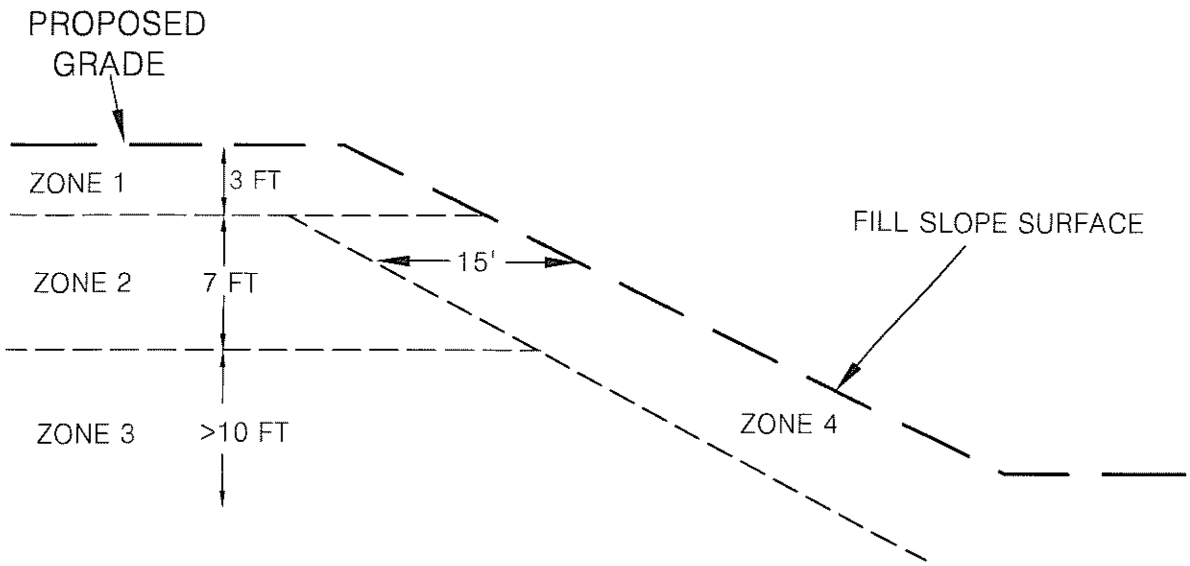
DETAIL FOR MAXIMUM PARTICLE DIMENSION



ZONE	DEPTH	PARTICLE MAX. DIMENSION	PLACEMENT METHOD
1	0-3 ft.	≤0.5 ft.	STANDARD OR CONVENTIONAL COMPACTION METHODS (SEE EARTHWORK SPECIFICATIONS)
2	3-10 ft.	≤2.0 ft.	ROCK BLANKETS (SEE PLATE G-13)
3	>10 ft.	≤8.0 ft.	ROCK BLANKETS (PLATE G-13) ROCK WINDROW (PLATE G-14) INDIVIDUAL ROCK BURIED (PLATE G-15)
4	15 HORIZONTAL FEET FROM FILL SLOPE FACE	≤1.0 ft.	STANDARD OR CONVENTIONAL COMPACTION METHODS (SEE EARTHWORK SPECIFICATIONS)

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PLATE G-12

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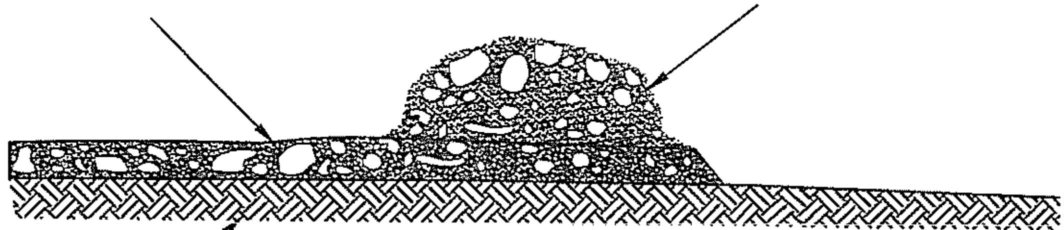
ROCK BLANKET DETAILS

LOOSE PILE 1
LOOSE, DUMPED ROCK, GRAVEL AND SAND MIXTURE REMOVE FRAGMENTS LARGER THAT 2 FEET FOR ISOLATED BURIAL (PLATE G-15) OR WINDROW (PLATE G-10)

APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

COMPACT PILE 1
SPREAD LOOSE PILE FORWARD WITH HEAVY TRACKED DOZER (D-8 OR LARGER). HEAVILY WATER, TRACK, AND APPLY ADDITIONAL SAND AND GRAVEL AS NECESSARY TO FILL VOIDS AND CREATE A DENSE MATRIX OF ROCK, COBBLES, GRAVEL AND SAND (2 FOOT MAXIMUM THICKNESS)

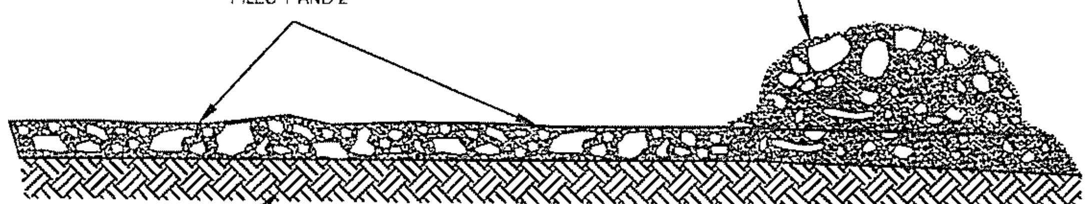
LOOSE PILE 2
DUMP SUCCESSIVE PILES OF LOOSE ROCK, GRAVEL AND SAND MIXTURE ON FORWARD EDGE OF PREVIOUSLY COMPACTED LIFT WITH TRUCKS AND/OR SCRAPERS. USE PREVIOUS LIFT TO ACCESS AND FURTHER COMPACT PILE 1.



APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

LOOSE PILE 3
DUMP SUCCESSIVE PILES OF LOOSE ROCK, GRAVEL AND SAND MIXTURE ON FORWARD EDGE OF PREVIOUSLY COMPACTED LIFT WITH TRUCKS AND/OR SCRAPERS. USE PREVIOUS LIFT TO ACCESS AND FURTHER COMPACT EXISTING BLANKET.

COMPACTED PILES 1 AND 2



APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

OBSERVATION TESTING AND APPROVAL PROCEDURES
OBSERVE EQUIPMENT. SCRAPERS AND TRUCKS SHOULD BE FULLY SUPPORTED ON BLANKET WITHOUT SIGNIFICANT YIELDING. EXCAVATE TEST/OBSERVATION PITS TO CONFIRM EXISTENCE OF MIXTURE OF VARIOUS PARTICLE SIZES, WITHOUT SIGNIFICANT VOIDS, AND FORMING A DENSE, COMPACTED FILL MATRIX. TEST BY ASTM D1556, D2922 AND/OR D3017 WHEN APPROPRIATE. RECORD LIMITS AND ELEVATION OF BLANKET. ALL FILL AND COMPACTION OPERATIONS TO BE CONDUCTED UNDER THE OBSERVATION OF THE GEOTECHNICAL ENGINEER. SUBSEQUENT LIFTS TO BE APPLIED ONLY AFTER OBSERVATION AND CONFIRMATION OF SUITABILITY OF FILL AND RELEASE BY THE GEOTECHNICAL ENGINEER. BLANKETS TO BE CONSTRUCTED IN ACCORDANCE WITH PLATE G-12.

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PLATE G-13

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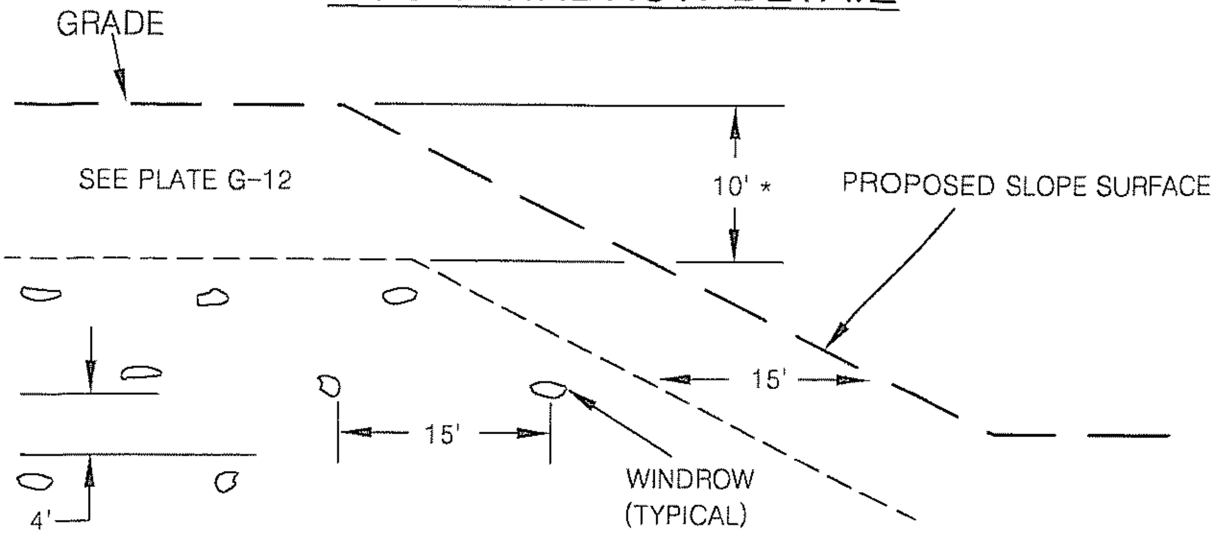
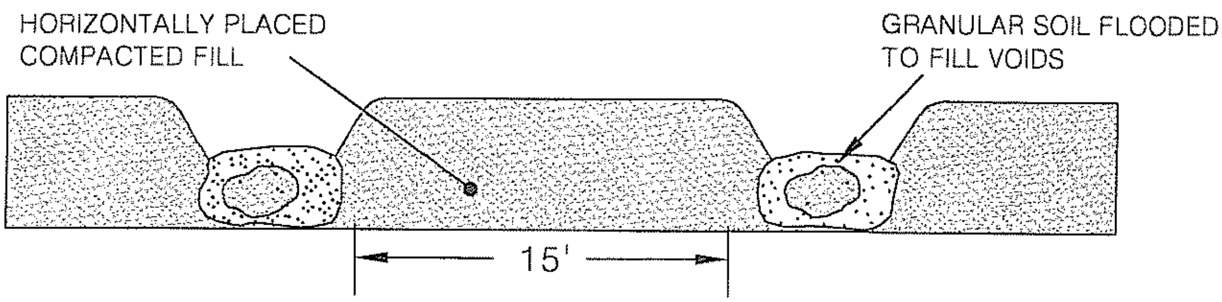
ROCK WINDROW DETAIL



NOTE: OVERSIZED MATERIAL SHOULD BE REMOVED FROM THE 15' CLEAR ZONES WITH SPECIAL EQUIPMENT, SUCH AS A ROCK RAKE, PRIOR TO PLACING THE NEXT FILL LIFT.
*VARIANCES TO THE ABOVE ROCK HOLD DOWN MAY BE GRANTED SUBJECT TO APPROVAL BY THE OWNER, GEOTECHNICAL ENGINEER, AND GOVERNING AGENCY

TYPICAL WINDROW DETAIL (END VIEW)



NOTE: COMPACTED FILL SHALL BE BROUGHT UP TO A HIGHER ELEVATION ALONG EACH WINDROW SO GRANULAR SOIL CAN BE FLOODED IN A "TRENCH CONDITION".

PROFILE VIEW

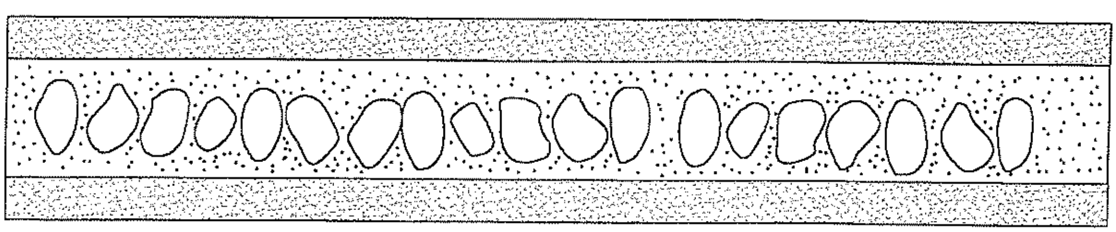


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PLATE G-14

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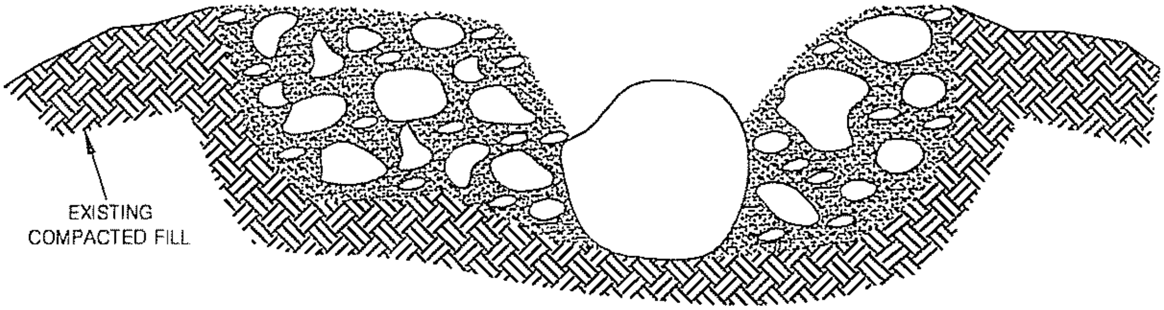
ISOLATED ROCK BURIAL DETAILS



EXCAVATE HOLE INTO EXISTING FILL PRISM, PLACE BOULDER (< 8 feet in maximum dimension) INTO EXISTING COMPACTED FILL. SURROUND WITH SAND, GRAVEL, COBBLES AND WATER HEAVILY. TRACK WITH D8 OR LARGER EQUIPMENT UNTIL RESULTING FILL FULLY SUPPORTS EQUIPMENT. OBSERVE AND/OR TEST IN ACCORDANCE WITH ASTM D1556, D2922 OR D3017. ROCKS LARGER THAN 8 FEET SHALL BE FURTHER REDUCED IN SIZE BY SECONDARY BREAKING.

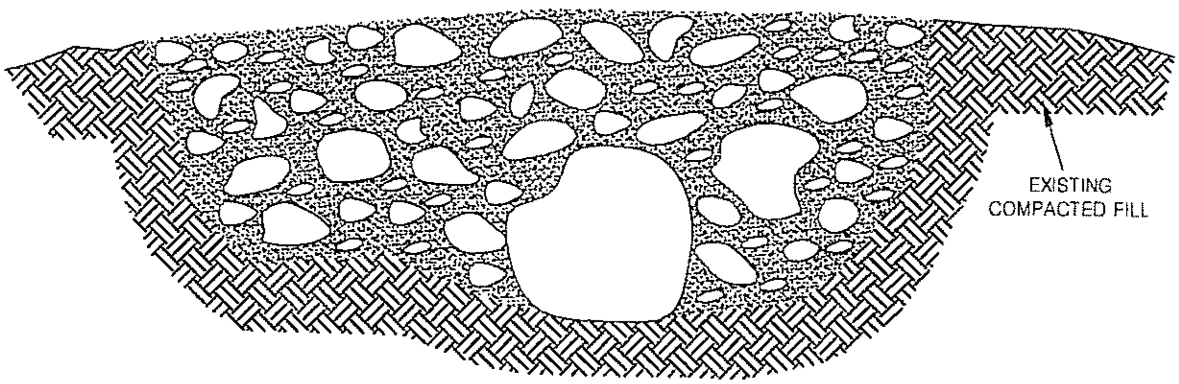


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PLATE G-15

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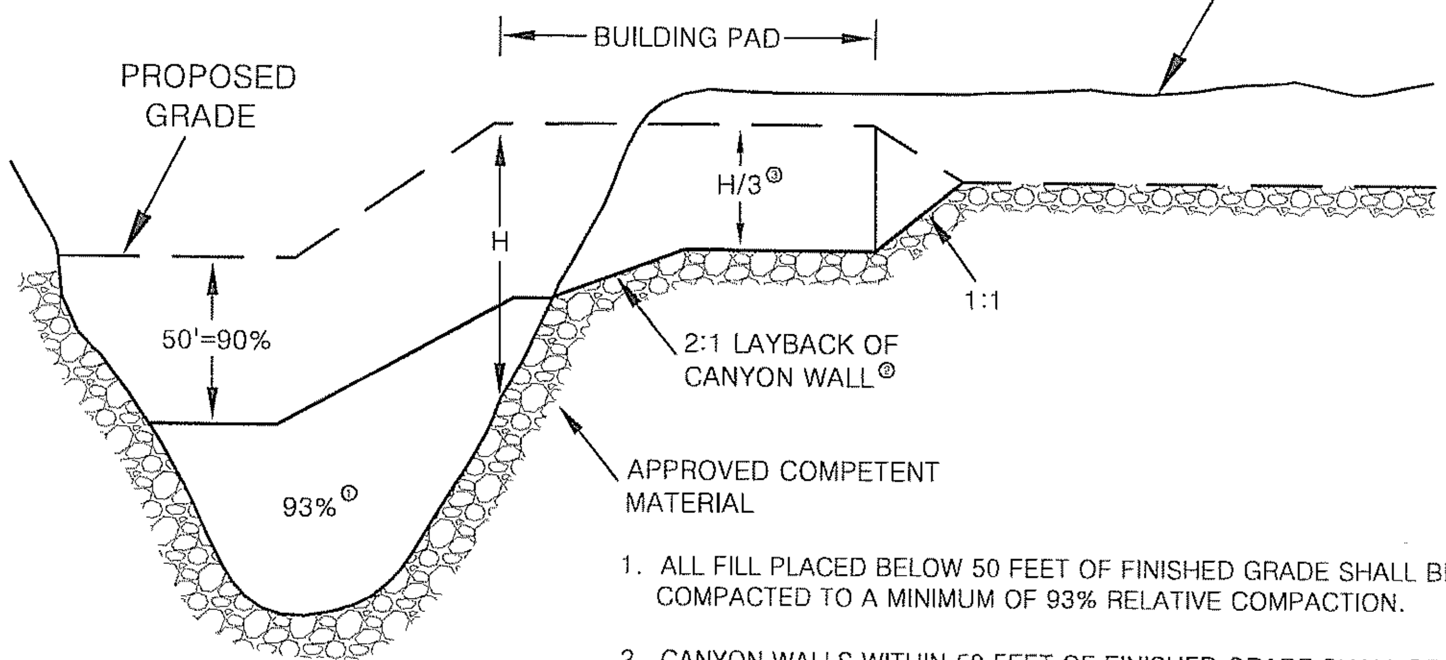
Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

RELATIVE COMPACTION VS. DEPTH

CANYON WALL LAY BACK
DIFFERENTIAL FILL OVEREXCAVATION DETAILS



1. ALL FILL PLACED BELOW 50 FEET OF FINISHED GRADE SHALL BE COMPACTED TO A MINIMUM OF 93% RELATIVE COMPACTION.
2. CANYON WALLS WITHIN 50 FEET OF FINISHED GRADE SHALL BE LAID BACK TO A SLOPE RATIO OF 2:1 OR FLATTER.
3. ALL BUILDING PADS SHALL BE OVER EXCAVATED TO A MINIMUM OF 1/3 OF THE MAXIMUM DEPTH OF FILL BELOW THE BUILDING PAD TO A MAXIMUM OF 17 FEET.
4. IF THE 2:1 LAY BACK OF THE CANYON WALL IS IMPRACTICAL, THEN AS AN ALTERNATIVE THE INCREASED COMPACTION STANDARDS IN NOTE 1 SHOULD BE EXTENDED UP TO H/3 AND THE LAY BACK WILL NOT BE REQUIRED.

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PLATE G-16

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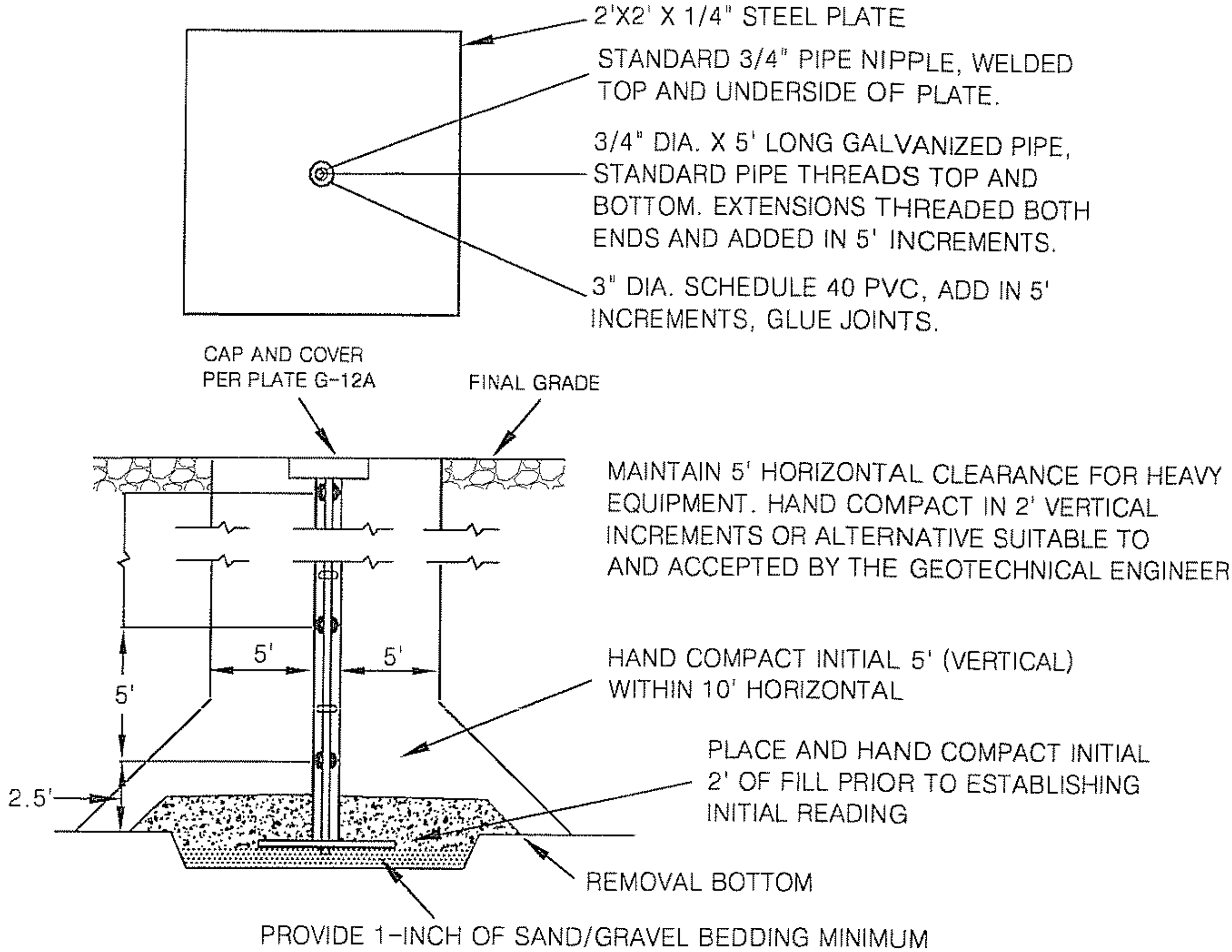
SETTLEMENT PLATE DETAIL



NOTES:

1) LOCATIONS OF SETTLEMENT PLATES SHALL BE CLEARLY MARKED AND READILY VISIBLE (RED FLAGGED) TO EQUIPMENT OPERATORS.

2) CONTRACTOR SHALL MAINTAIN 10' HORIZONTAL CLEARANCE FOR HEAVY EQUIPMENT WITHIN 5' (VERTICAL) OF PLATE BASE. FILL WITHIN CLEARANCE AREA SHALL BE HAND COMPACTED TO PROJECT SPECIFICATIONS OR COMPACTED BY ALTERNATIVE APPROVED BY THE GEOTECHNICAL ENGINEER.

3) AFTER 5' (VERTICAL) OF FILL IS IN PLACE, CONTRACTOR SHALL MAINTAIN 5' HORIZONTAL EQUIPMENT CLEARANCE. FILL IN CLEARANCE AREA SHALL BE HAND COMPACTED (OR APPROVED ALTERNATIVE) IN VERTICAL INCREMENTS NOT TO EXCEED 2 FEET.

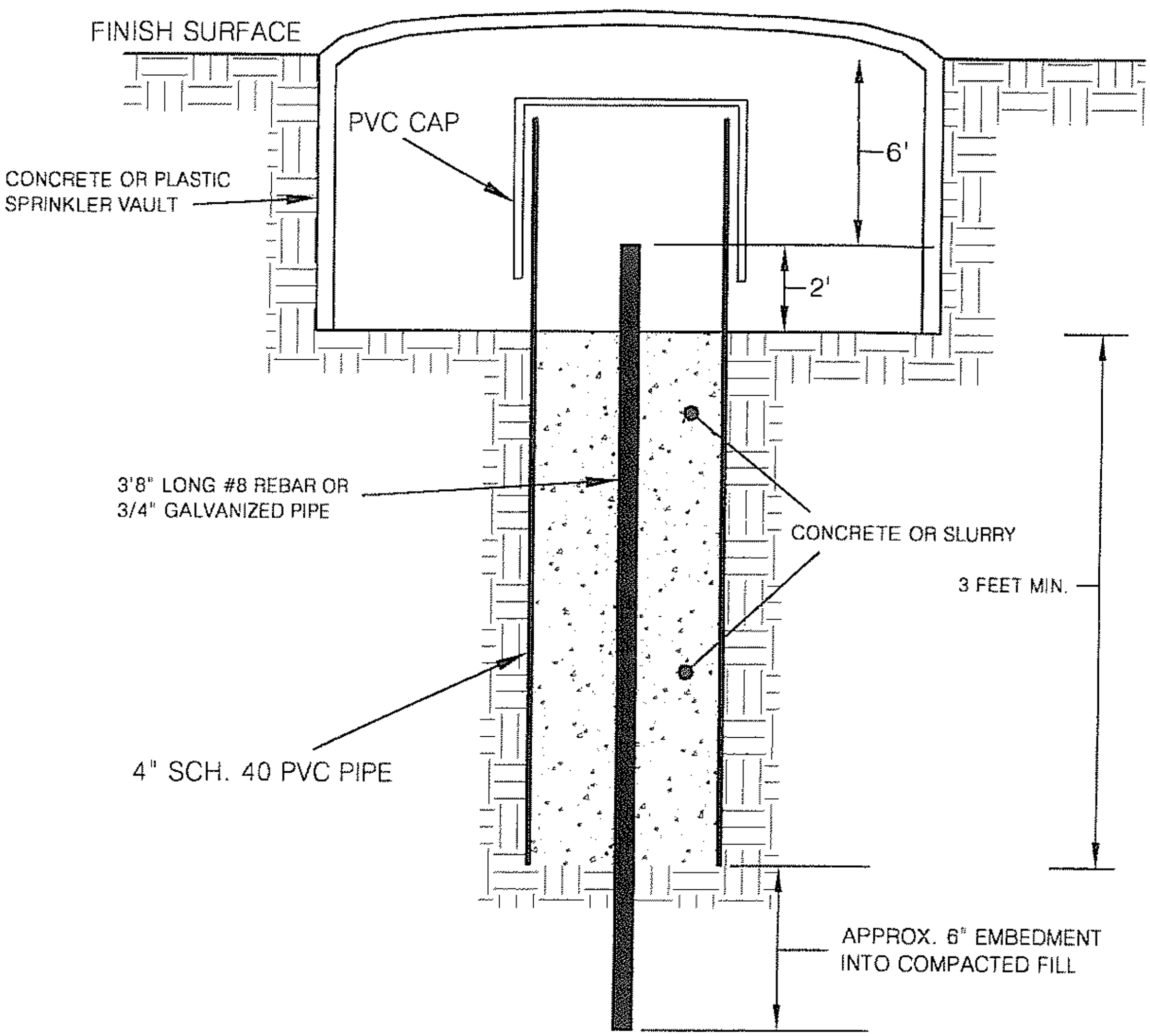
4) IN THE EVENT OF DAMAGE TO SETTLEMENT PLATE OR EXTENSION RESULTING FROM EQUIPMENT OPERATING WITHIN PRESCRIBED CLEARANCE AREA, CONTRACTOR SHALL IMMEDIATELY NOTIFY GEOTECHNICAL ENGINEER AND SHALL BE RESPONSIBLE FOR RESTORING THE SETTLEMENT PLATE AND EXTENSION RODS TO WORKING ORDER.

ALTA CALIFORNIA GEOTECHNICAL, INC .
VER. 3/12

PLATE G-17

PATH:\\LS-WTGL96E\share\Alta California Geotechnical\Drafting\GRADING DETAILS\G-17.dwg

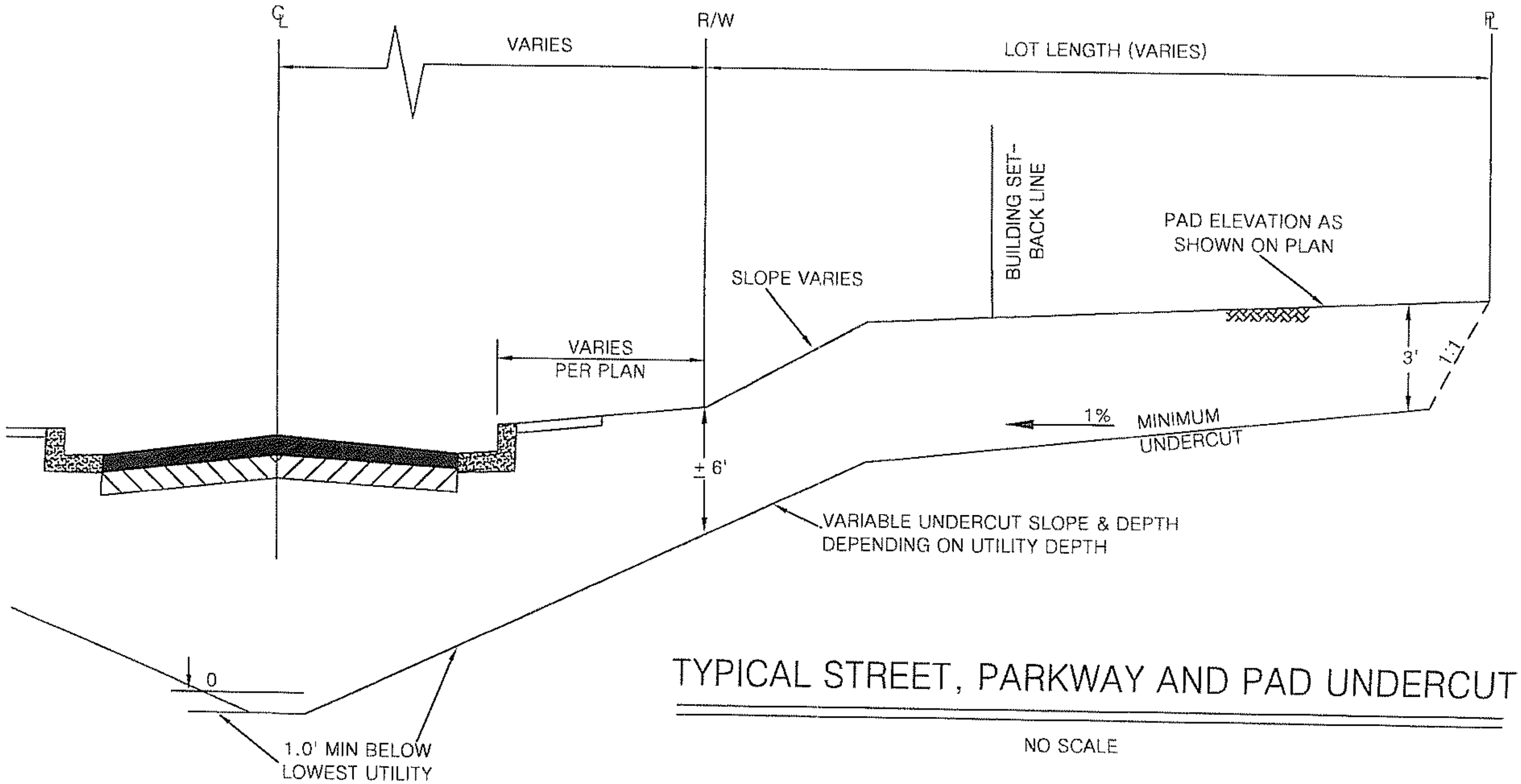
SURFACE SETTLEMENT MONUMENT DETAIL



ALTA CALIFORNIA GEOTECHNICAL, INC .
VER. 3/12

PLATE G-18

PATH:\\LS-WTGL96E\share\Alta California Geotechnical\Drafting\GRADING DETAILS\G-18.dwg



TYPICAL STREET, PARKWAY AND PAD UNDERCUT

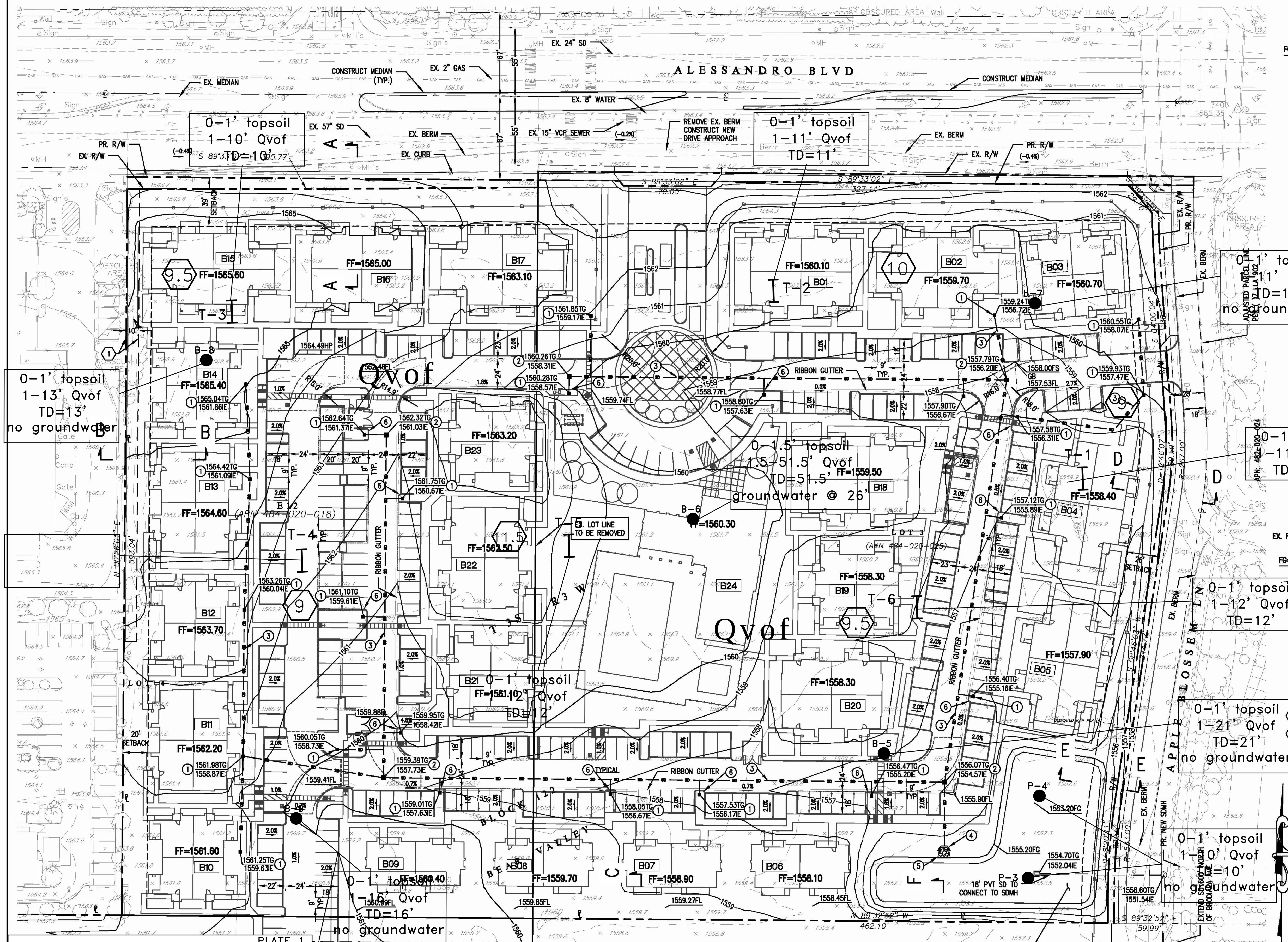
NO SCALE

ALTA CALIFORNIA GEOTECHNICAL, INC.
VER. 3/13

PLATE G-19

PATH: \\LS-WTGL96E\share\Alta California Geotechnical\Drafting\GRADING DETAILS\G-19.dwg

PRELIMINARY GRADING PLAN
VILLA ANNETTE



LEGEND

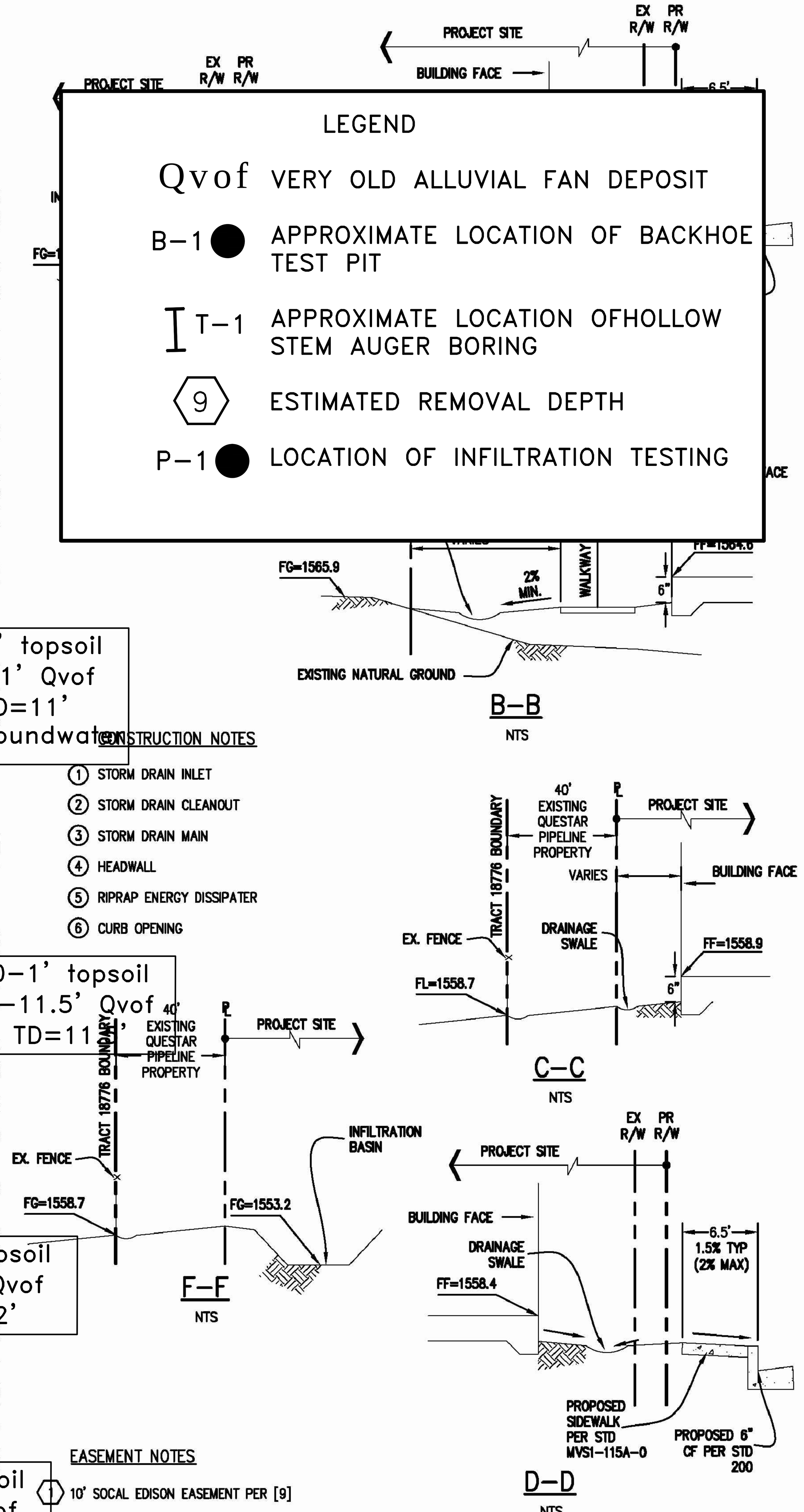
Qvof	VERY OLD ALLUVIAL FAN DEPOSIT
B-1 ●	APPROXIMATE LOCATION OF BACKHOE TEST PIT
T-1	APPROXIMATE LOCATION OFHOLLOW STEM AUGER BORING
9	ESTIMATED REMOVAL DEPTH
P-1 ●	LOCATION OF INFILTRATION TESTING

CONSTRUCTION NOTES

1. STORM DRAIN INLET
2. STORM DRAIN CLEANOUT
3. STORM DRAIN MAIN
4. HEADWALL
5. RIPRAP ENERGY DISSIPATER
6. CURB OPENING

EASEMENT NOTES

1. 10' SOCAL EDISON EASEMENT PER [9]
2. 20' EMNT 4 CORNERS PIPELINE CO PER [6] 2205 OR 147, JAN 10, 1958



ENGINEER

CIVIL LANDWORKS CORP.
110 COPPERWOOD WAY, SUITE P
OCEANSIDE, CA 92058
760-908-8745

DAVID V. CARON 6-28-16

REGISTERED PROFESSIONAL ENGINEER DAVID V. CARON No.C070066 EXP.09/30/16 CIVIL STATE OF CALIFORNIA

Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 • info@civillandworks.com

GRAPHIC SCALE
SCALE: 1" = 40'
40 0 40 80

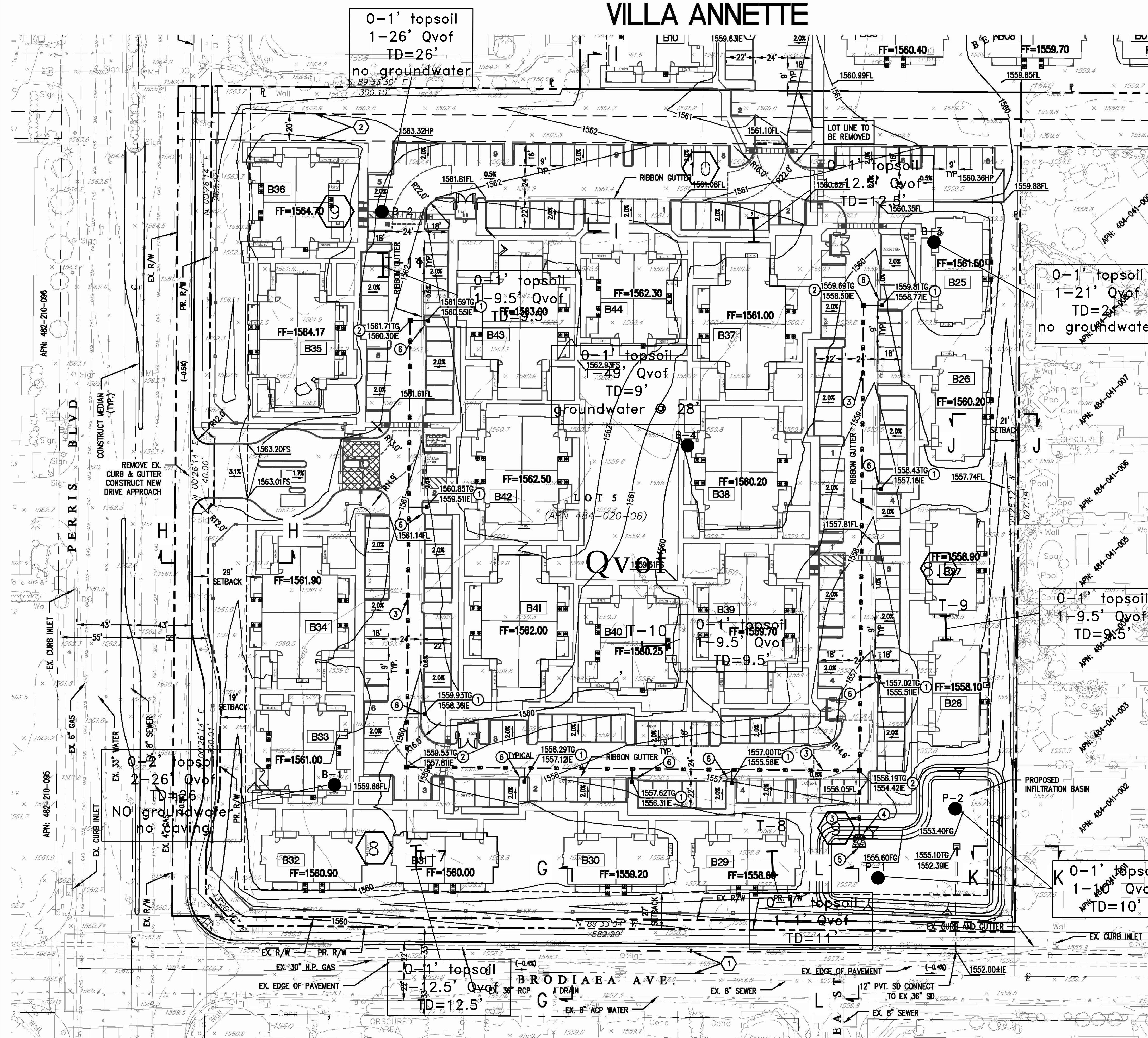
SHEET 2 OF 3

PLATE 1

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0192 DATE: 6-27-16

PRELIMINARY GRADING PLAN

VILLA ANNETTE

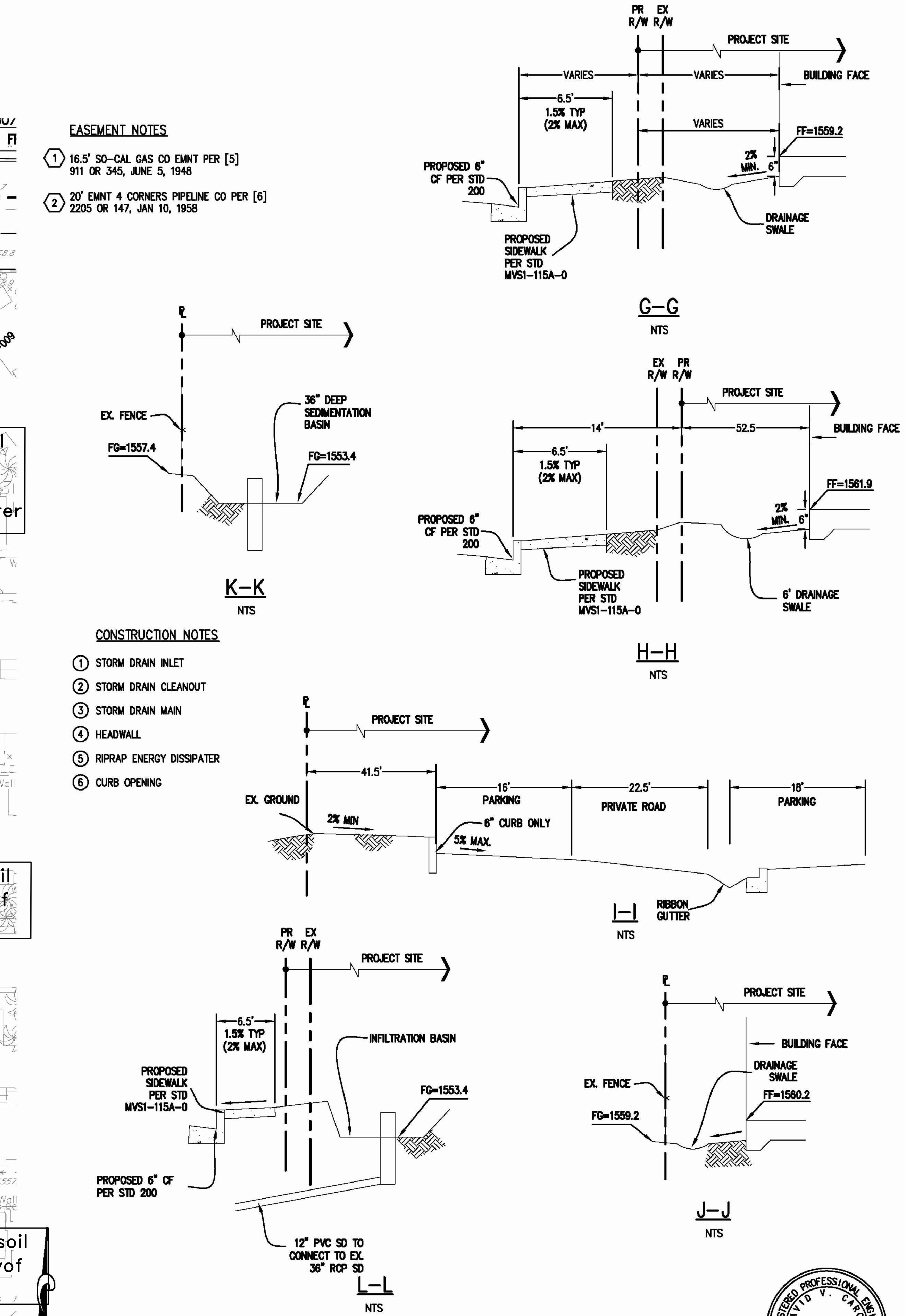


EASEMENT NOTES

1. 16.5' SO-CAL GAS CO EMNT PER [5] 911 OR 345, JUNE 5, 1948
2. 20' EMNT 4 CORNERS PIPELINE CO PER [6] 2205 OR 147, JAN 10, 1958

CONSTRUCTION NOTES

1. STORM DRAIN INLET
2. STORM DRAIN CLEANOUT
3. STORM DRAIN MAIN
4. HEADWALL
5. RIPRAP ENERGY DISSIPATER
6. CURB OPENING



GRAPHIC SCALE
SCALE: 1" = 40'

ENGINEER

Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 • info@civillandworks.com

REGISTERED PROFESSIONAL ENGINEER DAVID V. CARON No.C070066 EXP.09/30/16 CIVIL STATE OF CALIFORNIA

CIVIL LANDWORKS CORP.
110 COPPERWOOD WAY, SUITE P
OCEANSIDE, CA 92058
760-908-8745

DAVID V. CARON 6-28-16

SHEET 3 OF 3

SEE PLATE 1 OR LEGEND — PLATE 2

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0192 DATE: 6-27-16

6/27/16

ALTA CALIFORNIA
GEOTECHNICAL INC.

170 North Maple Street, Suite 108
Corona, CA 92880
www.altageotechnical.com

LATCO SC, INC.
940 Calle Negocio, Suite 200
San Clemente, California 92673

June 28, 2016
Project Number 1-0192

Attention: Mr. Robert Lattanzio

Subject: ***SUMMARY OF INFILTRATION TESTING***
Alessandro Apartment Project
City of Moreno Valley, California

References: See Appendix A

Mr. Lattanzio:

Presented herein is Alta California Geotechnical, Inc.'s (Alta) summary of infiltration testing for the proposed Alessandro Apartment Project, located in the City of Moreno Valley, California. This report is based on recent infiltration testing conducted onsite based on the WQMP system locations provided by Civil Landworks. Our testing was conducted at the locations shown on the attached Plates 1 and 2.

Presented below is a brief summary of onsite geotechnical conditions, a discussion of the proposed WQMP system, a summary of our infiltration testing, and design recommendations for the system.

Site Geotechnical Conditions

Alta recently conducted a subsurface investigation (including infiltration testing) on the site in June of 2016 (Reference 1). Based on the subsurface information and review of the referenced geologic map (Reference 4), the proposed BMP locations are underlain by very old alluvial fan deposits, composed primarily of sand and silty/clayey sands in a medium dense condition. Infiltration testing at four (4) locations was conducted as part of our preliminary investigation

(Reference 1) at approximately ten (10) feet below grade per the WQMP designer's request, and the logs are presented in Appendix B.

Groundwater was encountered at a depth between 26 and 28 feet during our subsurface investigation (Reference 1). Groundwater in the vicinity is generally at a depth of approximately 60 feet, based on available data from a well located approximately 1.5 miles from the site (Reference 3).

Proposed WQMP System

It is Alta's understanding that the proposed WQMP system will consist of two storm water infiltration-type basins. Both basins will connect to an existing offsite storm drain system. The approximate locations of the basins are shown on the attached Plates 1 and 2.

Infiltration Testing

Four infiltration tests were recently conducted and the test locations are shown on Plates 1 and 2, identified as P-1 through P-4. These tests were conducted in general conformance with the Riverside County LID BMP Design Handbook (Reference 2) methodology for percolation testing. A hollow-stem auger was utilized to excavate the test holes to approximately 10-feet below existing grade. The test holes were pre-soaked for 24 hours prior to our testing.

A summary of the test results is presented in Table A. The rates presented in Table A were determined from percolation rates that were converted to infiltration rates utilizing the Porchet method in accordance with Appendix A of the County of Riverside LID Manual. The rates presented in Table A do not include a safety factor. Data from the recent infiltration testing is presented on Plates C-1 through C-4 in Appendix C.

Table A Infiltration Rate Results			
Test Designation	Location	Approximate Depth of Test Below Grade	Field Infiltration Rate (inches/hour) (No Factor of Safety)
P-1	See Plate 2	10	4.1
P-2	See Plate 2	10	3.0
P-3	See Plate 1	10	2.0
P-4	See Plate 1	10	3.1

Conclusions and Design Recommendations

The field infiltration rates for all four tests exceeded the City of Moreno Valley minimum standard of 1.6 inches/hour. As such, per that standard, utilization of infiltration-type WQMP systems is feasible within the areas tested.

As noted in Reference 1, there is an increased potential for localized liquefaction to occur below improvements directly adjacent to the proposed infiltration basins. Recommendations to limit the impact of localized liquefaction are included in Reference 1. Upon implementation of the recommendations, it is anticipated that the proposed basins will be feasible from a geotechnical standpoint. A methodology for dealing with overflow should the infiltration system become clogged or full should be developed and maintained.

Limitations

The conclusions and recommendations presented in this report are based on our infiltration test results and experience with similar soil conditions on similar projects. Materials adjacent to or beneath those observed may have different characteristics than those observed and no precise representations are made as to the quality or extent of the materials not observed. The project geotechnical consultant should review the final BMP system prior to construction.

Alta appreciates the opportunity to provide geotechnical consulting services for your project.

Sincerely,
Alta California Geotechnical, Inc.

MINA TAWFIK
Associate Civil Engineer

Reviewed By:

SCOTT A. GRAY/RGE 2857
Reg. Exp.: 12-31-16
Registered Geotechnical Engineer
Vice President

REGISTERED PROFESSIONAL ENGINEER
SCOTT A. GRAY
No. 2857
Exp. 12-31-16
GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (3) Addressee

MT: SAG: 1-0192, June 28, 2016 (Summary of Infiltration Testing, Alessandro Apt.)

APPENDIX A

REFERENCES

APPENDIX A

References

1. Alta California Geotechnical, Inc., 2016, Preliminary Geotechnical Investigation, Alessandro Apartment Project, Southwest Corner Alessandro Boulevard and Perris Boulevard, City of Moreno Valley, California, dated June 27, 2016 (Project Number 1-0192).
2. County of Riverside, Low Impact Development BMP Design Handbook, Riverside, Rev. September, 2011.
3. California Department of Water Resources, 2014, Water Data Library. http://www.water.ca.gov/waterdatalibrary/
4. Morton, D.M. and Matti, B. 2001, Geologic Map of the Sunny Mead 7.5' Quadrangle, Riverside County, California, Version 1.0, California Division of Mines and Geology Open-File Report 01-450.

APPENDIX B

BORING LOGS

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description
Coarse Grained Soils More than 50% retained on No. 200 sieve	Gravel and Gravelly Soils More than 50% of coarse fraction retained on No,. 4 sieve		GW	Well-graded gravels or gravel sand mixtures, little or no fines
			GP	Poorly-graded gravels or gravel sand mixture, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils More than 50% of coarse fraction passes on No,. 4 sieve		SW	Well-graded sands or gravelly sands, little or no fines
			SP	Poorly-graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, and-clay mixtures

Major Divisions		grf	ltr	
Fine Grained Soils More than 50% passes on No. 200 sieve	Silts And Clays LL,<50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silt-clays of low plasticity
	Silts And Clays LL,<50		MH	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
			VH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

BOUNDARY CLASSIFICATION: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

	U.S. STANDARD SERIES SIEVE 200	40	10	4	CLEAR SQUARE SIEVE OPENINGS 3/4"	3"	12"
Silts and Clays	Sand			Gravel		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

RELATIVE DENSITY

Sands and Gravels	Blows/Foot (SPT)
Very Loose	<4
Loose	4-10
Medium Dense	11-30
Dense	31-50
Very Dense	>50

CONSISTENCY CLASSIFICATION

Silts and Clays	Criteria
Very Soft	Thumb penetrates soil >1 in.
Soft	Thumb penetrates soil 1 in.
Firm	Thumb penetrates soil 1/4 in.
Stiff	Readily indented with thumbnail
Very Stiff	Thumbnail will not indent soil

HARDNESS

Bedrock
Soft
Moderately Hard
Hard
Very Hard

LABORATORY TESTS

Symbol	Test
DS	Direct Shear
DSR	Direct Shear (Remolded)
CON	
SA	Sieve Analysis
MAX	Maximum Density
RV	Resistance (R) Value
EI	Expansion Index
SE	Sand Equivalent
AL	Atterberg Limits
CHEM	Chemical Analysis
HY	Hydrometer Analysis

SOIL MOISTURE

Increasing Visual Moisture Content

- Dry - Dry to touch
- Moist - Damp, but no visible free water
- wet - Visible free water

SIZE PROPORTIONS

Trace - <5%

Few - 5 to 10%

Some - 15 to 25%

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	P-1
DATE FINISHED	6/1/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.		NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP			

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	TOPSOIL: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. VERY OLD ALLUVIAL FAN DEPOSITS (Qvof): SILTY SAND, fine grained, very light brown, dry, loose.				
5						@4 ft. brown, fine grained, damp.				
						@7 ft. orangish brown.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- [R] RING (DRIVE) SAMPLE
- [S] SPT (SPLIT SPOON) SAMPLE
- [B] BULK SAMPLE [T] TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192 PLATE B-10

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment
DATE STARTED	6/1/16	GROUND ELEV.	
DATE FINISHED	6/1/16	GW DEPTH (FT)	
DRILLER	Martini Drilling	DRIVE WT.	
TYPE OF DRILL RIG	Hollow stem auger	DROP	

BORING DESIG. P-2
LOGGED BY MT
NOTE

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	TOPSOIL: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. VERY OLD ALLUVIAL FAN DEPOSITS (Qvof): SILTY SAND, fine grained, light tannish brown, dry, loose.				
						@3 ft. light brown, damp.				
5										
						@8 ft. orangish brown.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
[R] RING (DRIVE) SAMPLE
[S] SPT (SPLIT SPOON) SAMPLE
[B] BULK SAMPLE [T] TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192 PLATE B-11

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	P-3
DATE FINISHED	6/1/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.		NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP			

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	TOPSOIL: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. VERY OLD ALLUVIAL FAN DEPOSITS (Qvof): SILTY SAND, fine grained, tannish brown, dry, loose.				
5						@5 ft. brown, damp.				
						@7 ft. dark brown to dark tannish brown, moist.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192 PLATE B-12

Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment
DATE STARTED	6/13/16	GROUND ELEV.	
DATE FINISHED	6/13/16	GW DEPTH (FT)	
DRILLER	2R Drilling	DRIVE WT.	
TYPE OF DRILL RIG	Hollow stem auger	DROP	

BORING DESIG. P-4
LOGGED BY MT
NOTE

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	TOPSOIL: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. VERY OLD ALLUVIAL FAN DEPOSITS (Qvof): SILTY SAND, fine grained, dark tannish brown, damp, loose, coarse grained lithics.				
5						@5 ft. brown, moist.				
						@8 ft. dark brown.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192 PLATE B-13

APPENDIX C

INFILTRATION TEST DATA

Project Number	1-0192			
Test Designation	P-1	Date of Test	6/3/2016	
Boring Diameter (inches)	8	Test Type	Infiltration	

Time (minutes)	Depth of Boring (ft)	Initial Water Level (ft)	Final Water Level (ft)	Change in Height (ft)
15	10	0.0	5.8	-5.80
15	10	0.0	4.9	-4.90
30	10	0.0	8.6	-8.60
30	10	0.0	8.4	-8.40
30	10	0.0	7.9	-7.90
30	10	0.0	7.4	-7.40
30	10	0.0	7.0	-7.00
30	10	0.0	6.9	-6.90

Final Calculations

Initial Height (I) in inches	120.0
Final height (F) in inches	37.2
Change in Height (inches)	82.8
Change in Time (minutes)	30
Radius of Hole (inches)	4

Havg (inches) 78.6   Havg= (I-F)/2+I inches

Infiltration Rate (inch/hr) 4.11   Inf. Rate= ((I-F)(60min/hr)(Radius))/time(radius+2(Havg))

(Porchet Method)

Plate C-1

Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

Project Number	1-0192			
Test Designation	P-2	Date of Test	6/3/2016	
Boring Diameter (inches)	8	Test Type	Infiltration	

Time (minutes)	Depth of Boring (ft)	Initial Water Level (ft)	Final Water Level (ft)	Change in Height (ft)
15	10	0.0	4.6	-4.60
30	10	0.0	7.4	-7.40
30	10	0.0	7.1	-7.10
30	10	0.0	6.6	-6.60
30	10	0.0	6.1	-6.10
30	10	0.0	5.9	-5.90
30	10	0.0	5.7	-5.70
30	10	0.0	5.6	-5.60

Final Calculations

Initial Height (I) in inches	120.0	
Final height (F) in inches	52.8	
Change in Height (inches)	67.2	
Change in Time (minutes)	30	
Radius of Hole (inches)	4	
Havg (inches)	86.4	Havg= (I-F)/2+I inches
Infiltration Rate (inch/hr)	3.04	Inf. Rate= ((I-F)(60min/hr)(Radius))/time(radius+2(Havg)) (Porchet Method)

Plate C-2

Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

Project Number	1-0192		
Test Designation	P-3	Date of Test	6/6/2016
Boring Diameter (inches)	8	Test Type	Infiltration

Time (minutes)	Depth of Boring (ft)	Initial Water Level (ft)	Final Water Level (ft)	Change in Height (ft)
15	10	0.0	4.4	-4.40
30	10	0.0	6.7	-6.70
30	10	0.0	6.3	-6.30
30	10	0.0	5.7	-5.70
30	10	0.0	5.5	-5.50
30	10	0.0	4.9	-4.90
30	10	0.0	4.3	-4.30
30	10	0.0	4.0	-4.00
30	10	0.0	4.0	-4.00

Final Calculations

Initial Height (I) in inches	120.0	
Final height (F) in inches	72.0	
Change in Height (inches)	48.0	
Change in Time (minutes)	30	
Radius of Hole (inches)	4	
Havg (inches)	96	Havg= (I-F)/2+I inches
Infiltration Rate (inch/hr)	1.96	Inf. Rate= ((I-F)(60min/hr)(Radius))/time(radius+2(Havg)) (Porchet Method)

Plate C-3

Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)

Project Number	1-0192			
Test Designation	P-4		Date of Test	6/14/2016
Boring Diameter (inches)	8		Test Type	Infiltration

Time (minutes)	Depth of Boring (ft)	Initial Water Level (ft)	Final Water Level (ft)	Change in Height (ft)
15	10	0.0	5.6	-5.60
15	10	0.0	4.8	-4.80
30	10	0.0	8.4	-8.40
30	10	0.0	7.8	-7.80
30	10	0.0	7.5	-7.50
30	10	0.0	7.1	-7.10
30	10	0.0	6.9	-6.90
30	10	0.0	6.3	-6.30
30	10	0.0	5.9	-5.90
30	10	0.0	5.7	-5.70
30	10	0.0	5.7	-5.70

Final Calculations

Initial Height (I) in inches	120.0	
Final height (F) in inches	51.6	
Change in Height (inches)	68.4	
Change in Time (minutes)	30	
Radius of Hole (inches)	4	
Havg (inches)	85.8	Havg= (I-F)/2+I inches
Infiltration Rate (inch/hr)	3.12	Inf. Rate= ((I-F)(60min/hr)(Radius))/time(radius+2(Havg))

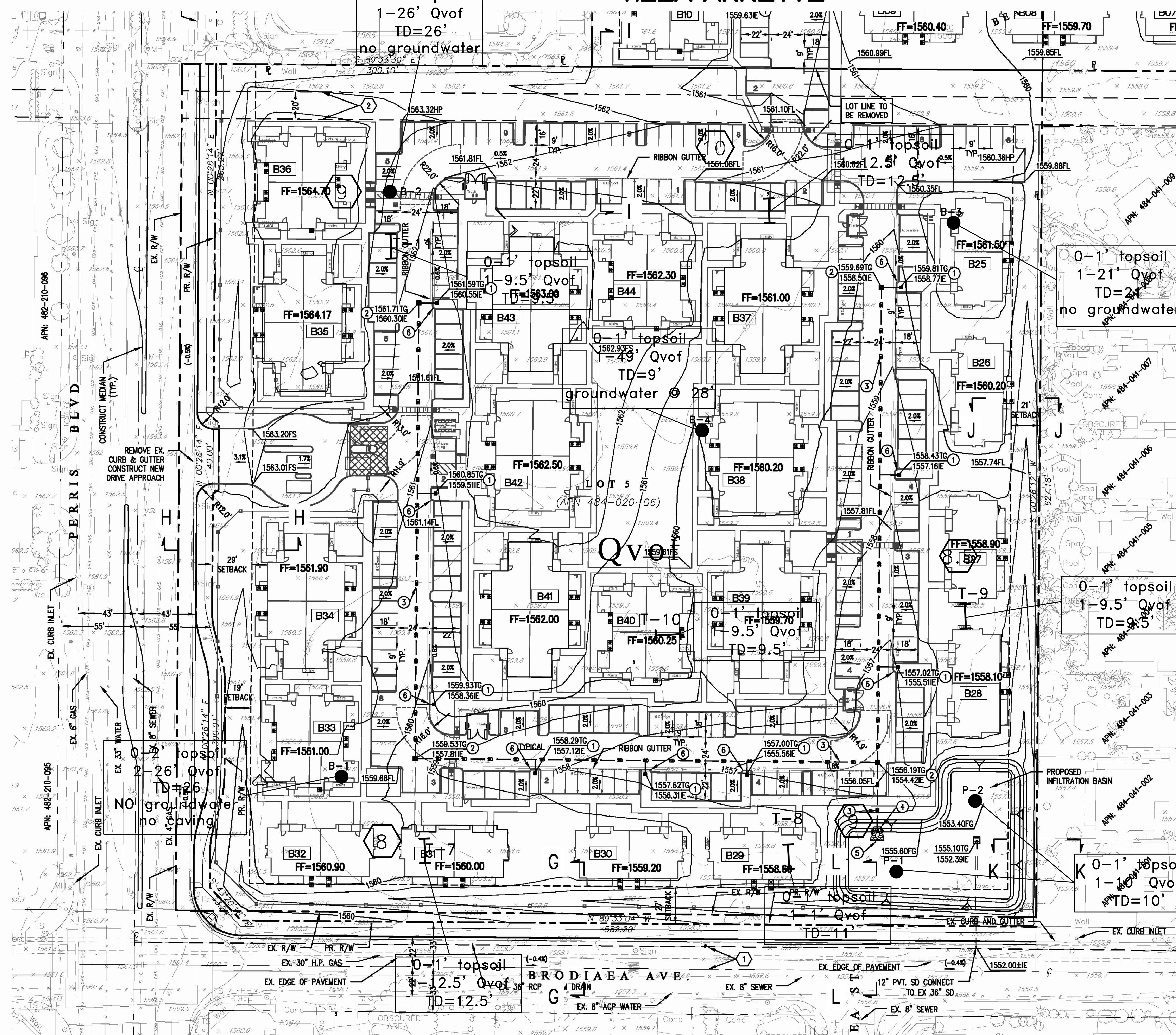
Plate C-4

Attachment: Appendix F - Geotechnical Investigation (2340 : PA16-0039 Plot Plan)


PRELIMINARY GRADING PLAN
VILLA ANNETTE
LEGEND
Qvof VERY OLD ALLUVIAL FAN DEPOSIT
B-1 APPROXIMATE LOCATION OF BACKHOE TEST PIT
T-1 APPROXIMATE LOCATION OFHOLLOW STEM AUGER BORING
9 ESTIMATED REMOVAL DEPTH
P-1 LOCATION OF INFILTRATION TESTING
ALESSANDRO BLVD
APPLE BLOSSEM LN
0-1' topsoil 1-10' Qvof TD=10'
0-1' topsoil 1-11' Qvof TD=11'
0-1' topsoil 1-13' Qvof TD=13' no groundwater
0-1.5' topsoil 1.5-51.5' Qvof TD=51.5' groundwater @ 26'
0-1' topsoil 1-12' Qvof TD=12'
0-1' topsoil 1-21' Qvof TD=21' no groundwater
0-1' topsoil 1-16' Qvof TD=16' no groundwater
0-1' topsoil 1-10' Qvof TD=10' no groundwater
CONSTRUCTION NOTES
1 STORM DRAIN INLET
2 STORM DRAIN CLEANOUT
3 STORM DRAIN MAIN
4 HEADWALL
5 RIPRAP ENERGY DISSIPATER
6 CURB OPENING
EASEMENT NOTES
1 10' SOCAL EDISON EASEMENT PER [9]
2 20' EMNT 4 CORNERS PIPELINE CO PER [6] 2205 OR 147, JAN 10, 1958
B-B NTS
C-C NTS
D-D NTS
F-F NTS
ENGINEER
CIVIL LANDWORKS CORP.
110 COPPERWOOD WAY, SUITE P
OCEANSIDE, CA 92058
760-908-8745
DAVID V. CARON 6-28-16
Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 • info@civillandworks.com
GRAPHIC SCALE
SCALE: 1" = 40'
SHEET 2 OF 3
PLATE 1
ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0192
DATE: 6-28-16

PRELIMINARY GRADING PLAN

VILLA ANNETTE

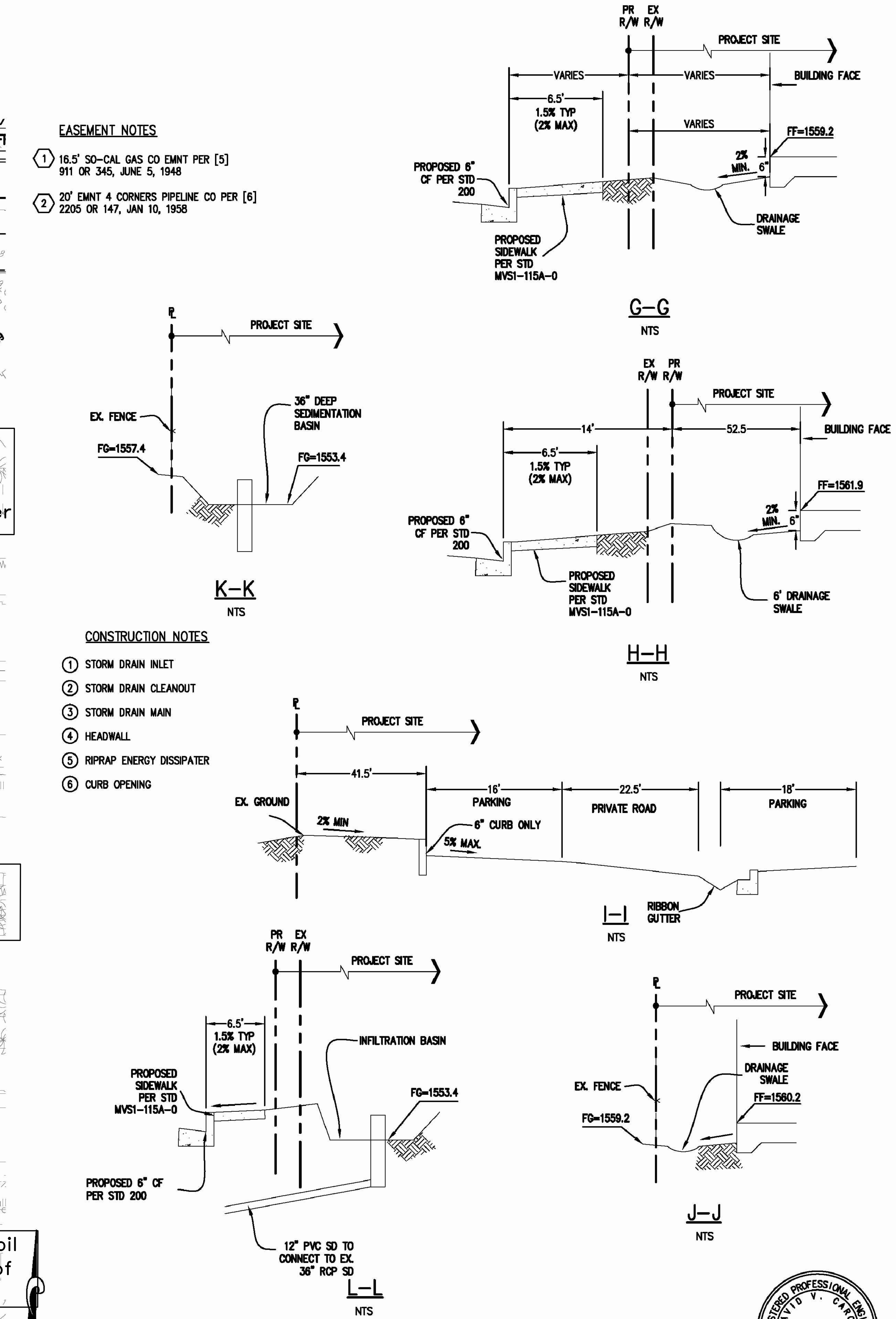


EASEMENT NOTES

1. 16.5' SO-CAL GAS CO EMNT PER [5] 911 OR 345, JUNE 5, 1948
2. 20' EMNT 4 CORNERS PIPELINE CO PER [6] 2205 OR 147, JAN 10, 1958

CONSTRUCTION NOTES

1. STORM DRAIN INLET
2. STORM DRAIN CLEANOUT
3. STORM DRAIN MAIN
4. HEADWALL
5. RIPRAP ENERGY DISSIPATER
6. CURB OPENING



GRAPHIC SCALE
SCALE: 1" = 40'

SEE PLATE 1 OR LEGEND — PLATE 2

ALTA CALIFORNIA GEOTECHNICAL, INC.
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DAVID V. CARON 6-28-16

REGISTERED PROFESSIONAL ENGINEER DAVID V. CARON No.C070066 EXP.09/30/16 CIVIL STATE OF CALIFORNIA

6/27/16

TRAFFIC IMPACT ANALYSIS

ALESSANDRO APARTMENTS

City of Moreno Valley, California

Prepared by

transpogroup
WHAT TRANSPORTATION CAN BE.

Project No. 15459.00
October 19, 2016

Contact
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10070 Mesa Rim Road
San Diego, California 92121
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APPENDICES

1.0 INTRODUCTION

The following presents the Traffic Impact Analysis (TIA) prepared by Transpo Group (Transpo) for a proposed 272 dwelling unit (DU) apartment development (proposed project) near the southeast corner of Perris Boulevard and Alessandro Boulevard in the City of Moreno Valley (City). The proposed project site sits on a vacant parcel bounded by Alessandro Boulevard, retail and single-family homes to the north; Brodiaea Avenue and single-family homes to the south; Appleblossom Lane, apartments and single-family homes to the east; and, Perris Boulevard, retail and self-storage uses to the west.

This TIA has been prepared consistent with the City's *Traffic Impact Analysis Preparation Guide* (August 2007). A *Scoping Agreement for Traffic Analysis Study* has been prepared by Transpo and was approved by the City in March 2016. The Scoping Agreement is provided in Appendix A. The Lead Agency of the proposed project is the City of Moreno Valley.

Purpose and Objectives of the Traffic Study

The purpose of this traffic study is to evaluate the traffic and circulation impacts of the proposed project. The study objectives of this traffic study include:

- Documentation of existing traffic conditions and future traffic conditions corresponding to the "Existing plus Project" scenario (consisting of existing year 2016 plus project conditions), and "Near-Term Year 2021" (five-year horizon consisting of existing plus ambient growth plus cumulative projects).
- Determination of additional circulation system features and system management actions needed to achieve the City's levels of service requirements with implementation of the proposed project.

Site Location and Study Area

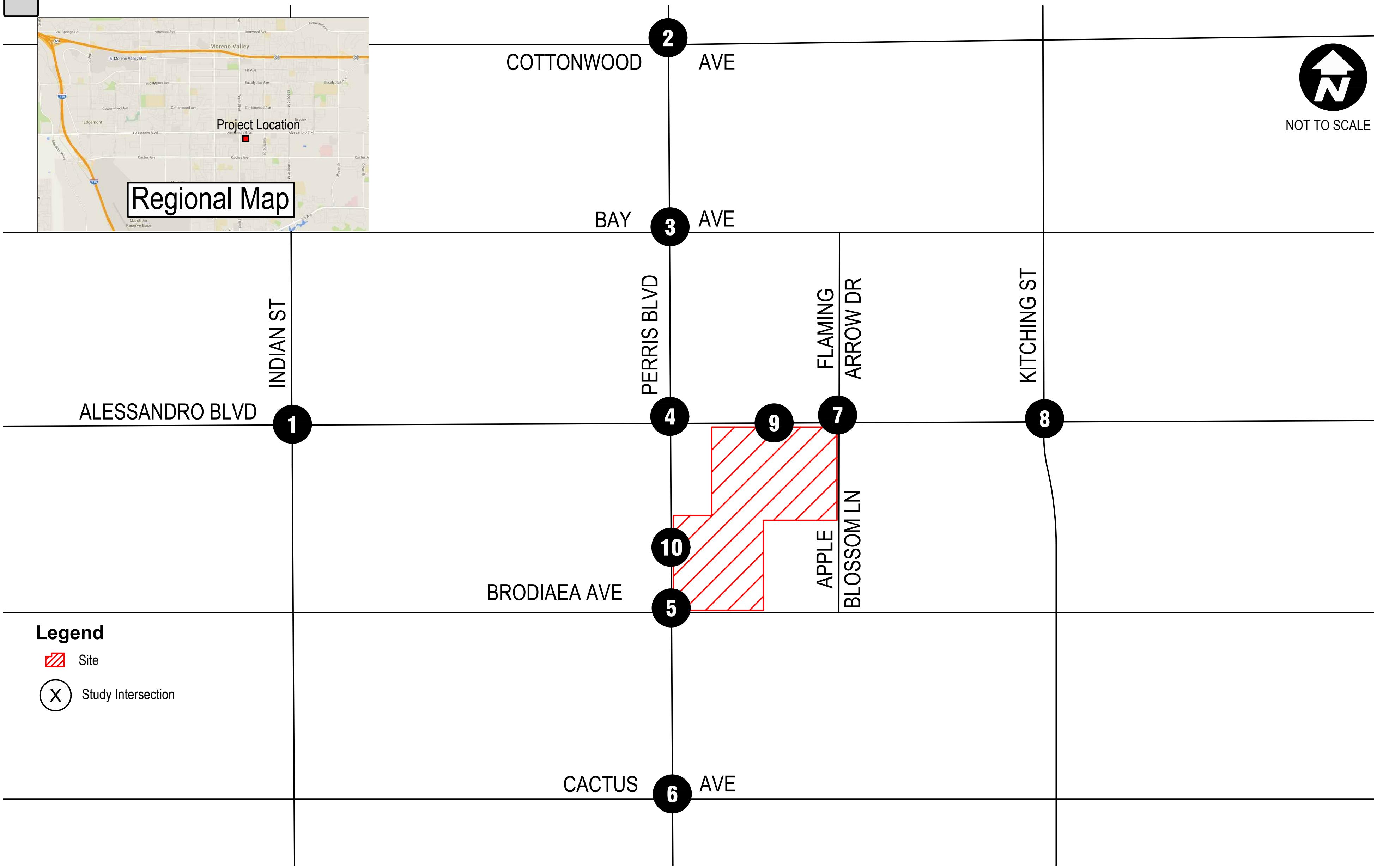
Figure 1 illustrates the project site location, while Figure 2 illustrates the project study area and traffic control. Regional access to the project site is provided by Interstate 215 (I-215) via its interchange with Perris Boulevard, and State Route 60 (SR 60) via its interchange with Alessandro Boulevard. Local access is provided by Perris Boulevard and Alessandro Boulevard. Per Scoping Agreement, the study area intersections and roadway segments are as follows:

Study Area Intersections

1. Indian Street/Alessandro Boulevard
2. Perris Boulevard/Cottonwood Avenue
3. Perris Boulevard/Bay Avenue
4. Perris Boulevard/Alessandro Boulevard
5. Perris Boulevard/Brodiaea Avenue
6. Perris Boulevard/Cactus Avenue
7. Flaming Arrow Drive-Appleblossom Lane/Alessandro Boulevard
8. Kitching Street/Alessandro Boulevard
9. Project Driveway North/Alessandro Boulevard (with project only)
10. Perris Boulevard/Project Driveway West (with project only)

Study Area Roadway Segments

1. Alessandro Boulevard, west of Indian Street
2. Alessandro Boulevard, west of Perris Boulevard
3. Alessandro Boulevard, east of Perris Boulevard
4. Perris Boulevard, north of Cottonwood Avenue



Source: Google Earth Imagery, 02/2016

Project Site Location and Study Area

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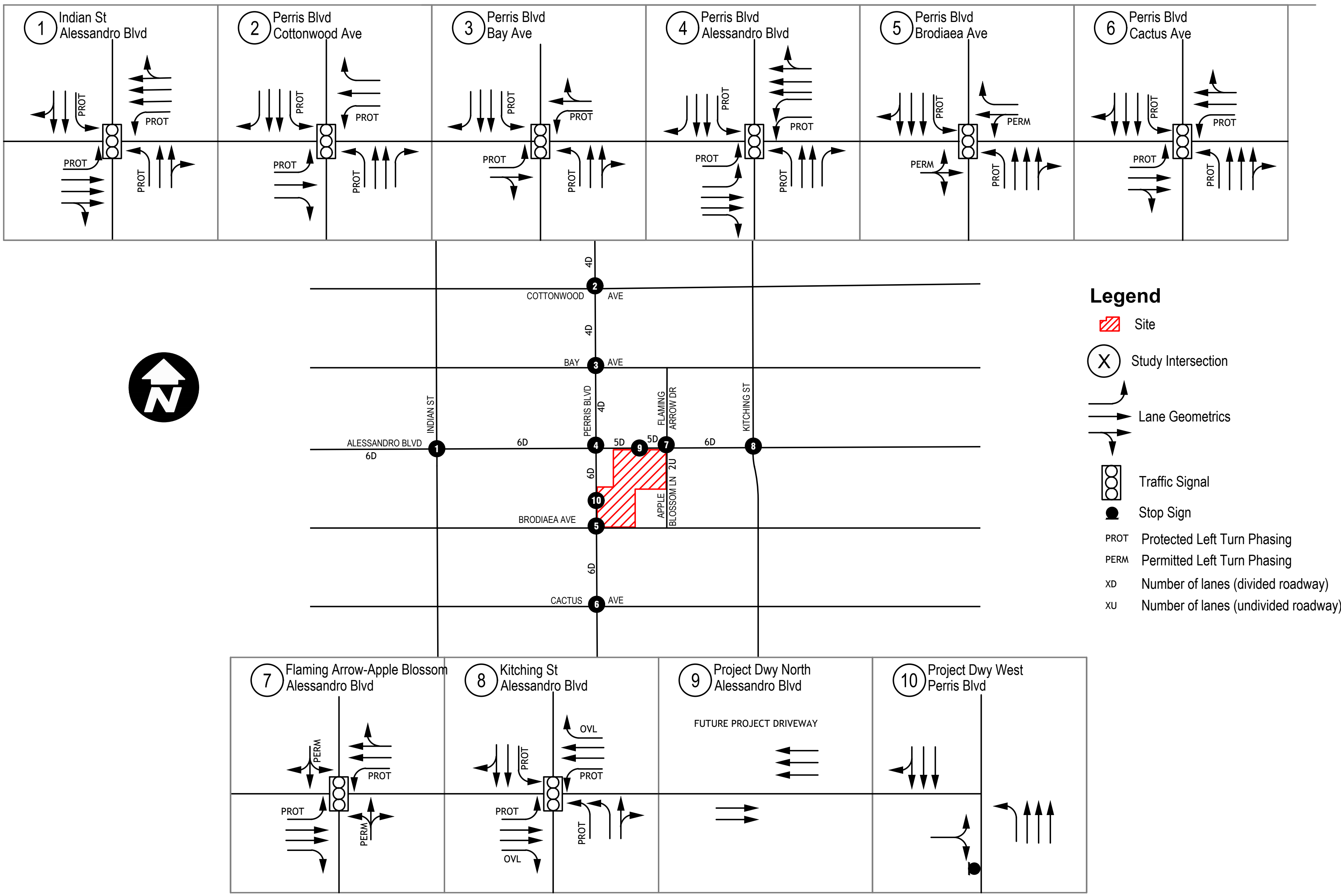
FIGURE
1



Study Area Intersection and Roadway Geometrics and Traffic Control

Moreno Valley Residential

FIGURE 2

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5. Perris Boulevard, north of Bay Avenue
6. Perris Boulevard, north of Alessandro Boulevard
7. Perris Boulevard, south of Alessandro Boulevard
8. Appleblossom Lane, south of Alessandro Boulevard

All study area intersections and roadway segments are within the jurisdiction of the City.

Methodology

Intersections

Per City TIA guidelines, the study area intersections were analyzed under the latest version of the *Highway Capacity Manual* (HCM) “Operations” methodology using the *Synchro* level of service (LOS) software program which is consistent with the HCM 2010 methodology. The HCM 2010 methodology determines the control delay a driver may experience at the intersection. If an intersection could not be analyzed using the HCM 2010 methodology because of a particular intersection configuration (e.g., U-turn movements), the HCM 2000 methodology was used. In that case, where *Synchro* is unable to calculate intersection level of service, *Traffix* (version 8.0) was used for the level of service calculation.

The degree of congestion at an intersection is described by the level of service, which ranges from LOS A to LOS F, with LOS A representing free-flow conditions with little delay and LOS F representing over-saturated traffic flow throughout the peak hour. A complete description of the meaning of level of service can be found in the Highway Research Board Special Report 209, *Highway Capacity Manual* (HCM 2000). Brief descriptions of the six levels of service for signalized and unsignalized intersections based on the HCM methodology are shown in Table A. Table B below provides detailed descriptions of each level of service.

Table A – Level of Service Definitions for Intersections

Level of Service	Control Delay in Seconds (signalized)	Control Delay in Seconds (unsignalized)
A	0.0 – 10.0 seconds	0.0 – 10.0 seconds
B	10.1 – 20.0 seconds	10.1 – 15.0 seconds
C	20.1 – 35.0 seconds	15.1 – 25.0 seconds
D	35.1 – 55.0 seconds	25.1 – 35.0 seconds
E	55.1 – 80.0 seconds	35.1 – 50.0 seconds
F	80.1 seconds or greater	50.1 seconds or greater

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

Table B – Level of Service Descriptions

LOS	Description
A	No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are nearing full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

Source: Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.

Roadway Segments

Per City TIA guidelines, Table C provides the LOS criteria for roadway segments based on daily traffic volumes.

Table C – Level of Service Definitions for Roadway Segments

	Level of Service [1]				
Roadway	**A**	**B**	**C**	**D**	**E**
6-lane Divided Arterial	33,900	39,400	45,000	50,600	56,300
4-lane Divided Arterial	22,500	26,300	30,000	33,800	37,500
4-lane Undivided Arterial	15,000	17,500	20,000	22,500	25,000
2-lane Industrial Collector	7,500	8,800	10,000	11,300	12,500
2-lane Undivided Residential	n/a	n/a	n/a	n/a	2,000

Note: [1] Maximum Average Daily Traffic (ADT)

Significance Criteria

The City's significance threshold is based on the *City of Moreno Valley General Plan* (July 2006) which states:

> *LOS D is applicable to intersections and roadway segments that are adjacent to freeway on/off ramps, and/or adjacent land uses. LOS C is applicable to all other intersections and roadway segments. Boundary intersections are assumed to be LOS D.*

According to Figure 5.2-7 of the General Plan EIR, the project study area intersection and roadway segments on Perris Boulevard and Alessandro Boulevard are designated to the LOS D standard. The project driveway intersections on Perris Boulevard and Alessandro Boulevard are also designated to the LOS D standard.

Furthermore, according to the *Moreno Valley Walmart Traffic Impact Analysis (Revised)*, dated March 5 2015 and prepared by Urban Crossroads:

- *If an intersection is projected to operate at an acceptable level of service without the Project and the addition of Project traffic, as measured at 50 or more peak hour trips, is expected to cause the intersection to operate at an unacceptable level of service, the impact is considered a potentially significant direct impact.*
- *Additionally, if an intersection is currently operating at an unacceptable level of service without the project and the Project contributes 50 or more peak hour trips, the impact is considered a potentially significant direct impact.*

In addition, per direction of the City, the significance level for an unsignalized intersection is that, once an intersection is found to operate at LOS E or F, a traffic signal warrant consistent with the *Manual of Uniform Traffic Control Devices* (MUTCD) would need to be prepared to determine whether signalization of the intersections would be warranted.

Therefore, if the project causes an intersection to operate below the minimum standard, the project would cause a significant project-specific impact at that intersection, and specific mitigation measures must be developed to improve the intersection's LOS back to pre-project levels.

Traffic Analysis Scenarios

This traffic study analyzed the following traffic scenarios:

Existing Condition

Existing traffic volumes were collected at the study intersections and roadway segments in May-2016 during a typical weekday. The existing traffic scenario constitutes the environmental setting in accordance with the *California Environmental Quality Act* (CEQA) analysis at the time that the hearing body reviews the proposed project.

Existing plus Project Condition

The Existing plus Project Condition traffic was developed by adding the proposed project traffic to the Existing Condition. This scenario was the basis for determining project-specific impacts and mitigation measures.

Near-Term Year 2021 Baseline Condition

Per City requirements, the Near-Term year of analysis would be 2021, a five-year horizon from the existing traffic condition. The proposed project is anticipated to be built and occupied by year 2021. Near-Term year traffic in this scenario was forecast for 2021 by applying an annual ambient growth rate (2% per year per the City's Scoping Agreement) to the existing traffic volumes. In addition to the ambient growth rate, traffic from approved and pending projects (i.e. cumulative projects) in the project's vicinity was added.

Near-Term Year 2021 plus Project Condition

The Near-Term Year 2021 plus Project Condition traffic was developed by adding the proposed project traffic to the Near-Term Year Baseline Condition. This scenario was also the basis for determining project-specific impacts and mitigation measures.

2.0 PROJECT DESCRIPTION AND TRAFFIC GENERATION

The following section provides information on the permanent operation of the proposed project relative to the local and regional circulation network.

Project Size and Description

Figure 3 illustrates the site plan of the proposed project. The proposed project is the development of 272 apartment dwelling units (DUs) on a vacant 19.47-acre parcel. The project would specifically develop 88 one-bedroom DUs, 160 two-bedroom DUs, and 24 three-bedroom DUs. The project site is specifically located on the northeast corner of Perris Boulevard/Brodiaea Avenue.

Per the City Zoning Code, for multi-family residential development, one-bedroom units are required to provide 1.5 parking spaces of which one covered space must be provided; two-bedroom units are required to provide two parking spaces of which one covered space must be provided; three-bedroom units are required to provide two and one-half spaces of which one covered spaces must be provided; and guest parking is provided within the minimum required parking standard as follows:

- 88 one-bedroom units at a rate of 1.5 spaces per DU = a total of 132 spaces with a minimum 88 covered spaces;
- 160 two-bedroom units at a rate of two spaces per DU = a total of 320 spaces with a minimum of 160 covered spaces;
- 24 three-bedroom units at a rate of three spaces per DU = a total of 60 spaces with a minimum of 60 covered spaces;

Therefore, the total parking requirement equals a total of 512 spaces with a minimum of 272 covered spaces. Per the site plan, the proposed project would provide 315 covered spaces and 215 open spaces for a total of 530 spaces. This results in a surplus of 18 total spaces. Therefore, the proposed project would be in compliance with the City's Zoning Code in regards to its required amount of parking spaces.

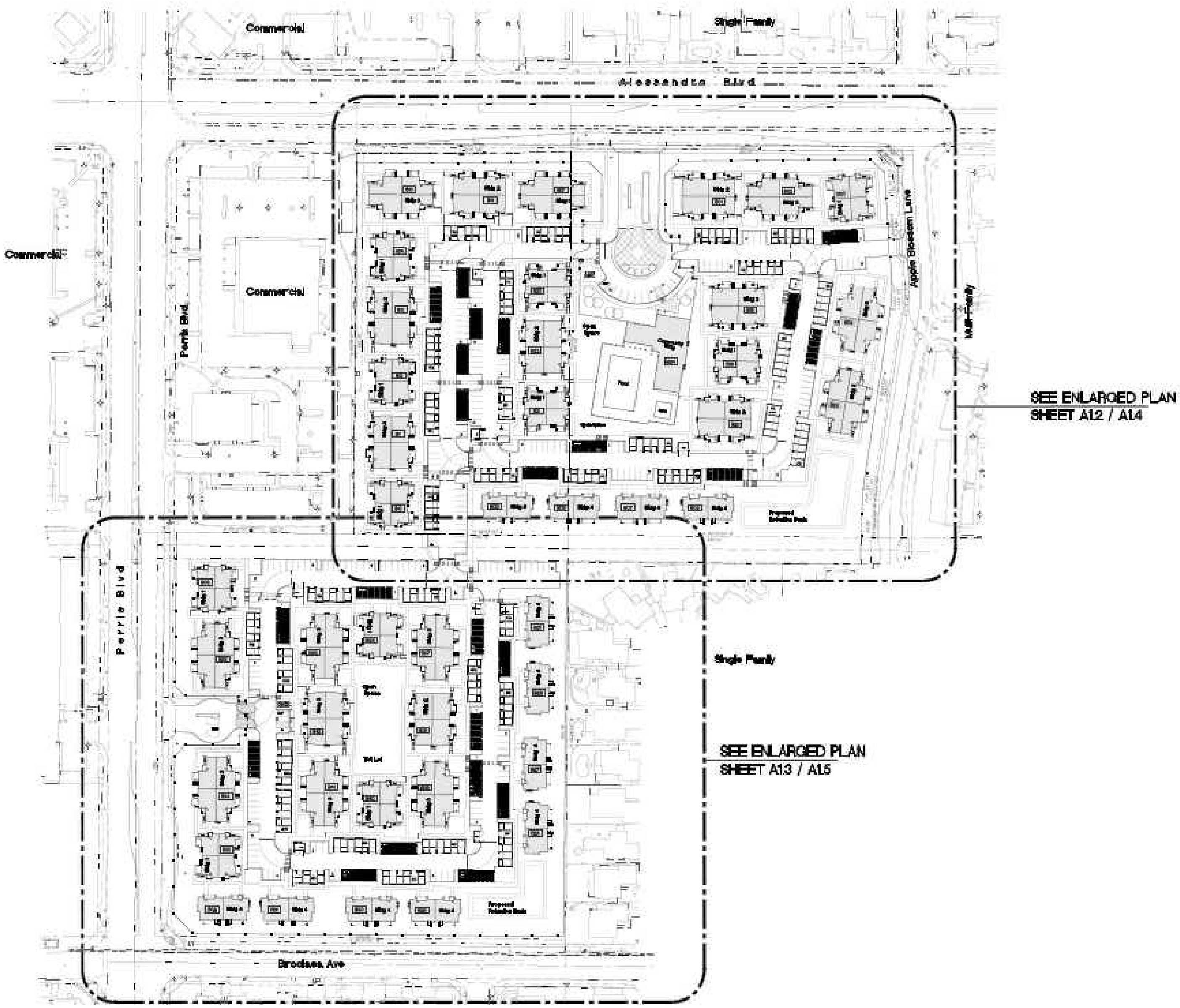
Public (resident, guest, and deliveries) driveway access to the proposed project would be provided from two gated driveways on the south side of Alessandro Boulevard and on east side of Perris Boulevard. The project would construct a median on Alessandro Boulevard that would restrict northbound left turns out of the project and westbound left turns into the project. All inbound and outbound movements from the project would be limited to right-turns only. At the end of this driveway, there are 11 spaces that would allow for visitors to park and use the kiosk to contact the office and/or residents. The Alessandro Boulevard driveway measures 62 feet wide and would allow for 140 feet of stacking. The site plan illustrates two inbound lanes and one outbound lane at this driveway.

The project would also construct a median on Perris Boulevard that would restrict all left turns into and out of the project site and the existing self-storage facility across the street Only right-turn inbound and outbound movements would be allowed. Existing northbound left turns into the self-storage facility would now have to make a U-turn at the intersection of Perris Boulevard/Alessandro Boulevard to access the self-storage facility. There is a gate on the east edge of this driveway. The Perris Boulevard driveway measures 40 feet wide and would allow for 105 feet of stacking. The site plan illustrates two inbound lanes and one outbound lane at this driveway.

A gated, emergency-access only driveway is proposed on Appleblossom Lane. This driveway will be gated and only available to emergency vehicles. No project and public access will be permitted at this location.

A review of the site plan shows no visual obstructions along the roadway to prohibit drivers to maneuver in, and out of, the driveway area. Parking is also restricted on both Alessandro Boulevard and Perris Boulevard near the driveways so vehicles exiting out of the project will not have any obstructions.

Internal circulation within the project site is based on driveway aisles that measure 24 feet wide and have been designed to meet the City's design standards.



NOT TO SCALE

Source: Civil Landworks, 05/2016

Project Site Plan

Moreno Valley Residential

FIGURE

3

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Project Traffic

This section describes the trip generation, distribution, and assignment of the proposed project's traffic volumes on the study area transportation network facilities.

Trip Generation

Weekday daily, a.m. and p.m. peak hour trip generation estimates for the proposed project were developed using trip rates provided in the Institute of Transportation Engineers (ITE) *Trip Generation*, 9th *Edition.* Summaries of the trip generation rates and resulting vehicle trips for the proposed project are presented in Table D.

Table D – Project Trip Generation Estimates

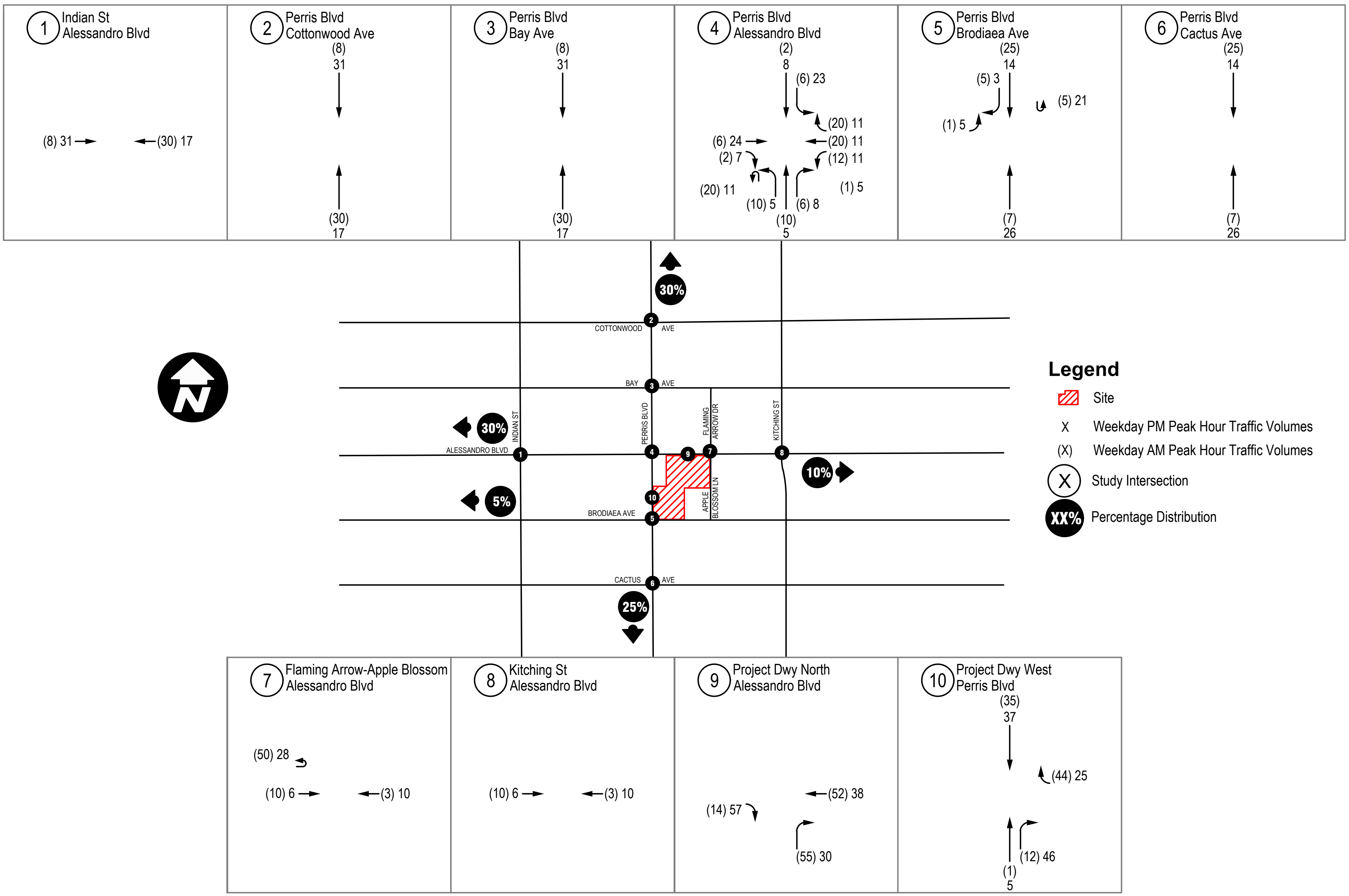
Land Use	Size/Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
TRIP RATES								
Low-Rise Apartments (ITE LUC 221)	per DU	6.59	0.10	0.36	0.46	0.38	0.20	0.58
TRIP GENERATION								
Low-Rise Apartments	272 DUs	**1,792**	**26**	**99**	**125**	**103**	**55**	**158**

Note: Trip rates from *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

According to the table, the proposed project would generate approximately 1,792 daily trips, 125 a.m. peak hour trips (26 inbound and 99 outbound), and 158 p.m. peak hour trips (103 inbound and 55 outbound).

Trip Distribution and Assignment

Regional and local trip distribution percentages for the proposed project were based on logical peak hour commute patterns and approved in the City's Scoping Agreement. Figure 4 illustrates the trip distribution percentages for the proposed project. The trip distribution percentages at each intersection were applied to the proposed project's weekday daily, a.m. and p.m. peak hour trip generation estimates to calculate the project trip assignment. The resulting weekday daily, a.m. and p.m. peak hour trip assignments are also shown on Figure 4.



Project Trip Distribution and Assignment

Moreno Valley Residential TIA

FIGURE

4

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3.0 EXISTING CONDITIONS ANALYSIS

The following section describes the existing traffic conditions in the project study area. Existing traffic volumes were collected at the study intersections and roadway segments in May 2016 during a typical weekday. This section describes the traffic conditions related to the following traffic scenarios:

- Existing Conditions
- Existing plus Project

Existing Traffic Conditions

Roadways

Regional access to the project site is provided by Interstate 215 (I-215) via its interchange with Alessandro Boulevard, and State Route 60 (SR 60) via its interchange with Perris Boulevard. Local access is provided by Alessandro Boulevard and Perris Boulevard. The following describes the roadways in the study area:

Alessandro Boulevard

Alessandro Boulevard is designated as a Divided Major Arterial in the City's *General Plan, Circulation Element*. Alessandro Boulevard provides east-west regional and local access throughout the City of Moreno Valley starting at its interchange with I-215, and ending on the northeast side of the City, before Gilman Springs Road. In the vicinity of the project site, Alessandro Boulevard is a divided six-lane roadway with raised medians. On-street parking is not allowed on both sides of the street, and the posted speed limit is 45 miles per hour (MPH). In addition, the Riverside Transit Agency (RTA) operates a bus route along Alessandro Boulevard in the project vicinity with stops on the south side of Alessandro Boulevard, east and west of Perris Boulevard (Route 20). There is also a bus stop on the north side of Alessandro Boulevard, east of Flaming Arrow Drive-Appleblossom Lane. Per May 2016 traffic counts, the ADT on Alessandro Boulevard within the project vicinity averages approximately 25,060 ADT.

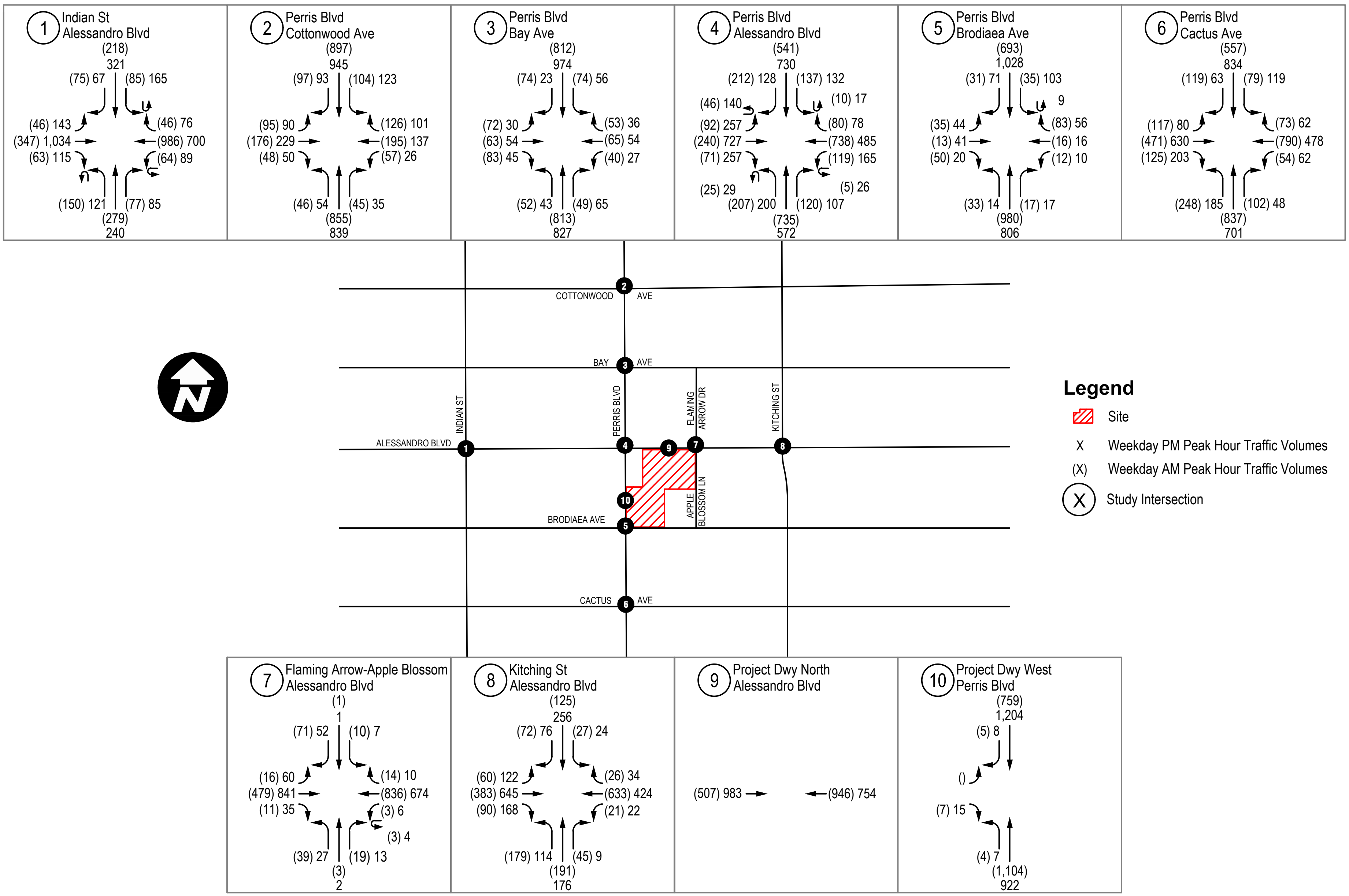
Perris Boulevard

Perris Boulevard is designated as a Six-Lane Divided Arterial in the City's *General Plan, Circulation Element*. Perris Boulevard provides north-south regional and local access throughout the City of Moreno Valley starting at Heacock Street to the north and terminating south of Nandina Avenue. In the vicinity of the project site, Perris Boulevard is a six lane divided roadway with both raised and painted medians. The painted medians act as Two-Way-Left-Turn-Lanes (TWLTLs). The RTA operates a bus route along Perris Boulevard with stops on the east and west sides of Perris Boulevard south of Alessandro Boulevard (Routes 18 and 19). There are also stops north and south of Cottonwood Avenue, Brodiaea Avenue, and Cactus Avenue. Per May 2016 traffic counts, the ADT on Perris Boulevard within the project vicinity averages approximately 28,720 ADT.

Intersection Geometrics and Traffic Volumes

Figure 2, shown previously, illustrates the existing traffic controls and lane geometrics at the study area intersections and roadway segments. Existing traffic volumes were collected at the study intersections and roadway segments in May 2016.

Figure 5 shows the existing a.m. and p.m. peak hour traffic volumes at the study intersections, while Figure 6 shows the existing daily traffic volumes on the study area roadway segments. The raw traffic volume count sheets are provided in Appendix B.



Existing AM and PM Peak Hour Traffic Volumes

Moreno Valley Residential

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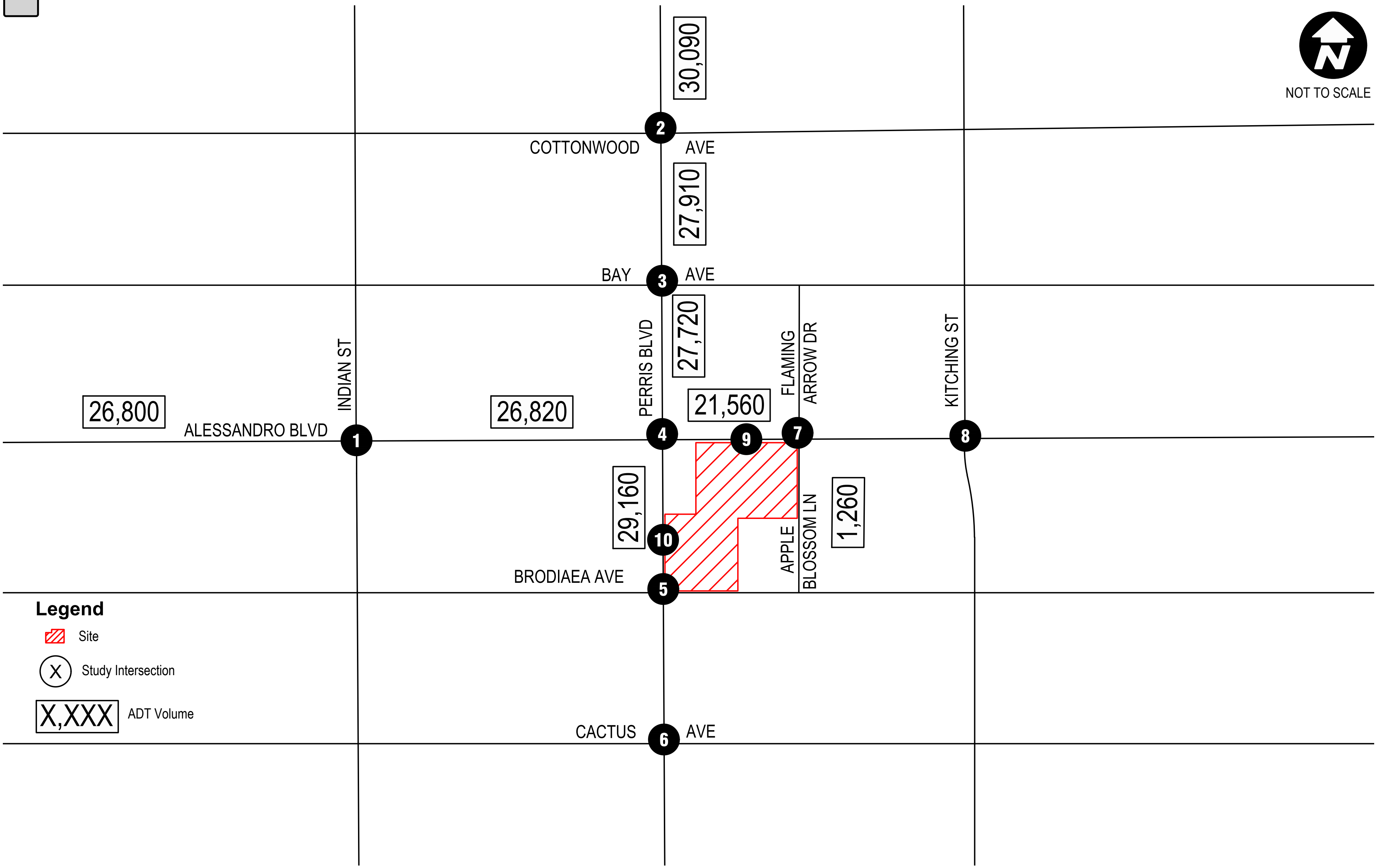
FIGURE **5**



Existing Daily Traffic Volumes

Moreno Valley Residential

FIGURE
6

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Levels of Service

Intersections

Based on the analysis methodology described in Section 1.0, the existing a.m. and p.m. peak hour traffic volumes were input into the *Synchro* LOS software to determine the existing intersection delay and LOS values. Table E presents the results of the existing intersection LOS analysis, while the LOS calculation sheets are provided in Appendix C.

Table E – Existing Condition Intersection Level of Service Summary

		Existing Condition			
		AM Peak Hour		PM Peak Hour	
Intersection	Control	Delay	LOS	Delay	LOS
1. Indian Street/Alessandro Boulevard	signal	23.6 sec	C	29.8 sec	C
2. Perris Boulevard/Cottonwood Avenue	signal	21.5 sec	C	20.7 sec	C
3. Perris Boulevard/Bay Avenue	signal	28.7 sec	C	32.9 sec	C
4. Perris Boulevard/Alessandro Boulevard [1]	signal	33.2 sec	C	38.0 sec	D
5. Perris Boulevard/Brodiaea Avenue	signal	6.2 sec	A	5.5 sec	A
6. Perris Boulevard/Cactus Avenue	signal	40.6 sec	D	36.5 sec	D
7. Appleblossom-Flaming Arrow/Alessandro	signal	14.4 sec	B	13.2 sec	B
8. Kitching Street/Alessandro Boulevard	signal	26.3 sec	C	23.9 sec	C
9. Project Driveway/Alessandro Boulevard	--	*does not exist*			
10. Perris Boulevard/Project Driveway	--	*does not exist*			

Notes: Delay and LOS for intersections based on *Highway Capacity Manual* (HCM).
Bold value indicates intersection is operating with unsatisfactory LOS, at LOS E or F.
[1] Due to high U-turn movements, this intersection was analyzed in HCM 2000 in *Traffix* as HCM 2010 in *Synchro* cannot calculate LOS for U-turn movements.

Based on the existing LOS analysis, all study area intersections are currently operating with a satisfactory LOS (LOS D or better) during both peak hours.

Roadway Segments

Based on the analysis methodology described in Section 1.0, the existing daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values in Table D above. Table F presents the results of the existing roadway segment LOS analysis.

Based on the existing roadway segment analysis, all study area roadway segments currently operate with satisfactory LOS (LOS D or better).

Pedestrian and Bicycle Facilities

There are three basic categories of pedestrian and bicycle facilities as defined by the City. Class I bike paths involve designs which are completely separated from traffic lanes. Class II paths are on-street paths that are located along the edge of a street with a striped lane denoting this bike path. Class III paths also are located along a street edge, but are not striped. These paths are identified by street signs only.

According to the City's Bicycle Master Plan, within the project vicinity Cottonwood Avenue and Cactus Avenue are designated as Class III bicycle routes. Alessandro Boulevard west of Perris Boulevard has a Class II path. Perris Boulevard is not currently designated in the City's Bicycle Master plan, nor does it have any visible striping or signing for bicycles.

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Table F – Existing Condition Roadway Segment Level of Service Summary

Roadway Segment	Segment Type	ADT	LOS [1]
1. Alessandro Boulevard, west of Indian Street	6-lane Divided Arterial	26,800	A
2. Alessandro Boulevard, Indian St to Perris Blvd	6-lane Divided Arterial	26,820	A
3. Alessandro Blvd, Perris Blvd to Flaming Arrow Dr	6-lane Divided Arterial	21,560	A
4. Perris Boulevard, north of Cottonwood Avenue	4-lane Divided Arterial	30,090	C
5. Perris Boulevard, Cottonwood Avenue to Bay Ave	4-lane Divided Arterial	27,910	B
6. Perris Boulevard, Bay Avenue to Alessandro Blvd	4-lane Divided Arterial	27,720	B
7. Perris Boulevard, Alessandro Blvd to Brodiaea Ave	6-lane Divided Arterial	29,160	A
8. Appleblossom Lane, south of Alessandro Boulevard	2-lane, undivided residential	1,260	D or better

Notes: [1] LOS based on Table D – City of Moreno Valley Roadway Segment LOS Values.
[2] City's LOS standards do not provide for specific LOS values of LOS A – D for two-lane residential roads.
Bold value indicates roadway segment is operating with unsatisfactory LOS, at LOS E or F.

Currently, there are continuous sidewalks along the north side of Alessandro Boulevard in the study area. On Perris Boulevard, there are continuous sidewalks on the west side of Perris Boulevard. There are no existing sidewalks along the project's frontage. However, the project is expected to build sidewalks to City standards along it's frontage. This would connect all sidewalks within the project's immediate vicinity and connect pedestrians with the existing transit stops on Alessandro Boulevard and Perris Boulevard.

Transit

The Riverside Transit Agency (RTA) operates three bus routes in the project vicinity. RTA Route 20 travels along Alessandro Blvd with stops on the south side of Alessandro Blvd both east and west of Perris Boulevard. There are also stops for Route 20 on the north side of Alessandro Blvd east and west of Flaming Arrow Drive-Appleblossom Lane. Weekday service for Route 20 starts at 4:05 a.m. and ends at 11:14 p.m. On Saturday, Route 20 starts service at 7:08 a.m. and ends service at 9:16 p.m. Sunday service starts at 7:20 a.m. and ends at 8:16 p.m.

Routes 18 and 19 travel along Perris Boulevard with stops on the east and west sides of Perris Boulevard south of Alessandro Boulevard. Weekday service for Route 18 begins at 5:45 a.m. and ends at 10:41 p.m. Service on Saturday and Sunday starts at 6:52 a.m. and ends at 7:54 p.m.

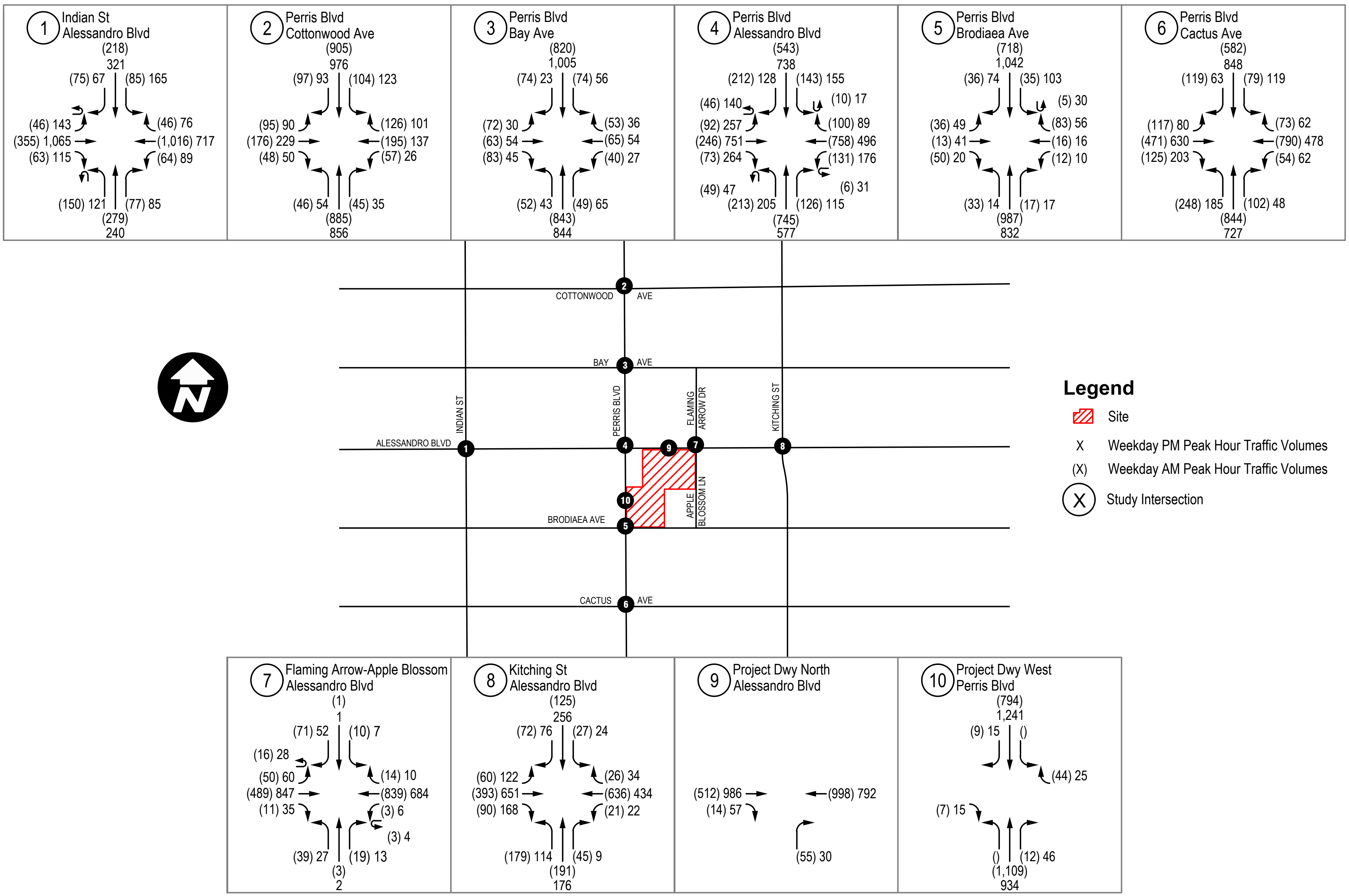
Weekday service for Route 19 starts at 3:35 a.m. and ends at 11:26 p.m. Service on Saturday begins at 6:01 a.m. and ends at 10:04 p.m. Sunday service for Route 19 starts at 6:04 a.m. and ends at 8:59 p.m.

Existing plus Project

Traffic generated by the proposed project was added to the existing scenario and the project impacts on the circulation system were analyzed. This scenario would determine project-specific impacts and mitigation measures (if required) with project traffic added to existing traffic volumes.

Traffic Volumes

The proposed project trip assignment shown in Figure 4 was added to the existing traffic volumes in Figures 5 and 6 which resulted in the Existing plus Project peak hour and daily traffic volumes, respectively. Figure 7 illustrates the Existing plus Project a.m. and p.m. peak hour traffic volumes, while Figure 8 illustrates the Existing plus Project daily traffic volumes.



Existing Plus Project AM and PM Peak Hour Traffic Volumes

Moreno Valley Residential TIA

FIGURE

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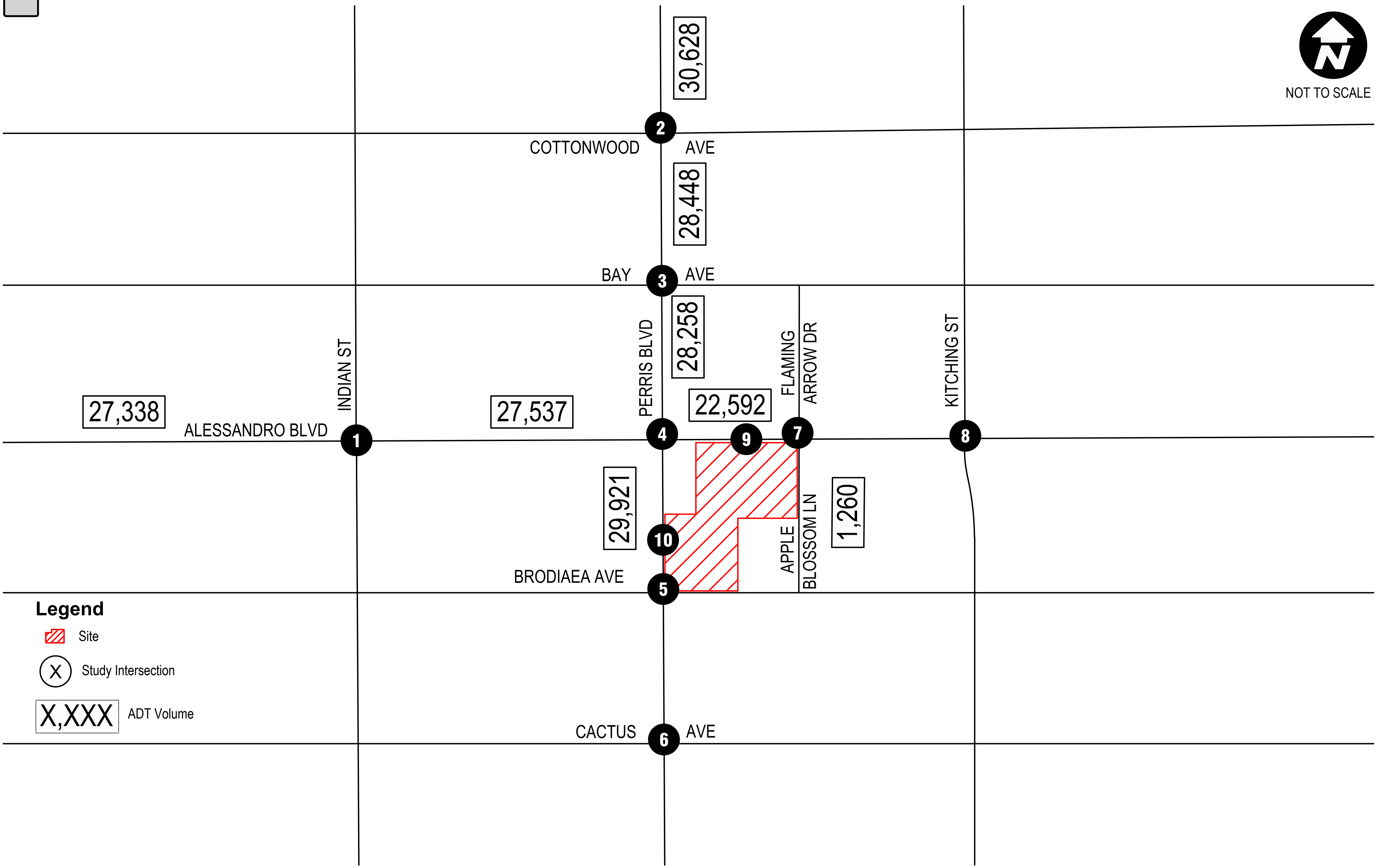

Existing Plus Project Daily Traffic Volumes

Moreno Valley Residential

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FIGURE
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Levels of Service

Intersections

Based on the analysis methodology described in Section 1.0, the Existing plus Project a.m. and p.m. peak hour traffic volumes were input into the *Synchro* LOS software to determine the intersection delay and LOS values. Table G presents the results of the Existing plus Project intersection LOS analysis, while the LOS calculation sheets are provided in Appendix C.

Based on the Existing plus Project LOS analysis, all study area intersections are forecast to operate at satisfactory LOS with addition of traffic from the proposed project. Per the City's significance criteria, the added trips would not impact any study area intersections. Therefore, no mitigation measures are required.

Roadway Segments

Based on the analysis methodology described in Section 1.0, the Existing plus Project daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values in Table D above. Table H presents the results of the Existing plus Project roadway segment LOS analysis.

Based on the Existing plus Project roadway segment analysis, all study area roadway segments would continue to operate with satisfactory LOS (LOS D or better) with addition of traffic from the proposed project.

Mitigation Measures

As shown in both Tables G and H, the project is not expected to impact any intersections or roadway segments, therefore no mitigation measures are required.

Table G – Existing plus Project Intersection Level of Service Summary

Intersection	Control	Existing Condition				Existing plus Project				Project Trips Added		Impact?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM	
1. Indian Street/Alessandro Boulevard	signal	23.6 sec	C	29.8 sec	C	25.9 sec	C	31.2 sec	C	38	48	no
2. Perris Boulevard/Cottonwood Avenue	signal	21.5 sec	C	20.7 sec	C	19.2 sec	B	19.8 sec	B	38	48	no
3. Perris Boulevard/Bay Avenue	signal	28.7 sec	C	32.9 sec	C	32.5 sec	D	35.9 sec	D	38	48	no
4. Perris Boulevard/Alessandro Boulevard [1]	signal	33.2 sec	C	38.0 sec	D	33.7 sec	C	39.3 sec	D	115	129	no
5. Perris Boulevard/Brodiaea Avenue	signal	6.2 sec	A	5.5 sec	A	6.2 sec	A	6.5 sec	A	43	69	no
6. Perris Boulevard/Cactus Avenue	signal	40.6 sec	D	36.5 sec	D	40.8 sec	D	37.3 sec	D	32	40	no
7. Appleblossom-Flaming Arrow/Alessandro	signal	14.4 sec	B	13.2 sec	B	16.8 sec	B	8.1 sec	A	63	44	no
8. Kitching Street/Alessandro Boulevard	signal	26.3 sec	C	23.9 sec	C	26.4 sec	C	27.1 sec	C	13	16	no
9. Project Driveway/Alessandro Boulevard	1-way stop	*proposed intersection*				11.6 sec	B	13.3 sec	B	126	128	no
10. Perris Boulevard/Project Driveway	1-way stop	*proposed intersection*				16.1 sec	C	16.4 sec	C	92	113	no

Notes: Delay and LOS for intersections based on *Highway Capacity Manual* (HCM), Transportation Research Board.
Bold value indicates intersection is operating with unsatisfactory LOS, at LOS E or F.
Bold value indicates significant project impact per the appropriate City's LOS significance criteria.
[1] Due to high U-turn movements, this intersection was analyzed in HCM 2000 in *Traffix* as HCM 2010 in *Synchro* cannot calculate LOS for U-turn movements.

Table H – Existing plus Project Condition Roadway Segment Level of Service Summary

Roadway Segment	Segment Type	Existing Condition		Existing plus Project		
		ADT	LOS [1]	ADT	LOS [1]	Impact?
1. Alessandro Boulevard, west of Indian Street	6-lane Divided Arterial	26,800	A	27,338	A	no
2. Alessandro Boulevard, Indian St to Perris Blvd	6-lane Divided Arterial	26,820	A	27,537	A	no
3. Alessandro Blvd, Perris Blvd to Flaming Arrow Dr	6-lane Divided Arterial	21,560	A	22,592	A	no
4. Perris Boulevard, north of Cottonwood Avenue	4-lane Divided Arterial	30,090	C	30,628	C	no
5. Perris Boulevard, Cottonwood Avenue to Bay Ave	4-lane Divided Arterial	27,910	B	28,448	B	no
6. Perris Boulevard, Bay Avenue to Alessandro Blvd	4-lane Divided Arterial	27,720	B	28,258	B	no
7. Perris Boulevard, Alessandro Blvd to Brodiaea Ave	6-lane Divided Arterial	29,160	A	30,921	A	no
8. Appleblossom Lane, south of Alessandro Blvd	2-lane, undivided residential	1,260	D or better	1,260	D or better	no

Notes: [1] LOS based on Table D – City of Moreno Valley Roadway Segment LOS Values.

[2] City's LOS standards do not provide for specific LOS values of LOS A – D for two-lane residential roads.

Bold value indicates roadway segment is operating with unsatisfactory LOS, at LOS E or F.

Bold value indicates significant project impact per the appropriate City's LOS significance criteria.

4.0 NEAR-TERM YEAR 2021 TRAFFIC CONDITIONS

Near-Term Year 2021 Baseline Condition

This scenario is comprised of the existing (2016) traffic conditions, plus five years of ambient traffic growth (2016 to 2021), plus traffic from cumulative (approved and/or pending) developments in the study area. An ambient traffic growth rate of two (2) percent per year was applied (per the Scoping Agreement with the City) to the existing (adjusted) traffic volumes to forecast the Near-Term Year 2021.

Cumulative development projects in the project vicinity were obtained from the City's *Economic Development Summary* (May 2016). Appendix D contains the detailed information for the cumulative projects used in this TIA.

Traffic Controls and Intersection Geometrics

There no improvements planned for the study area roadways and intersections through the 2021 project near-term year. Therefore, the existing intersection traffic controls and geometrics were assumed for those intersections in the 2016 level of service analysis.

Traffic Volumes

As discussed above, Near-Term Year 2021 baseline traffic volumes were forecast by applying an annual growth rate of two (2) percent per year, plus the addition of traffic from cumulative development. Table I presents the list of cumulative developments in the study area, and their anticipated trip generation estimates, while Figure 9 illustrates the locations of the cumulative projects relative to the proposed project site.

Based on the table, the cumulative projects in the study area would generate a total of approximately 34,922 daily trips, 2,134 a.m. peak hour trips, and 3,195 p.m. peak hour trips. Those trips were distributed appropriately through the study area based on logical travel and commute corridors and are generally consistent with the forecast volumes in the *Moreno Valley Walmart Traffic Impact Analysis (Revised)* (March 5 2015, Urban Crossroads).

The trip assignments of the cumulative projects, and the ambient growth rate were applied to the existing (2016) traffic volumes which derived the Near-Term Year (2021) Baseline traffic volumes. Figure 10 illustrates the Near-Term Year (2021) Baseline a.m. and p.m. peak hour volumes, while Figure 11 illustrates the Near-Term Year Baseline daily traffic volumes.

Levels of Service

Intersections

Based on the analysis methodology described in Section 1.0, the Near-Term Year 2021 Baseline a.m. and p.m. peak hour traffic volumes were input into the *Synchro* LOS software to determine the existing intersection delay and LOS values. Table J presents the results of the Near-Term Year 2021 Baseline intersection LOS analysis, while the LOS calculation sheets are provided in Appendix C.

Based on the Near-Term Year 2021 Baseline LOS analysis, the study area intersection of Perris Boulevard/Cactus Avenue is forecast to operate at an unsatisfactory LOS (LOS E) during both peak hours.

Roadway Segments

Based on the analysis methodology described in Section 1.0, the Near-Term Year 2021 Baseline daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values in Table D above. Table K presents the results of the Near-Term Year 2021 Baseline roadway segment LOS analysis.

Table I. Cumulative Projects Trip Generation Estimates

Land Use	Units	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Trip Rates[1]								
Apartment (ITE Code 220)	DU	6.65	0.10	0.41	0.51	0.40	0.22	0.62
Shopping Center (ITE Code 820)					ITE Equation			
Single-Family Detached Housing (ITE Code 210)	DU	9.52	0.19	0.56	0.75	0.63	0.37	1.00
Hotel (ITE Code 310)	RMS	8.92	0.39	0.28	0.67	0.34	0.36	0.70
Hospital (ITE Code 610)	TSF	13.22	0.60	0.35	0.95	0.35	0.58	0.93

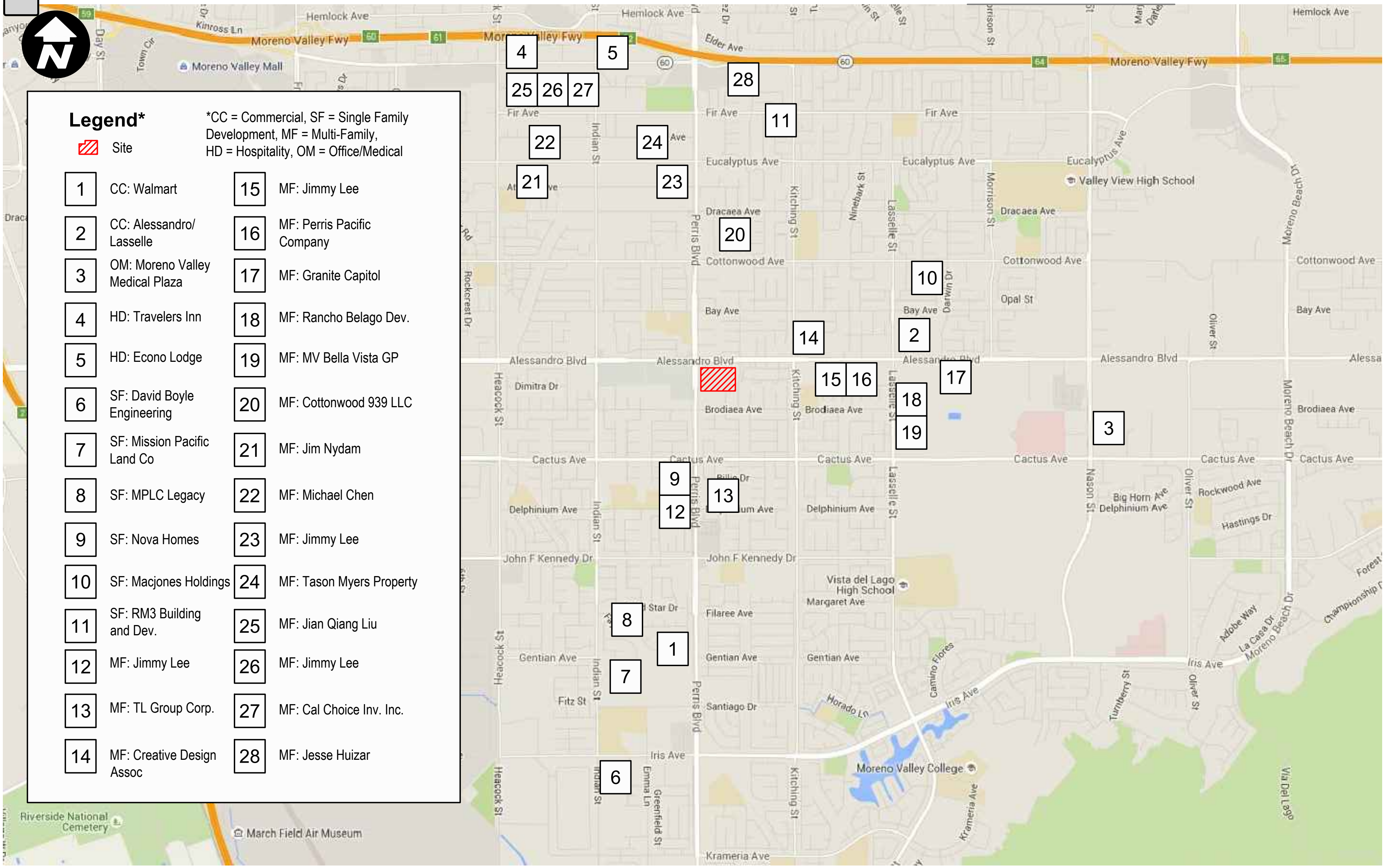
Trip Generation

Cumulative Projects	Units	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
1. CC: Walmart[2]	193.000 TSF	9625	218	170	388	411	423	834
2. CC: Alessandro/Lasselle	140.000 TSF	8451	119	73	191	360	390	751
		-3984	-28	-17	-45	-170	-184	-354
NET		4467	91	56	146	190	206	397
3. OM: Moreno Valley Medical Plaza	217.000 TSF	2869	130	76	206	77	125	202
4. HD: Travelers Inn	55 RMS	491	21	15	37	19	20	39
5. Econo Lodge	51 RMS	455	20	14	34	17	18	36
6. SF: David Boyle Engineering	16 DU	152	3	9	12	10	6	16
7. SF Dev: Mission Pacific Land Co	189 DU	1799	35	106	142	119	70	189
8. SF Dev: MPLC Legacy	543 DU	5169	102	305	407	342	201	543
9. SF Dev: Nova Homes	127 DU	1209	24	71	95	80	47	127
10. SF: Macjones Holdings	16 DU	152	3	9	12	10	6	16
11. SF Dev: RM3 Building and Dev.	12 DU	114	2	7	9	8	4	12
12. MF: Jimmy Lee	60 DU	399	6	24	31	24	13	37
13. MF: TL Group Corp.	52 DU	346	5	21	27	21	11	32
14. MF: Creative Design Assoc	39 DU	259	4	16	20	16	8	24
15. MF: Jimmy Lee	24 DU	160	2	10	12	10	5	15
16. MF: Perris Pacific Company	49 DU	326	5	20	25	20	11	30
17. MF: Granite Capitol	438 DU	2913	45	179	223	177	95	272
18. MF: Rancho Belago Dev.	141 DU	938	14	58	72	57	31	87
19. MF: MV Bella Vista GP	220 DU	1463	22	90	112	89	48	136
20. MF: Cottonwood 939 LLC	84 DU	559	9	34	43	34	18	52
21. MF: Jim Nydam	15 DU	100	2	6	8	6	3	9
22. MF: Michael Chen	16 DU	106	2	7	8	6	3	10
23. MF: Jimmy Lee	12 DU	80	1	5	6	5	3	7
24. MF: Tason Myers Property	12 DU	80	1	5	6	5	3	7
25. MF: Jian Qiang Liu	12 DU	80	1	5	6	5	3	7
26. MF: Jimmy Lee	12 DU	80	1	5	6	5	3	7
27. MF: Cal Choice Inv Inc	20 DU	133	2	8	10	8	4	12
28. MF: Jesse Huizar	60 DU	399	6	24	31	24	13	37
Total Trip Generation		34922	778	1356	2134	1794	1401	3195

1 Trip rates from the Institute of Transporation Engineers, *Trip Generation, 9th Edition,* 2012.

[2] Trip generation from Traffic Impact Study for South Moreno Valley Walmart Project, Applied Planning, Inc., April 2015.

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)



Source: City of Moreno Valley, Economic Development Summary, June 2016

Locations of Cumulative Projects

FIGURE 9

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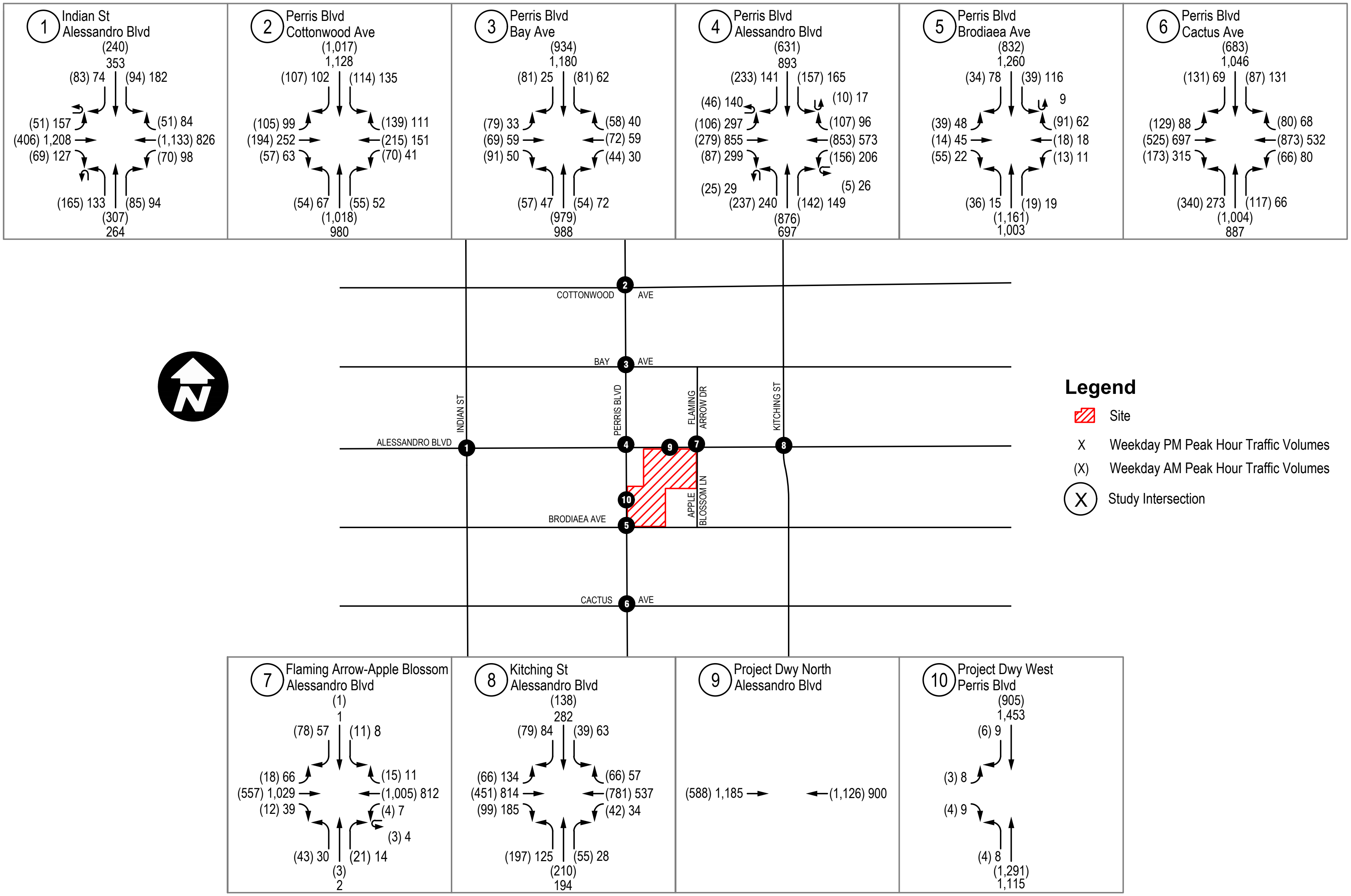

Near-Term 2021 Baseline AM and PM Peak Hour Traffic Volumes

Moreno Valley Residential TIA

FIGURE
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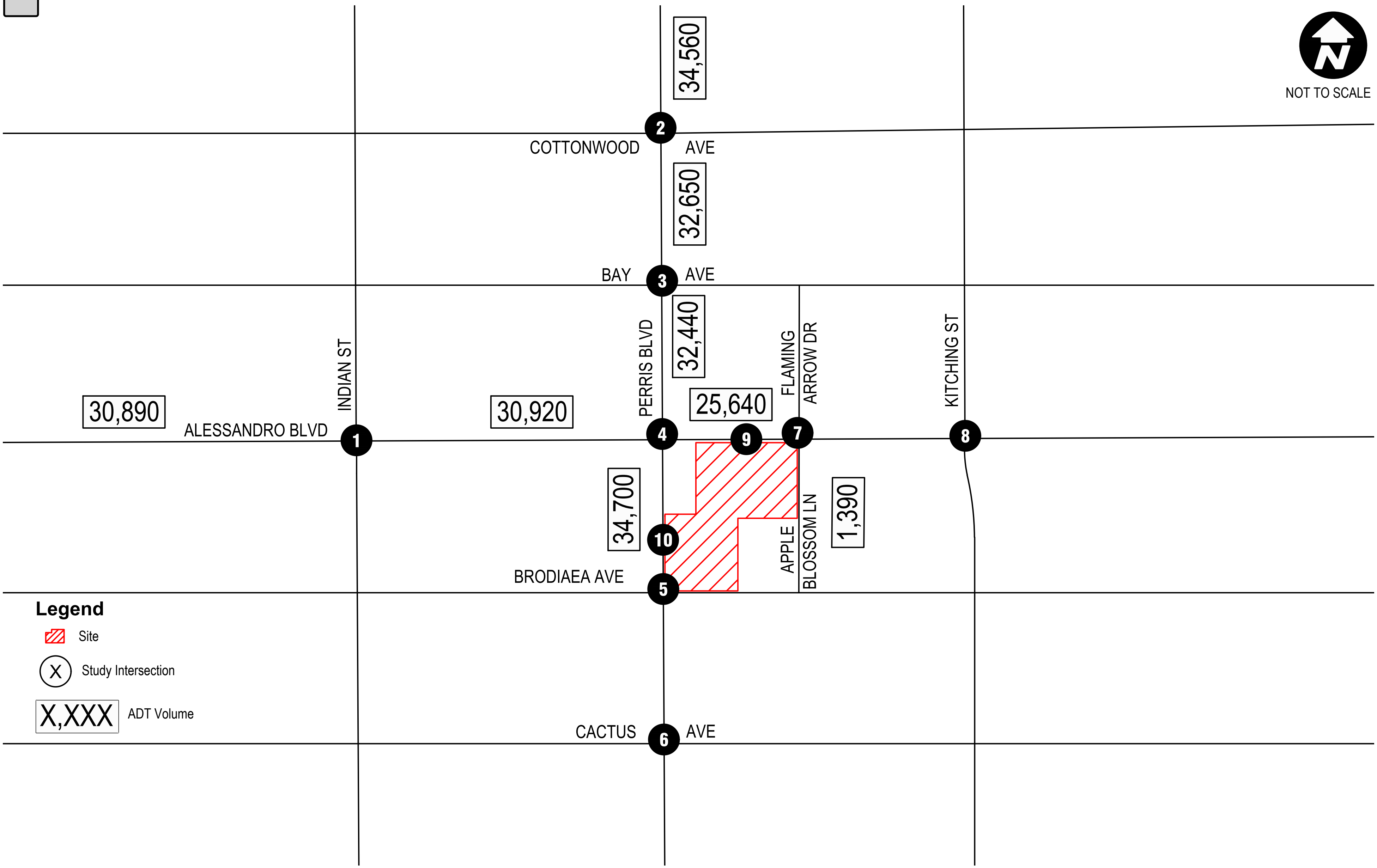

Near-Term 2021 Baseline Daily Traffic Volumes

Moreno Valley Residential

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FIGURE 11

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Table J – Near-Term Year 2021 Baseline Intersection Level of Service Summary

Intersection	Control	Near-Term Year 2021 Baseline Condition			
		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Indian Street/Alessandro Boulevard	signal	21.5 sec	C	31.9 sec	C
2. Perris Boulevard/Cottonwood Avenue	signal	22.2 sec	C	20.9 sec	C
3. Perris Boulevard/Bay Avenue	signal	35.1 sec	D	23.7 sec	C
4. Perris Boulevard/Alessandro Boulevard [1]	signal	36.5 sec	D	47.7sec	D
5. Perris Boulevard/Brodiaea Avenue	signal	7.9 sec	A	7.7 sec	A
6. Perris Boulevard/Cactus Avenue	signal	**62.5 sec**	**E**	**57.2 sec**	**E**
7. Appleblossom-Flaming Arrow/Alessandro	signal	11.4 sec	B	12.7 sec	B
8. Kitching Street/Alessandro Boulevard	signal	27.8 sec	C	21.1 sec	C
9. Project Driveway/Alessandro Boulevard	--	*does not exist*			
10. Perris Boulevard/Project Driveway	--	*does not exist*			

Notes: Delay and LOS for intersections based on *Highway Capacity Manual* (HCM).
Bold value indicates intersection is operating with unsatisfactory LOS, at LOS E or F.
[1] Due to high U-turn movements, this intersection was analyzed in HCM 2000 in *Traffix* as HCM 2010 in *Synchro* cannot calculate LOS for U-turn movements.

Table K – Near-Term Year 2021 Baseline Roadway Segment Level of Service Summary

Roadway Segment	Segment Type	ADT	LOS [1]
1. Alessandro Boulevard, west of Indian Street	6-lane Divided Arterial	30,890	A
2. Alessandro Boulevard, Indian St to Perris Blvd	6-lane Divided Arterial	30,920	A
3. Alessandro Blvd, Perris Blvd to Flaming Arrow Dr	6-lane Divided Arterial	25,640	A
4. Perris Boulevard, north of Cottonwood Avenue	4-lane Divided Arterial	34,560	D
5. Perris Boulevard, Cottonwood Avenue to Bay Ave	4-lane Divided Arterial	32,650	C
6. Perris Boulevard, Bay Avenue to Alessandro Blvd	4-lane Divided Arterial	32,440	C
7. Perris Boulevard, Alessandro Blvd to Brodiaea Ave	6-lane Divided Arterial	34,700	A
8. Appleblossom Lane, south of Alessandro Boulevard	2-lane, undivided residential	1,390	D or better

Notes: [1] LOS based on Table D – City of Moreno Valley Roadway Segment LOS Values.
[2] City's LOS standards do not provide for specific LOS values of LOS A – D for two-lane residential roads.
Bold value indicates roadway segment is operating with unsatisfactory LOS, at LOS E or F.

Based on the Near-Term Year 2021 Baseline roadway segment analysis, both study area roadway segments are forecast to continue to operate with satisfactory LOS (LOS D or better).

Near-Term Year 2021 plus Project

Traffic generated by the proposed project was added to the Near-Term Year 2021 Baseline scenario and the project impacts on the circulation system were analyzed. This scenario would determine project-specific impacts and mitigation measures (if required) with project traffic added to the Near-Term Year 2021 Baseline traffic volumes.

Traffic Volumes

The proposed project trip assignment shown in Figure 4 was added to the Near-Term Year 2021 Baseline traffic volumes in Figures 10 and 11 which resulted in the Near-Term Year 2021 plus Project a.m. and p.m. peak hour traffic volumes and daily traffic volumes, respectively. Figure 12 illustrates the Near-Term Year plus Project a.m. and p.m. peak hour traffic volumes, while Figure 13 illustrates the Near-Term Year plus Project daily traffic volumes.

Levels of Service

Intersections

Based on the analysis methodology described in Section 1.0, the Near-Term Year 2021 plus Project a.m. and p.m. peak hour traffic volumes were input into the *Synchro* LOS software to determine the intersection delay and LOS values. Table L presents the results of the Near-Term Year 2021 plus Project intersection LOS analysis, while the LOS calculation sheets are provided in Appendix C.

Based on the Near-Term Year 2021 plus Project LOS analysis, the intersection of Perris Boulevard/Cactus Avenue is forecast to continue to operate at LOS E with the addition of traffic from the proposed project. Per the City's significance criteria, this would not be a significant impact as the proposed project would not add 50 or more peak hour trips to this intersection. Therefore, no mitigation measure would be required.

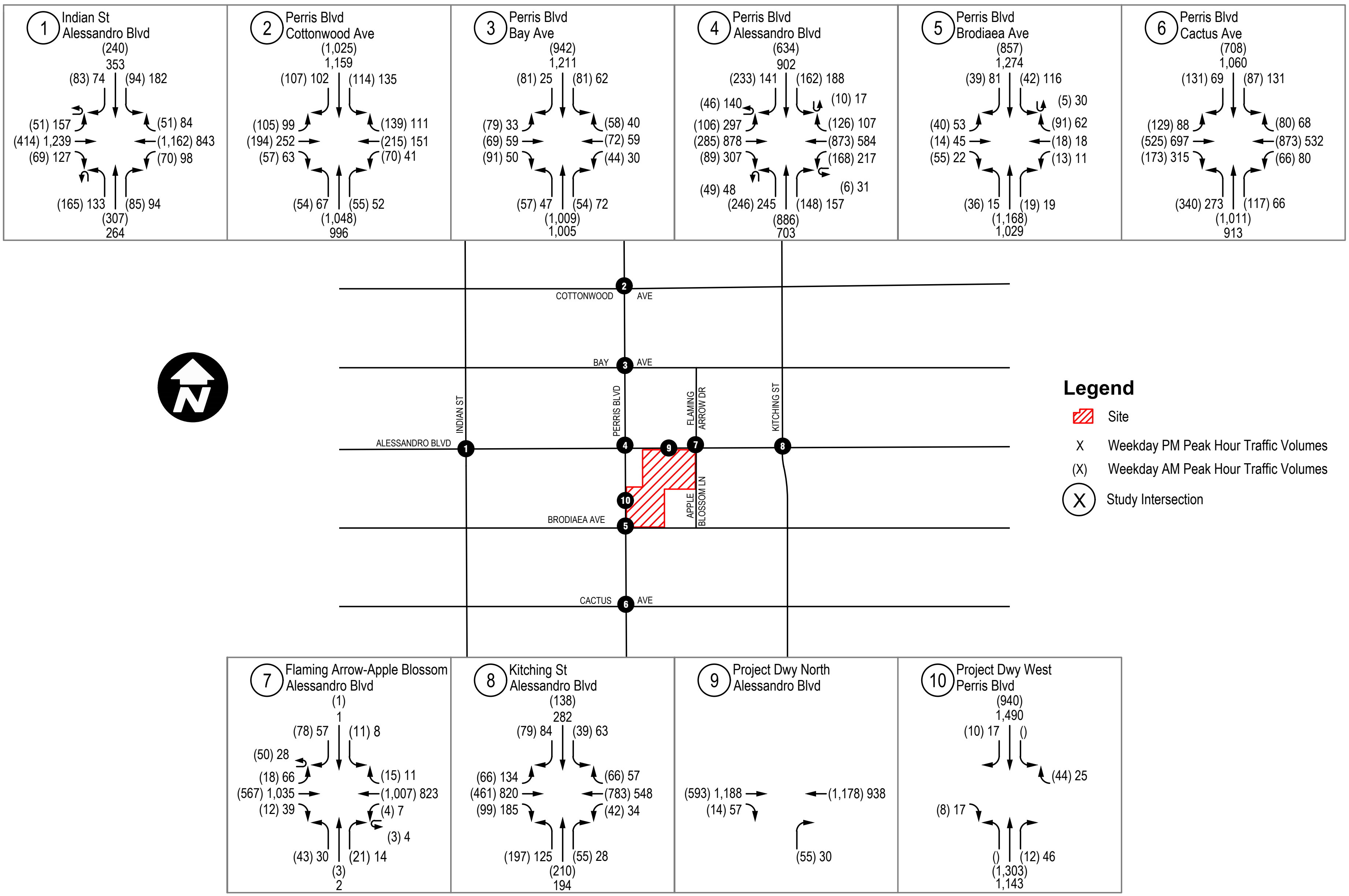
Roadway Segments

Based on the analysis methodology described in Section 1.0, the Near-Term Year 2021 plus Project daily traffic volumes at the study area roadway segments were compared to the City's roadway segment LOS values in Table D above. Table M presents the results of the Near-Term Year 2021 plus Project roadway segment LOS analysis.

Based on the Near-Term Year 2021 plus Project LOS analysis, all roadway segments are expected to operate at LOS D or better. Per the City's significance criteria, no impacts to the study area roadway segments are expected. Therefore, no mitigation measures would be required.

Mitigation Measures

As shown in both Tables L and M, the project is not expected to impact any intersections or roadway segments, therefore no mitigation measures are required.



Near-Term 2021 plus Project AM and PM Peak Hour Traffic Volumes

FIGURE
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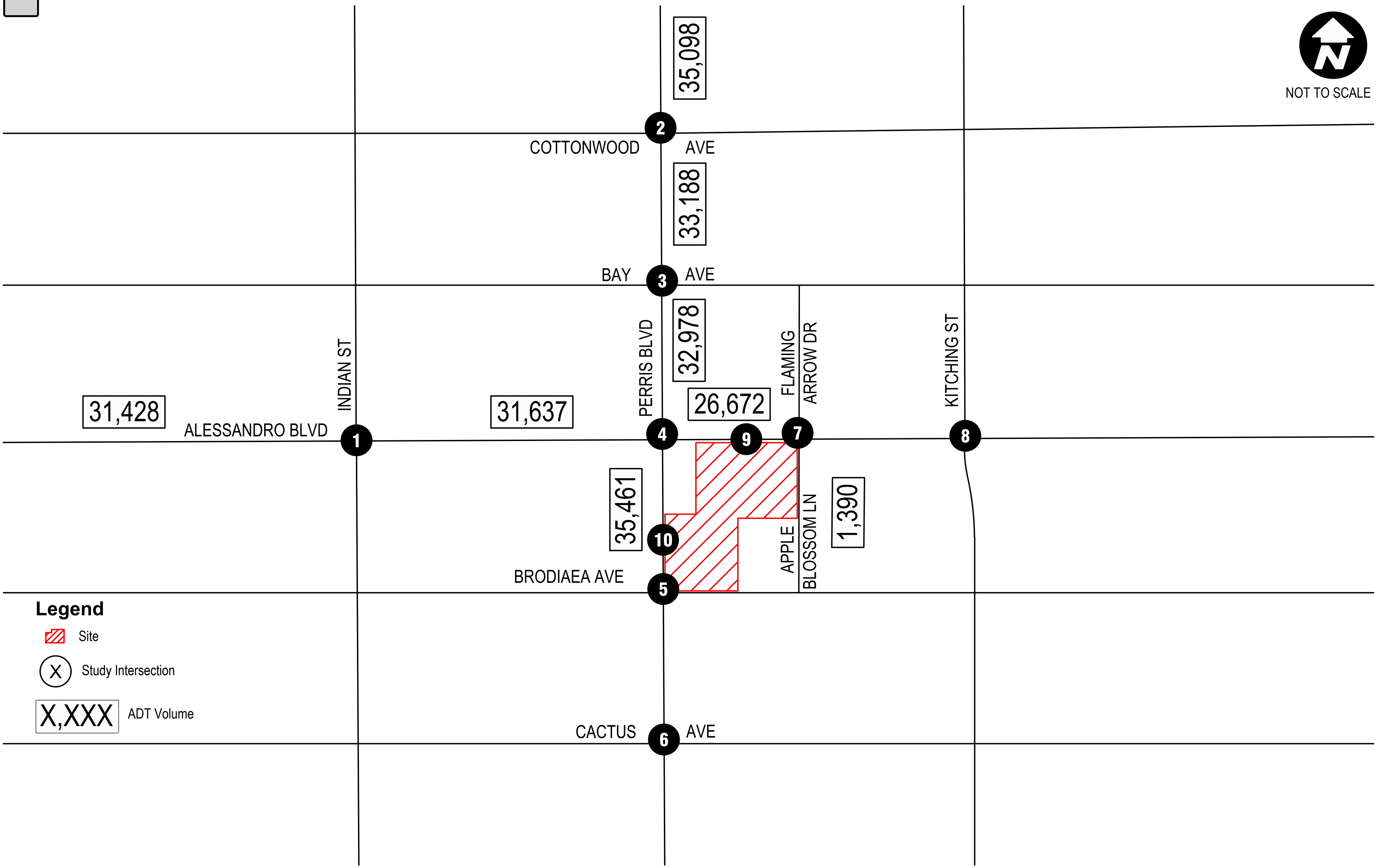

Near-Term Year 2021 Plus Project Daily Traffic Volumes

Moreno Valley Residential

FIGURE 13

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Table L – Near-Term Year 2021 plus Project Intersection Level of Service Summary

Intersection	Control	Near-Term Year 2021 Condition				Near-Term Year 2021 plus Project				Project Trips Added		Impact?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM	
1. Indian Street/Alessandro Boulevard	signal	21.5 sec	C	31.9 sec	C	26.1 sec	C	30.9 sec	C	38	48	no
2. Perris Boulevard/Cottonwood Avenue	signal	22.2 sec	C	20.9 sec	C	23.3 sec	C	23.2 sec	C	38	48	no
3. Perris Boulevard/Bay Avenue	signal	35.1 sec	D	23.7 sec	C	37.2 sec	D	41.3 sec	D	38	48	no
4. Perris Boulevard/Alessandro Boulevard [1]	signal	36.5 sec	D	47.7sec	D	37.5 sec	D	51.3 sec	D	115	129	no
5. Perris Boulevard/Brodiaea Avenue	signal	7.9 sec	A	7.7 sec	A	5.6 sec	A	8.1 sec	A	43	69	no
6. Perris Boulevard/Cactus Avenue	signal	**62.5 sec**	**E**	**57.2 sec**	**E**	**62.5 sec**	**E**	**57.3 sec**	**E**	32	40	no
7. Appleblossom-Flaming Arrow/Alessandro	signal	11.4 sec	B	12.7 sec	B	13.2 sec	B	6.7 sec	A	68	44	no
8. Kitching Street/Alessandro Boulevard	signal	27.8 sec	C	21.1 sec	C	25.6 sec	C	27.2 sec	C	13	16	no
9. Project Driveway/Alessandro Boulevard	1-way stop	*proposed intersection*				11.0 sec	B	14.5 sec	B	126	128	no
10. Perris Boulevard/Project Driveway	1-way stop	*proposed intersection*				18.7 sec	C	18.5 sec	C	92	113	no

Notes: Delay and LOS for intersections based on *Highway Capacity Manual* (HCM), Transportation Research Board.
Bold value indicates intersection is operating with unsatisfactory LOS, at LOS E or F.
Bold value indicates significant project impact per the appropriate City's LOS significance criteria.
[1] Due to high U-turn movements, this intersection was analyzed in HCM 2000 in *Traffix* as HCM 2010 in *Synchro* cannot calculate LOS for U-turn movements.

Table M – Near-Term Year 2021 plus Project Condition Roadway Segment Level of Service Summary

Roadway Segment	Segment Type	Near-Term Year		Near-Term Year + Project		
		ADT	LOS [1]	ADT	LOS [1]	Impact?
1. Alessandro Boulevard, west of Indian Street	6-lane Divided Arterial	30,890	A	31,428	A	no
2. Alessandro Boulevard, Indian St to Perris Blvd	6-lane Divided Arterial	30,920	A	31,637	A	no
3. Alessandro Blvd, Perris Blvd to Flaming Arrow Dr	6-lane Divided Arterial	25,640	A	26,672	A	no
4. Perris Boulevard, north of Cottonwood Avenue	4-lane Divided Arterial	34,560	D	35,098	D	no
5. Perris Boulevard, Cottonwood Avenue to Bay Ave	4-lane Divided Arterial	32,650	C	33,188	C	no
6. Perris Boulevard, Bay Avenue to Alessandro Blvd	4-lane Divided Arterial	32,440	C	32,978	C	no
7. Perris Boulevard, Alessandro Blvd to Brodiaea Ave	6-lane Divided Arterial	34,700	A	35,461	A	no
8. Appleblossom Lane, south of Alessandro Blvd	2-lane, undivided residential	1,390	D or better	1,390	D or better	no

Notes: [1] LOS based on Table D – City of Moreno Valley Roadway Segment LOS Values.
[2] City's LOS standards do not provide for specific LOS values of LOS A – D for two-lane residential roads.
Bold value indicates roadway segment is operating with unsatisfactory LOS, at LOS E or F.
Bold value indicates significant project impact per the appropriate City's LOS significance criteria.

5.0 PROJECT ACCESS, DRIVEWAY AND INTERSECTION QUEUING,CIRCULATION AND PARKING

The following section discusses the proposed project's access and circulation characteristics, and parking requirements.

Project Access and Circulation

Public (resident, guest, and deliveries) driveway access to the proposed project would be provided from two gated driveways on the south side of Alessandro Boulevard and on east side of Perris Boulevard. The project would construct a median on Alessandro Boulevard that would restrict northbound left turns out of the project and westbound left turns into the project. All inbound and outbound movements from the project would be limited to right-turns only. At the end of this driveway, there are 11 spaces that would allow for visitors to park and use the kiosk to contact the office and/or residents. The Alessandro Boulevard driveway measures 62 feet wide and would allow for 140 feet of stacking. The site plan illustrates two inbound lanes and one outbound lane at this driveway.

The project would also construct a median on Perris Boulevard that would restrict all left turns into and out of the project site and the self-storage facility Only right-turn inbound and outbound movements would be allowed. Existing northbound left turns into the self-storage facility would now make a U-turn at the intersection of Perris Boulevard/Alessandro Boulevard to access the self-storage facility. There is a gate on the east edge of this driveway. The Perris Boulevard driveway measures 40 feet wide and would allow for 105 feet of stacking. The site plan illustrates two inbound lanes and one outbound lane at this driveway.

In addition, based on the peak hour intersection LOS analysis, the driveway on Alessandro Boulevard is forecast to operate at LOS B during both peak hours. The driveway on Perris Boulevard is forecast to operate at LOS C during both peak hours. A review of the site plan shows no visual obstructions along the roadway to prohibit drivers to maneuver in, and out of, the driveway area. Parking is also restricted on both Alessandro Boulevard and Perris Boulevard near the driveways so vehicles exiting out of the project will not have any obstructions.

Internal circulation within the project site is based on driveway aisles that measure 24 feet wide and have been designed to meet the City's design standards.

Driveway and Intersection Queuing

A 95th percentile queuing analysis based on a *SimTraffic* analysis was conducted at the following intersections and project driveways:

- Perris Boulevard/Alessandro Boulevard
- Perris Boulevard/Brodiaea Avenue
- Apple Blossom Lane-Flaming Arrow Dr/Alessandro Boulevard
- Perris Boulevard/Project Driveway
- Project Driveway/Alessandro Boulevard

The detailed *SimTraffic* queuing analysis sheets are provided in Appendix E. Tables N and O illustrate the Existing plus Project and Near-Term Year 2021 plus Project queueing analysis, respectively.

According to the tables, neither the project driveways, nor the adjacent intersections to the site, are forecast to experience any significant queues. During the PM peak hour in the Near-Term Year 2021 plus project scenarios, the project is expected to increase the northbound left turn queue at the Perris Boulevard/Alessandro Boulevard intersection by 170 feet (approximately eight passenger cars) in the PM peak hour. This would bring the total queue to 430 feet (approximately 20 passenger cars). The existing turn pocket is approximately 470 feet, and can adequately accommodate the forecast queue length.

Table N – Existing plus Project Queuing Analysis (95th Percentile Queue in Feet)

Intersection/Movement	Existing		Existing plus Project		Change	
	AM	PM	AM	PM	AM	PM
Project Driveway/Alessandro Boulevard						
-NBR	--	--	164	47	+164	+47
Perris Blvd/Able Storage Dwy-Project Dwy						
-EBL	16	29	--	--	-16	-29
-EBR	23	25	30	37	+7	+12
-WBR	--	--	55	46	+55	+46

Table O – Near-Term Year 2021 plus Project Queuing Analysis (95th Percentile Queue in Feet)

Intersection/Movement	Near-Term 2021		Near-Term 2021 plus Project		Change	
	AM	PM	AM	PM	AM	PM
Project Driveway/Alessandro Boulevard						
-NBR	--	--	51	51	+51	+51
Perris Blvd/Able Storage Dwy-Project Dwy						
-EBL	17	29	--	--	-17	-29
-EBR	17	32	33	40	+16	+8
-WBR	--	--	54	46	+52	+46
Perris Blvd/Alessandro Blvd						
-NBL	220	260	273	430	+53	+170
-WBL	64	103	84	109	+20	+6
Perris Blvd/Brodiaea Ave						
-SBL	61	104	64	113	+3	+9
Apple Blossom Ln-Flaming Arrow Dr/Alessandro Blvd						
-EBL	42	79	91	110	+49	+31

According to the tables, the Alessandro Boulevard driveway, is not expected to experience any significant queues. The northbound right turn is expected to be 51 feet (two passenger cars) in the Near-Term Year 2021 plus project scenarios. This movement has adequate stacking distance (140 feet for the northbound right turn).

The Perris Boulevard driveway is also not expected to experience any significant queuing. The eastbound right is expected to be 40 feet (approximately two passenger cars), and the westbound right is expected to be 46 feet (approximately two passenger cars) in the Near-Term Year 2021 plus project scenarios.

All other forecast queues at the analyzed driveways and intersections can accommodate their forecast 95th percentile queues, and no impacts to queuing are anticipated.

Parking

Per the City Zoning Code, for multi-family residential development, one-bedroom units are required to provide 1.5 parking spaces of which one covered space must be provided; two-bedroom units are required to provide two parking spaces of which one covered space must be provided; three-bedroom units are required to provide two and one-half spaces of which one covered spaces must be provided; and guest parking is provided within the minimum required parking standard as follows:

- 88 one-bedroom units at a rate of 1.5 spaces per DU = a total of 132 spaces with a minimum 88 covered spaces;
- 160 two-bedroom units at a rate of two spaces per DU = a total of 320 spaces with a minimum of 160 covered spaces;
- 24 three-bedroom units at a rate of three spaces per DU = a total of 60 spaces with a minimum of 60 covered spaces;

Therefore the total parking requirement equals a total of 512 spaces with a minimum of 272 covered spaces. Per the site plan, the proposed project would provide 315 covered spaces and 215 open spaces for a total of 530 spaces. This results in a surplus of 18 total spaces. Therefore, the proposed project would be in compliance with the City's Zoning Code in regards to its required amount of parking spaces.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The following section provides the conclusions and recommendations (if any) for the traffic analysis of the proposed project as noted above in Sections 3.0 – Existing Conditions, 4.0 – Near-Term Year 2021, 5.0 – Project Access, Circulation and Parking.

Project Trip Generation

The proposed project is the development of 272 low-rise apartment DUs on a vacant 19.47 acre parcel on the northeast corner of Perris Boulevard/Brodiaea. Per ITE trip rates, the proposed project would generate approximately 1,792 daily trips, 125 a.m. peak hour trips (26 inbound and 99 outbound), and 158 p.m. peak hour trips (103 inbound and 55 outbound).

Existing plus Project

Based on the Existing plus Project LOS analysis, all study area intersections and roadway segments would continue to operate with satisfactory LOS (LOS D or better) with addition of traffic from the proposed project. No mitigation measures are required as all study area intersections and roadway segments would continue to operate with satisfactory LOS (LOS D or better) with the addition of project traffic.

Near-Term Year 2021 plus Project

Based on the Near-Term Year 2021 plus Project LOS analysis, the intersection of Perris Boulevard/Cactus Avenue is forecast to continue to operate at LOS E with the addition of traffic from the proposed project. Per the City's significance criteria, this would not be a significant impact as the proposed project would not add 50 or more peak hour trips to this intersection. Therefore, no mitigation measure would be required.

Project Access, Circulation and Parking

Based on the peak hour intersection LOS analysis reported above, the driveway on Alessandro Boulevard is expected to operate at LOS B during both peak hours. The driveway on Perris Boulevard is expected to operate at LOS C during both peak hours. A review of the site plan shows no visual obstructions along the roadway to prohibit drivers to maneuver in, and out of, the driveway area. Parking is also restricted on both Alessandro Boulevard and Perris Boulevard near the driveways so vehicles exiting out of the project will not have any obstructions. Internal circulation within the project site is based on driveway aisles that measure 24 feet wide and have been designed to meet the City's design standards.

Driveway Queuing

According to the queuing analysis, the Alessandro Boulevard driveway, is not expected to experience any significant queues. The northbound right turn is expected to be 51 feet (two passenger cars) in the Near-Term Year 2021 plus project scenarios. This movement has adequate stacking distance (140 feet for the northbound right turn).

The Perris Boulevard driveway is also not expected to experience any significant queueing. The eastbound right is expected to be 40 feet (approximately two passenger cars), and the westbound right is expected to be 46 feet (approximately two passenger cars) in the Near-Term Year 2021 plus project scenarios. All movements would have adequate stacking distance.

During the PM peak hour in the Near-Term Year 2021 plus project scenarios, the project is expected to increase the northbound left turn queue at the Perris Boulevard/Alessandro Boulevard intersection by 170 feet (approximately eight passenger cars) in the PM peak hour. This would bring the total queue to 430 feet (approximately 20 passenger cars). The existing turn pocket is approximately 470 feet, and can adequately accommodate the forecast queue length.

All other forecast queues at the analyzed driveways and intersections can accommodate their forecast 95th percentile queues, and no impacts to queuing are anticipated.

Parking

Per the City Zoning Code, for multi-family residential development, one-bedroom units are required to provide 1.5 parking spaces of which one covered space must be provided; two-bedroom units are required to provide two parking spaces of which one covered space must be provided; three-bedroom units are required to provide two and one-half spaces of which one covered spaces must be provided; and guest parking is provided within the minimum required parking standard as follows:

- 88 one-bedroom units at a rate of 1.5 spaces per DU = a total of 132 spaces with a minimum 88 covered spaces;
- 160 two-bedroom units at a rate of two spaces per DU = a total of 320 spaces with a minimum of 160 covered spaces;
- 24 three-bedroom units at a rate of three spaces per DU = a total of 60 spaces with a minimum of 60 covered spaces;

Therefore the total parking requirement equals a total of 512 spaces with a minimum of 272 covered spaces. Per the site plan, the proposed project would provide 315 covered spaces and 215 open spaces for a total of 530 spaces. This results in a surplus of 18 total spaces. Therefore, the proposed project would be in compliance with the City's Zoning Code in regards to its required amount of parking spaces.

7.0 REFERENCES

City of Moreno Valley, *General Plan*, July 2006.

City of Moreno Valley, *Municipal Code, Zoning Ordinance*.

City of Moreno Valley, *Traffic Impact Analysis Preparation Guide,* August 2007.

Institute of Transportation Engineers, *Trip Generation, 9th Edition*, 2012.

Transportation Research Board, *Highway Capacity Manual*, Special Report No. 209, Washington, D.C., 2000.

Urban Crossroads, *Moreno Valley Walmart Traffic Impact Analysis (Revised)*, March 2015.

transpogroup
WHAT TRANSPORTATION CAN BE.

APPENDIX A

Scoping Agreement for Traffic Analysis Study

SCOPING AGREEMENT
FOR TRAFFIC ANALYSIS STUDY

Date: March 1, 2016

This letter acknowledges the City of Moreno Valley Transportation Engineering Division requirements for the traffic impact analysis of the following project.

Case No.: *to be provided*

Project Name: Alessandro Apartments: 272 DU of Low-Rise Apartments

Project Address: Southeast corner of Perris Boulevard/Alessandro Boulevard

Project Description: Development of vacant parcels near the southeast corner of Perris Boulevard/Alessandro Boulevard with 272 dwelling units (DUs) of apartments with access points on Alessandro Boulevard (right turn in/out only access), Perris Boulevard (right turn in/out only access), and Appleblossom Lane (full access).

Related Cases: None

	Consultant	**Developer**
Name:	Dennis Pascua	Robert Lattanzio
Firm:	Transpo Group	Latco SC, Inc.
Address:	10070 Mesa Rim Road San Diego, CA 92121	940 Calle Negocio, Suite 200 San Clemente, CA 92673
Telephone:	(858) 412-0302	(949) 276-4402

I. Background

Per the City's *Traffic Impact Analysis Preparation Guide* (August 2007), the proposed project would be required to prepare a Traffic Impact Analysis (TIA). Per the guidelines, for: *"…Tracts, Plot Plans, Planned Unit Developments, Conditional Use Permits, etc. The Level of Service established by the General Plan must be maintained at all intersections. Feasible mitigation shall be identified, as necessary, to maintain the required Level of Service. Impacts to safety shall be assessed as well…"*

The proposed project is the development of 272 DUs of apartments near the southeast corner of Perris Boulevard/Alessandro Boulevard with access points on Alessandro Boulevard, Perris Boulevard, and Appleblossom Lane. Project site is currently vacant and undeveloped. Site plan is attached.

II. Trip Geographic Distribution and Assignment

Trip distribution and assignment sketch attached.

III. Site Trip Generation Forecast

Per "Low-Rise Apartment (ITE 221)" trip rates in ITE *Trip Generation, 9th Edition* (2012), the rates are: 6.59 (per DU) daily, 0.46 AM peak hour (21%:79%), and 0.58 PM peak hour (65%:35%). Therefore, the approximate trip generation is 1,792 daily trips, 125 AM peak hour trips (26 inbound and 99 outbound), and 158 PM peak hour trips (103 inbound and 55 outbound).

In addition, the City's General Plan Land Use Map (Figure 2-2 in General Plan) designates the project site for "Residential: Max. 15 du/ac" land uses which allows for multiple-family housing development, and is consistent with the proposed project.

Project site is currently vacant and no trips are being generated to/from the site.

IV. Specific Project Issues to be Analyzed

a. The TIA shall address the adequacy of the proposed site access locations and their adjacent roadway segments, and, if needed, identify specific near-term and future circulation improvements required to maintain acceptable peak hour and daily levels of service (LOS).

b. The TIA shall address the project traffic impacts at all study intersections listed in Section VI and provide appropriate mitigation measures if applicable. Peak-hour traffic signal warrants shall be evaluated for all intersections that are not currently signalized.

c. Qualitative assessment of existing and planned non-motorized facilities (e.g., pedestrian sidewalks, bicycle routes, trails, etc.) within the study area.

V. Study of Horizon Years

a. Existing
b. Existing plus Project
c. Pre-Project Conditions (Existing + Growth (existing to opening year – 5 year minimum horizon – assume growth rate of 2% per year) + related projects in vicinity)
d. Post-Project Conditions (Pre-Project Conditions + Project)

VI. Facilities to be Studied

a. Intersections

i. Indian Street/Alessandro Boulevard (signalized)
ii. Perris Boulevard/Alessandro Boulevard (signalized)
iii. Flaming Arrow Drive/Alessandro Boulevard (signalized)
iv. Kitching Street/Alessandro Boulevard (signalized)
v. Perris Boulevard/Cottonwood Avenue (signalized)
vi. Perris Boulevard/Bay Avenue (signalized)
vii. Perris Boulevard/Brodiaea Avenue (signalized)
viii. Perris Boulevard/Cactus Avenue (signalized)

b. Roadway Segments

i. Alessandro Boulevard, west of Indian Street
ii. Alessandro Boulevard, Indian Street to Perris Boulevard
iii. Alessandro Boulevard, Perris Boulevard to Flaming Arrow Drive
iv. Perris Boulevard, north of Cottonwood Avenue
v. Perris Boulevard, Cottonwood Avenue to Bay Avenue
vi. Perris Boulevard, Bay Avenue to Alessandro Boulevard
vii. Perris Boulevard, Alessandro Boulevard to Brodiaea Avenue
viii. Flaming Arrow Drive, south of Alessandro Boulevard

Traffic counts will be conducted while the adjacent schools are in session. No traffic counts will be collected during holiday weeks.

VII. Deliverables

a. Draft Traffic Impact Analysis (TIA) – 2 copies plus one PDF file
b. Final TIA – 4 copies plus one PDF file

All Draft and Final TIAs shall be delivered with the appropriate review fee to the Permit Technician, Land Development Division, Moreno Valley City Hall, 14177 Frederick Street, Moreno Valley, CA 92552. Please contact the Land Development Division at 951-413-3110 prior to the delivery of the traffic study. A signed copy of this Scoping Agreement will be included in the submitted Draft and Final Traffic Impact Analyses.

If you have any questions regarding this *Scoping Agreement*, please contact Vincent Tran at (951) 413-3140.

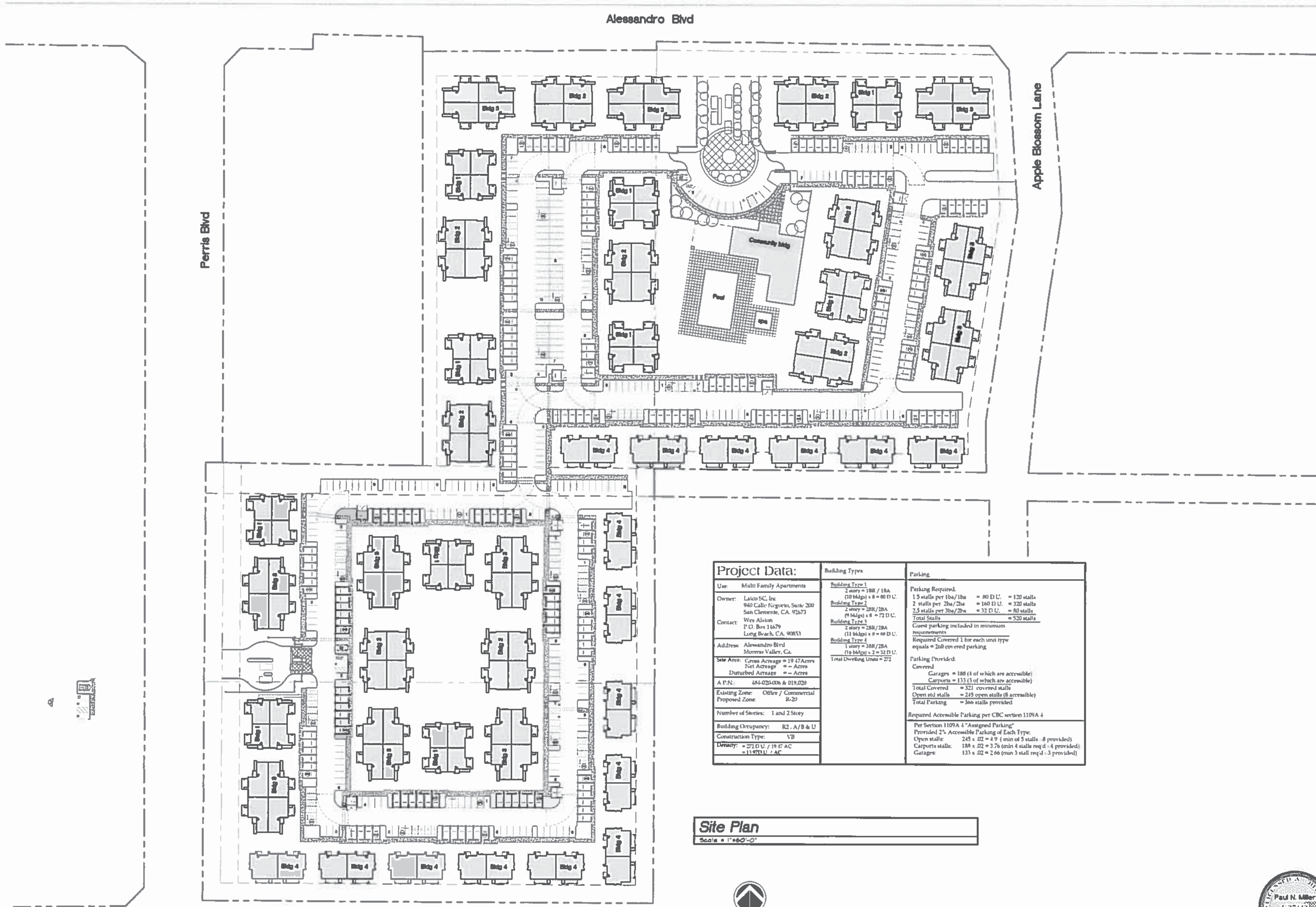
Recommended By:

Dennis Pascua
Transportation Planning Manager
Transpo Group

Approved By:

Eric Lewis, PE, TE
City Traffic Engineer
City of Moreno Valley

Attachments: Site Plan
Project Trip Distribution and Assignment (sketch)



Project Data:	
Use:	Multi Family Apartments
Owner:	Laico SC, Inc 940 Calle Negocio, Suite 200 San Clemente, CA. 92673
Contact:	Wes Alston P.O. Box 14679 Long Beach, CA. 90853
Address:	Alessandro Blvd Moreno Valley, Ca.
Site Area:	Gross Acreage = 19.47 Acres Net Acreage = -- Acres Disturbed Acreage = -- Acres
A.P.N.:	484-020-006 & 018,020
Existing Zone:	Office / Commercial
Proposed Zone:	R-20
Number of Stories:	1 and 2 Story
Building Occupancy:	R2, A/B & U
Construction Type:	VB
Density:	= 272 D.U. / 19.47 AC = 13.97 D.U. / AC

Building Types

Building Type 1
2 story = 1BR / 1BA
(10 bldgs) x 8 = 80 D.U.
Building Type 2
2 story = 2BR/2BA
(9 bldgs) x 8 = 72 D.U.
Building Type 3
2 story = 2BR/2BA
(11 bldgs) x 8 = 88 D.U.
Building Type 4
1 story = 3BR/2BA
(16 bldgs) x 2 = 32 D.U.
Total Dwelling Units = 272

Parking

Parking Required.

1.5 stalls per 1ba/1ba	= 80 D.U.	= 120 stalls
2 stalls per 2ba/2ba	= 160 D.U.	= 320 stalls
2.5 stalls per 3ba/2ba	= 32 D.U.	= 80 stalls
Total Stalls		= 520 stalls

Guest parking included in minimum requirements

Required Covered 1 for each unit type equals = 260 covered parking

Parking Provided:
Covered
Garages = 188 (4 of which are accessible)
Carports = 133 (3 of which are accessible)
Total Covered = 321 covered stalls
Open std stalls = 245 open stalls (8 accessible)
Total Parking = 566 stalls provided

Required Accessible Parking per CBC section 1109A.4

Per Section 1109A.4 "Assigned Parking"
Provided 2% Accessible Parking of Each Type.
Open stalls: 245 x .02 = 4.9 (min of 5 stalls - 8 provided)
Carports stalls: 188 x .02 = 3.76 (min 4 stalls req'd - 4 provided)
Garages: 133 x .02 = 2.66 (min 3 stall req'd - 3 provided)

City Case# PA14-XXXX

Alessandro Apts Moreno Valley CA

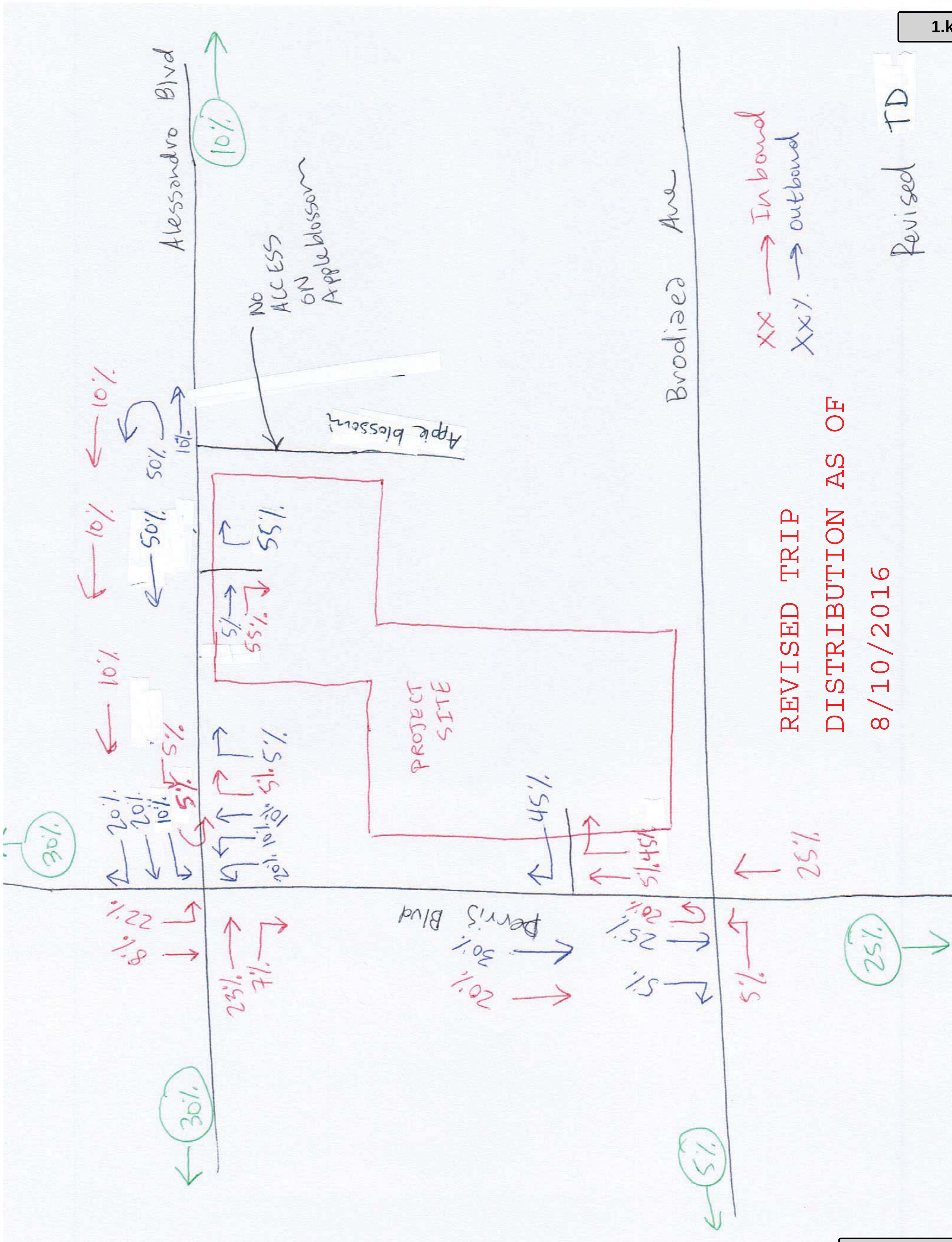
Paul N. Miller
C 27442
Renewal Date 2/28/17

A1.1
SHEET

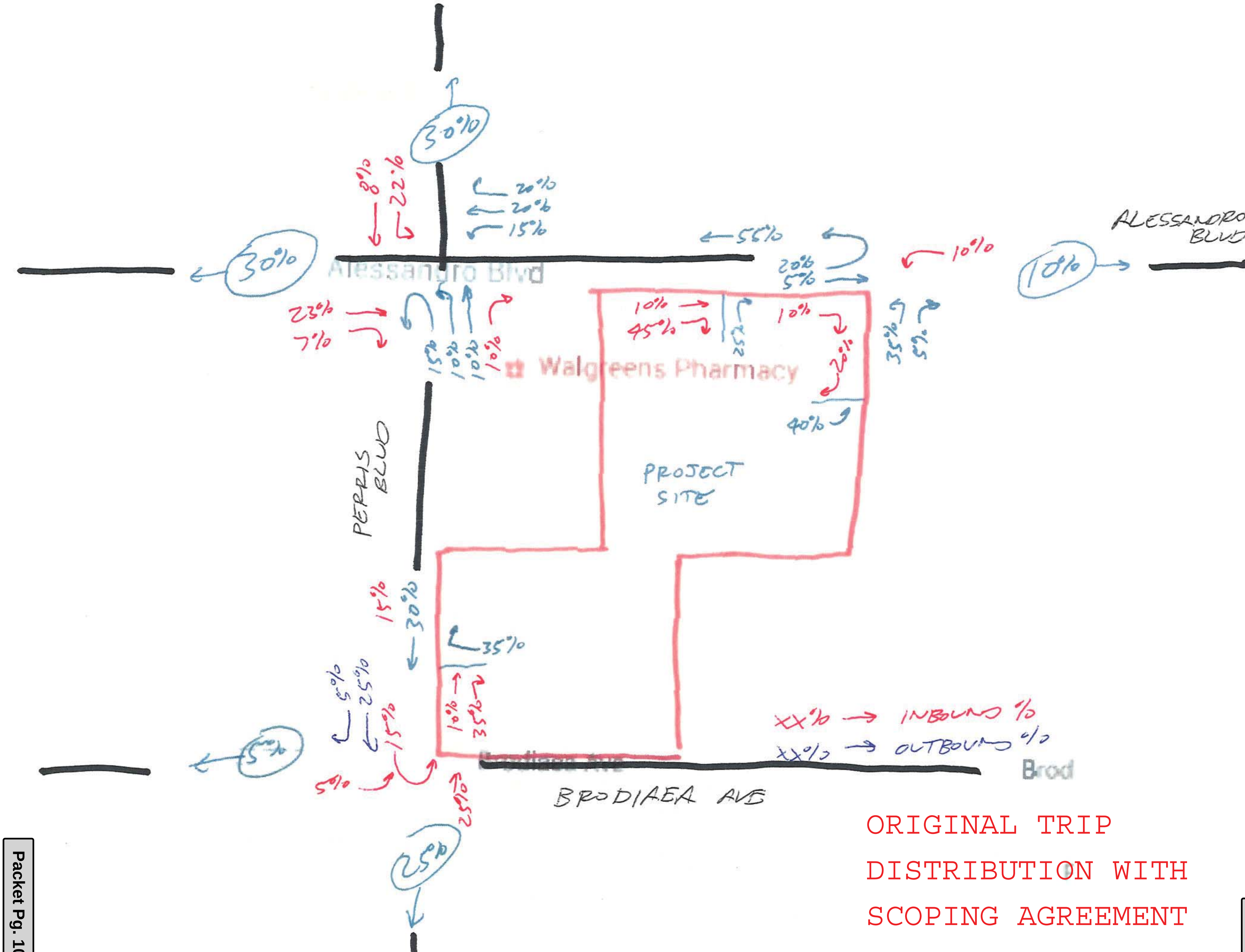
REVISIONS

THE VERNAL GROUP

Architecture and Planning · www.vernalgroup.com · E-Mail: info@vernalgroup.com · 1035 E. Olive Ave.· Fresno, Ca. 93728 · Ph: (559) 222-9480 · Fax:(559) 222-9479

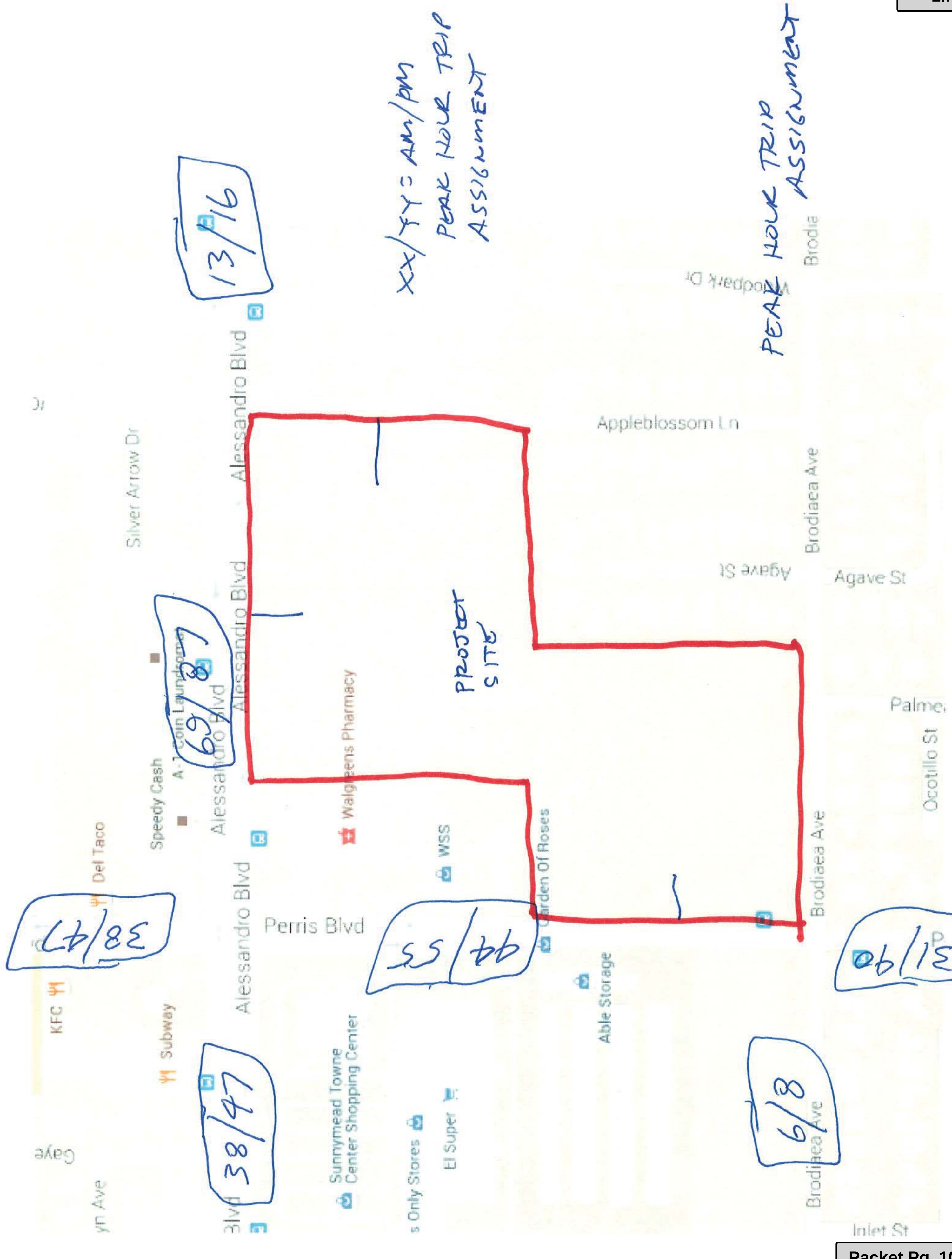


Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)



ORIGINAL TRIP DISTRIBUTION WITH SCOPING AGREEMENT

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)



XX/YY = AM/PM
PEAK HOUR TRIP
ASSIGNMENT
PEAK HOUR TRIP
ASSIGNMENT
13/16
69/87
38/47
94/55
38/47
31/90
6/8
PROJECT
SITE
Alessandro Blvd
Perris Blvd
Silver Arrow Dr
Appleblossom Ln
Brodiaea Ave
Agave St
Woodpark Dr
Palme
Ocotillo St
Inlet St
Speedy Cash
A-1 Coin Laundromat
Walgreens Pharmacy
WSS
Garden Of Roses
Del Taco
KFC
Subway
Sunnymead Towne
Center Shopping Center
s Only Stores
El Super
Able Storage
Gaye
yn Ave

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WHAT TRANSPORTATION CAN BE.

APPENDIX B

Raw Traffic Volume Count Sheets

Thursday, May 26, 2016 | Location: Moreno Valley | PROJECT: SC0976

ADT1 Alessandro west of Indian. | **Prepared by AimTD tel. 714 753 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:30			32		21			12:00			193		215		
00:15			28		22			12:15			222		254		
00:30			25		13			12:30			211		232		
00:45			21	106	18	74	180	12:45			212	838	231	932	1770
01:00			24		13			13:00			189		256		
01:15			12		9			13:15			237		227		
01:30			22		16			13:30			218		242		
01:45			13	71	15	53	124	13:45			211	855	231	956	1811
02:00			20		14			14:00			239		210		
02:15			18		8			14:15			223		241		
02:30			14		12			14:30			267		234		
02:45			16	68	19	53	121	14:45			286	1015	208	893	1908
03:00			10		9			15:00			261		237		
03:15			11		24			15:15			271		227		
03:30			19		29			15:30			273		230		
03:45			16	56	35	97	153	15:45			243	1048	231	925	1973
04:00			22		51			16:00			291		250		
04:15			15		59			16:15			287		217		
04:30			29		63			16:30			286		247		
04:45			17	83	74	247	330	16:45			322	1186	225	939	2125
05:00			22		68			17:00			299		220		
05:15			19		78			17:15			301		192		
05:30			29		128			17:30			317		201		
05:45			35	105	127	401	506	17:45			264	1181	210	823	2004
06:00			38		88			18:00			300		212		
06:15			32		139			18:15			263		189		
06:30			48		179			18:30			233		170		
06:45			78	196	251	657	853	18:45			233	1029	184	755	1784
07:00			36		287			19:00			220		157		
07:15			87		286			19:15			219		137		
07:30			94		330			19:30			171		152		
07:45			107	324	316	1219	1543	19:45			164	774	129	575	1349
08:00			123		281			20:00			173		132		
08:15			134		268			20:15			170		118		
08:30			122		213			20:30			147		120		
08:45			127	506	221	983	1489	20:45			141	631	98	468	1099
09:00			107		178			21:00			126		103		
09:15			114		186			21:15			143		94		
09:30			132		169			21:30			126		84		
09:45			122	475	173	706	1181	21:45			105	500	74	355	855
10:00			121		202			22:00			108		78		
10:15			128		189			22:15			83		49		
10:30			107		193			22:30			73		56		
10:45			145	501	186	770	1271	22:45			49	313	54	237	550
11:00			122		211			23:00			54		45		
11:15			134		218			23:15			34		28		
11:30			196		227			23:30			46		25		
11:45			222	674	190	846	1520	23:45			45	179	28	126	305
Total Vol.				3165		6106	**9271**					9549		7984	**17533**

Daily Totals

NB	SB	EB	WB	**Combined**
		12714	14090	**26804**

	AM					PM				
	NB	SB	EB	WB	Combined	NB	SB	EB	WB	Combined
Split %			34.1%	65.9%	**34.6%**			54.5%	45.5%	**65.4%**
Peak Hour	00:30	00:30	11:45	07:00	**11:45**			16:45	12:15	**16:00**
Volume			848	1219	**1739**			1239	973	**2125**
P.H.F.			0.95	0.92	**0.91**			0.96	0.95	**0.97**

pacific@aimtd.com Tell. 714 753 7888

Thursday, May 26, 2016 | Location: Moreno Valley | PROJECT: SC0976

ADT2 Alessandro west of Perris. | **Prepared by AimTD tel. 714 753 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:30			28		20			12:00			210		229		
00:15			18		24			12:15			241		242		
00:30			25		16			12:30			205		224		
00:45			16	87	18	78	165	12:45			219	875	222	917	1792
01:00			23		13			13:00			209		234		
01:15			10		6			13:15			232		207		
01:30			20		16			13:30			251		233		
01:45			10	63	11	46	109	13:45			211	903	205	879	1782
02:00			27		9			14:00			272		198		
02:15			14		7			14:15			222		215		
02:30			15		13			14:30			231		232		
02:45			11	67	20	49	116	14:45			291	1016	208	853	1869
03:00			10		10			15:00			280		241		
03:15			11		22			15:15			259		254		
03:30			22		25			15:30			287		229		
03:45			16	59	29	86	145	15:45			265	1091	218	942	2033
04:00			21		36			16:00			301		225		
04:15			14		47			16:15			283		230		
04:30			32		50			16:30			307		226		
04:45			19	86	53	186	272	16:45			338	1229	239	920	2149
05:00			18		59			17:00			297		213		
05:15			24		64			17:15			344		221		
05:30			32		118			17:30			316		197		
05:45			32	106	97	338	444	17:45			270	1227	227	858	2085
06:00			40		77			18:00			289		194		
06:15			26		129			18:15			274		190		
06:30			51		164			18:30			223		175		
06:45			92	209	229	599	808	18:45			234	1020	192	751	1771
07:00			53		260			19:00			252		140		
07:15			74		271			19:15			205		147		
07:30			94		320			19:30			193		157		
07:45			137	358	296	1147	1505	19:45			149	799	119	563	1362
08:00			128		283			20:00			187		131		
08:15			126		246			20:15			178		116		
08:30			126		222			20:30			166		117		
08:45			127	507	201	952	1459	20:45			155	686	102	466	1152
09:00			125		184			21:00			138		115		
09:15			127		168			21:15			131		96		
09:30			154		145			21:30			128		83		
09:45			158	564	171	668	1232	21:45			97	494	76	370	864
10:00			141		197			22:00			97		61		
10:15			148		172			22:15			80		48		
10:30			130		177			22:30			75		45		
10:45			154	573	188	734	1307	22:45			46	298	58	212	510
11:00			182		170			23:00			48		35		
11:15			202		220			23:15			37		24		
11:30			201		216			23:30			49		26		
11:45			221	806	183	789	1595	23:45			49	183	24	109	292
Total Vol.				3485		5672	**9157**					9821		7840	**17661**

Daily Totals

NB	SB	EB	WB	Combined
		13306	13512	**26818**

	AM					PM				
	NB	SB	EB	WB	Combined	NB	SB	EB	WB	Combined
Split %			38.1%	61.9%	**34.1%**			55.6%	44.4%	**65.9%**
Peak Hour	00:30	00:30	11:45	07:15	**11:45**			16:45	15:00	**16:30**
Volume			877	1170	**1755**			1295	942	**2185**
P.H.F.			0.91	0.91	**0.91**			0.94	0.93	**0.95**

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Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

Thursday, May 26, 2016 Location: Moreno Valley PROJECT: SC0976

ADT3 Alessandro east of Perris. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:30			32		12			12:00			148		181		
00:15			19		15			12:15			159		199		
00:30			21		13			12:30			170		163		
00:45			15	87	6	46	133	12:45			163	640	176	719	1359
01:00			17		7			13:00			171		159		
01:15			16		9			13:15			163		170		
01:30			15		8			13:30			186		190		
01:45			13	61	7	31	92	13:45			154	674	153	672	1346
02:00			18		4			14:00			175		158		
02:15			16		8			14:15			174		176		
02:30			10		9			14:30			217		176		
02:45			17	61	10	31	92	14:45			187	753	195	705	1458
03:00			14		16			15:00			259		185		
03:15			8		20			15:15			221		228		
03:30			8		18			15:30			221		177		
03:45			18	48	28	82	130	15:45			205	906	156	746	1652
04:00			20		41			16:00			230		185		
04:15			13		43			16:15			234		180		
04:30			23		58			16:30			221		198		
04:45			23	79	53	195	274	16:45			269	954	169	732	1686
05:00			18		54			17:00			209		192		
05:15			19		69			17:15			271		169		
05:30			20		96			17:30			244		157		
05:45			29	86	107	326	412	17:45			220	944	186	704	1648
06:00			35		94			18:00			206		172		
06:15			22		143			18:15			224		148		
06:30			53		143			18:30			204		133		
06:45			70	180	201	581	761	18:45			205	839	134	587	1426
07:00			73		205			19:00			174		134		
07:15			100		222			19:15			183		125		
07:30			129		262			19:30			151		135		
07:45			148	450	248	937	1387	19:45			128	636	104	498	1134
08:00			114		189			20:00			122		114		
08:15			99		196			20:15			162		96		
08:30			109		176			20:30			145		84		
08:45			94	416	151	712	1128	20:45			103	532	81	375	907
09:00			89		126			21:00			125		76		
09:15			88		129			21:15			112		79		
09:30			98		122			21:30			105		63		
09:45			111	386	129	506	892	21:45			86	428	53	271	699
10:00			86		148			22:00			91		45		
10:15			93		137			22:15			74		40		
10:30			110		138			22:30			57		42		
10:45			115	404	173	596	1000	22:45			56	278	39	166	444
11:00			127		153			23:00			60		25		
11:15			119		181			23:15			41		21		
11:30			137		180			23:30			40		21		
11:45			157	540	174	688	1228	23:45			50	191	17	84	275
Total Vol.				2798		4731	**7529**					7775		6259	**14034**

Daily Totals

NB	SB	EB	WB	Combined
		10573	10990	**21563**

	AM NB	AM SB	AM EB	AM WB	AM Combined	PM NB	PM SB	PM EB	PM WB	PM Combined
Split %			37.2%	62.8%	**34.9%**			55.4%	44.6%	**65.1%**
Peak Hour	00:30	00:30	11:45	07:00	**07:15**			16:45	14:45	**16:30**
Volume			634	937	**1412**			993	785	**1698**
P.H.F.			0.93	0.89	**0.89**			0.92	0.86	**0.96**

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Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

Thursday, May 26, 2016 Location: Moreno Valley PROJECT: SC0976

ADT4 Perris north of Cottonwood. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	38		52					12:00	217		218				
00:15	35		50					12:15	228		243				
00:30	25		39					12:30	213		261				
00:45	24	122	35	176			298	12:45	260	918	213	935			1853
01:00	26		24					13:00	204		203				
01:15	19		31					13:15	256		239				
01:30	21		22					13:30	241		232				
01:45	27	93	35	112			205	13:45	244	945	256	930			1875
02:00	31		30					14:00	225		243				
02:15	19		16					14:15	269		266				
02:30	31		29					14:30	264		251				
02:45	18	99	20	95			194	14:45	257	1015	233	993			2008
03:00	35		26					15:00	286		267				
03:15	36		25					15:15	246		275				
03:30	48		31					15:30	247		233				
03:45	60	179	28	110			289	15:45	252	1031	261	1036			2067
04:00	73		35					16:00	260		223				
04:15	72		47					16:15	238		281				
04:30	89		61					16:30	220		274				
04:45	118	352	53	196			548	16:45	230	948	278	1056			2004
05:00	122		56					17:00	246		296				
05:15	137		67					17:15	257		260				
05:30	140		106					17:30	250		295				
05:45	136	535	102	331			866	17:45	234	987	284	1135			2122
06:00	174		89					18:00	234		264				
06:15	168		104					18:15	195		231				
06:30	155		118					18:30	191		232				
06:45	183	680	147	458			1138	18:45	180	800	220	947			1747
07:00	175		178					19:00	192		207				
07:15	238		245					19:15	199		213				
07:30	272		297					19:30	158		207				
07:45	274	959	283	1003			1962	19:45	135	684	155	782			1466
08:00	276		237					20:00	137		166				
08:15	240		197					20:15	141		182				
08:30	192		155					20:30	132		153				
08:45	198	906	186	775			1681	20:45	119	529	154	655			1184
09:00	167		121					21:00	141		152				
09:15	192		148					21:15	117		157				
09:30	182		144					21:30	95		137				
09:45	220	761	145	558			1319	21:45	104	457	138	584			1041
10:00	174		161					22:00	91		102				
10:15	183		173					22:15	86		99				
10:30	189		174					22:30	58		113				
10:45	204	750	187	695			1445	22:45	101	336	80	394			730
11:00	193		191					23:00	53		71				
11:15	196		209					23:15	46		70				
11:30	203		183					23:30	32		66				
11:45	248	840	195	778			1618	23:45	41	172	50	257			429
Total Vol.		6276		5287			**11563**			8822		9704			**18526**

Daily Totals

NB	SB	EB	WB	Combined
15098	14991			**30089**

	AM			PM		
Split %	54.3%	45.7%	**38.4%**	47.6%	52.4%	**61.6%**
Peak Hour	07:30	07:15	**07:15**	14:15	17:00	**17:00**
Volume	1062	1062	**2122**	1076	1135	**2122**
P.H.F.	0.96	0.89	**0.93**	0.97	0.96	**0.97**

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Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

Thursday, May 26, 2016 | Location: Moreno Valley | PROJECT: SC0976

ADT5 Perris north of Bay. | **Prepared by AimTD tel. 714 753 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	34		41					12:00	231		204				
00:15	25		46					12:15	210		234				
00:30	26		32					12:30	221		234				
00:45	25	110	30	149			259	12:45	218	880	232	904			1784
01:00	21		21					13:00	189		230				
01:15	18		29					13:15	245		213				
01:30	24		20					13:30	239		218				
01:45	29	92	31	101			193	13:45	239	912	224	885			1797
02:00	28		27					14:00	243		215				
02:15	21		15					14:15	247		251				
02:30	29		22					14:30	229		236				
02:45	17	95	19	83			178	14:45	242	961	218	920			1881
03:00	22		23					15:00	287		225				
03:15	33		23					15:15	253		241				
03:30	38		30					15:30	239		245				
03:45	49	142	31	107			249	15:45	209	988	218	929			1917
04:00	61		33					16:00	249		200				
04:15	58		49					16:15	231		243				
04:30	70		57					16:30	209		244				
04:45	104	293	57	196			489	16:45	212	901	250	937			1838
05:00	101		57					17:00	217		267				
05:15	120		58					17:15	251		257				
05:30	114		118					17:30	210		268				
05:45	112	447	108	341			788	17:45	231	909	244	1036			1945
06:00	151		90					18:00	232		248				
06:15	135		111					18:15	187		222				
06:30	136		113					18:30	168		211				
06:45	154	576	138	452			1028	18:45	189	776	192	873			1649
07:00	170		171					19:00	186		205				
07:15	212		221					19:15	189		175				
07:30	252		273					19:30	155		177				
07:45	241	875	250	915			1790	19:45	113	643	128	685			1328
08:00	262		206					20:00	133		159				
08:15	208		172					20:15	127		160				
08:30	180		171					20:30	118		137				
08:45	180	830	171	720			1550	20:45	105	483	133	589			1072
09:00	139		127					21:00	114		123				
09:15	168		145					21:15	95		120				
09:30	181		142					21:30	96		121				
09:45	191	679	146	560			1239	21:45	96	401	108	472			873
10:00	192		173					22:00	82		95				
10:15	151		163					22:15	83		77				
10:30	179		170					22:30	64		92				
10:45	194	716	170	676			1392	22:45	99	328	80	344			672
11:00	217		175					23:00	48		59				
11:15	197		180					23:15	47		62				
11:30	210		186					23:30	34		60				
11:45	239	863	197	738			1601	23:45	40	169	50	231			400
Total Vol.		5718		5038			**10756**			8351		8805			**17156**

Daily Totals

NB	SB	EB	WB	**Combined**
14069	13843			**27912**

	AM				PM			
Split %	53.2%	46.8%		**38.5%**	48.7%	51.3%		**61.5%**
Peak Hour	07:15	07:15		**07:15**	14:45	16:45		**14:45**
Volume	967	950		**1917**	1021	1042		**1950**
P.H.F.	0.92	0.87		**0.91**	0.90	0.97		**0.95**

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Thursday, May 26, 2016 Location: Moreno Valley PROJECT: SC0976

ADT6 Perris north of Alessandro. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	31		36					12:00	205		208				
00:15	21		42					12:15	234		223				
00:30	32		30					12:30	213		224				
00:45	29	113	30	138			251	12:45	233	885	228	883			1768
01:00	19		20					13:00	200		245				
01:15	19		25					13:15	270		217				
01:30	24		20					13:30	240		218				
01:45	28	90	30	95			185	13:45	281	991	220	900			1891
02:00	30		29					14:00	246		209				
02:15	23		19					14:15	240		259				
02:30	28		21					14:30	211		246				
02:45	18	99	20	89			188	14:45	264	961	220	934			1895
03:00	25		22					15:00	272		239				
03:15	34		22					15:15	232		242				
03:30	33		34					15:30	240		249				
03:45	45	137	28	106			243	15:45	215	959	212	942			1901
04:00	59		37					16:00	249		196				
04:15	49		54					16:15	218		236				
04:30	69		73					16:30	201		242				
04:45	104	281	58	222			503	16:45	213	881	238	912			1793
05:00	86		56					17:00	228		251				
05:15	119		53					17:15	237		251				
05:30	104		119					17:30	233		274				
05:45	122	431	96	324			755	17:45	223	921	254	1030			1951
06:00	169		77					18:00	237		243				
06:15	151		96					18:15	179		220				
06:30	122		114					18:30	192		204				
06:45	147	589	153	440			1029	18:45	168	776	192	859			1635
07:00	156		167					19:00	169		184				
07:15	217		203					19:15	194		186				
07:30	229		251					19:30	156		174				
07:45	259	861	253	874			1735	19:45	122	641	128	672			1313
08:00	223		196					20:00	131		159				
08:15	197		172					20:15	138		154				
08:30	179		155					20:30	123		144				
08:45	169	768	157	680			1448	20:45	114	506	134	591			1097
09:00	125		134					21:00	116		111				
09:15	171		145					21:15	91		128				
09:30	171		143					21:30	109		115				
09:45	195	662	148	570			1232	21:45	95	411	104	458			869
10:00	182		182					22:00	87		83				
10:15	203		166					22:15	76		75				
10:30	163		141					22:30	75		88				
10:45	198	746	174	663			1409	22:45	107	345	84	330			675
11:00	205		183					23:00	47		54				
11:15	199		177					23:15	42		56				
11:30	212		189					23:30	33		52				
11:45	244	860	180	729			1589	23:45	37	159	46	208			367
Total Vol.		5637		4930			**10567**			8436		8719			**17155**

Daily Totals

NB	SB	EB	WB	Combined
14073	13649			**27722**

	AM			PM		
Split %	53.3%	46.7%	**38.1%**	49.2%	50.8%	**61.9%**
Peak Hour	07:15	07:15	**07:15**	13:15	17:00	**14:45**
Volume	928	903	**1831**	1037	1030	**1958**
P.H.F.	0.90	0.89	**0.89**	0.95	0.94	**0.96**

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Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

Thursday, May 26, 2016 Location: Moreno Valley PROJECT: SC0976

ADT7 Perris south of Alessandro. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	40		44					12:00	204		237				
00:15	29		41					12:15	209		250				
00:30	25		30					12:30	199		239				
00:45	29	123	26	141			264	12:45	255	867	223	949			1816
01:00	23		20					13:00	222		240				
01:15	16		21					13:15	244		211				
01:30	29		20					13:30	280		219				
01:45	33	101	22	83			184	13:45	275	1021	270	940			1961
02:00	30		34					14:00	243		235				
02:15	27		22					14:15	237		235				
02:30	21		18					14:30	222		275				
02:45	25	103	16	90			193	14:45	255	957	257	1002			1959
03:00	21		25					15:00	279		295				
03:15	36		23					15:15	224		242				
03:30	37		40					15:30	238		283				
03:45	55	149	21	109			258	15:45	220	961	226	1046			2007
04:00	60		35					16:00	252		262				
04:15	46		46					16:15	228		255				
04:30	78		81					16:30	179		276				
04:45	108	292	57	219			511	16:45	258	917	284	1077			1994
05:00	105		47					17:00	222		278				
05:15	120		57					17:15	224		298				
05:30	108		118					17:30	219		325				
05:45	116	449	104	326			775	17:45	246	911	284	1185			2096
06:00	154		49					18:00	195		288				
06:15	147		97					18:15	191		238				
06:30	153		94					18:30	215		249				
06:45	182	636	135	375			1011	18:45	178	779	235	1010			1789
07:00	181		125					19:00	154		231				
07:15	257		181					19:15	183		213				
07:30	289		177					19:30	155		217				
07:45	272	999	216	699			1698	19:45	121	613	165	826			1439
08:00	275		176					20:00	148		205				
08:15	191		173					20:15	130		192				
08:30	209		134					20:30	114		176				
08:45	177	852	162	645			1497	20:45	119	511	154	727			1238
09:00	137		131					21:00	129		164				
09:15	169		133					21:15	106		160				
09:30	192		130					21:30	101		154				
09:45	188	686	139	533			1219	21:45	96	432	119	597			1029
10:00	195		144					22:00	88		151				
10:15	182		181					22:15	71		80				
10:30	163		150					22:30	76		106				
10:45	211	751	157	632			1383	22:45	120	355	87	424			779
11:00	202		180					23:00	55		61				
11:15	217		194					23:15	53		62				
11:30	218		217					23:30	32		66				
11:45	205	842	207	798			1640	23:45	49	189	46	235			424
Total Vol.		5983		4650			**10633**			8513		10018			**18531**

Daily Totals

NB	SB	EB	WB	Combined
14496	14668			**29164**

	AM NB	AM SB	AM	PM NB	PM SB	PM
Split %	56.3%	43.7%	**36.5%**	45.9%	54.1%	**63.5%**
Peak Hour	07:15	11:45	**07:15**	13:15	17:15	**16:45**
Volume	1093	933	**1843**	1042	1195	**2108**
P.H.F.	0.95	0.93	**0.94**	0.96	0.92	**0.97**

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Thursday, June 30, 2016 | Location: Moreno Valley | PROJECT: SC0976

#N/A | **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	4		6					12:00	11		8				
00:15	5		5					12:15	6		6				
00:30	0		1					12:30	16		6				
00:45	0	9	3	15			24	12:45	8	41	11	31			72
01:00	0		1					13:00	7		7				
01:15	3		1					13:15	7		2				
01:30	3		4					13:30	6		6				
01:45	1	7	3	9			16	13:45	10	30	8	23			53
02:00	1		2					14:00	13		10				
02:15	2		4					14:15	10		12				
02:30	1		0					14:30	11		6				
02:45	2	6	2	8			14	14:45	12	46	7	35			81
03:00	2		1					15:00	7		11				
03:15	6		3					15:15	7		7				
03:30	3		2					15:30	9		9				
03:45	1	12	3	9			21	15:45	8	31	12	39			70
04:00	5		1					16:00	7		7				
04:15	6		1					16:15	14		9				
04:30	5		2					16:30	8		8				
04:45	9	25	3	7			32	16:45	13	42	6	30			72
05:00	7		0					17:00	10		7				
05:15	6		1					17:15	16		8				
05:30	6		0					17:30	10		6				
05:45	7	26	0	1			27	17:45	10	46	11	32			78
06:00	4		3					18:00	12		18				
06:15	6		1					18:15	12		6				
06:30	9		1					18:30	16		9				
06:45	18	37	0	5			42	18:45	9	49	12	45			94
07:00	13		3					19:00	14		11				
07:15	13		5					19:15	12		11				
07:30	8		2					19:30	10		14				
07:45	9	43	1	11			54	19:45	15	51	8	44			95
08:00	14		3					20:00	11		9				
08:15	7		1					20:15	7		10				
08:30	13		0					20:30	5		6				
08:45	7	41	2	6			47	20:45	4	27	4	29			56
09:00	10		5					21:00	11		4				
09:15	7		3					21:15	7		7				
09:30	9		2					21:30	13		13				
09:45	12	38	7	17			55	21:45	4	35	6	30			65
10:00	7		3					22:00	7		6				
10:15	7		4					22:15	10		8				
10:30	8		4					22:30	8		7				
10:45	8	30	8	19			49	22:45	4	29	4	25			54
11:00	8		5					23:00	3		6				
11:15	6		7					23:15	3		4				
11:30	7		4					23:30	7		5				
11:45	16	37	3	19			56	23:45	4	17	3	18			35
Total Vol.		311		126			**437**			444		381			**825**

Daily Totals

NB	SB	EB	WB	**Combined**
755	507			**1262**

	AM			PM		
Split %	71.2%	28.8%	**34.6%**	53.8%	46.2%	**65.4%**
Peak Hour	06:30	10:30	**11:45**	18:15	18:45	**19:00**
Volume	53	24	**72**	51	48	**95**
P.H.F.	0.74	0.75	**0.82**	0.72	0.86	**0.95**

cs@aimtd.com Tell. 714 253 7888

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC0976
Thu, May 26, 16	NORTH & SOUTH:	Indian	LOCATION #:	1
	EAST & WEST:	Alessandro	CONTROL:	SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

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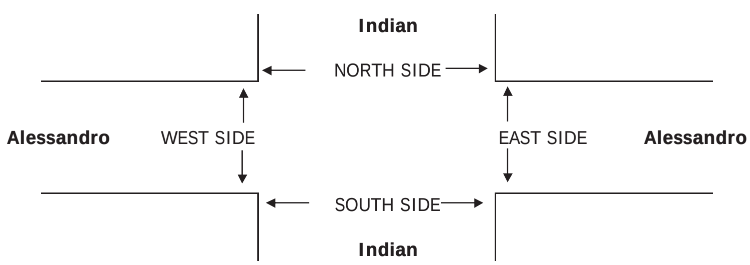
S ▼

Add U-Turns to Left Tu

	NORTHBOUND Indian			SOUTHBOUND Indian			EASTBOUND Alessandro			WESTBOUND Alessandro			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	2	0	1	3	0	1	3	0	
AM 7:00 AM	23	46	7	13	28	23	2	26	4	13	228	9	422
7:15 AM	23	46	11	10	34	17	15	60	10	6	259	9	500
7:30 AM	39	54	14	17	54	20	6	65	15	17	298	3	602
7:45 AM	32	83	29	21	60	20	9	96	7	16	259	9	641
8:00 AM	41	81	12	20	63	24	12	82	17	19	218	15	604
8:15 AM	38	61	22	27	41	11	19	104	24	12	211	19	589
8:30 AM	32	51	17	28	36	9	19	80	18	18	168	13	489
8:45 AM	51	101	20	17	38	10	15	96	19	15	164	18	564
VOLUMES	279	523	132	153	354	134	97	609	114	116	1,805	95	4,411
APPROACH %	30%	56%	14%	24%	55%	21%	12%	74%	14%	6%	90%	5%	
APP/DEPART	934	/	714	641	/	574	820	/	904	2,016	/	2,219	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	150	279	77	85	218	75	46	347	63	64	986	46	2,436
APPROACH %	30%	55%	15%	22%	58%	20%	10%	76%	14%	6%	90%	4%	
PEAK HR FACTOR		0.878			0.883			0.776			0.862		0.950
APP/DEPART	506	/	371	378	/	341	456	/	513	1,096	/	1,211	0
PM 4:00 PM	36	57	12	43	95	15	23	217	13	30	160	24	725
4:15 PM	32	66	18	37	51	11	22	222	32	31	196	20	738
4:30 PM	43	60	17	34	86	16	35	219	25	18	181	16	750
4:45 PM	30	57	24	35	85	15	35	253	27	33	197	21	812
5:00 PM	25	67	23	46	80	21	41	244	29	14	179	20	789
5:15 PM	23	56	15	45	73	14	31	272	31	22	166	15	763
5:30 PM	43	60	23	39	83	17	36	265	28	20	158	20	792
5:45 PM	38	55	16	35	79	15	35	223	29	20	180	14	739
VOLUMES	270	478	148	314	632	124	258	1,915	214	188	1,417	150	6,108
APPROACH %	30%	53%	17%	29%	59%	12%	11%	80%	9%	11%	81%	9%	
APP/DEPART	896	/	875	1,070	/	1,002	2,387	/	2,409	1,755	/	1,822	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	121	240	85	165	321	67	143	1,034	115	89	700	76	3,156
APPROACH %	27%	54%	19%	30%	58%	12%	11%	80%	9%	10%	81%	9%	
PEAK HR FACTOR		0.885			0.940			0.967			0.862		0.972
APP/DEPART	446	/	453	553	/	509	1,292	/	1,300	865	/	894	0

U-TURNS	NB	SB	EB	WB
	0	0	0	0
7:00 AM	0	0	0	4
7:15 AM	0	0	0	1
7:30 AM	0	0	0	1
7:45 AM	0	0	0	1
8:00 AM	0	0	0	0
8:15 AM	0	0	0	2
8:30 AM	0	0	1	1
8:45 AM	0	0	0	0
VOLUMES	0	0	1	10
4:00 PM	0	0	1	5
4:15 PM	0	0	1	3
4:30 PM	0	0	2	3
4:45 PM	0	0	1	6
5:00 PM	0	0	3	3
5:15 PM	0	0	2	4
5:30 PM	0	0	0	3
5:45 PM	0	0	1	5
VOLUMES	0	0	11	32



	PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS			
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS
AM 7:00 AM	1	0	0	3	4	0	0	0	3	3	1	0	0	0
7:15 AM	3	3	1	4	11	3	3	1	3	10	0	0	0	1
7:30 AM	0	1	6	8	15	0	1	6	5	12	0	0	0	3
7:45 AM	0	0	4	1	5	0	0	2	0	2	0	0	2	1
8:00 AM	1	2	3	1	7	1	2	3	1	7	0	0	0	0
8:15 AM	2	4	4	4	14	2	4	3	1	10	0	0	1	3
8:30 AM	1	2	2	5	10	1	2	2	2	7	0	0	0	3
8:45 AM	0	1	2	5	8	0	1	1	5	7	0	0	1	0
TOTAL	8	13	22	31	74	7	13	18	20	58	1	0	4	11
PM 4:00 PM	0	4	3	11	18	0	4	3	10	17	0	0	0	1
4:15 PM	3	8	4	8	23	3	8	4	8	23	0	0	0	0
4:30 PM	0	0	0	7	7	0	0	0	5	5	0	0	0	2
4:45 PM	1	4	1	6	12	1	3	1	5	10	0	1	0	1
5:00 PM	0	0	3	3	6	0	0	2	0	2	0	0	1	3
5:15 PM	2	0	6	1	9	2	0	6	1	9	0	0	0	0
5:30 PM	4	4	3	5	16	4	4	2	4	14	0	0	1	1
5:45 PM	3	5	1	1	10	1	4	0	0	5	2	1	1	1
TOTAL	13	25	21	42	101	11	23	18	33	85	2	2	3	9

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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC0976
Thu, May 26, 16	NORTH & SOUTH:	Perris	LOCATION #:	5
	EAST & WEST:	Cottonwood	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

Add U-Turns to Left Tur

		NORTHBOUND Perris			SOUTHBOUND Perris			EASTBOUND Cottonwood			WESTBOUND Cottonwood				U-TURNS			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
	LANES:	1	2	1	1	2	1	1	1	1	1	1	1		0	0	0	0
AM	7:00 AM	6	142	5	13	139	9	11	10	4	11	23	23	396	0	0	0	0
AM	7:15 AM	8	185	4	18	197	13	15	27	9	11	50	24	561	0	0	0	0
AM	7:30 AM	8	216	15	32	235	28	20	50	16	13	45	30	708	0	0	0	0
AM	7:45 AM	13	219	15	33	264	34	29	52	16	15	49	39	778	0	0	0	0
AM	8:00 AM	17	235	11	21	201	22	31	47	7	18	51	33	694	0	0	0	0
AM	8:15 AM	16	165	5	17	163	13	31	22	5	10	36	31	514	0	0	0	0
AM	8:30 AM	17	165	3	20	140	12	10	19	13	9	26	23	457	0	0	0	0
AM	8:45 AM	16	175	6	20	147	15	14	15	7	8	48	29	500	0	0	0	0
AM	VOLUMES	101	1,502	64	174	1,486	146	161	242	77	95	328	232	4,608	0	0	0	0
AM	APPROACH %	6%	90%	4%	10%	82%	8%	34%	50%	16%	15%	50%	35%					
AM	APP/DEPART	1,667	/	1,895	1,806	/	1,658	480	/	480	655	/	575	0				
AM	BEGIN PEAK HR		7:15 AM															
AM	VOLUMES	46	855	45	104	897	97	95	176	48	57	195	126	2,741				
AM	APPROACH %	5%	90%	5%	9%	82%	9%	30%	55%	15%	15%	52%	33%					
AM	PEAK HR FACTOR		0.899			0.829			0.822			0.917		0.881				
AM	APP/DEPART	946	/	1,076	1,098	/	1,002	319	/	325	378	/	338	0				
PM	4:00 PM	11	160	11	17	152	14	21	37	12	6	27	17	485	0	0	0	0
PM	4:15 PM	11	231	13	44	228	26	30	58	12	7	20	15	695	0	0	0	0
PM	4:30 PM	15	211	11	29	225	19	26	45	12	6	45	30	674	0	0	0	0
PM	4:45 PM	17	218	8	21	250	20	24	56	10	5	40	22	691	0	0	0	0
PM	5:00 PM	7	223	6	38	222	20	21	51	11	6	30	18	653	0	0	0	0
PM	5:15 PM	20	215	13	32	226	33	19	58	13	8	35	21	693	0	0	0	0
PM	5:30 PM	10	183	8	32	247	20	26	64	16	7	32	40	685	0	0	0	0
PM	5:45 PM	15	188	8	37	252	21	16	61	14	7	39	20	678	0	0	0	0
PM	VOLUMES	106	1,629	78	250	1,802	173	183	430	100	52	268	183	5,254	0	0	0	0
PM	APPROACH %	6%	90%	4%	11%	81%	8%	26%	60%	14%	10%	53%	36%					
PM	APP/DEPART	1,813	/	1,995	2,225	/	1,954	713	/	758	503	/	547	0				
PM	BEGIN PEAK HR		4:45 PM															
PM	VOLUMES	54	839	35	123	945	93	90	229	50	26	137	101	2,722				
PM	APPROACH %	6%	90%	4%	11%	81%	8%	24%	62%	14%	10%	52%	38%					
PM	PEAK HR FACTOR		0.935			0.971			0.870			0.835		0.982				
PM	APP/DEPART	928	/	1,030	1,161	/	1,021	369	/	387	264	/	284	0				

Perris

NORTH SIDE

Cottonwood WEST SIDE EAST SIDE **Cottonwood**

SOUTH SIDE

Perris

		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS			
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS
AM	7:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1
AM	7:15 AM	0	3	1	1	5	0	3	1	1	5	0	0	0	0
AM	7:30 AM	3	1	1	4	9	2	1	1	2	6	1	0	0	2
AM	7:45 AM	1	1	0	7	9	1	0	0	7	8	0	1	0	0
AM	8:00 AM	0	1	0	6	7	0	1	0	4	5	0	0	0	2
AM	8:15 AM	1	1	0	0	2	1	1	0	0	2	0	0	0	0
AM	8:30 AM	1	3	0	4	8	1	3	0	3	7	0	0	0	1
AM	8:45 AM	2	1	0	0	3	2	1	0	0	3	0	0	0	0
AM	TOTAL	8	11	2	23	44	7	10	2	17	36	1	1	0	6
PM	4:00 PM	1	1	0	1	3	0	1	0	1	2	1	0	0	0
PM	4:15 PM	1	2	0	0	3	1	2	0	0	3	0	0	0	0
PM	4:30 PM	2	0	0	3	5	2	0	0	3	5	0	0	0	0
PM	4:45 PM	1	1	0	4	6	1	0	0	4	5	0	1	0	0
PM	5:00 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0
PM	5:15 PM	0	1	1	0	2	0	0	1	0	1	0	1	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	1	0	0	2	3	1	0	0	1	2	0	0	0	1
PM	TOTAL	8	5	1	10	24	7	3	1	9	20	1	2	0	1

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:				
Thu, May 26, 16	LOCATION: Moreno Valley		PROJECT #:	SC0976
	NORTH & SOUTH: Perris		LOCATION #:	6
	EAST & WEST: Bay		CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER

N ▲ ◄ W E ► S ▼

Add U-Turns to Left Tur

		NORTHBOUND Perris			SOUTHBOUND Perris			EASTBOUND Bay			WESTBOUND Bay			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	0	1	2	1	1	1	0	1	1	0	
AM	7:00 AM	5	162	8	8	164	7	6	12	11	9	5	12	409
	7:15 AM	11	174	7	15	197	17	17	13	9	4	12	14	490
	7:30 AM	16	229	17	24	221	21	19	18	22	19	20	15	641
	7:45 AM	16	210	15	20	196	24	21	18	40	12	20	14	606
	8:00 AM	9	200	10	15	198	12	15	14	12	5	13	10	513
	8:15 AM	6	171	8	10	151	5	6	6	5	8	14	16	406
	8:30 AM	6	164	10	13	136	16	6	8	7	13	12	6	397
	8:45 AM	5	149	11	8	136	10	9	5	11	4	7	5	360
	VOLUMES	74	1,459	86	113	1,399	112	99	94	117	74	103	92	3,822
	APPROACH %	5%	90%	5%	7%	86%	7%	32%	30%	38%	28%	38%	34%	
	APP/DEPART	1,619	/	1,694	1,624	/	1,590	310	/	251	269	/	287	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	52	813	49	74	812	74	72	63	83	40	65	53	2,250
	APPROACH %	6%	89%	5%	8%	85%	8%	33%	29%	38%	25%	41%	34%	
	PEAK HR FACTOR		0.872			0.902			0.690			0.731		0.878
	APP/DEPART	914	/	971	960	/	934	218	/	154	158	/	191	0
PM	4:00 PM	10	226	14	9	213	9	9	18	6	5	10	9	538
	4:15 PM	3	185	5	22	232	6	12	9	9	5	7	19	514
	4:30 PM	7	239	9	9	227	2	9	11	10	6	8	13	550
	4:45 PM	14	206	9	10	210	5	9	9	9	3	15	5	504
	5:00 PM	13	227	16	11	196	3	12	19	15	8	12	8	540
	5:15 PM	7	192	19	6	265	7	5	13	10	3	13	11	551
	5:30 PM	10	204	13	17	242	10	4	8	9	8	14	5	544
	5:45 PM	13	204	17	22	271	3	9	14	11	8	15	12	599
	VOLUMES	77	1,683	102	106	1,856	45	69	101	79	46	94	82	4,340
	APPROACH %	4%	90%	5%	5%	92%	2%	28%	41%	32%	21%	42%	37%	
	APP/DEPART	1,862	/	1,838	2,007	/	1,985	249	/	305	222	/	212	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	43	827	65	56	974	23	30	54	45	27	54	36	2,234
	APPROACH %	5%	88%	7%	5%	92%	2%	23%	42%	35%	23%	46%	31%	
	PEAK HR FACTOR		0.913			0.889			0.701			0.836		0.932
	APP/DEPART	935	/	895	1,053	/	1,048	129	/	173	117	/	118	0

U-TURNS

		NB	SB	EB	WB
		0	0	0	0
AM	7:00 AM	0	5	0	0
	7:15 AM	0	7	0	0
	7:30 AM	0	12	0	0
	7:45 AM	0	9	0	1
	8:00 AM	0	5	0	0
	8:15 AM	0	2	0	0
	8:30 AM	2	3	0	0
	8:45 AM	0	1	0	1
	VOLUMES	2	44	0	2
PM	4:00 PM	0	2	0	0
	4:15 PM	0	0	0	0
	4:30 PM	1	0	0	0
	4:45 PM	1	0	0	0
	5:00 PM	0	0	0	0
	5:15 PM	1	1	0	0
	5:30 PM	1	0	0	0
	5:45 PM	0	1	0	0
	VOLUMES	4	4	0	0

Perris

NORTH SIDE

Bay WEST SIDE

EAST SIDE **Bay**

SOUTH SIDE

Perris

		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS			
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS
AM	7:00 AM	0	3	3	0	6	0	3	3	0	6	0	0	0	0
	7:15 AM	1	5	5	2	13	1	5	5	1	12	0	0	0	1
	7:30 AM	0	4	12	3	19	0	4	12	3	19	0	0	0	0
	7:45 AM	2	0	9	4	15	2	0	9	3	14	0	0	0	1
	8:00 AM	2	2	1	0	5	2	2	1	0	5	0	0	0	0
	8:15 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0
	8:30 AM	2	0	3	2	7	1	0	2	0	3	1	0	1	2
	8:45 AM	1	0	2	0	3	0	0	2	0	2	1	0	0	0
	TOTAL	8	14	36	11	69	6	14	35	7	62	2	0	1	4
PM	4:00 PM	1	1	5	1	8	1	0	4	1	6	0	1	1	0
	4:15 PM	0	0	1	1	2	0	0	1	0	1	0	0	0	1
	4:30 PM	1	0	0	1	2	1	0	0	1	2	0	0	0	0
	4:45 PM	1	1	1	1	4	1	1	1	1	4	0	0	0	0
	5:00 PM	2	0	1	1	4	2	0	1	0	3	0	0	0	1
	5:15 PM	0	1	2	1	4	0	1	2	1	4	0	0	0	0
	5:30 PM	2	2	3	0	7	2	1	3	0	6	0	1	0	0
	5:45 PM	1	1	0	4	6	0	1	0	3	4	1	0	0	1
	TOTAL	8	6	13	10	37	7	4	12	7	30	1	2	1	3

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC0976
Thu, May 26, 16	NORTH & SOUTH:	Perris	LOCATION #:	2
	EAST & WEST:	Alessandro	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER

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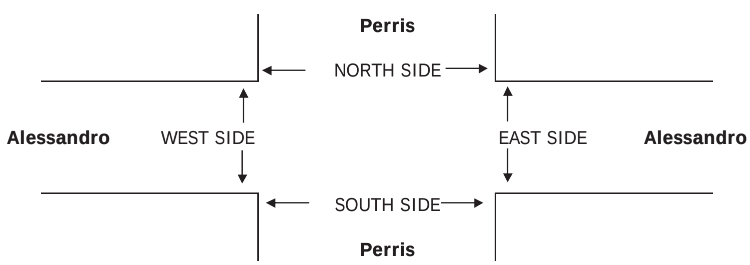
Add U-Turns to Left Tu

		NORTHBOUND Perris			SOUTHBOUND Perris			EASTBOUND Alessandro			WESTBOUND Alessandro			TOTAL
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	LANES:	1	2	1	1	2	1	1	2	1	1	3	0	
AM	7:00 AM	34	156	15	19	113	45	23	28	10	16	168	20	647
AM	7:15 AM	57	156	34	38	114	46	28	37	9	30	176	19	744
AM	7:30 AM	53	217	36	39	159	55	26	56	16	30	206	22	915
AM	7:45 AM	60	179	30	40	146	54	34	84	22	28	207	22	906
AM	8:00 AM	62	183	20	30	122	57	50	63	24	36	149	17	813
AM	8:15 AM	60	118	13	31	110	41	48	66	21	29	161	14	712
AM	8:30 AM	53	146	20	22	95	40	37	59	22	31	121	19	665
AM	8:45 AM	56	101	19	30	88	27	42	53	22	27	121	15	601
AM	VOLUMES	435	1,256	187	249	947	365	288	446	146	227	1,309	148	6,003
AM	APPROACH %	23%	67%	10%	16%	61%	23%	33%	51%	17%	13%	78%	9%	
AM	APP/DEPART	1,878	/	1,614	1,561	/	1,357	880	/	880	1,684	/	2,152	0
AM	BEGIN PEAK HR		7:15 AM											
AM	VOLUMES	232	735	120	147	541	212	138	240	71	124	738	80	3,378
AM	APPROACH %	21%	68%	11%	16%	60%	24%	31%	53%	16%	13%	78%	8%	
AM	PEAK HR FACTOR		0.888			0.889			0.802			0.913		0.923
AM	APP/DEPART	1,087	/	917	900	/	756	449	/	502	942	/	1,203	0
PM	4:00 PM	68	145	32	46	156	33	95	156	50	35	105	24	945
PM	4:15 PM	52	136	25	40	174	33	91	131	54	46	111	18	911
PM	4:30 PM	56	139	24	34	189	25	98	169	54	40	171	22	1,021
PM	4:45 PM	68	154	34	32	169	33	67	136	44	29	118	16	900
PM	5:00 PM	66	158	33	37	149	31	101	152	67	48	123	26	991
PM	5:15 PM	45	133	18	48	190	28	116	223	61	53	113	16	1,044
PM	5:30 PM	61	130	21	31	192	27	93	186	69	43	141	18	1,012
PM	5:45 PM	57	151	35	33	199	42	87	166	60	47	108	18	1,003
PM	VOLUMES	473	1,146	222	301	1,418	252	748	1,319	459	341	990	158	7,827
PM	APPROACH %	26%	62%	12%	15%	72%	13%	30%	52%	18%	23%	66%	11%	
PM	APP/DEPART	1,841	/	1,833	1,971	/	2,236	2,526	/	1,850	1,489	/	1,908	0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	229	572	107	149	730	128	397	727	257	191	485	78	4,050
PM	APPROACH %	25%	63%	12%	15%	72%	13%	29%	53%	19%	25%	64%	10%	
PM	PEAK HR FACTOR		0.883			0.919			0.863			0.933		0.970
PM	APP/DEPART	908	/	924	1,007	/	1,181	1,381	/	992	754	/	953	0

U-TURNS				
	NB	SB	EB	WB
	0	0	0	0
7:00 AM	4	1	9	0
7:15 AM	2	3	10	0
7:30 AM	6	3	7	2
7:45 AM	9	0	12	2
8:00 AM	8	4	17	1
8:15 AM	6	6	11	6
8:30 AM	7	1	16	1
8:45 AM	13	2	16	6
VOLUMES	55	20	98	18
4:00 PM	7	4	36	5
4:15 PM	6	4	32	3
4:30 PM	7	3	31	4
4:45 PM	8	3	11	1
5:00 PM	5	8	36	11
5:15 PM	9	4	36	5
5:30 PM	8	3	36	9
5:45 PM	7	2	32	1
VOLUMES	57	31	250	39



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS			
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS
AM	7:00 AM	3	0	1	3	7	2	0	1	2	5	1	0	0	1
AM	7:15 AM	3	0	0	8	11	3	0	0	7	10	0	0	0	1
AM	7:30 AM	1	1	1	5	8	1	1	1	5	8	0	0	0	0
AM	7:45 AM	1	3	1	7	12	1	3	1	7	12	0	0	0	0
AM	8:00 AM	4	0	2	7	13	4	0	2	7	13	0	0	0	0
AM	8:15 AM	1	3	2	4	10	1	3	1	4	9	0	0	1	0
AM	8:30 AM	3	0	1	6	10	3	0	1	3	7	0	0	0	3
AM	8:45 AM	2	2	0	2	6	1	1	0	2	4	1	1	0	0
AM	TOTAL	18	9	8	42	77	16	8	7	37	68	2	1	1	5
PM	4:00 PM	2	4	1	9	16	2	4	1	9	16	0	0	0	0
PM	4:15 PM	0	4	2	1	7	0	4	1	1	6	0	0	1	0
PM	4:30 PM	0	1	2	4	7	0	1	2	4	7	0	0	0	0
PM	4:45 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0
PM	5:00 PM	2	2	6	2	12	0	2	6	1	9	2	0	0	1
PM	5:15 PM	0	0	0	5	5	0	0	0	5	5	0	0	0	0
PM	5:30 PM	9	3	0	5	17	7	3	0	5	15	2	0	0	0
PM	5:45 PM	8	2	2	8	20	2	2	2	5	11	6	0	0	3
PM	TOTAL	21	16	13	35	85	11	16	12	31	70	10	0	1	4

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC0976
Thu, May 26, 16	NORTH & SOUTH:	Perris	LOCATION #:	7
	EAST & WEST:	Brodiaea	CONTROL:	SIGNAL

NOTES:

AM
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OTHER
OTHER

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Add U-Turns to Left Tu

		NORTHBOUND Perris			SOUTHBOUND Perris			EASTBOUND Brodiaea			WESTBOUND Brodiaea			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	3	0	1	3	0	0	1	0	0	1	0	
AM	7:00 AM	1	170	1	3	114	4	5	1	6	6	5	19	335
	7:15 AM	5	220	1	5	175	6	12	5	7	2	2	19	459
	7:30 AM	9	261	2	6	163	10	6	3	22	3	3	22	510
	7:45 AM	8	240	7	8	201	7	11	4	18	4	3	19	530
	8:00 AM	11	259	7	16	154	8	6	1	3	3	8	23	499
	8:15 AM	1	176	1	11	156	6	7	5	4	4	7	16	394
	8:30 AM	2	182	5	8	124	7	6	3	7	7	6	13	370
	8:45 AM	4	153	7	8	134	9	3	1	3	2	5	13	342
	VOLUMES	41	1,661	31	65	1,221	57	56	23	70	31	39	144	3,439
	APPROACH %	2%	96%	2%	5%	91%	4%	38%	15%	47%	14%	18%	67%	
	APP/DEPART	1,733	/	1,862	1,343	/	1,322	149	/	118	214	/	137	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	33	980	17	35	693	31	35	13	50	12	16	83	1,998
	APPROACH %	3%	95%	2%	5%	91%	4%	36%	13%	51%	11%	14%	75%	
	PEAK HR FACTOR		0.930			0.878			0.742			0.816		0.942
	APP/DEPART	1,030	/	1,098	759	/	755	98	/	65	111	/	80	0
PM	4:00 PM	6	213	9	19	215	14	9	11	6	1	3	12	518
	4:15 PM	3	188	4	11	216	18	3	11	6	1	10	9	480
	4:30 PM	2	212	4	12	274	16	6	5	4	2	6	11	554
	4:45 PM	9	185	6	18	238	13	6	11	2	2	6	18	514
	5:00 PM	2	228	4	20	238	16	16	8	6	2	5	16	561
	5:15 PM	7	169	4	25	257	16	11	14	4	4	3	12	526
	5:30 PM	3	181	5	30	275	24	10	7	2	3	4	9	553
	5:45 PM	2	228	4	30	258	15	7	12	8	1	4	19	588
	VOLUMES	34	1,604	40	165	1,971	132	68	79	38	16	41	106	4,294
	APPROACH %	2%	96%	2%	7%	87%	6%	37%	43%	21%	10%	25%	65%	
	APP/DEPART	1,678	/	1,791	2,268	/	2,025	185	/	271	163	/	207	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	14	806	17	105	1,028	71	44	41	20	10	16	56	2,228
	APPROACH %	2%	96%	2%	9%	85%	6%	42%	39%	19%	12%	20%	68%	
	PEAK HR FACTOR		0.894			0.915			0.875			0.854		0.947
	APP/DEPART	837	/	915	1,204	/	1,058	105	/	154	82	/	101	0

U-TURNS	NB	SB	EB	WB
	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	1	0	0
VOLUMES	0	1	0	0
4:00 PM	0	2	0	0
4:15 PM	0	0	0	0
4:30 PM	0	1	0	0
4:45 PM	0	1	0	0
5:00 PM	0	1	0	0
5:15 PM	0	3	0	0
5:30 PM	0	4	0	0
5:45 PM	0	1	0	0
VOLUMES	0	13	0	0

Perris

NORTH SIDE

Brodiaea   WEST SIDE   EAST SIDE   Brodiaea

SOUTH SIDE

Perris

		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS			
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS
AM	7:00 AM	0	2	3	4	9	0	2	3	3	8	0	0	0	1
	7:15 AM	0	2	1	7	10	0	2	1	6	9	0	0	0	1
	7:30 AM	0	2	0	5	7	0	2	0	5	7	0	0	0	0
	7:45 AM	0	4	4	2	10	0	3	4	2	9	0	1	0	0
	8:00 AM	0	0	0	5	5	0	0	0	5	5	0	0	0	0
	8:15 AM	0	6	1	1	8	0	6	0	1	7	0	0	1	0
	8:30 AM	3	0	2	0	5	3	0	2	0	5	0	0	0	0
	8:45 AM	0	1	2	2	5	0	0	2	1	3	0	1	0	1
	TOTAL	3	17	13	26	59	3	15	12	23	53	0	2	1	3
PM	4:00 PM	0	1	1	5	7	0	1	1	4	6	0	0	0	1
	4:15 PM	0	1	1	7	9	0	0	0	7	7	0	1	1	0
	4:30 PM	1	1	5	1	8	1	1	5	1	8	0	0	0	0
	4:45 PM	0	1	1	1	3	0	1	1	1	3	0	0	0	0
	5:00 PM	0	0	5	4	9	0	0	3	3	6	0	0	2	1
	5:15 PM	0	0	0	5	5	0	0	0	4	4	0	0	0	1
	5:30 PM	1	0	1	0	2	0	0	0	0	0	1	0	1	0
	5:45 PM	0	2	1	4	7	0	1	1	2	4	0	1	0	2
	TOTAL	2	6	15	27	50	1	4	11	22	38	1	2	4	5

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC0976
Thu, May 26, 16	NORTH & SOUTH:	Perris	LOCATION #:	8
	EAST & WEST:	Cactus	CONTROL:	SIGNAL

NOTES:

AM
PM
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OTHER

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☑ Add U-Turns to Left Tur

		NORTHBOUND Perris			SOUTHBOUND Perris			EASTBOUND Cactus			WESTBOUND Cactus				U-TURNS			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
	LANES:	1	3	0	1	3	0	1	2	0	1	2	0		0	0	0	0
AM	7:00 AM	58	146	11	7	103	21	15	81	21	14	170	7	654	1	0	0	0
	7:15 AM	45	202	17	8	134	25	25	86	27	15	218	10	812	0	0	0	0
	7:30 AM	78	218	19	26	139	32	23	140	41	19	208	19	962	0	0	0	0
	7:45 AM	63	223	47	24	141	48	38	155	27	15	198	21	1,000	0	0	0	0
	8:00 AM	62	194	19	21	143	14	31	90	30	5	166	23	798	0	0	0	0
	8:15 AM	47	137	14	12	132	14	9	79	22	16	110	15	607	0	0	0	0
	8:30 AM	43	162	10	14	107	17	16	88	34	18	128	13	650	0	0	0	0
	8:45 AM	45	131	15	7	111	6	20	63	37	10	101	11	557	0	0	0	0
	VOLUMES	441	1,413	152	119	1,010	177	177	782	239	112	1,299	119	6,040	1	0	0	0
	APPROACH %	22%	70%	8%	9%	77%	14%	15%	65%	20%	7%	85%	8%					
	APP/DEPART	2,006	/	1,709	1,306	/	1,362	1,198	/	1,053	1,530	/	1,916	0				
	BEGIN PEAK HR		7:15 AM															
	VOLUMES	248	837	102	79	557	119	117	471	125	54	790	73	3,572				
	APPROACH %	21%	71%	9%	10%	74%	16%	16%	66%	18%	6%	86%	8%					
	PEAK HR FACTOR		0.891			0.886			0.810			0.932		0.893				
	APP/DEPART	1,187	/	1,027	755	/	736	713	/	652	917	/	1,157	0				
PM	4:00 PM	41	182	16	22	200	19	35	168	44	12	105	17	861	0	0	0	0
	4:15 PM	36	151	16	21	198	10	21	168	45	11	83	14	774	0	0	0	0
	4:30 PM	49	179	13	35	223	22	31	156	49	16	114	20	907	0	0	0	0
	4:45 PM	39	185	13	30	187	20	14	161	61	14	132	15	871	0	0	0	0
	5:00 PM	43	182	6	29	203	12	15	160	40	14	94	13	811	0	0	0	0
	5:15 PM	54	155	16	25	221	9	20	153	53	18	138	14	876	0	0	0	0
	5:30 PM	49	154	10	30	250	8	19	144	73	16	91	8	852	0	0	0	0
	5:45 PM	35	171	11	40	217	14	14	158	47	23	109	21	860	0	0	0	0
	VOLUMES	346	1,359	101	232	1,699	114	169	1,268	412	124	866	122	6,812	0	0	0	0
	APPROACH %	19%	75%	6%	11%	83%	6%	9%	69%	22%	11%	78%	11%					
	APP/DEPART	1,806	/	1,650	2,045	/	2,235	1,849	/	1,601	1,112	/	1,326	0				
	BEGIN PEAK HR		4:30 PM															
	VOLUMES	185	701	48	119	834	63	80	630	203	62	478	62	3,465				
	APPROACH %	20%	75%	5%	12%	82%	6%	9%	69%	22%	10%	79%	10%					
	PEAK HR FACTOR		0.969			0.907			0.967			0.885		0.955				
	APP/DEPART	934	/	843	1,016	/	1,099	913	/	797	602	/	726	0				

Perris

← NORTH SIDE →

Cactus WEST SIDE ↕ ↕ EAST SIDE Cactus

← SOUTH SIDE →

Perris

		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	T
AM	7:00 AM	0	1	0	1	2	0	1	0	1	2	0	0	0	0	
	7:15 AM	2	0	3	0	5	0	0	1	0	1	2	0	2	0	
	7:30 AM	0	2	0	1	3	0	2	0	1	3	0	0	0	0	
	7:45 AM	0	2	5	0	7	0	0	5	0	5	0	2	0	0	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 AM	0	2	3	1	6	0	2	2	1	5	0	0	1	0	
	8:30 AM	2	3	3	1	9	2	3	3	1	9	0	0	0	0	
	8:45 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	
	TOTAL	4	10	15	4	33	2	8	12	4	26	2	2	3	0	
PM	4:00 PM	1	2	1	2	6	1	0	1	0	2	0	2	0	2	
	4:15 PM	3	1	3	6	13	3	1	2	6	12	0	0	1	0	
	4:30 PM	0	1	2	2	5	0	1	2	2	5	0	0	0	0	
	4:45 PM	2	3	0	2	7	2	3	0	2	7	0	0	0	0	
	5:00 PM	1	0	2	0	3	1	0	0	0	1	0	0	2	0	
	5:15 PM	2	2	1	5	10	2	2	1	5	10	0	0	0	0	
	5:30 PM	0	1	1	0	2	0	1	1	0	2	0	0	0	0	
	5:45 PM	3	0	1	1	5	0	0	1	0	1	3	0	0	1	
	TOTAL	12	10	11	18	51	9	8	8	15	40	3	2	3	3	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC0976
Thu, May 26, 16	NORTH & SOUTH:	Flaming Arrow	LOCATION #:	3
	EAST & WEST:	Alessandro	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER

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Add U-Turns to Left Tu

	NORTHBOUND Flaming Arrow			SOUTHBOUND Flaming Arrow			EASTBOUND Alessandro			WESTBOUND Alessandro				U-TURNS			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	1	0	1	2	1	1	3	0		0	0	0	0
AM 7:00 AM	4	1	1	2	1	21	4	61	3	0	185	3	286	0	0	0	0
7:15 AM	15	0	5	3	0	17	3	92	1	1	189	0	326	0	0	0	0
7:30 AM	12	2	6	2	0	18	3	119	2	0	237	3	404	0	0	0	0
7:45 AM	5	1	7	4	1	19	5	154	1	2	228	8	435	0	0	0	2
8:00 AM	7	0	1	1	0	17	5	114	7	3	182	3	340	0	0	0	1
8:15 AM	8	0	1	1	0	7	7	84	2	1	178	2	291	0	0	0	0
8:30 AM	14	1	0	0	0	10	6	119	2	0	154	1	307	0	0	0	0
8:45 AM	10	0	1	0	0	8	4	94	1	0	142	1	261	0	0	0	0
VOLUMES	75	5	22	13	2	117	37	837	19	7	1,495	21	2,650	0	0	0	3
APPROACH %	74%	5%	22%	10%	2%	89%	4%	94%	2%	0%	98%	1%					
APP/DEPART	102	/	63	132	/	25	893	/	875	1,523	/	1,687	0				
BEGIN PEAK HR		7:15 AM															
VOLUMES	39	3	19	10	1	71	16	479	11	6	836	14	1,505				
APPROACH %	64%	5%	31%	12%	1%	87%	3%	95%	2%	1%	98%	2%					
PEAK HR FACTOR		0.763			0.854			0.791			0.892		0.865				
APP/DEPART	61	/	33	82	/	15	506	/	511	856	/	946	0				
PM 4:00 PM	8	0	1	1	0	14	11	203	6	3	163	4	414	0	0	0	1
4:15 PM	6	1	2	0	0	10	9	202	12	4	141	2	389	0	0	2	1
4:30 PM	9	1	5	2	0	15	16	195	11	5	208	0	467	0	0	0	3
4:45 PM	6	1	4	2	0	12	14	219	10	1	163	2	434	0	0	0	0
5:00 PM	9	0	2	1	0	11	14	171	8	1	160	3	380	0	0	0	0
5:15 PM	3	0	2	2	1	14	16	256	6	3	143	5	451	0	0	0	1
5:30 PM	6	1	3	0	0	20	15	234	2	1	173	2	457	0	0	1	0
5:45 PM	8	2	1	2	1	13	12	228	5	3	163	1	439	0	0	0	1
VOLUMES	55	6	20	10	2	109	107	1,708	60	21	1,314	19	3,431	0	0	3	7
APPROACH %	68%	7%	25%	8%	2%	90%	6%	91%	3%	2%	97%	1%					
APP/DEPART	81	/	129	121	/	76	1,875	/	1,745	1,354	/	1,481	0				
BEGIN PEAK HR		4:30 PM															
VOLUMES	27	2	13	7	1	52	60	841	35	10	674	10	1,732				
APPROACH %	64%	5%	31%	12%	2%	87%	6%	90%	4%	1%	97%	1%					
PEAK HR FACTOR		0.700			0.882			0.842			0.815		0.927				
APP/DEPART	42	/	72	60	/	42	936	/	865	694	/	753	0				

Flaming Arrow

NORTH SIDE

Alessandro WEST SIDE EAST SIDE **Alessandro**

SOUTH SIDE

Flaming Arrow

	PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS			
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS
AM 7:00 AM	1	2	0	3	6	0	1	0	3	4	1	1	0	0
7:15 AM	6	1	0	1	8	6	1	0	1	8	0	0	0	0
7:30 AM	1	0	1	0	2	1	0	1	0	2	0	0	0	0
7:45 AM	3	1	2	0	6	3	0	2	0	5	0	1	0	0
8:00 AM	5	1	0	1	7	4	1	0	1	6	1	0	0	0
8:15 AM	2	0	0	0	2	2	0	0	0	2	0	0	0	0
8:30 AM	3	2	0	0	5	2	2	0	0	4	1	0	0	0
8:45 AM	1	1	0	0	2	1	0	0	0	1	0	1	0	0
TOTAL	22	8	3	5	38	19	5	3	5	32	3	3	0	0
PM 4:00 PM	3	2	2	1	8	3	2	2	1	8	0	0	0	0
4:15 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0
4:30 PM	0	3	1	1	5	0	3	1	1	5	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	3	2	2	0	7	3	1	1	0	5	0	1	1	0
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0
5:30 PM	2	3	1	3	9	1	3	0	3	7	1	0	1	0
5:45 PM	0	3	0	4	7	0	2	0	0	2	0	1	0	4
TOTAL	10	13	7	9	39	9	11	4	5	29	1	2	3	4

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:	LOCATION:	Moreno Valley	PROJECT #:	SC0976
Thu, May 26, 16	NORTH & SOUTH:	Kitching	LOCATION #:	4
	EAST & WEST:	Alessandro	CONTROL:	SIGNAL

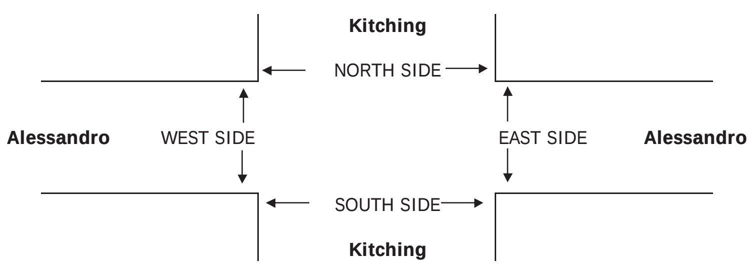
NOTES:

AM PM MD OTHER OTHER

N W E S

Add U-Turns to Left Tur

	NORTHBOUND Kitching			SOUTHBOUND Kitching			EASTBOUND Alessandro			WESTBOUND Alessandro				U-TURNS			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	2	1	0	1	2	0	1	2	1	1	2	1		0	0	0	0
AM 7:00 AM	40	32	5	3	27	27	6	45	19	1	123	2	330	0	0	1	0
7:15 AM	27	44	6	7	27	21	11	88	17	5	162	9	424	0	0	3	0
7:30 AM	61	55	15	8	43	21	16	99	26	6	162	5	517	0	0	2	0
7:45 AM	48	49	18	9	31	16	23	112	33	8	173	9	529	0	0	3	0
8:00 AM	43	43	6	3	24	14	10	84	14	2	136	3	382	0	0	2	0
8:15 AM	26	26	0	4	19	23	5	80	11	1	123	3	321	0	0	3	0
8:30 AM	34	35	2	5	25	15	12	76	13	2	97	5	321	0	0	8	0
8:45 AM	21	32	3	3	18	13	11	67	12	1	103	0	284	0	0	5	0
VOLUMES	300	316	55	42	214	150	94	651	145	26	1,079	36	3,108	0	0	27	0
APPROACH %	45%	47%	8%	10%	53%	37%	11%	73%	16%	2%	95%	3%					
APP/DEPART	671	/	419	406	/	385	890	/	748	1,141	/	1,556	0				
BEGIN PEAK HR		7:15 AM															
VOLUMES	179	191	45	27	125	72	60	383	90	21	633	26	1,852				
APPROACH %	43%	46%	11%	12%	56%	32%	11%	72%	17%	3%	93%	4%					
PEAK HR FACTOR		0.792			0.778			0.793			0.895		0.875				
APP/DEPART	415	/	267	224	/	236	533	/	455	680	/	894	0				
PM 4:00 PM	22	34	4	7	40	21	25	135	45	3	112	4	452	0	0	3	0
4:15 PM	32	32	5	13	39	21	18	136	38	7	107	10	458	0	0	4	1
4:30 PM	29	39	2	4	50	23	50	142	40	1	148	30	558	0	0	15	0
4:45 PM	32	54	2	5	48	14	33	132	30	2	113	7	472	0	0	10	0
5:00 PM	21	44	5	5	73	20	24	147	32	7	99	11	488	0	0	13	1
5:15 PM	30	41	3	4	56	14	35	178	50	8	116	6	541	0	0	12	0
5:30 PM	31	42	0	10	63	19	28	171	44	4	110	9	531	0	0	8	0
5:45 PM	32	49	1	5	64	23	35	149	42	3	99	8	510	0	0	15	0
VOLUMES	229	335	22	53	433	155	248	1,190	321	35	904	85	4,010	0	0	80	2
APPROACH %	39%	57%	4%	8%	68%	24%	14%	68%	18%	3%	88%	8%					
APP/DEPART	586	/	588	641	/	787	1,759	/	1,267	1,024	/	1,368	0				
BEGIN PEAK HR		5:00 PM															
VOLUMES	114	176	9	24	256	76	122	645	168	22	424	34	2,070				
APPROACH %	38%	59%	3%	7%	72%	21%	13%	69%	18%	5%	88%	7%					
PEAK HR FACTOR		0.912			0.908			0.889			0.923		0.957				
APP/DEPART	299	/	284	356	/	445	935	/	679	480	/	662	0				



	PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS			
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS
AM 7:00 AM	0	8	0	0	8	0	8	0	0	8	0	0	0	0
7:15 AM	0	5	2	3	10	0	5	2	2	9	0	0	0	1
7:30 AM	1	7	6	0	14	1	7	6	0	14	0	0	0	0
7:45 AM	2	4	1	0	7	1	3	0	0	4	1	1	1	0
8:00 AM	1	1	3	1	6	0	1	3	1	5	1	0	0	0
8:15 AM	0	1	0	1	2	0	1	0	1	2	0	0	0	0
8:30 AM	3	2	1	0	6	3	2	1	0	6	0	0	0	0
8:45 AM	0	2	0	0	2	0	1	0	0	1	0	1	0	0
TOTAL	7	30	13	5	55	5	28	12	4	49	2	2	1	1
PM 4:00 PM	1	3	1	3	8	1	3	1	3	8	0	0	0	0
4:15 PM	0	5	1	0	6	0	5	1	0	6	0	0	0	0
4:30 PM	0	0	4	1	5	0	0	4	1	5	0	0	0	0
4:45 PM	1	5	4	0	10	1	5	4	0	10	0	0	0	0
5:00 PM	1	1	4	4	10	1	0	4	4	9	0	1	0	0
5:15 PM	2	0	4	0	6	2	0	4	0	6	0	0	0	0
5:30 PM	1	3	1	1	6	0	3	1	0	4	1	0	0	1
5:45 PM	0	2	2	0	4	0	2	2	0	4	0	0	0	0
TOTAL	6	19	21	9	55	5	18	21	8	52	1	1	0	1

APPENDIX C

Intersection Level of Service Worksheets

HCM 2010 Signalized Intersection Summary
1: Indian St & Alessandro Blvd

EX AM
6/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	347	63	64	986	46	150	279	77	85	218	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	48	365	66	67	1038	48	158	294	81	89	229	79
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	594	104	306	1237	57	198	708	192	364	914	307
Arrive On Green	0.06	0.14	0.14	0.34	0.50	0.50	0.11	0.26	0.26	0.21	0.35	0.35
Sat Flow, veh/h	1774	4353	765	1774	4982	230	1774	2755	746	1774	2603	875
Grp Volume(v), veh/h	48	282	149	67	706	380	158	187	188	89	154	154
Grp Sat Flow(s),veh/h/ln	1774	1695	1728	1774	1695	1822	1774	1770	1731	1774	1770	1708
Q Serve(g_s), s	1.8	5.5	5.7	1.9	12.6	12.6	6.1	6.1	6.3	2.9	4.3	4.5
Cycle Q Clear(g_c), s	1.8	5.5	5.7	1.9	12.6	12.6	6.1	6.1	6.3	2.9	4.3	4.5
Prop In Lane	1.00		0.44	1.00		0.13	1.00		0.43	1.00		0.51
Lane Grp Cap(c), veh/h	108	463	236	306	842	452	198	455	445	364	621	600
V/C Ratio(X)	0.45	0.61	0.63	0.22	0.84	0.84	0.80	0.41	0.42	0.24	0.25	0.26
Avail Cap(c_a), veh/h	177	969	494	306	969	521	279	455	445	364	621	600
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.42	0.42	0.42	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	28.5	28.6	19.6	16.4	16.4	30.3	21.6	21.7	23.3	16.1	16.2
Incr Delay (d2), s/veh	2.9	1.3	2.8	0.1	2.6	4.7	10.4	2.7	2.9	0.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.6	2.9	0.9	6.0	6.7	3.6	3.4	3.4	1.5	2.3	2.3
LnGrp Delay(d),s/veh	34.6	29.8	31.3	19.7	19.0	21.1	40.7	24.3	24.6	23.6	17.1	17.2
LnGrp LOS	C	C	C	B	B	C	D	C	C	C	B	B
Approach Vol, veh/h		479			1153			533			397	
Approach Delay, s/veh		30.7			19.7			29.3			18.6	
Approach LOS		C			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	22.0	16.1	13.6	11.8	28.6	8.2	21.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	18.0	7.0	20.0	11.0	16.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	4.9	8.3	3.9	7.7	8.1	6.5	3.8	14.6
Green Ext Time (p_c), s	0.7	1.4	1.9	1.9	0.1	1.3	0.0	2.8

Intersection Summary		
HCM 2010 Ctrl Delay		23.6
HCM 2010 LOS		C

HCM 2010 Signalized Intersection Summary
2: Perris Blvd & Cottonwood Ave

EX AM
6/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	176	48	57	195	126	46	855	45	104	897	97
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	108	200	55	65	222	143	52	972	51	118	1019	110
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	262	223	183	290	247	113	1213	543	328	1643	735
Arrive On Green	0.09	0.14	0.14	0.10	0.16	0.16	0.08	0.46	0.46	0.19	0.46	0.46
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	108	200	55	65	222	143	52	972	51	118	1019	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.1	7.2	1.7	2.4	8.0	3.8	2.0	16.5	1.3	4.1	15.2	2.8
Cycle Q Clear(g_c), s	4.1	7.2	1.7	2.4	8.0	3.8	2.0	16.5	1.3	4.1	15.2	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	262	223	183	290	247	113	1213	543	328	1643	735
V/C Ratio(X)	0.69	0.76	0.25	0.36	0.77	0.58	0.46	0.80	0.09	0.36	0.62	0.15
Avail Cap(c_a), veh/h	177	426	362	183	426	362	177	1213	543	328	1643	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	29.0	16.8	29.2	28.3	11.4	30.9	17.0	12.9	24.9	14.1	10.8
Incr Delay (d2), s/veh	9.5	4.6	0.6	1.2	4.8	2.2	2.3	4.5	0.3	0.7	1.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.1	0.8	1.2	4.5	1.8	1.0	8.6	0.6	2.1	7.8	1.3
LnGrp Delay(d),s/veh	40.5	33.6	17.4	30.4	33.2	13.6	33.2	21.5	13.1	25.6	15.9	11.2
LnGrp LOS	D	C	B	C	C	B	C	C	B	C	B	B
Approach Vol, veh/h		363			430			1075			1247	
Approach Delay, s/veh		33.2			26.2			21.7			16.4	
Approach LOS		C			C			C			B	
Timer	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	28.0	11.2	13.8	8.5	36.5	10.1	14.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0				
Max Q Clear Time (g_c+I1), s	6.1	18.5	4.4	9.2	4.0	17.2	6.1	10.0				
Green Ext Time (p_c), s	0.1	3.0	0.5	0.6	0.0	3.9	0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			21.5									
HCM 2010 LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	72	63	83	40	65	53	52	813	49	74	812	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	82	72	94	45	74	60	59	924	56	84	923	84
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	97	127	103	104	84	423	1698	103	143	1213	543
Arrive On Green	0.08	0.13	0.13	0.06	0.11	0.11	0.08	0.17	0.17	0.03	0.11	0.11
Sat Flow, veh/h	1774	735	959	1774	953	773	1774	3391	205	1774	3539	1583
Grp Volume(v), veh/h	82	0	166	45	0	134	59	482	498	84	923	84
Grp Sat Flow(s),veh/h/ln	1774	0	1694	1774	0	1726	1774	1770	1826	1774	1770	1583
Q Serve(g_s), s	3.1	0.0	6.6	1.7	0.0	5.2	2.2	17.5	17.5	3.3	17.7	3.4
Cycle Q Clear(g_c), s	3.1	0.0	6.6	1.7	0.0	5.2	2.2	17.5	17.5	3.3	17.7	3.4
Prop In Lane	1.00		0.57	1.00		0.45	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	144	0	223	103	0	188	423	886	915	143	1213	543
V/C Ratio(X)	0.57	0.00	0.74	0.43	0.00	0.71	0.14	0.54	0.54	0.59	0.76	0.15
Avail Cap(c_a), veh/h	177	0	387	177	0	395	423	886	915	177	1213	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.56	0.56	0.56	0.80	0.80	0.80
Uniform Delay (d), s/veh	31.0	0.0	29.2	31.8	0.0	30.1	25.6	21.9	21.9	32.9	28.3	21.9
Incr Delay (d2), s/veh	3.5	0.0	4.8	2.9	0.0	5.0	0.1	1.4	1.3	3.1	3.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	3.4	0.9	0.0	2.8	1.1	8.9	9.2	1.7	9.3	1.5
LnGrp Delay(d),s/veh	34.4	0.0	34.1	34.7	0.0	35.1	25.6	23.2	23.2	36.0	31.9	22.4
LnGrp LOS	C		C	C		D	C	C	C	D	C	C
Approach Vol, veh/h		248			179			1039			1091	
Approach Delay, s/veh		34.2			35.0			23.4			31.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	39.0	8.1	13.2	20.7	28.0	9.7	11.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.3	19.5	3.7	8.6	4.2	19.7	5.1	7.2
Green Ext Time (p_c), s	0.0	2.4	0.0	0.6	1.6	2.3	0.2	0.4

Intersection Summary		
HCM 2010 Ctrl Delay		28.7
HCM 2010 LOS		C

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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):          95                Critical Vol./Cap.(X):        0.619
Loss Time (sec):      16                Average Delay (sec/veh):       33.2
Optimal Cycle: OPTIMIZED                Level Of Service:                 C
********************************************************************************
Street Name:            Perris Blvd                     Alessandro Blvd
Approach:      North Bound      South Bound      East Bound        West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected         Protected
Rights:          Include          Include          Include           Include
Min. Green:    10    19    19   10    19    19   10    15    15   10    15    15
Y+R:          4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     232   735   120  147   541   212  138   240    71  124   738    80
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:  232   735   120  147   541   212  138   240    71  124   738    80
Added Vol:      0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:    0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:  232   735   120  147   541   212  138   240    71  124   738    80
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:   232   735   120  147   541   212  138   240    71  124   738    80
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:  232   735   120  147   541   212  138   240    71  124   738    80
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:  232   735   120  147   541   212  138   240    71  124   738    80
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment:  0.95  0.95  0.85 0.95  0.95  0.85 0.95  0.95  0.85 0.95  0.90  0.90
Lanes:       1.00  2.00  1.00 1.00  2.00  1.00 1.00  2.00  1.00 1.00  2.71  0.29
Final Sat.:  1805  3610  1615 1805  3610  1615 1805  3610  1615 1805  4610   500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13  0.20  0.07 0.08  0.15  0.13 0.08  0.07  0.04 0.07  0.16  0.16
Crit Moves:  ****                   ****       ****                   ****
Green/Cycle: 0.21  0.30  0.30 0.15  0.24  0.24 0.12  0.23  0.23 0.15  0.26  0.26
Volume/Cap:  0.62  0.69  0.25 0.53  0.62  0.54 0.62  0.29  0.19 0.45  0.62  0.62
Uniform Del: 34.2  29.5  25.4 37.1  32.1  31.4 39.5  30.2  29.5 36.6  31.1  31.1
IncremntDel:  3.2   1.9   0.3  2.0   1.4   1.6  5.2   0.2   0.3  1.2   0.9   0.9
InitQueuDel:  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0
Delay Adj:   1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Delay/Veh:   37.4  31.4  25.7 39.1  33.5  33.0 44.8  30.4  29.8 37.8  32.0  32.0
User DelAdj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh:  37.4  31.4  25.7 39.1  33.5  33.0 44.8  30.4  29.8 37.8  32.0  32.0
LOS by Move:    D     C     C    D     C     C    D     C     C    D     C     C
HCM2kAvgQ:      7    11     3    5     8     6    5     3     2    4     9     9
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Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to TRANSPO Group, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	13	50	12	16	83	33	980	17	35	693	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	14	53	13	17	88	35	1043	18	37	737	33
Adj No. of Lanes	0	1	0	0	1	1	1	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	35	80	125	127	161	88	2206	38	529	3380	151
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.86	0.86	0.60	1.00	1.00
Sat Flow, veh/h	415	339	783	500	1247	1583	1774	5148	89	1774	4991	223
Grp Volume(v), veh/h	104	0	0	30	0	88	35	687	374	37	500	270
Grp Sat Flow(s),veh/h/ln	1537	0	0	1747	0	1583	1774	1695	1847	1774	1695	1823
Q Serve(g_s), s	2.9	0.0	0.0	0.0	0.0	3.7	1.3	3.4	3.4	0.6	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	0.0	1.0	0.0	3.7	1.3	3.4	3.4	0.6	0.0	0.0
Prop In Lane	0.36		0.51	0.43		1.00	1.00		0.05	1.00		0.12
Lane Grp Cap(c), veh/h	226	0	0	252	0	161	88	1453	792	529	2296	1235
V/C Ratio(X)	0.46	0.00	0.00	0.12	0.00	0.55	0.40	0.47	0.47	0.07	0.22	0.22
Avail Cap(c_a), veh/h	479	0	0	521	0	430	228	1453	792	529	2296	1235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.70	0.70	0.70	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	0.0	28.7	0.0	29.9	30.6	3.1	3.1	10.0	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.2	0.0	2.8	2.1	0.8	1.4	0.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.5	0.0	1.7	0.7	1.5	1.8	0.3	0.1	0.1
LnGrp Delay(d),s/veh	31.6	0.0	0.0	28.9	0.0	32.7	32.6	3.9	4.5	10.1	0.2	0.4
LnGrp LOS	C			C		C	C	A	A	B	A	A
Approach Vol, veh/h		104			118			1096			807	
Approach Delay, s/veh		31.6			31.8			5.0			0.7	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.9	34.0		11.1	7.5	51.4		11.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	9.0	30.0		19.0	9.0	30.0		19.0
Max Q Clear Time (g_c+I1), s	2.6	5.4		6.5	3.3	2.0		5.7
Green Ext Time (p_c), s	2.4	7.2		0.8	0.0	5.2		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		6.2
HCM 2010 LOS		A

HCM 2010 Signalized Intersection Summary
6: Perris Blvd & Cactus Ave

EX AM
6/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	117	471	125	54	790	73	248	837	102	79	557	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	131	529	140	61	888	82	279	940	115	89	626	134
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	818	216	123	889	82	317	1313	160	215	962	203
Arrive On Green	0.09	0.29	0.29	0.07	0.27	0.27	0.18	0.29	0.29	0.04	0.08	0.08
Sat Flow, veh/h	1774	2773	731	1774	3276	303	1774	4594	560	1774	4209	887
Grp Volume(v), veh/h	131	337	332	61	480	490	279	693	362	89	502	258
Grp Sat Flow(s),veh/h/ln	1774	1770	1734	1774	1770	1809	1774	1695	1764	1774	1695	1706
Q Serve(g_s), s	5.1	11.6	11.7	2.3	19.0	19.0	10.7	12.8	12.9	3.4	10.1	10.3
Cycle Q Clear(g_c), s	5.1	11.6	11.7	2.3	19.0	19.0	10.7	12.8	12.9	3.4	10.1	10.3
Prop In Lane	1.00		0.42	1.00		0.17	1.00		0.32	1.00		0.52
Lane Grp Cap(c), veh/h	165	522	511	123	480	491	317	969	504	215	775	390
V/C Ratio(X)	0.79	0.65	0.65	0.50	1.00	1.00	0.88	0.72	0.72	0.41	0.65	0.66
Avail Cap(c_a), veh/h	177	522	511	177	480	491	317	969	504	215	775	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	31.1	21.5	21.5	31.4	25.5	25.5	28.0	22.4	22.5	31.2	29.6	29.7
Incr Delay (d2), s/veh	20.4	2.7	2.9	3.1	40.7	40.2	23.8	4.5	8.5	1.3	4.1	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	6.0	5.9	1.2	14.6	14.9	7.4	6.6	7.4	1.8	5.2	5.8
LnGrp Delay(d),s/veh	51.4	24.2	24.4	34.4	66.1	65.7	51.8	27.0	31.0	32.4	33.7	38.1
LnGrp LOS	D	C	C	C	E	E	D	C	C	C	C	D
Approach Vol, veh/h		800			1031			1334			849	
Approach Delay, s/veh		28.8			64.1			33.3			34.9	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	24.0	8.9	24.6	16.5	20.0	10.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	20.0	7.0	19.0	12.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	5.4	14.9	4.3	13.7	12.7	12.3	7.1	21.0
Green Ext Time (p_c), s	0.3	2.8	0.0	2.0	0.0	1.6	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		40.6
HCM 2010 LOS		D

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

EX AM
6/22/2016

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	16	479	11	3	3	836	14	39	3	19	10	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0			4.0			4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.91			1.00			1.00
Frt	1.00	1.00	0.85		1.00	1.00			0.96			0.88
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.97			0.99
Satd. Flow (prot)	1770	3539	1583		1770	5073			1728			1635
Flt Permitted	0.95	1.00	1.00		1.00	1.00			0.83			0.98
Satd. Flow (perm)	1770	3539	1583		1863	5073			1487			1607
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	19	557	13	3	3	972	16	45	3	22	12	1
RTOR Reduction (vph)	0	0	9	0	0	3	0	0	11	0	0	41
Lane Group Flow (vph)	19	557	4	0	6	985	0	0	59	0	0	55
Turn Type	Prot	NA	Perm	custom	Prot	NA		Perm	NA		Perm	NA
Protected Phases	7	4			3	8			2			6
Permitted Phases			4	3				2			6	
Actuated Green, G (s)	1.5	21.1	21.1		1.6	21.2			35.3			35.3
Effective Green, g (s)	1.5	21.1	21.1		1.6	21.2			35.3			35.3
Actuated g/C Ratio	0.02	0.30	0.30		0.02	0.30			0.50			0.50
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0			4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0			3.0			3.0
Lane Grp Cap (vph)	37	1066	477		42	1536			749			810
v/s Ratio Prot	0.01	c0.16				c0.19						
v/s Ratio Perm			0.00		0.00				c0.04			0.03
v/c Ratio	0.51	0.52	0.01		0.14	0.64			0.08			0.07
Uniform Delay, d1	33.9	20.3	17.1		33.5	21.1			9.0			8.9
Progression Factor	1.11	0.99	1.00		1.17	0.48			1.00			1.00
Incremental Delay, d2	9.7	0.4	0.0		1.3	0.7			0.2			0.2
Delay (s)	47.4	20.5	17.1		40.5	10.9			9.2			9.1
Level of Service	D	C	B		D	B			A			A
Approach Delay (s)		21.3				11.1			9.2			9.1
Approach LOS		C				B			A			A

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Volume (vph)	71
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.86
Adj. Flow (vph)	83
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 2010 Signalized Intersection Summary
8: Kitching St & Alessandro Blvd

EX AM
6/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	383	90	21	633	26	179	191	45	27	125	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	68	435	102	24	719	30	203	217	51	31	142	82
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	636	586	256	887	468	655	587	138	80	569	311
Arrive On Green	0.02	0.06	0.06	0.14	0.25	0.25	0.19	0.40	0.40	0.05	0.26	0.26
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1459	343	1774	2211	1208
Grp Volume(v), veh/h	68	435	102	24	719	30	203	0	268	31	112	112
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	0	1802	1774	1770	1650
Q Serve(g_s), s	2.7	8.4	0.0	0.8	13.4	1.0	3.6	0.0	7.3	1.2	3.5	3.8
Cycle Q Clear(g_c), s	2.7	8.4	0.0	0.8	13.4	1.0	3.6	0.0	7.3	1.2	3.5	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.73
Lane Grp Cap(c), veh/h	130	636	586	256	887	468	655	0	725	80	455	424
V/C Ratio(X)	0.52	0.68	0.17	0.09	0.81	0.06	0.31	0.00	0.37	0.39	0.25	0.26
Avail Cap(c_a), veh/h	177	1062	777	256	1062	547	655	0	725	177	455	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	31.0	17.2	26.0	24.7	17.7	24.4	0.0	14.7	32.5	20.6	20.7
Incr Delay (d2), s/veh	2.7	1.1	0.1	0.2	4.1	0.1	0.3	0.0	1.4	3.0	1.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.2	1.5	0.4	7.0	0.4	1.7	0.0	3.9	0.7	1.9	1.9
LnGrp Delay(d),s/veh	35.7	32.1	17.3	26.1	28.8	17.8	24.6	0.0	16.1	35.5	21.9	22.2
LnGrp LOS	D	C	B	C	C	B	C		B	D	C	C
Approach Vol, veh/h		605			773			471			255	
Approach Delay, s/veh		30.0			28.3			19.8			23.7	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	32.2	14.1	16.6	17.3	22.0	9.1	21.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	21.0	8.0	18.0	7.0	21.0
Max Q Clear Time (g_c+I1), s	3.2	9.3	2.8	10.4	5.6	5.8	4.7	15.4
Green Ext Time (p_c), s	0.0	1.5	1.8	2.1	0.2	0.9	0.0	2.2

Intersection Summary			
HCM 2010 Ctrl Delay			26.3
HCM 2010 LOS			C

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	3	4	4	1098	759	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	4	1207	834	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1328	420	840	0	-	0
Stage 1	837	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	211	497	467	-	-	-
Stage 1	304	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	206	497	467	-	-	-
Mov Cap-2 Maneuver	256	-	-	-	-	-
Stage 1	304	-	-	-	-	-
Stage 2	517	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	467	-	256	497	-	-
HCM Lane V/C Ratio	0.009	-	0.013	0.009	-	-
HCM Control Delay (s)	12.8	0.1	19.2	12.3	-	-
HCM Lane LOS	B	A	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	1034	115	89	700	76	121	240	85	165	321	67
Future Volume (veh/h)	143	1034	115	89	700	76	121	240	85	165	321	67
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	147	1066	119	92	722	78	125	247	88	170	331	69
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	1224	136	148	920	99	297	626	218	322	752	155
Arrive On Green	0.15	0.26	0.26	0.11	0.26	0.26	0.17	0.24	0.24	0.18	0.26	0.26
Sat Flow, veh/h	1774	4644	518	1774	4664	500	1774	2579	896	1774	2924	602
Grp Volume(v), veh/h	147	778	407	92	523	277	125	168	167	170	199	201
Grp Sat Flow(s),veh/h/ln	1774	1695	1771	1774	1695	1774	1774	1770	1705	1774	1770	1756
Q Serve(g_s), s	5.4	15.4	15.4	3.5	10.0	10.2	4.4	5.5	5.8	6.1	6.6	6.7
Cycle Q Clear(g_c), s	5.4	15.4	15.4	3.5	10.0	10.2	4.4	5.5	5.8	6.1	6.6	6.7
Prop In Lane	1.00		0.29	1.00		0.28	1.00		0.53	1.00		0.34
Lane Grp Cap(c), veh/h	266	893	467	148	668	350	297	430	414	322	455	452
V/C Ratio(X)	0.55	0.87	0.87	0.62	0.78	0.79	0.42	0.39	0.40	0.53	0.44	0.45
Avail Cap(c_a), veh/h	266	920	481	177	775	406	297	430	414	322	455	452
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.21	0.21	0.21	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	24.6	24.6	30.1	24.4	24.5	26.1	22.2	22.3	25.9	21.8	21.8
Incr Delay (d2), s/veh	2.5	8.9	15.7	1.0	1.0	2.0	0.9	2.6	2.9	1.6	3.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	8.2	9.5	1.7	4.7	5.2	2.2	3.0	3.0	3.1	3.6	3.6
LnGrp Delay(d),s/veh	30.1	33.5	40.4	31.1	25.4	26.5	27.0	24.8	25.2	27.5	24.8	25.0
LnGrp LOS	C	C	D	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		1332			892			460			570	
Approach Delay, s/veh		35.2			26.3			25.6			25.7	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	21.0	9.8	22.4	15.7	22.0	14.5	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	17.0	7.0	19.0	10.0	18.0	10.0	16.0
Max Q Clear Time (g_c+I1), s	8.1	7.8	5.5	17.4	6.4	8.7	7.4	12.2
Green Ext Time (p_c), s	0.2	1.2	0.0	1.1	0.3	1.5	1.8	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	29.8
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
2: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	229	50	26	137	101	54	839	35	123	945	93
Future Volume (veh/h)	90	229	50	26	137	101	54	839	35	123	945	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	92	234	51	27	140	103	55	856	36	126	964	95
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	295	251	72	216	183	117	1213	543	407	1793	802
Arrive On Green	0.08	0.16	0.16	0.04	0.12	0.12	0.07	0.34	0.34	0.23	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	92	234	51	27	140	103	55	856	36	126	964	95
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.5	8.5	1.5	1.0	5.0	2.6	2.1	14.7	1.1	4.1	12.9	2.2
Cycle Q Clear(g_c), s	3.5	8.5	1.5	1.0	5.0	2.6	2.1	14.7	1.1	4.1	12.9	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	295	251	72	216	183	117	1213	543	407	1793	802
V/C Ratio(X)	0.62	0.79	0.20	0.37	0.65	0.56	0.47	0.71	0.07	0.31	0.54	0.12
Avail Cap(c_a), veh/h	177	426	362	177	426	362	177	1213	543	407	1793	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	28.4	15.8	32.7	29.6	10.9	31.5	19.9	15.5	22.4	11.7	9.1
Incr Delay (d2), s/veh	4.8	6.5	0.4	3.2	3.3	2.7	2.7	3.2	0.2	0.4	1.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.9	0.7	0.6	2.8	1.3	1.1	7.7	0.5	2.1	6.6	1.0
LnGrp Delay(d),s/veh	35.8	34.8	16.2	35.8	32.9	13.6	34.2	23.1	15.7	22.8	12.9	9.4
LnGrp LOS	D	C	B	D	C	B	C	C	B	C	B	A
Approach Vol, veh/h		377			270			947			1185	
Approach Delay, s/veh		32.5			25.8			23.5			13.6	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.1	28.0	6.9	15.1	8.6	39.5	9.8	12.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.1	16.7	3.0	10.5	4.1	14.9	5.5	7.0
Green Ext Time (p_c), s	0.1	3.2	0.4	0.6	0.0	4.6	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	54	45	27	54	36	43	827	65	56	974	23
Future Volume (veh/h)	30	54	45	27	54	36	43	827	65	56	974	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	32	58	48	29	58	39	46	889	70	60	1047	25
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	96	80	76	103	69	503	1140	90	503	1213	543
Arrive On Green	0.05	0.10	0.10	0.04	0.10	0.10	0.09	0.11	0.11	0.09	0.11	0.11
Sat Flow, veh/h	1774	944	781	1774	1040	699	1774	3324	262	1774	3539	1583
Grp Volume(v), veh/h	32	0	106	29	0	97	46	473	486	60	1047	25
Grp Sat Flow(s),veh/h/ln	1774	0	1725	1774	0	1739	1774	1770	1817	1774	1770	1583
Q Serve(g_s), s	1.2	0.0	4.1	1.1	0.0	3.7	1.7	18.2	18.2	2.2	20.4	0.7
Cycle Q Clear(g_c), s	1.2	0.0	4.1	1.1	0.0	3.7	1.7	18.2	18.2	2.2	20.4	0.7
Prop In Lane	1.00		0.45	1.00		0.40	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	82	0	176	76	0	172	503	607	623	503	1213	543
V/C Ratio(X)	0.39	0.00	0.60	0.38	0.00	0.56	0.09	0.78	0.78	0.12	0.86	0.05
Avail Cap(c_a), veh/h	177	0	394	177	0	398	503	607	623	503	1213	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.18	0.18	0.18	0.84	0.84	0.84
Uniform Delay (d), s/veh	32.4	0.0	30.1	32.6	0.0	30.1	23.5	28.5	28.5	23.7	29.4	11.9
Incr Delay (d2), s/veh	3.0	0.0	3.3	3.1	0.0	2.9	0.0	1.8	1.8	0.1	7.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.1	0.6	0.0	1.9	0.8	9.2	9.5	1.1	11.2	0.3
LnGrp Delay(d),s/veh	35.4	0.0	33.3	35.7	0.0	33.0	23.5	30.3	30.3	23.8	36.5	12.0
LnGrp LOS	D		C	D		C	C	C	C	C	D	B
Approach Vol, veh/h		138			126			1005			1132	
Approach Delay, s/veh		33.8			33.6			30.0			35.3	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.8	28.0	7.0	11.1	23.8	28.0	7.2	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.2	20.2	3.1	6.1	3.7	22.4	3.2	5.7
Green Ext Time (p_c), s	0.1	2.0	0.0	0.7	0.1	1.1	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	32.9
HCM 2010 LOS	C

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                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):          95                Critical Vol./Cap.(X):         0.794
Loss Time (sec):      16                Average Delay (sec/veh):        38.0
Optimal Cycle: OPTIMIZED                Level Of Service:                  D
********************************************************************************
Street Name:           Perris Blvd                     Alessandro Blvd
Approach:      North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected         Protected         Protected         Protected
Rights:            Include           Include           Include           Include
Min. Green:    10    19    19    10    19    19    10    15    15    10    15    15
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     229   572   107   149   730   128   397   727   257   191   485    78
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  229   572   107   149   730   128   397   727   257   191   485    78
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  229   572   107   149   730   128   397   727   257   191   485    78
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   229   572   107   149   730   128   397   727   257   191   485    78
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  229   572   107   149   730   128   397   727   257   191   485    78
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:  229   572   107   149   730   128   397   727   257   191   485    78
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  0.95  0.85  0.95  0.95  0.85  0.95  0.95  0.85  0.95  0.89  0.89
Lanes:       1.00  2.00  1.00  1.00  2.00  1.00  1.00  2.00  1.00  1.00  2.58  0.42
Final Sat.:  1805  3610  1615  1805  3610  1615  1805  3610  1615  1805  4375   704
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13  0.16  0.07  0.08  0.20  0.08  0.22  0.20  0.16  0.11  0.11  0.11
Crit Moves:  ****                    ****        ****                    ****
Green/Cycle: 0.16  0.26  0.26  0.14  0.25  0.25  0.27  0.28  0.28  0.15  0.16  0.16
Volume/Cap:  0.81  0.60  0.25  0.59  0.81  0.32  0.81  0.72  0.57  0.72  0.70  0.70
Uniform Del: 38.8  30.5  27.5  38.4  33.7  29.2  32.5  30.8  29.2  38.6  37.9  37.9
IncremntDel: 16.6   1.1   0.3   3.8   5.8   0.5  10.2   2.5   1.7   9.1   2.8   2.8
InitQueuDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Delay/Veh:   55.3  31.6  27.8  42.1  39.5  29.6  42.7  33.3  30.9  47.7  40.7  40.7
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  55.3  31.6  27.8  42.1  39.5  29.6  42.7  33.3  30.9  47.7  40.7  40.7
LOS by Move:    E     C     C     D     D     C     D     C     C     D     D     D
HCM2kAvgQ:      9     8     3     5    13     3    13    11     7     7     7     7

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HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

EX PM
6/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	44	41	20	10	16	56	14	806	17	9	96	1028
Future Volume (vph)	44	41	20	10	16	56	14	806	17	9	96	1028
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.97			1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.98			0.98	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1778			1827	1583	1770	5069			1770	5036
Flt Permitted		0.85			0.91	1.00	0.95	1.00			0.32	1.00
Satd. Flow (perm)		1545			1700	1583	1770	5069			587	5036
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	46	43	21	11	17	59	15	848	18	9	101	1082
RTOR Reduction (vph)	0	14	0	0	0	52	0	2	0	0	0	7
Lane Group Flow (vph)	0	96	0	0	28	7	15	864	0	0	110	1150
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		custom	Prot	NA
Protected Phases		4			8		5	2			1	6
Permitted Phases	4			8		8				1		
Actuated Green, G (s)		8.4			8.4	8.4	1.5	26.4			23.2	48.1
Effective Green, g (s)		8.4			8.4	8.4	1.5	26.4			23.2	48.1
Actuated g/C Ratio		0.12			0.12	0.12	0.02	0.38			0.33	0.69
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		185			204	189	37	1911			194	3460
v/s Ratio Prot							0.01	c0.17				0.23
v/s Ratio Perm		c0.06			0.02	0.00					c0.19	
v/c Ratio		0.52			0.14	0.04	0.41	0.45			0.57	0.33
Uniform Delay, d1		28.9			27.6	27.2	33.8	16.4			19.3	4.4
Progression Factor		1.00			1.00	1.00	1.34	0.17			0.49	0.32
Incremental Delay, d2		2.4			0.3	0.1	6.4	0.7			2.2	0.2
Delay (s)		31.3			27.9	27.3	51.8	3.5			11.8	1.6
Level of Service		C			C	C	D	A			B	A
Approach Delay (s)		31.3			27.5			4.4				2.5
Approach LOS		C			C			A				A

Intersection Summary			
HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	71
Future Volume (vph)	71
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	75
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

HCM Signalized Intersection Capacity Analysis
6: Perris Blvd & Cactus Ave

EX PM
6/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	630	203	62	478	62	185	701	48	119	834	63
Future Volume (vph)	80	630	203	62	478	62	185	701	48	119	834	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	
Frt	1.00	0.96		1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3410		1770	3478		1770	5036		1770	5032	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3410		1770	3478		1770	5036		1770	5032	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	663	214	65	503	65	195	738	51	125	878	66
RTOR Reduction (vph)	0	43	0	0	14	0	0	10	0	0	12	0
Lane Group Flow (vph)	84	834	0	65	554	0	195	779	0	125	932	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.3	20.3		4.2	17.2		11.2	21.5		8.0	18.3	
Effective Green, g (s)	7.3	20.3		4.2	17.2		11.2	21.5		8.0	18.3	
Actuated g/C Ratio	0.10	0.29		0.06	0.25		0.16	0.31		0.11	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	184	988		106	854		283	1546		202	1315	
v/s Ratio Prot	0.05	c0.24		0.04	c0.16		c0.11	0.15		0.07	c0.19	
v/s Ratio Perm												
v/c Ratio	0.46	0.84		0.61	0.65		0.69	0.50		0.62	0.71	
Uniform Delay, d1	29.5	23.4		32.1	23.7		27.8	19.9		29.5	23.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.87	0.52	
Incremental Delay, d2	1.8	6.7		10.1	1.7		6.8	1.2		5.4	3.2	
Delay (s)	31.3	30.0		42.2	25.4		34.6	21.1		31.2	15.3	
Level of Service	C	C		D	C		C	C		C	B	
Approach Delay (s)		30.2			27.1			23.7			17.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	630	203	62	478	62	185	701	48	119	834	63
Future Volume (veh/h)	80	630	203	62	478	62	185	701	48	119	834	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	84	663	214	65	503	65	195	738	51	125	878	66
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	715	231	127	638	82	329	1250	86	304	1172	88
Arrive On Green	0.14	0.27	0.27	0.07	0.20	0.20	0.19	0.26	0.26	0.06	0.08	0.08
Sat Flow, veh/h	1774	2633	849	1774	3155	406	1774	4860	334	1774	4827	362
Grp Volume(v), veh/h	84	445	432	65	281	287	195	514	275	125	616	328
Grp Sat Flow(s),veh/h/ln	1774	1770	1713	1774	1770	1791	1774	1695	1804	1774	1695	1799
Q Serve(g_s), s	3.0	17.2	17.2	2.5	10.6	10.6	7.0	9.3	9.4	4.8	12.4	12.5
Cycle Q Clear(g_c), s	3.0	17.2	17.2	2.5	10.6	10.6	7.0	9.3	9.4	4.8	12.4	12.5
Prop In Lane	1.00		0.50	1.00		0.23	1.00		0.19	1.00		0.20
Lane Grp Cap(c), veh/h	250	480	465	127	358	362	329	872	464	304	823	437
V/C Ratio(X)	0.34	0.93	0.93	0.51	0.79	0.79	0.59	0.59	0.59	0.41	0.75	0.75
Avail Cap(c_a), veh/h	250	480	465	177	455	461	329	872	464	304	823	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	27.1	24.8	24.8	31.3	26.5	26.5	26.1	22.8	22.8	29.6	30.1	30.1
Incr Delay (d2), s/veh	0.8	24.3	25.0	3.1	6.9	7.2	2.8	2.9	5.5	0.9	5.9	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	11.5	11.3	1.3	5.8	6.0	3.7	4.7	5.4	2.4	6.5	7.6
LnGrp Delay(d),s/veh	27.9	49.2	49.9	34.4	33.4	33.7	28.9	25.7	28.3	30.5	36.0	41.0
LnGrp LOS	C	D	D	C	C	C	C	C	C	C	D	D
Approach Vol, veh/h		961			633			984			1069	
Approach Delay, s/veh		47.6			33.6			27.1			36.9	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	22.0	9.0	23.0	17.0	21.0	13.9	18.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	18.0	7.0	19.0	11.0	17.0	8.0	18.0
Max Q Clear Time (g_c+I1), s	6.8	11.4	4.5	19.2	9.0	14.5	5.0	12.6
Green Ext Time (p_c), s	0.3	2.6	0.0	0.0	0.2	1.4	1.5	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	36.5
HCM 2010 LOS	D

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

EX PM
6/22/2016

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	60	841	35	4	6	674	10	27	2	13	7	1
Future Volume (vph)	60	841	35	4	6	674	10	27	2	13	7	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0			4.0			4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.91			1.00			1.00
Frt	1.00	1.00	0.85		1.00	1.00			0.96			0.88
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.97			0.99
Satd. Flow (prot)	1770	3539	1583		1770	5074			1729			1636
Flt Permitted	0.95	1.00	1.00		1.00	1.00			0.86			0.98
Satd. Flow (perm)	1770	3539	1583		1863	5074			1541			1615
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	65	904	38	4	6	725	11	29	2	14	8	1
RTOR Reduction (vph)	0	0	24	0	0	3	0	0	8	0	0	32
Lane Group Flow (vph)	65	904	14	0	10	733	0	0	37	0	0	33
Turn Type	Prot	NA	Perm	custom	Prot	NA		Perm	NA		Perm	NA
Protected Phases	7	4			3	8			2			6
Permitted Phases			4	3				2			6	
Actuated Green, G (s)	4.8	26.1	26.1		1.7	23.0			30.2			30.2
Effective Green, g (s)	4.8	26.1	26.1		1.7	23.0			30.2			30.2
Actuated g/C Ratio	0.07	0.37	0.37		0.02	0.33			0.43			0.43
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0			4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0			3.0			3.0
Lane Grp Cap (vph)	121	1319	590		45	1667			664			696
v/s Ratio Prot	c0.04	c0.26				0.14						
v/s Ratio Perm			0.01		0.01				c0.02			0.02
v/c Ratio	0.54	0.69	0.02		0.22	0.44			0.06			0.05
Uniform Delay, d1	31.5	18.5	13.9		33.5	18.4			11.6			11.6
Progression Factor	0.59	0.67	3.52		0.99	0.58			1.00			1.00
Incremental Delay, d2	2.1	0.7	0.0		2.3	0.2			0.2			0.1
Delay (s)	20.7	13.0	48.9		35.4	10.9			11.8			11.7
Level of Service	C	B	D		D	B			B			B
Approach Delay (s)		14.9				11.2			11.8			11.7
Approach LOS		B				B			B			B

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

EX PM
6/22/2016

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	52
Future Volume (vph)	52
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Adj. Flow (vph)	56
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 2010 Signalized Intersection Summary
8: Kitching St & Alessandro Blvd

EX PM
6/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	645	168	22	424	34	114	176	9	24	256	76
Future Volume (veh/h)	122	645	168	22	424	34	114	176	9	24	256	76
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	127	672	175	23	442	35	119	183	9	25	267	79
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	847	522	64	651	624	310	503	25	373	1100	319
Arrive On Green	0.09	0.24	0.24	0.04	0.18	0.18	0.09	0.29	0.29	0.21	0.41	0.41
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1761	87	1774	2709	785
Grp Volume(v), veh/h	127	672	175	23	442	35	119	0	192	25	173	173
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	0	1847	1774	1770	1724
Q Serve(g_s), s	4.9	12.5	4.0	0.9	8.2	0.2	2.3	0.0	5.8	0.8	4.5	4.7
Cycle Q Clear(g_c), s	4.9	12.5	4.0	0.9	8.2	0.2	2.3	0.0	5.8	0.8	4.5	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.46
Lane Grp Cap(c), veh/h	162	847	522	64	651	624	310	0	528	373	718	700
V/C Ratio(X)	0.78	0.79	0.34	0.36	0.68	0.06	0.38	0.00	0.36	0.07	0.24	0.25
Avail Cap(c_a), veh/h	253	1011	595	177	860	718	344	0	528	373	718	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	25.0	8.8	32.9	26.6	5.0	30.0	0.0	19.9	22.1	13.7	13.7
Incr Delay (d2), s/veh	5.5	2.5	0.3	3.4	1.4	0.0	0.8	0.0	1.9	0.1	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	6.4	1.8	0.5	4.1	0.2	1.1	0.0	3.2	0.4	2.3	2.4
LnGrp Delay(d),s/veh	36.6	27.5	9.0	36.3	28.0	5.0	30.8	0.0	21.9	22.2	14.5	14.6
LnGrp LOS	D	C	A	D	C	A	C		C	C	B	B
Approach Vol, veh/h		974			500			311			371	
Approach Delay, s/veh		25.4			26.8			25.3			15.0	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.7	24.0	6.5	20.7	10.3	32.4	10.4	16.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	20.0	7.0	20.0	7.0	20.0	10.0	17.0
Max Q Clear Time (g_c+I1), s	2.8	7.8	2.9	14.5	4.3	6.7	6.9	10.2
Green Ext Time (p_c), s	0.7	0.7	1.1	2.3	0.1	1.6	0.1	1.6

Intersection Summary		
HCM 2010 Ctrl Delay		23.9
HCM 2010 LOS		C

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	8	7	908	1204	8
Future Vol, veh/h	7	8	7	908	1204	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	8	7	956	1267	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1669	638	1276	0	-	0
Stage 1	1272	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	141	359	287	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	134	359	287	-	-	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	164	-	-	-	-	-
Stage 2	562	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	287	-	148	359	-	-
HCM Lane V/C Ratio	0.026	-	0.05	0.023	-	-
HCM Control Delay (s)	17.9	-	30.6	15.3	-	-
HCM Lane LOS	C	-	D	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	406	69	70	1133	51	165	307	85	94	240	83
Future Volume (veh/h)	51	406	69	70	1133	51	165	307	85	94	240	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	57	451	77	78	1259	57	183	341	94	104	267	92
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	1167	195	138	1380	62	328	708	192	303	632	213
Arrive On Green	0.07	0.27	0.27	0.16	0.55	0.55	0.18	0.26	0.26	0.17	0.24	0.24
Sat Flow, veh/h	1774	4390	733	1774	4987	226	1774	2752	748	1774	2601	876
Grp Volume(v), veh/h	57	346	182	78	856	460	183	218	217	104	180	179
Grp Sat Flow(s),veh/h/ln	1774	1695	1733	1774	1695	1823	1774	1770	1731	1774	1770	1708
Q Serve(g_s), s	2.2	5.8	6.0	2.8	15.9	15.9	6.6	7.3	7.5	3.6	6.0	6.2
Cycle Q Clear(g_c), s	2.2	5.8	6.0	2.8	15.9	15.9	6.6	7.3	7.5	3.6	6.0	6.2
Prop In Lane	1.00		0.42	1.00		0.12	1.00		0.43	1.00		0.51
Lane Grp Cap(c), veh/h	119	901	461	138	938	505	328	455	445	303	430	415
V/C Ratio(X)	0.48	0.38	0.40	0.56	0.91	0.91	0.56	0.48	0.49	0.34	0.42	0.43
Avail Cap(c_a), veh/h	177	920	470	203	969	521	328	455	445	303	430	415
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	21.0	21.1	28.4	14.9	14.9	25.9	22.0	22.1	25.6	22.3	22.4
Incr Delay (d2), s/veh	3.0	0.3	0.6	0.3	1.4	2.6	2.1	3.6	3.8	0.7	3.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.8	3.0	1.4	7.3	8.0	3.4	4.0	4.0	1.8	3.2	3.3
LnGrp Delay(d),s/veh	34.5	21.3	21.6	28.8	16.3	17.4	28.0	25.6	25.9	26.3	25.3	25.7
LnGrp LOS	C	C	C	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		585			1394			618			463	
Approach Delay, s/veh		22.7			17.3			26.4			25.7	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	22.0	9.5	22.6	16.9	21.0	8.7	23.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	18.0	8.0	19.0	10.0	17.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	5.6	9.5	4.8	8.0	8.6	8.2	4.2	17.9
Green Ext Time (p_c), s	0.3	1.5	0.0	2.3	0.1	1.3	0.9	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	194	57	70	215	139	54	1018	55	114	1017	107
Future Volume (veh/h)	105	194	57	70	215	139	54	1018	55	114	1017	107
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	117	216	63	78	239	154	60	1131	61	127	1130	119
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	343	292	138	322	273	122	1213	543	295	1558	697
Arrive On Green	0.09	0.18	0.18	0.08	0.17	0.17	0.14	0.69	0.69	0.17	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	117	216	63	78	239	154	60	1131	61	127	1130	119
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.5	7.5	2.4	3.0	8.5	4.1	2.2	19.5	0.6	4.5	18.4	3.2
Cycle Q Clear(g_c), s	4.5	7.5	2.4	3.0	8.5	4.1	2.2	19.5	0.6	4.5	18.4	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	343	292	138	322	273	122	1213	543	295	1558	697
V/C Ratio(X)	0.74	0.63	0.22	0.56	0.74	0.56	0.49	0.93	0.11	0.43	0.73	0.17
Avail Cap(c_a), veh/h	177	426	362	177	426	362	177	1213	543	295	1558	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.69	0.69	0.69	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	26.3	24.3	31.1	27.5	11.6	29.0	10.3	3.7	26.2	16.1	11.9
Incr Delay (d2), s/veh	13.2	2.0	0.4	3.6	4.9	1.8	2.1	10.5	0.3	1.0	3.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	4.0	1.1	1.6	4.8	1.9	1.1	10.6	0.3	2.3	9.6	1.5
LnGrp Delay(d),s/veh	44.2	28.3	24.6	34.7	32.3	13.4	31.2	20.8	4.0	27.2	19.1	12.4
LnGrp LOS	D	C	C	C	C	B	C	C	A	C	B	B
Approach Vol, veh/h		396			471			1252			1376	
Approach Delay, s/veh		32.4			26.5			20.5			19.3	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	28.0	9.5	16.9	8.8	34.8	10.3	16.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	21.5	5.0	9.5	4.2	20.4	6.5	10.5
Green Ext Time (p_c), s	0.0	1.7	0.0	1.8	0.0	2.5	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	69	91	44	72	58	57	979	54	81	934	81
Future Volume (veh/h)	79	69	91	44	72	58	57	979	54	81	934	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	88	77	101	49	80	64	63	1088	60	90	1038	90
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	102	134	109	110	88	404	1170	64	404	1213	543
Arrive On Green	0.09	0.14	0.14	0.06	0.11	0.11	0.08	0.11	0.11	0.08	0.11	0.11
Sat Flow, veh/h	1774	732	961	1774	960	768	1774	3411	188	1774	3539	1583
Grp Volume(v), veh/h	88	0	178	49	0	144	63	564	584	90	1038	90
Grp Sat Flow(s),veh/h/ln	1774	0	1693	1774	0	1727	1774	1770	1830	1774	1770	1583
Q Serve(g_s), s	3.3	0.0	7.1	1.9	0.0	5.6	2.3	22.1	22.1	3.3	20.2	3.6
Cycle Q Clear(g_c), s	3.3	0.0	7.1	1.9	0.0	5.6	2.3	22.1	22.1	3.3	20.2	3.6
Prop In Lane	1.00		0.57	1.00		0.44	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	152	0	236	109	0	198	404	607	627	404	1213	543
V/C Ratio(X)	0.58	0.00	0.76	0.45	0.00	0.73	0.16	0.93	0.93	0.22	0.86	0.17
Avail Cap(c_a), veh/h	177	0	387	177	0	395	404	607	627	404	1213	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.23	0.23	0.23	0.73	0.73	0.73
Uniform Delay (d), s/veh	30.8	0.0	29.0	31.7	0.0	29.9	26.1	30.2	30.2	26.5	29.3	22.0
Incr Delay (d2), s/veh	3.4	0.0	4.9	2.9	0.0	5.0	0.0	7.2	7.1	0.2	5.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.6	1.0	0.0	3.0	1.1	12.1	12.5	1.7	10.9	1.6
LnGrp Delay(d),s/veh	34.2	0.0	33.9	34.6	0.0	34.9	26.1	37.5	37.3	26.7	35.2	22.5
LnGrp LOS	C		C	C		C	C	D	D	C	D	C
Approach Vol, veh/h		266			193			1211			1218	
Approach Delay, s/veh		34.0			34.8			36.8			33.6	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	28.0	8.3	13.7	20.0	28.0	10.0	12.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.3	24.1	3.9	9.1	4.3	22.2	5.3	7.6
Green Ext Time (p_c), s	0.1	0.0	0.0	0.7	0.1	1.2	0.2	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	35.1
HCM 2010 LOS	D

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                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):          95                Critical Vol./Cap.(X):        0.676
Loss Time (sec):      16                Average Delay (sec/veh):       36.5
Optimal Cycle: OPTIMIZED                Level Of Service:                 D
********************************************************************************
Street Name:           Perris Blvd                     Alessandro Blvd
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    10    19    19    10    19    19    10    15    15    10    15    15
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     232   735   120   147   541   212   138   240    71   124   738    80
Growth Adj:  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10
Initial Bse:  255   809   132   162   595   233   152   264    78   136   812    88
Added Vol:      7    67    10     5    36     0     0    15     9    25    41    19
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  262   876   142   167   631   233   152   279    87   161   853   107
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   262   876   142   167   631   233   152   279    87   161   853   107
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  262   876   142   167   631   233   152   279    87   161   853   107
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:  262   876   142   167   631   233   152   279    87   161   853   107
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  0.95  0.85  0.95  0.95  0.85  0.95  0.95  0.85  0.95  0.89  0.89
Lanes:       1.00  2.00  1.00  1.00  2.00  1.00  1.00  2.00  1.00  1.00  2.67  0.33
Final Sat.:  1805  3610  1615  1805  3610  1615  1805  3610  1615  1805  4530   568
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.15  0.24  0.09  0.09  0.17  0.14  0.08  0.08  0.05  0.09  0.19  0.19
Crit Moves:  ****                          ****  ****                    ****
Green/Cycle: 0.21  0.30  0.30  0.13  0.21  0.21  0.12  0.24  0.24  0.16  0.28  0.28
Volume/Cap:  0.68  0.81  0.29  0.71  0.82  0.68  0.68  0.32  0.22  0.55  0.68  0.68
Uniform Del: 34.3  30.8  25.6  39.6  35.6  34.3  39.8  29.6  28.9  36.7  30.5  30.5
IncremntDel:  4.7   4.7   0.3   9.8   6.9   5.3   7.9   0.2   0.3   2.3   1.3   1.3
InitQueuDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Delay/Veh:   38.9  35.6  25.9  49.5  42.5  39.6  47.7  29.8  29.2  39.0  31.8  31.8
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  38.9  35.6  25.9  49.5  42.5  39.6  47.7  29.8  29.2  39.0  31.8  31.8
LOS by Move:    D     D     C     D     D     D     D     C     C     D     C     C
HCM2kAvgQ:      8    15     3     6    12     7     6     4     2     5    10    10
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	14	55	13	18	91	36	1161	19	39	832	34
Future Volume (veh/h)	39	14	55	13	18	91	36	1161	19	39	832	34
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	16	61	14	20	101	40	1290	21	43	924	38
Adj No. of Lanes	0	1	0	0	1	1	1	3	0	1	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	38	88	127	145	180	482	3392	55	101	2219	91
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.54	1.00	1.00	0.08	0.59	0.59
Sat Flow, veh/h	417	334	777	481	1274	1583	1774	5154	84	1774	5011	206
Grp Volume(v), veh/h	120	0	0	34	0	101	40	848	463	43	625	337
Grp Sat Flow(s),veh/h/ln	1529	0	0	1755	0	1583	1774	1695	1848	1774	1695	1826
Q Serve(g_s), s	3.5	0.0	0.0	0.0	0.0	4.2	0.8	0.0	0.0	1.6	7.0	7.0
Cycle Q Clear(g_c), s	5.2	0.0	0.0	1.2	0.0	4.2	0.8	0.0	0.0	1.6	7.0	7.0
Prop In Lane	0.36		0.51	0.41		1.00	1.00		0.05	1.00		0.11
Lane Grp Cap(c), veh/h	244	0	0	272	0	180	482	2231	1216	101	1501	809
V/C Ratio(X)	0.49	0.00	0.00	0.12	0.00	0.56	0.08	0.38	0.38	0.43	0.42	0.42
Avail Cap(c_a), veh/h	456	0	0	500	0	407	482	2231	1216	228	1501	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.62	0.62	0.62	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	0.0	28.0	0.0	29.4	11.8	0.0	0.0	31.3	9.5	9.5
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.2	0.0	2.7	0.0	0.3	0.6	2.9	0.9	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	0.6	0.0	2.0	0.4	0.1	0.2	0.9	3.4	3.8
LnGrp Delay(d),s/veh	31.2	0.0	0.0	28.2	0.0	32.1	11.8	0.3	0.6	34.1	10.3	11.0
LnGrp LOS	C			C		C	B	A	A	C	B	B
Approach Vol, veh/h		120			135			1351			1005	
Approach Delay, s/veh		31.2			31.1			0.7			11.6	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	50.1		12.0	23.0	35.0		12.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	9.0	31.0		18.0	9.0	31.0		18.0
Max Q Clear Time (g_c+I1), s	3.6	2.0		7.2	2.8	9.0		6.2
Green Ext Time (p_c), s	0.0	10.1		0.8	4.0	6.2		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	525	173	66	873	80	340	1004	117	87	683	131
Future Volume (veh/h)	129	525	173	66	873	80	340	1004	117	87	683	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	143	583	192	73	970	89	378	1116	130	97	759	146
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	737	242	134	843	77	304	1452	169	177	1042	199
Arrive On Green	0.10	0.28	0.28	0.08	0.26	0.26	0.17	0.31	0.31	0.03	0.08	0.08
Sat Flow, veh/h	1774	2620	861	1774	3279	301	1774	4620	538	1774	4291	818
Grp Volume(v), veh/h	143	393	382	73	524	535	378	819	427	97	598	307
Grp Sat Flow(s),veh/h/ln	1774	1770	1711	1774	1770	1810	1774	1695	1768	1774	1695	1718
Q Serve(g_s), s	5.5	14.4	14.4	2.8	18.0	18.0	12.0	15.3	15.3	3.8	12.1	12.2
Cycle Q Clear(g_c), s	5.5	14.4	14.4	2.8	18.0	18.0	12.0	15.3	15.3	3.8	12.1	12.2
Prop In Lane	1.00		0.50	1.00		0.17	1.00		0.30	1.00		0.48
Lane Grp Cap(c), veh/h	177	498	481	134	455	465	304	1065	556	177	823	417
V/C Ratio(X)	0.81	0.79	0.79	0.54	1.15	1.15	1.24	0.77	0.77	0.55	0.73	0.73
Avail Cap(c_a), veh/h	177	498	481	177	455	465	304	1065	556	177	823	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	30.8	23.2	23.3	31.2	26.0	26.0	29.0	21.7	21.7	32.3	29.9	30.0
Incr Delay (d2), s/veh	23.2	8.4	8.8	3.4	90.4	90.1	134.0	5.3	9.9	3.4	5.4	10.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.2	8.0	1.5	20.1	20.6	17.2	7.8	8.9	2.0	6.3	7.1
LnGrp Delay(d),s/veh	54.0	31.6	32.1	34.6	116.4	116.1	163.0	27.0	31.6	35.7	35.3	40.7
LnGrp LOS	D	C	C	C	F	F	F	C	C	D	D	D
Approach Vol, veh/h		918			1132			1624			1002	
Approach Delay, s/veh		35.3			111.0			59.9			37.0	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	26.0	9.3	23.7	16.0	21.0	11.0	22.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	22.0	7.0	18.0	12.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	5.8	17.3	4.8	16.4	14.0	14.2	7.5	20.0
Green Ext Time (p_c), s	0.7	3.0	0.0	0.8	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.5
HCM 2010 LOS	E

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

OPYR_2021_AM
6/23/2016

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	18	557	12	3	4	1005	15	43	3	21	11	1
Future Volume (vph)	18	557	12	3	4	1005	15	43	3	21	11	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0			4.0			4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.91			1.00			1.00
Frt	1.00	1.00	0.85		1.00	1.00			0.96			0.88
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.97			0.99
Satd. Flow (prot)	1770	3539	1583		1770	5074			1729			1634
Flt Permitted	0.95	1.00	1.00		1.00	1.00			0.83			0.98
Satd. Flow (perm)	1770	3539	1583		1863	5074			1472			1606
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	20	619	13	3	4	1117	17	48	3	23	12	1
RTOR Reduction (vph)	0	0	9	0	0	3	0	0	12	0	0	46
Lane Group Flow (vph)	20	619	4	0	7	1131	0	0	62	0	0	54
Turn Type	Prot	NA	Perm	custom	Prot	NA		Perm	NA		Perm	NA
Protected Phases	7	4			3	8			2			6
Permitted Phases			4	3				2			6	
Actuated Green, G (s)	1.6	22.7	22.7		2.7	23.8			32.6			32.6
Effective Green, g (s)	1.6	22.7	22.7		2.7	23.8			32.6			32.6
Actuated g/C Ratio	0.02	0.32	0.32		0.04	0.34			0.47			0.47
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0			4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0			3.0			3.0
Lane Grp Cap (vph)	40	1147	513		71	1725			685			747
v/s Ratio Prot	c0.01	0.17				c0.22						
v/s Ratio Perm			0.00		0.00				c0.04			0.03
v/c Ratio	0.50	0.54	0.01		0.10	0.66			0.09			0.07
Uniform Delay, d1	33.8	19.4	16.0		32.5	19.6			10.4			10.3
Progression Factor	1.21	0.73	1.00		0.82	0.43			1.00			1.00
Incremental Delay, d2	6.7	0.3	0.0		0.4	0.6			0.3			0.2
Delay (s)	47.4	14.4	16.0		27.1	9.1			10.7			10.5
Level of Service	D	B	B		C	A			B			B
Approach Delay (s)		15.5				9.2			10.7			10.5
Approach LOS		B				A			B			B

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

OPYR_2021_AM
6/23/2016

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	78
Future Volume (vph)	78
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	87
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	451	99	42	781	66	197	210	55	39	138	79
Future Volume (veh/h)	66	451	99	42	781	66	197	210	55	39	138	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	73	501	110	47	868	73	219	233	61	43	153	88
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	716	476	286	1017	694	339	366	96	268	685	374
Arrive On Green	0.03	0.07	0.07	0.16	0.29	0.29	0.10	0.26	0.26	0.15	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1424	373	1774	2213	1207
Grp Volume(v), veh/h	73	501	110	47	868	73	219	0	294	43	121	120
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	0	1797	1774	1770	1650
Q Serve(g_s), s	2.8	9.7	2.1	1.6	16.2	0.4	4.3	0.0	10.2	1.5	3.5	3.8
Cycle Q Clear(g_c), s	2.8	9.7	2.1	1.6	16.2	0.4	4.3	0.0	10.2	1.5	3.5	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.73
Lane Grp Cap(c), veh/h	134	716	476	286	1017	694	339	0	462	268	548	511
V/C Ratio(X)	0.54	0.70	0.23	0.16	0.85	0.11	0.65	0.00	0.64	0.16	0.22	0.24
Avail Cap(c_a), veh/h	177	1112	654	286	1112	737	344	0	462	268	548	511
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	30.6	8.1	25.3	23.5	4.3	30.4	0.0	23.1	25.9	17.9	18.0
Incr Delay (d2), s/veh	2.8	1.0	0.2	0.3	6.2	0.1	4.0	0.0	6.6	0.3	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.9	1.0	0.8	8.7	0.5	2.2	0.0	5.8	0.7	1.9	1.9
LnGrp Delay(d),s/veh	35.7	31.6	8.3	25.6	29.7	4.3	34.4	0.0	29.6	26.1	18.8	19.1
LnGrp LOS	D	C	A	C	C	A	C		C	C	B	B
Approach Vol, veh/h		684			988			513			284	
Approach Delay, s/veh		28.3			27.6			31.7			20.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	22.0	15.3	18.2	10.9	25.7	9.3	24.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	22.0	7.0	18.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	3.5	12.2	3.6	11.7	6.3	5.8	4.8	18.2
Green Ext Time (p_c), s	0.4	0.7	1.8	2.5	0.1	1.1	0.0	1.9

Intersection Summary		
HCM 2010 Ctrl Delay		27.8
HCM 2010 LOS		C

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	4	4	1291	905	6
Future Vol, veh/h	3	4	4	1291	905	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	4	1434	1006	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1592	506	1012	0	-	0
Stage 1	1009	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	154	438	386	-	-	-
Stage 1	239	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	146	438	386	-	-	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	239	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	386	-	198	438	-	-
HCM Lane V/C Ratio	0.012	-	0.017	0.01	-	-
HCM Control Delay (s)	14.4	-	23.5	13.3	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	1208	127	98	826	84	133	264	94	182	353	74
Future Volume (veh/h)	157	1208	127	98	826	84	133	264	94	182	353	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	165	1272	134	103	869	88	140	278	99	192	372	78
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	1390	146	153	1109	112	231	589	205	282	751	156
Arrive On Green	0.15	0.30	0.30	0.09	0.24	0.24	0.13	0.23	0.23	0.16	0.26	0.26
Sat Flow, veh/h	1774	4674	492	1774	4696	474	1774	2577	897	1774	2919	606
Grp Volume(v), veh/h	165	923	483	103	626	331	140	189	188	192	224	226
Grp Sat Flow(s),veh/h/ln	1774	1695	1776	1774	1695	1779	1774	1770	1704	1774	1770	1756
Q Serve(g_s), s	6.1	18.4	18.4	3.9	12.1	12.2	5.2	6.5	6.7	7.1	7.5	7.7
Cycle Q Clear(g_c), s	6.1	18.4	18.4	3.9	12.1	12.2	5.2	6.5	6.7	7.1	7.5	7.7
Prop In Lane	1.00		0.28	1.00		0.27	1.00		0.53	1.00		0.35
Lane Grp Cap(c), veh/h	262	1009	528	153	801	420	231	404	390	282	455	451
V/C Ratio(X)	0.63	0.91	0.91	0.67	0.78	0.79	0.61	0.47	0.48	0.68	0.49	0.50
Avail Cap(c_a), veh/h	262	1017	533	177	920	483	231	404	390	282	455	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	23.7	23.7	31.0	25.0	25.1	28.7	23.3	23.4	27.8	22.1	22.2
Incr Delay (d2), s/veh	4.7	12.4	20.4	0.7	0.4	0.7	4.5	3.8	4.2	6.5	3.8	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	10.3	12.0	1.9	5.7	6.1	2.9	3.6	3.6	4.0	4.1	4.2
LnGrp Delay(d),s/veh	32.8	36.1	44.1	31.7	25.4	25.8	33.2	27.2	27.6	34.3	25.9	26.1
LnGrp LOS	C	D	D	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		1571			1060			517			642	
Approach Delay, s/veh		38.2			26.1			29.0			28.5	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	20.0	10.1	24.8	13.1	22.0	14.3	20.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	16.0	7.0	21.0	8.0	18.0	9.0	19.0
Max Q Clear Time (g_c+I1), s	9.1	8.7	5.9	20.4	7.2	9.7	8.1	14.2
Green Ext Time (p_c), s	0.1	1.2	0.0	0.4	0.1	1.6	0.7	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
2: Perris Blvd & Cottonwood Ave

OPYR_2021_PM
6/23/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	252	63	41	151	111	67	980	52	135	1128	102
Future Volume (veh/h)	99	252	63	41	151	111	67	980	52	135	1128	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	104	265	66	43	159	117	71	1032	55	142	1187	107
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	324	276	101	225	191	133	1213	543	351	1648	737
Arrive On Green	0.11	0.17	0.17	0.06	0.12	0.12	0.15	0.69	0.69	0.20	0.47	0.47
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	104	265	66	43	159	117	71	1032	55	142	1187	107
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.9	9.6	2.5	1.6	5.7	4.9	2.6	15.4	0.6	4.9	18.9	1.6
Cycle Q Clear(g_c), s	3.9	9.6	2.5	1.6	5.7	4.9	2.6	15.4	0.6	4.9	18.9	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	196	324	276	101	225	191	133	1213	543	351	1648	737
V/C Ratio(X)	0.53	0.82	0.24	0.43	0.71	0.61	0.53	0.85	0.10	0.40	0.72	0.15
Avail Cap(c_a), veh/h	196	426	362	177	426	362	177	1213	543	351	1648	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	27.8	24.9	31.9	29.6	29.2	28.6	9.6	4.0	24.5	15.0	3.6
Incr Delay (d2), s/veh	2.7	9.1	0.4	2.9	4.1	3.2	2.9	6.6	0.3	0.8	2.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.8	1.1	0.9	3.2	2.3	1.4	8.0	0.3	2.5	9.7	0.8
LnGrp Delay(d),s/veh	32.2	36.9	25.4	34.8	33.7	32.4	31.5	16.3	4.3	25.2	17.8	4.0
LnGrp LOS	C	D	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		435			319			1158			1436	
Approach Delay, s/veh		34.0			33.3			16.6			17.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	28.0	8.0	16.2	9.2	36.6	11.7	12.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.9	17.4	3.6	11.6	4.6	20.9	5.9	7.7
Green Ext Time (p_c), s	0.0	3.6	0.0	0.6	0.0	2.3	0.2	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	59	50	30	59	40	47	988	72	62	1180	25
Future Volume (veh/h)	33	59	50	30	59	40	47	988	72	62	1180	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	35	62	53	32	62	42	49	1040	76	65	1242	26
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	95	82	82	103	70	109	1841	135	127	1985	888
Arrive On Green	0.05	0.10	0.10	0.05	0.10	0.10	0.02	0.18	0.18	0.02	0.19	0.19
Sat Flow, veh/h	1774	929	794	1774	1037	702	1774	3345	244	1774	3539	1583
Grp Volume(v), veh/h	35	0	115	32	0	104	49	550	566	65	1242	26
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1739	1774	1770	1820	1774	1770	1583
Q Serve(g_s), s	1.3	0.0	4.5	1.2	0.0	4.0	1.9	19.8	19.9	2.5	22.6	0.9
Cycle Q Clear(g_c), s	1.3	0.0	4.5	1.2	0.0	4.0	1.9	19.8	19.9	2.5	22.6	0.9
Prop In Lane	1.00		0.46	1.00		0.40	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	88	0	177	82	0	173	109	974	1002	127	1985	888
V/C Ratio(X)	0.40	0.00	0.65	0.39	0.00	0.60	0.45	0.56	0.56	0.51	0.63	0.03
Avail Cap(c_a), veh/h	177	0	394	177	0	397	177	974	1002	177	1985	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.09	0.09	0.09	0.69	0.69	0.69
Uniform Delay (d), s/veh	32.3	0.0	30.2	32.4	0.0	30.2	33.1	21.0	21.0	33.0	21.8	12.9
Incr Delay (d2), s/veh	2.9	0.0	4.0	3.0	0.0	3.3	0.3	0.2	0.2	2.2	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.3	0.7	0.0	2.1	0.9	9.8	10.1	1.3	11.4	0.4
LnGrp Delay(d),s/veh	35.2	0.0	34.2	35.4	0.0	33.5	33.4	21.2	21.2	35.1	22.8	13.0
LnGrp LOS	D		C	D		C	C	C	C	D	C	B
Approach Vol, veh/h		150			136			1165			1333	
Approach Delay, s/veh		34.4			33.9			21.7			23.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	42.5	7.2	11.2	8.3	43.3	7.5	11.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.5	21.9	3.2	6.5	3.9	24.6	3.3	6.0
Green Ext Time (p_c), s	0.0	2.0	0.0	0.8	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):          95                Critical Vol./Cap.(X):        0.926
Loss Time (sec):      16                Average Delay (sec/veh):       47.7
Optimal Cycle: OPTIMIZED                Level Of Service:                 D
********************************************************************************
Street Name:           Perris Blvd                      Alessandro Blvd
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    10   19    19    10   19    19    10   15    15    10   15    15
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     229  572   107   149  730   128   397  727   257   191  485    78
Growth Adj:  1.10 1.10  1.10  1.10 1.10  1.10  1.10 1.10  1.10  1.10 1.10  1.10
Initial Bse:  252  629   118   164  803   141   437  800   283   210  534    86
Added Vol:     17   68    31    18   90     0     0   55    16    22   39    10
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  269  697   149   182  893   141   437  855   299   232  573    96
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   269  697   149   182  893   141   437  855   299   232  573    96
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  269  697   149   182  893   141   437  855   299   232  573    96
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  269  697   149   182  893   141   437  855   299   232  573    96
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.95  0.85  0.95 0.95  0.85  0.95 0.95  0.85  0.95 0.89  0.89
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.57  0.43
Final Sat.:  1805 3610  1615  1805 3610  1615  1805 3610  1615  1805 4350   728
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.15 0.19  0.09  0.10 0.25  0.09  0.24 0.24  0.18  0.13 0.13  0.13
Crit Moves:  ****                  ****        ****                   ****
Green/Cycle: 0.16 0.27  0.27  0.14 0.26  0.26  0.26 0.27  0.27  0.15 0.16  0.16
Volume/Cap:  0.95 0.70  0.34  0.70 0.95  0.33  0.95 0.88  0.69  0.88 0.83  0.83
Uniform Del: 39.6 31.0  27.6  38.7 34.5  28.4  34.7 33.4  31.2  39.8 38.8  38.8
IncremntDel: 39.3  2.3   0.5   8.1 17.9   0.5  29.0  9.7   4.7  27.8  7.5   7.5
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   79.0 33.4  28.0  46.8 52.4  28.9  63.7 43.1  36.0  67.6 46.3  46.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  79.0 33.4  28.0  46.8 52.4  28.9  63.7 43.1  36.0  67.6 46.3  46.3
LOS by Move:    E    C     C     D    D     C     E    D     D     E    D     D
HCM2kAvgQ:     12   11     4     7   18     4    17   16     9    10   10    10

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HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

OPYR_2021_PM
6/23/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	48	45	22	11	18	62	15	1003	19	9	116	1260
Future Volume (vph)	48	45	22	11	18	62	15	1003	19	9	116	1260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.97			1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.98			0.98	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1777			1827	1583	1770	5071			1770	5041
Flt Permitted		0.85			0.91	1.00	0.95	1.00			0.25	1.00
Satd. Flow (perm)		1541			1690	1583	1770	5071			472	5041
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	47	23	12	19	65	16	1056	20	9	122	1326
RTOR Reduction (vph)	0	14	0	0	0	57	0	3	0	0	0	6
Lane Group Flow (vph)	0	107	0	0	31	8	16	1073	0	0	131	1402
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		custom	Prot	NA
Protected Phases		4			8		5	2			1	6
Permitted Phases	4			8		8				1		
Actuated Green, G (s)		8.8			8.8	8.8	1.5	20.0			29.2	47.7
Effective Green, g (s)		8.8			8.8	8.8	1.5	20.0			29.2	47.7
Actuated g/C Ratio		0.13			0.13	0.13	0.02	0.29			0.42	0.68
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		193			212	199	37	1448			196	3435
v/s Ratio Prot							0.01	c0.21				0.28
v/s Ratio Perm		c0.07			0.02	0.01					c0.28	
v/c Ratio		0.55			0.15	0.04	0.43	0.74			0.67	0.41
Uniform Delay, d1		28.8			27.3	26.9	33.8	22.7			16.5	4.9
Progression Factor		1.00			1.00	1.00	0.52	0.37			0.40	0.29
Incremental Delay, d2		3.4			0.3	0.1	5.9	2.6			2.2	0.1
Delay (s)		32.2			27.6	27.0	23.5	11.0			8.7	1.5
Level of Service		C			C	C	C	B			A	A
Approach Delay (s)		32.2			27.2			11.2				2.1
Approach LOS		C			C			B				A

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	78
Future Volume (vph)	78
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	82
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

HCM 2010 Signalized Intersection Summary
6: Perris Blvd & Cactus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	697	315	80	532	68	273	887	66	131	1046	69
Future Volume (veh/h)	88	697	315	80	532	68	273	887	66	131	1046	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	93	734	332	84	560	72	287	934	69	138	1101	73
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	644	291	143	687	88	279	1381	102	237	1279	85
Arrive On Green	0.13	0.27	0.27	0.08	0.22	0.22	0.16	0.29	0.29	0.04	0.09	0.09
Sat Flow, veh/h	1774	2371	1072	1774	3156	405	1774	4834	356	1774	4873	323
Grp Volume(v), veh/h	93	548	518	84	313	319	287	654	349	138	766	408
Grp Sat Flow(s),veh/h/ln	1774	1770	1674	1774	1770	1791	1774	1695	1800	1774	1695	1806
Q Serve(g_s), s	3.4	19.0	19.0	3.2	11.8	11.8	11.0	12.0	12.0	5.3	15.6	15.6
Cycle Q Clear(g_c), s	3.4	19.0	19.0	3.2	11.8	11.8	11.0	12.0	12.0	5.3	15.6	15.6
Prop In Lane	1.00		0.64	1.00		0.23	1.00		0.20	1.00		0.18
Lane Grp Cap(c), veh/h	238	480	454	143	385	390	279	969	514	237	890	474
V/C Ratio(X)	0.39	1.14	1.14	0.59	0.81	0.82	1.03	0.68	0.68	0.58	0.86	0.86
Avail Cap(c_a), veh/h	238	480	454	177	455	461	279	969	514	237	890	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	27.7	25.5	25.5	31.1	26.0	26.0	29.5	22.1	22.1	31.5	30.7	30.7
Incr Delay (d2), s/veh	1.0	85.5	86.9	3.8	9.4	9.5	61.7	3.8	7.0	3.3	10.1	17.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	20.6	19.7	1.7	6.7	6.9	10.1	6.1	6.9	2.9	8.6	10.1
LnGrp Delay(d),s/veh	28.7	111.0	112.4	34.9	35.4	35.6	91.2	25.9	29.2	34.9	40.8	48.0
LnGrp LOS	C	F	F	C	D	D	F	C	C	C	D	D
Approach Vol, veh/h		1159			716			1290			1312	
Approach Delay, s/veh		105.1			35.4			41.3			42.4	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	24.0	9.6	23.0	15.0	22.4	13.4	19.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	20.0	7.0	19.0	11.0	17.0	8.0	18.0
Max Q Clear Time (g_c+I1), s	7.3	14.0	5.2	21.0	13.0	17.6	5.4	13.8
Green Ext Time (p_c), s	0.5	3.0	0.0	0.0	0.0	0.0	1.6	1.4

Intersection Summary		
HCM 2010 Ctrl Delay		57.2
HCM 2010 LOS		E

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	66	1029	39	4	7	812	11	30	2	14	8	1
Future Volume (vph)	66	1029	39	4	7	812	11	30	2	14	8	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0			4.0			4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.91			1.00			1.00
Frt	1.00	1.00	0.85		1.00	1.00			0.96			0.88
Flt Protected	0.95	1.00	1.00		0.95	1.00			0.97			0.99
Satd. Flow (prot)	1770	3539	1583		1770	5075			1729			1635
Flt Permitted	0.95	1.00	1.00		1.00	1.00			0.85			0.98
Satd. Flow (perm)	1770	3539	1583		1863	5075			1523			1613
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	69	1083	41	4	7	855	12	32	2	15	8	1
RTOR Reduction (vph)	0	0	24	0	0	3	0	0	9	0	0	36
Lane Group Flow (vph)	69	1083	17	0	11	864	0	0	40	0	0	33
Turn Type	Prot	NA	Perm	custom	Prot	NA		Perm	NA		Perm	NA
Protected Phases	7	4			3	8			2			6
Permitted Phases			4	3				2			6	
Actuated Green, G (s)	4.2	28.9	28.9		1.4	26.1			27.7			27.7
Effective Green, g (s)	4.2	28.9	28.9		1.4	26.1			27.7			27.7
Actuated g/C Ratio	0.06	0.41	0.41		0.02	0.37			0.40			0.40
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0			4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0			3.0			3.0
Lane Grp Cap (vph)	106	1461	653		37	1892			602			638
v/s Ratio Prot	0.04	c0.31				c0.17						
v/s Ratio Perm			0.01		0.01				c0.03			0.02
v/c Ratio	0.65	0.74	0.03		0.30	0.46			0.07			0.05
Uniform Delay, d1	32.2	17.4	12.2		33.8	16.6			13.1			13.0
Progression Factor	0.61	0.63	1.11		1.10	0.80			1.00			1.00
Incremental Delay, d2	1.3	0.2	0.0		4.0	0.2			0.2			0.2
Delay (s)	20.8	11.2	13.5		41.1	13.4			13.3			13.2
Level of Service	C	B	B		D	B			B			B
Approach Delay (s)		11.8				13.7			13.3			13.2
Approach LOS		B				B			B			B

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	57
Future Volume (vph)	57
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	60
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	814	185	34	537	57	125	194	28	63	282	84
Future Volume (veh/h)	134	814	185	34	537	57	125	194	28	63	282	84
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	141	857	195	36	565	60	132	204	29	66	297	88
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	993	590	89	820	680	318	388	55	351	942	274
Arrive On Green	0.20	0.56	0.56	0.05	0.23	0.23	0.09	0.24	0.24	0.20	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1596	227	1774	2706	787
Grp Volume(v), veh/h	141	857	195	36	565	60	132	0	233	66	192	193
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	0	1823	1774	1770	1724
Q Serve(g_s), s	5.3	14.4	2.8	1.4	10.2	0.4	2.5	0.0	7.8	2.2	5.6	5.7
Cycle Q Clear(g_c), s	5.3	14.4	2.8	1.4	10.2	0.4	2.5	0.0	7.8	2.2	5.6	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.46
Lane Grp Cap(c), veh/h	176	993	590	89	820	680	318	0	443	351	616	600
V/C Ratio(X)	0.80	0.86	0.33	0.40	0.69	0.09	0.42	0.00	0.53	0.19	0.31	0.32
Avail Cap(c_a), veh/h	304	1163	666	177	910	720	344	0	443	351	616	600
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	14.2	4.1	32.2	24.6	4.2	30.0	0.0	23.0	23.4	16.7	16.7
Incr Delay (d2), s/veh	5.0	3.7	0.2	2.9	1.9	0.1	0.9	0.0	4.4	0.3	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.2	1.2	0.7	5.2	0.4	1.2	0.0	4.4	1.1	3.0	3.0
LnGrp Delay(d),s/veh	32.4	18.0	4.3	35.1	26.5	4.2	30.9	0.0	27.4	23.7	18.0	18.2
LnGrp LOS	C	B	A	D	C	A	C		C	C	B	B
Approach Vol, veh/h		1193			661			365			451	
Approach Delay, s/veh		17.4			25.0			28.7			18.9	
Approach LOS		B			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	21.0	7.5	23.6	10.5	28.4	11.0	20.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	12.0	18.0
Max Q Clear Time (g_c+I1), s	4.2	9.8	3.4	16.4	4.5	7.7	7.3	12.2
Green Ext Time (p_c), s	0.7	0.6	1.3	3.2	0.1	1.6	0.1	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	9	8	1115	1453	9
Future Vol, veh/h	8	9	8	1115	1453	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	9	8	1174	1529	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2020	769	1539	0	-	0
Stage 1	1534	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	91	295	213	-	-	-
Stage 1	113	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	81	295	213	-	-	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	113	-	-	-	-	-
Stage 2	476	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	213	-	101	295	-	-
HCM Lane V/C Ratio	0.04	-	0.083	0.032	-	-
HCM Control Delay (s)	22.6	-	43.9	17.6	-	-
HCM Lane LOS	C	-	E	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	0.1	-	-

HCM 2010 Signalized Intersection Summary
1: Indian St & Alessandro Blvd

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	355	63	64	1016	46	150	279	77	85	218	75
Future Volume (veh/h)	46	355	63	64	1016	46	150	279	77	85	218	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	48	374	66	67	1069	48	158	294	81	89	229	79
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	1092	188	129	1307	59	391	708	192	340	595	200
Arrive On Green	0.06	0.25	0.25	0.07	0.26	0.26	0.22	0.26	0.26	0.19	0.23	0.23
Sat Flow, veh/h	1774	4370	750	1774	4990	224	1774	2755	746	1774	2603	875
Grp Volume(v), veh/h	48	288	152	67	726	391	158	187	188	89	154	154
Grp Sat Flow(s),veh/h/ln	1774	1695	1730	1774	1695	1823	1774	1770	1731	1774	1770	1708
Q Serve(g_s), s	1.8	4.9	5.1	2.5	14.1	14.1	5.3	6.1	6.3	3.0	5.1	5.4
Cycle Q Clear(g_c), s	1.8	4.9	5.1	2.5	14.1	14.1	5.3	6.1	6.3	3.0	5.1	5.4
Prop In Lane	1.00		0.43	1.00		0.12	1.00		0.43	1.00		0.51
Lane Grp Cap(c), veh/h	108	847	432	129	888	478	391	455	445	340	404	390
V/C Ratio(X)	0.45	0.34	0.35	0.52	0.82	0.82	0.40	0.41	0.42	0.26	0.38	0.40
Avail Cap(c_a), veh/h	177	969	494	177	969	521	391	455	445	340	404	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.48	0.48	0.48	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	21.5	21.6	31.3	24.3	24.3	23.4	21.6	21.7	24.1	22.8	22.9
Incr Delay (d2), s/veh	2.9	0.2	0.5	1.5	2.6	4.7	0.7	2.7	2.9	0.4	2.7	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.3	2.5	1.3	6.9	7.7	2.7	3.4	3.4	1.5	2.8	2.9
LnGrp Delay(d),s/veh	34.6	21.8	22.1	32.8	26.8	28.9	24.0	24.3	24.6	24.5	25.5	25.9
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		488			1184			533			397	
Approach Delay, s/veh		23.1			27.9			24.3			25.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	22.0	9.1	21.5	19.4	20.0	8.2	22.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	18.0	7.0	20.0	11.0	16.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	5.0	8.3	4.5	7.1	7.3	7.4	3.8	16.1
Green Ext Time (p_c), s	0.3	1.4	0.0	2.1	0.2	1.0	0.8	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
2: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	176	48	57	195	126	46	885	45	104	905	97
Future Volume (veh/h)	95	176	48	57	195	126	46	885	45	104	905	97
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	108	200	55	65	222	143	52	1006	51	118	1028	110
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	335	285	127	305	259	113	1213	543	314	1615	723
Arrive On Green	0.09	0.18	0.18	0.07	0.16	0.16	0.13	0.69	0.69	0.18	0.46	0.46
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	108	200	55	65	222	143	52	1006	51	118	1028	110
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.1	6.9	2.1	2.5	7.9	3.8	1.9	14.5	0.5	4.1	15.6	2.8
Cycle Q Clear(g_c), s	4.1	6.9	2.1	2.5	7.9	3.8	1.9	14.5	0.5	4.1	15.6	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	335	285	127	305	259	113	1213	543	314	1615	723
V/C Ratio(X)	0.69	0.60	0.19	0.51	0.73	0.55	0.46	0.83	0.09	0.38	0.64	0.15
Avail Cap(c_a), veh/h	177	426	362	177	426	362	177	1213	543	314	1615	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	26.4	24.4	31.3	27.8	11.4	29.4	9.5	3.8	25.4	14.6	11.1
Incr Delay (d2), s/veh	9.5	1.7	0.3	3.1	3.8	1.8	2.3	5.3	0.3	0.7	1.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.7	0.9	1.3	4.4	1.8	1.0	7.6	0.3	2.1	8.0	1.3
LnGrp Delay(d),s/veh	40.5	28.1	24.7	34.4	31.6	13.3	31.7	14.8	4.0	26.1	16.5	11.6
LnGrp LOS	D	C	C	C	C	B	C	B	A	C	B	B
Approach Vol, veh/h		363			430			1109			1256	
Approach Delay, s/veh		31.3			25.9			15.1			17.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	28.0	9.0	16.6	8.5	35.9	10.1	15.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.1	16.5	4.5	8.9	3.9	17.6	6.1	9.9
Green Ext Time (p_c), s	0.1	3.9	0.0	1.7	0.0	3.8	0.0	1.5

Intersection Summary		
HCM 2010 Ctrl Delay		19.2
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Bay Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	63	83	40	65	53	52	843	49	74	820	74
Future Volume (veh/h)	72	63	83	40	65	53	52	843	49	74	820	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	82	72	94	45	74	60	59	958	56	84	932	84
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	97	127	103	104	84	423	1165	68	423	1213	543
Arrive On Green	0.08	0.13	0.13	0.06	0.11	0.11	0.08	0.11	0.11	0.08	0.11	0.11
Sat Flow, veh/h	1774	735	959	1774	953	773	1774	3399	199	1774	3539	1583
Grp Volume(v), veh/h	82	0	166	45	0	134	59	499	515	84	932	84
Grp Sat Flow(s),veh/h/ln	1774	0	1694	1774	0	1726	1774	1770	1828	1774	1770	1583
Q Serve(g_s), s	3.1	0.0	6.6	1.7	0.0	5.2	2.2	19.3	19.3	3.1	17.9	3.4
Cycle Q Clear(g_c), s	3.1	0.0	6.6	1.7	0.0	5.2	2.2	19.3	19.3	3.1	17.9	3.4
Prop In Lane	1.00		0.57	1.00		0.45	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	144	0	223	103	0	188	423	607	627	423	1213	543
V/C Ratio(X)	0.57	0.00	0.74	0.43	0.00	0.71	0.14	0.82	0.82	0.20	0.77	0.15
Avail Cap(c_a), veh/h	177	0	387	177	0	395	423	607	627	423	1213	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	31.0	0.0	29.2	31.8	0.0	30.1	25.6	29.0	29.0	26.0	28.3	21.9
Incr Delay (d2), s/veh	3.5	0.0	4.8	2.9	0.0	5.0	0.1	11.9	11.6	0.2	3.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	3.4	0.9	0.0	2.8	1.1	11.5	11.8	1.5	9.4	1.5
LnGrp Delay(d),s/veh	34.4	0.0	34.1	34.7	0.0	35.1	25.7	40.9	40.6	26.2	32.1	22.4
LnGrp LOS	C		C	C		D	C	D	D	C	C	C
Approach Vol, veh/h		248			179			1073			1100	
Approach Delay, s/veh		34.2			35.0			39.9			30.9	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.7	28.0	8.1	13.2	20.7	28.0	9.7	11.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.1	21.3	3.7	8.6	4.2	19.9	5.1	7.2
Green Ext Time (p_c), s	0.1	1.5	0.0	0.6	0.1	2.3	0.2	0.4

Intersection Summary		
HCM 2010 Ctrl Delay		35.2
HCM 2010 LOS		D

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Perris Blvd/Alessandro Blvd

Cycle (sec):	95	Critical Vol./Cap.(X):	0.650
Loss Time (sec):	16	Average Delay (sec/veh):	33.7
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Street Name:	Perris Blvd						Alessandro Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	10	15	15	10	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	0 1	1 0	2	0 1	1 0	2	0 1	1 0	2	1 0
Volume Module:												
Base Vol:	232	735	120	147	541	212	138	240	71	124	738	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	232	735	120	147	541	212	138	240	71	124	738	80
Added Vol:	30	10	6	6	2	0	0	6	2	13	20	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	262	745	126	153	543	212	138	246	73	137	758	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	262	745	126	153	543	212	138	246	73	137	758	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	262	745	126	153	543	212	138	246	73	137	758	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	262	745	126	153	543	212	138	246	73	137	758	100
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	0.95	0.85	0.95	0.95	0.85	0.95	0.89	0.89
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.65	0.35
Final Sat.:	1805	3610	1615	1805	3610	1615	1805	3610	1615	1805	4500	594
Capacity Analysis Module:												
Vol/Sat:	0.15	0.21	0.08	0.08	0.15	0.13	0.08	0.07	0.05	0.08	0.17	0.17
Crit Moves:	****				****		****				****	
Green/Cycle:	0.22	0.30	0.30	0.15	0.23	0.23	0.12	0.23	0.23	0.15	0.26	0.26
Volume/Cap:	0.65	0.69	0.26	0.55	0.65	0.57	0.65	0.30	0.20	0.50	0.65	0.65
Uniform Del:	33.5	29.2	25.2	37.2	33.0	32.3	40.0	30.5	29.8	37.1	31.3	31.3
IncremntDel:	3.7	1.8	0.3	2.4	1.8	2.0	6.9	0.2	0.3	1.5	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	37.2	31.1	25.4	39.6	34.8	34.3	47.0	30.7	30.1	38.6	32.5	32.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	31.1	25.4	39.6	34.8	34.3	47.0	30.7	30.1	38.6	32.5	32.5
LOS by Move:	D	C	C	D	C	C	D	C	C	D	C	C
HCM2kAvgQ:	8	11	3	5	9	6	5	3	2	4	9	9

HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	36	13	50	12	16	83	33	987	17	5	35	718
Future Volume (vph)	36	13	50	12	16	83	33	987	17	5	35	718
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.93			1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.98			0.98	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1705			1823	1583	1770	5072			1770	5049
Flt Permitted		0.87			0.88	1.00	0.95	1.00			0.26	1.00
Satd. Flow (perm)		1507			1636	1583	1770	5072			476	5049
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	38	14	53	13	17	88	35	1050	18	5	37	764
RTOR Reduction (vph)	0	47	0	0	0	79	0	2	0	0	0	5
Lane Group Flow (vph)	0	58	0	0	30	9	35	1066	0	0	42	797
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA			Prot	NA
Protected Phases		4			8		5	2			1	6
Permitted Phases	4			8		8						
Actuated Green, G (s)		7.3			7.3	7.3	3.3	29.2			21.5	47.4
Effective Green, g (s)		7.3			7.3	7.3	3.3	29.2			21.5	47.4
Actuated g/C Ratio		0.10			0.10	0.10	0.05	0.42			0.31	0.68
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		157			170	165	83	2115			146	3418
v/s Ratio Prot							0.02	c0.21				0.16
v/s Ratio Perm		c0.04			0.02	0.01					c0.09	
v/c Ratio		0.37			0.18	0.06	0.42	0.50			0.29	0.23
Uniform Delay, d1		29.2			28.6	28.2	32.4	15.1			18.4	4.3
Progression Factor		1.00			1.00	1.00	1.37	0.17			1.00	0.33
Incremental Delay, d2		1.5			0.5	0.1	2.5	0.6			0.1	0.0
Delay (s)		30.6			29.1	28.4	46.7	3.1			18.5	1.5
Level of Service		C			C	C	D	A			B	A
Approach Delay (s)		30.6			28.6			4.5				2.3
Approach LOS		C			C			A				A

Intersection Summary			
HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

8/3/2016

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	36
Future Volume (vph)	36
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	38
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 2010 Signalized Intersection Summary
6: Perris Blvd & Cactus Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	471	125	54	790	73	248	844	102	79	582	119
Future Volume (veh/h)	117	471	125	54	790	73	248	844	102	79	582	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	131	529	140	61	888	82	279	948	115	89	654	134
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	818	216	123	889	82	317	1314	159	215	970	196
Arrive On Green	0.09	0.29	0.29	0.07	0.27	0.27	0.18	0.29	0.29	0.04	0.08	0.08
Sat Flow, veh/h	1774	2773	731	1774	3276	303	1774	4599	556	1774	4244	858
Grp Volume(v), veh/h	131	337	332	61	480	490	279	698	365	89	521	267
Grp Sat Flow(s),veh/h/ln	1774	1770	1734	1774	1770	1809	1774	1695	1765	1774	1695	1711
Q Serve(g_s), s	5.1	11.6	11.7	2.3	19.0	19.0	10.7	13.0	13.0	3.4	10.5	10.7
Cycle Q Clear(g_c), s	5.1	11.6	11.7	2.3	19.0	19.0	10.7	13.0	13.0	3.4	10.5	10.7
Prop In Lane	1.00		0.42	1.00		0.17	1.00		0.32	1.00		0.50
Lane Grp Cap(c), veh/h	165	522	511	123	480	491	317	969	504	215	775	391
V/C Ratio(X)	0.79	0.65	0.65	0.50	1.00	1.00	0.88	0.72	0.72	0.41	0.67	0.68
Avail Cap(c_a), veh/h	177	522	511	177	480	491	317	969	504	215	775	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	31.1	21.5	21.5	31.4	25.5	25.5	28.0	22.5	22.5	31.2	29.8	29.9
Incr Delay (d2), s/veh	20.4	2.7	2.9	3.1	40.7	40.2	23.8	4.6	8.7	1.2	4.5	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	6.0	5.9	1.2	14.6	14.9	7.4	6.6	7.5	1.8	5.4	6.1
LnGrp Delay(d),s/veh	51.4	24.2	24.4	34.4	66.1	65.7	51.8	27.1	31.2	32.4	34.3	39.1
LnGrp LOS	D	C	C	C	E	E	D	C	C	C	C	D
Approach Vol, veh/h		800			1031			1342			877	
Approach Delay, s/veh		28.8			64.1			33.4			35.6	
Approach LOS		C			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	24.0	8.9	24.6	16.5	20.0	10.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	20.0	7.0	19.0	12.0	16.0	7.0	19.0
Max Q Clear Time (g_c+I1), s	5.4	15.0	4.3	13.7	12.7	12.7	7.1	21.0
Green Ext Time (p_c), s	0.3	2.8	0.0	2.0	0.0	1.5	0.0	0.0

Intersection Summary			
HCM 2010 Ctrl Delay			40.8
HCM 2010 LOS			D

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

8/3/2016

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	16	50	489	11	3	3	839	14	39	3	19	10
Future Volume (vph)	16	50	489	11	3	3	839	14	39	3	19	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.91			1.00		
Frt		1.00	1.00	0.85		1.00	1.00			0.96		
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.97		
Satd. Flow (prot)		1770	3539	1583		1770	5073			1728		
Flt Permitted		0.28	1.00	1.00		1.00	1.00			0.79		
Satd. Flow (perm)		515	3539	1583		1863	5073			1415		
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	19	58	569	13	3	3	976	16	45	3	22	12
RTOR Reduction (vph)	0	0	0	5	0	0	2	0	0	17	0	0
Lane Group Flow (vph)	0	77	569	8	0	6	990	0	0	53	0	0
Turn Type		Prot	NA	Perm		Prot	NA		Perm	NA		Perm
Protected Phases		7	4			3	8			2		
Permitted Phases				4					2			6
Actuated Green, G (s)		27.4	40.6	40.6		2.8	16.0			14.6		
Effective Green, g (s)		27.4	40.6	40.6		2.8	16.0			14.6		
Actuated g/C Ratio		0.39	0.58	0.58		0.04	0.23			0.21		
Clearance Time (s)		4.0	4.0	4.0		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0			3.0		
Lane Grp Cap (vph)		201	2052	918		74	1159			295		
v/s Ratio Prot			0.16				c0.20					
v/s Ratio Perm		c0.15		0.00		0.00				c0.04		
v/c Ratio		0.38	0.28	0.01		0.08	0.85			0.18		
Uniform Delay, d1		15.2	7.4	6.2		32.4	25.9			22.8		
Progression Factor		1.00	1.42	1.00		0.87	0.55			1.00		
Incremental Delay, d2		1.2	0.1	0.0		0.4	5.1			1.3		
Delay (s)		16.4	10.5	6.2		28.4	19.4			24.1		
Level of Service		B	B	A		C	B			C		
Approach Delay (s)			11.1				19.5			24.1		
Approach LOS			B				B			C		

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

8/3/2016

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	71
Future Volume (vph)	1	71
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.88	
Flt Protected	0.99	
Satd. Flow (prot)	1635	
Flt Permitted	0.97	
Satd. Flow (perm)	1592	
Peak-hour factor, PHF	0.86	0.86
Adj. Flow (vph)	1	83
RTOR Reduction (vph)	66	0
Lane Group Flow (vph)	30	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	14.6	
Effective Green, g (s)	14.6	
Actuated g/C Ratio	0.21	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	332	
v/s Ratio Prot		
v/s Ratio Perm	0.02	
v/c Ratio	0.09	
Uniform Delay, d1	22.3	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	22.9	
Level of Service	C	
Approach Delay (s)	22.9	
Approach LOS	C	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	393	90	21	636	26	179	191	45	27	125	72
Future Volume (veh/h)	60	393	90	21	636	26	179	191	45	27	125	72
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	68	447	102	24	723	30	203	217	51	31	142	82
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	649	590	251	890	470	652	586	138	80	569	311
Arrive On Green	0.02	0.06	0.06	0.14	0.25	0.25	0.19	0.40	0.40	0.05	0.26	0.26
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1459	343	1774	2211	1208
Grp Volume(v), veh/h	68	447	102	24	723	30	203	0	268	31	112	112
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	0	1802	1774	1770	1650
Q Serve(g_s), s	2.7	8.7	0.0	0.8	13.5	1.0	3.6	0.0	7.3	1.2	3.5	3.8
Cycle Q Clear(g_c), s	2.7	8.7	0.0	0.8	13.5	1.0	3.6	0.0	7.3	1.2	3.5	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.73
Lane Grp Cap(c), veh/h	130	649	590	251	890	470	652	0	723	80	455	424
V/C Ratio(X)	0.52	0.69	0.17	0.10	0.81	0.06	0.31	0.00	0.37	0.39	0.25	0.26
Avail Cap(c_a), veh/h	177	1062	775	251	1062	547	652	0	723	177	455	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	30.9	17.1	26.2	24.6	17.6	24.4	0.0	14.7	32.5	20.6	20.7
Incr Delay (d2), s/veh	3.1	1.3	0.1	0.2	4.2	0.1	0.3	0.0	1.5	3.0	1.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.4	1.6	0.4	7.0	0.4	1.7	0.0	3.9	0.7	1.9	1.9
LnGrp Delay(d),s/veh	36.1	32.2	17.2	26.3	28.8	17.7	24.7	0.0	16.2	35.5	21.9	22.2
LnGrp LOS	D	C	B	C	C	B	C		B	D	C	C
Approach Vol, veh/h		617			777			471			255	
Approach Delay, s/veh		30.1			28.3			19.9			23.7	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	32.1	13.9	16.8	17.3	22.0	9.1	21.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	21.0	8.0	18.0	7.0	21.0
Max Q Clear Time (g_c+I1), s	3.2	9.3	2.8	10.7	5.6	5.8	4.7	15.5
Green Ext Time (p_c), s	0.0	1.5	1.8	2.2	0.2	0.9	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.4
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	512	14	0	998	0	55
Future Vol, veh/h	512	14	0	998	0	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	557	15	0	1085	0	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	572	0	-	286
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.34	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.12	-	-	3.92
Pot Cap-1 Maneuver	-	-	626	-	0	606
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	626	-	-	606
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	606	-	-	626	-
HCM Lane V/C Ratio	0.099	-	-	-	-
HCM Control Delay (s)	11.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

HCM 2010 TWSC
10: Perris Blvd 8/3/2016

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	7	0	0	44	0	1109	12	0	794	9
Future Vol, veh/h	0	0	7	0	0	44	0	1109	12	0	794	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	92	91	92	92	92	91	91	92	92	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	8	0	0	48	0	1219	13	0	873	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	441	-	-	616	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	482	0	0	372	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	482	-	-	372	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	16.1	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	482	372	-	-
HCM Lane V/C Ratio	-	-	0.016	0.129	-	-
HCM Control Delay (s)	-	-	12.6	16.1	-	-
HCM Lane LOS	-	-	B	C	-	-
HCM 95th %tile Q(veh)	-	-	0	0.4	-	-

HCM 2010 Signalized Intersection Summary
1: Indian St & Alessandro Blvd

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	1065	115	89	717	76	121	240	85	165	321	67
Future Volume (veh/h)	143	1065	115	89	717	76	121	240	85	165	321	67
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	151	1121	121	94	755	80	127	253	89	174	338	71
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1248	135	149	976	103	162	665	228	288	958	199
Arrive On Green	0.14	0.27	0.27	0.08	0.21	0.21	0.09	0.26	0.26	0.16	0.33	0.33
Sat Flow, veh/h	1774	4661	503	1774	4674	492	1774	2587	888	1774	2919	606
Grp Volume(v), veh/h	151	815	427	94	546	289	127	171	171	174	203	206
Grp Sat Flow(s),veh/h/ln	1774	1695	1774	1774	1695	1776	1774	1770	1706	1774	1770	1756
Q Serve(g_s), s	5.6	16.2	16.2	3.6	10.6	10.8	4.9	5.6	5.8	6.4	6.1	6.2
Cycle Q Clear(g_c), s	5.6	16.2	16.2	3.6	10.6	10.8	4.9	5.6	5.8	6.4	6.1	6.2
Prop In Lane	1.00		0.28	1.00		0.28	1.00		0.52	1.00		0.35
Lane Grp Cap(c), veh/h	254	908	475	149	708	371	162	455	439	288	581	576
V/C Ratio(X)	0.60	0.90	0.90	0.63	0.77	0.78	0.78	0.38	0.39	0.60	0.35	0.36
Avail Cap(c_a), veh/h	254	920	482	177	823	431	228	455	439	288	581	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	24.7	24.7	31.0	26.1	26.2	31.1	21.4	21.5	27.2	17.8	17.9
Incr Delay (d2), s/veh	3.7	11.5	19.4	0.5	0.4	0.7	10.9	2.4	2.6	3.5	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	9.0	10.5	1.8	5.0	5.3	2.9	3.0	3.0	3.4	3.3	3.3
LnGrp Delay(d),s/veh	31.8	36.2	44.1	31.5	26.5	26.9	42.0	23.7	24.1	30.7	19.5	19.6
LnGrp LOS	C	D	D	C	C	C	D	C	C	C	B	B
Approach Vol, veh/h		1393			929			469			583	
Approach Delay, s/veh		38.1			27.1			28.8			22.9	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	22.0	9.9	22.7	10.4	27.0	14.0	18.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	18.0	7.0	19.0	9.0	19.0	9.0	17.0
Max Q Clear Time (g_c+I1), s	8.4	7.8	5.6	18.2	6.9	8.2	7.6	12.8
Green Ext Time (p_c), s	0.1	1.3	0.0	0.5	0.1	2.1	1.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
2: Perris Blvd & Cottonwood Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	229	50	26	137	101	54	856	35	123	976	93
Future Volume (veh/h)	90	229	50	26	137	101	54	856	35	123	976	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	102	260	57	30	156	115	61	973	40	140	1109	106
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	334	284	78	255	217	123	1163	520	389	1694	758
Arrive On Green	0.09	0.18	0.18	0.04	0.14	0.14	0.14	0.66	0.66	0.22	0.48	0.48
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	102	260	57	30	156	115	61	973	40	140	1109	106
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.9	9.3	2.1	1.2	5.5	2.9	2.2	14.7	0.5	4.7	16.7	2.6
Cycle Q Clear(g_c), s	3.9	9.3	2.1	1.2	5.5	2.9	2.2	14.7	0.5	4.7	16.7	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	334	284	78	255	217	123	1163	520	389	1694	758
V/C Ratio(X)	0.67	0.78	0.20	0.38	0.61	0.53	0.50	0.84	0.08	0.36	0.65	0.14
Avail Cap(c_a), veh/h	177	426	362	177	426	362	177	1163	520	389	1694	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	27.4	24.5	32.5	28.4	10.6	29.0	10.6	4.8	23.1	13.9	10.2
Incr Delay (d2), s/veh	7.5	6.9	0.3	3.0	2.4	2.0	2.7	6.5	0.3	0.6	2.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.4	1.0	0.6	3.0	1.4	1.2	7.8	0.2	2.4	8.5	1.2
LnGrp Delay(d),s/veh	38.5	34.3	24.8	35.6	30.8	12.6	31.7	17.1	5.0	23.7	15.8	10.6
LnGrp LOS	D	C	C	D	C	B	C	B	A	C	B	B
Approach Vol, veh/h		419			301			1074			1355	
Approach Delay, s/veh		34.1			24.3			17.5			16.2	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.4	27.0	7.1	16.5	8.9	37.5	10.0	13.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	23.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.7	16.7	3.2	11.3	4.2	18.7	5.9	7.5
Green Ext Time (p_c), s	0.1	3.3	0.0	1.2	0.0	3.4	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Bay Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	54	45	27	54	36	43	844	65	56	1005	23
Future Volume (veh/h)	30	54	45	27	54	36	43	844	65	56	1005	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	34	61	51	31	61	41	49	959	74	64	1142	26
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	93	78	86	103	69	499	1142	88	499	1213	543
Arrive On Green	0.05	0.10	0.10	0.05	0.10	0.10	0.09	0.11	0.11	0.09	0.11	0.11
Sat Flow, veh/h	1774	939	785	1774	1040	699	1774	3330	257	1774	3539	1583
Grp Volume(v), veh/h	34	0	112	31	0	102	49	510	523	64	1142	26
Grp Sat Flow(s),veh/h/ln	1774	0	1724	1774	0	1739	1774	1770	1817	1774	1770	1583
Q Serve(g_s), s	1.3	0.0	4.4	1.2	0.0	3.9	1.8	19.8	19.8	2.3	22.4	1.0
Cycle Q Clear(g_c), s	1.3	0.0	4.4	1.2	0.0	3.9	1.8	19.8	19.8	2.3	22.4	1.0
Prop In Lane	1.00		0.46	1.00		0.40	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	86	0	171	86	0	172	499	607	623	499	1213	543
V/C Ratio(X)	0.40	0.00	0.65	0.36	0.00	0.59	0.10	0.84	0.84	0.13	0.94	0.05
Avail Cap(c_a), veh/h	177	0	394	177	0	398	499	607	623	499	1213	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.09	0.09	0.09	0.76	0.76	0.76
Uniform Delay (d), s/veh	32.3	0.0	30.4	32.3	0.0	30.2	23.6	29.2	29.2	23.9	30.3	20.9
Incr Delay (d2), s/veh	2.9	0.0	4.2	2.5	0.0	3.2	0.0	1.4	1.3	0.1	12.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.3	0.6	0.0	2.0	0.9	9.9	10.2	1.2	13.1	0.5
LnGrp Delay(d),s/veh	35.3	0.0	34.6	34.8	0.0	33.4	23.6	30.5	30.5	24.0	42.7	21.0
LnGrp LOS	D		C	C		C	C	C	C	C	D	C
Approach Vol, veh/h		146			133			1082			1232	
Approach Delay, s/veh		34.7			33.7			30.2			41.2	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.7	28.0	7.4	10.9	23.7	28.0	7.4	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.3	21.8	3.2	6.4	3.8	24.4	3.3	5.9
Green Ext Time (p_c), s	0.1	1.3	0.0	0.3	0.1	0.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):          95                Critical Vol./Cap.(X):        0.794
Loss Time (sec):      16                Average Delay (sec/veh):       38.0
Optimal Cycle: OPTIMIZED                Level Of Service:                 D
********************************************************************************
Street Name:           Perris Blvd                     Alessandro Blvd
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    10   19    19    10   19    19    10   15    15    10   15    15
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     229  572   107   149  730   128   397  727   257   191  485    78
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  229  572   107   149  730   128   397  727   257   191  485    78
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  229  572   107   149  730   128   397  727   257   191  485    78
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   229  572   107   149  730   128   397  727   257   191  485    78
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  229  572   107   149  730   128   397  727   257   191  485    78
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  229  572   107   149  730   128   397  727   257   191  485    78
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.95  0.85  0.95 0.95  0.85  0.95 0.95  0.85  0.95 0.89  0.89
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.58  0.42
Final Sat.:  1805 3610  1615  1805 3610  1615  1805 3610  1615  1805 4375   704
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.16  0.07  0.08 0.20  0.08  0.22 0.20  0.16  0.11 0.11  0.11
Crit Moves:  ****                  ****        ****                   ****
Green/Cycle: 0.16 0.26  0.26  0.14 0.25  0.25  0.27 0.28  0.28  0.15 0.16  0.16
Volume/Cap:  0.81 0.60  0.25  0.59 0.81  0.32  0.81 0.72  0.57  0.72 0.70  0.70
Uniform Del: 38.8 30.5  27.5  38.4 33.7  29.2  32.5 30.8  29.2  38.6 37.9  37.9
IncremntDel: 16.6  1.1   0.3   3.8  5.8   0.5  10.2  2.5   1.7   9.1  2.8   2.8
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   55.3 31.6  27.8  42.1 39.5  29.6  42.7 33.3  30.9  47.7 40.7  40.7
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  55.3 31.6  27.8  42.1 39.5  29.6  42.7 33.3  30.9  47.7 40.7  40.7
LOS by Move:    E    C     C     D    D     C     D    C     C     D    D     D
HCM2kAvgQ:      9    8     3     5   13     3    13   11     7     7    7     7

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HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	49	41	20	10	16	56	14	832	17	30	103	1042
Future Volume (vph)	49	41	20	10	16	56	14	832	17	30	103	1042
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.98			1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.98			0.98	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1778			1827	1583	1770	5070			1770	5035
Flt Permitted		0.84			0.91	1.00	0.95	1.00			0.30	1.00
Satd. Flow (perm)		1533			1698	1583	1770	5070			565	5035
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.94	0.94
Adj. Flow (vph)	52	44	21	11	17	60	15	885	18	33	110	1109
RTOR Reduction (vph)	0	13	0	0	0	53	0	3	0	0	0	7
Lane Group Flow (vph)	0	104	0	0	28	7	15	900	0	0	143	1181
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		custom	Prot	NA
Protected Phases		4			8		5	2			1	6
Permitted Phases	4			8		8				1		
Actuated Green, G (s)		8.7			8.7	8.7	1.5	21.1			28.2	47.8
Effective Green, g (s)		8.7			8.7	8.7	1.5	21.1			28.2	47.8
Actuated g/C Ratio		0.12			0.12	0.12	0.02	0.30			0.40	0.68
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		190			211	196	37	1528			227	3438
v/s Ratio Prot							0.01	c0.18				0.23
v/s Ratio Perm		c0.07			0.02	0.00					c0.25	
v/c Ratio		0.55			0.13	0.04	0.41	0.59			0.63	0.34
Uniform Delay, d1		28.8			27.3	27.0	33.8	20.8			16.7	4.6
Progression Factor		1.00			1.00	1.00	1.32	0.21			0.51	0.36
Incremental Delay, d2		3.2			0.3	0.1	6.3	1.5			2.5	0.1
Delay (s)		32.0			27.6	27.0	50.9	5.8			11.0	1.8
Level of Service		C			C	C	D	A			B	A
Approach Delay (s)		32.0			27.2			6.5				2.8
Approach LOS		C			C			A				A

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

8/3/2016

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	74
Future Volume (vph)	74
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.94
Adj. Flow (vph)	79
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 2010 Signalized Intersection Summary
6: Perris Blvd & Cactus Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	630	203	62	478	62	185	727	48	119	848	63
Future Volume (veh/h)	80	630	203	62	478	62	185	727	48	119	848	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	708	228	70	537	70	208	817	54	134	953	71
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	753	242	132	677	88	274	1323	87	248	1242	92
Arrive On Green	0.15	0.29	0.29	0.07	0.21	0.21	0.15	0.27	0.27	0.05	0.08	0.08
Sat Flow, veh/h	1774	2634	848	1774	3151	409	1774	4875	321	1774	4830	359
Grp Volume(v), veh/h	90	476	460	70	301	306	208	567	304	134	668	356
Grp Sat Flow(s),veh/h/ln	1774	1770	1713	1774	1770	1790	1774	1695	1806	1774	1695	1799
Q Serve(g_s), s	3.2	18.4	18.4	2.7	11.3	11.3	7.9	10.2	10.3	5.2	13.5	13.5
Cycle Q Clear(g_c), s	3.2	18.4	18.4	2.7	11.3	11.3	7.9	10.2	10.3	5.2	13.5	13.5
Prop In Lane	1.00		0.50	1.00		0.23	1.00		0.18	1.00		0.20
Lane Grp Cap(c), veh/h	258	506	489	132	380	385	274	920	490	248	872	463
V/C Ratio(X)	0.35	0.94	0.94	0.53	0.79	0.80	0.76	0.62	0.62	0.54	0.77	0.77
Avail Cap(c_a), veh/h	258	506	489	177	480	486	274	920	490	248	872	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	26.9	24.4	24.4	31.2	26.0	26.0	28.4	22.3	22.3	31.2	30.0	30.0
Incr Delay (d2), s/veh	0.8	25.9	26.5	3.3	6.9	7.1	11.7	3.1	5.8	2.2	6.1	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	12.6	12.3	1.4	6.2	6.4	4.8	5.2	5.9	2.7	7.1	8.2
LnGrp Delay(d),s/veh	27.7	50.4	51.0	34.5	32.9	33.1	40.1	25.4	28.1	33.4	36.1	41.2
LnGrp LOS	C	D	D	C	C	C	D	C	C	C	D	D
Approach Vol, veh/h		1026			677			1079			1158	
Approach Delay, s/veh		48.6			33.2			29.0			37.4	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	23.0	9.2	24.0	14.8	22.0	14.2	19.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	19.0	7.0	20.0	9.0	18.0	8.0	19.0
Max Q Clear Time (g_c+I1), s	7.2	12.3	4.7	20.4	9.9	15.5	5.2	13.3
Green Ext Time (p_c), s	0.1	2.9	0.0	0.0	0.0	1.4	1.5	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

8/3/2016

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	28	60	847	35	4	6	684	10	27	2	13	7
Future Volume (vph)	28	60	847	35	4	6	684	10	27	2	13	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.91			1.00		
Frt		1.00	1.00	0.85		1.00	1.00			0.96		
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.97		
Satd. Flow (prot)		1770	3539	1583		1770	5074			1728		
Flt Permitted		0.16	1.00	1.00		1.00	1.00			0.82		
Satd. Flow (perm)		291	3539	1583		1863	5074			1467		
Peak-hour factor, PHF	0.92	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	30	70	985	41	5	7	795	12	31	2	15	8
RTOR Reduction (vph)	0	0	0	16	0	0	2	0	0	12	0	0
Lane Group Flow (vph)	0	100	985	25	0	12	805	0	0	36	0	0
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA		Perm	NA		Perm
Protected Phases		7	4			3	8			2		
Permitted Phases	7			4	3				2			6
Actuated Green, G (s)		25.6	42.4	42.4		1.6	18.4			14.0		
Effective Green, g (s)		25.6	42.4	42.4		1.6	18.4			14.0		
Actuated g/C Ratio		0.37	0.61	0.61		0.02	0.26			0.20		
Clearance Time (s)		4.0	4.0	4.0		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0			3.0		
Lane Grp Cap (vph)		106	2143	958		42	1333			293		
v/s Ratio Prot			0.28				c0.16					
v/s Ratio Perm		c0.34		0.02		0.01				c0.02		
v/c Ratio		0.94	0.46	0.03		0.29	0.60			0.12		
Uniform Delay, d1		21.5	7.5	5.5		33.6	22.6			23.0		
Progression Factor		0.54	0.22	0.00		0.90	0.36			1.00		
Incremental Delay, d2		35.7	0.1	0.0		3.4	0.7			0.9		
Delay (s)		47.3	1.7	0.0		33.5	8.8			23.8		
Level of Service		D	A	A		C	A			C		
Approach Delay (s)			5.7				9.2			23.8		
Approach LOS			A				A			C		

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

8/3/2016

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	52
Future Volume (vph)	1	52
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.88	
Flt Protected	0.99	
Satd. Flow (prot)	1635	
Flt Permitted	0.97	
Satd. Flow (perm)	1602	
Peak-hour factor, PHF	0.86	0.86
Adj. Flow (vph)	1	60
RTOR Reduction (vph)	48	0
Lane Group Flow (vph)	21	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	14.0	
Effective Green, g (s)	14.0	
Actuated g/C Ratio	0.20	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	320	
v/s Ratio Prot		
v/s Ratio Perm	0.01	
v/c Ratio	0.07	
Uniform Delay, d1	22.7	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	23.1	
Level of Service	C	
Approach Delay (s)	23.1	
Approach LOS	C	

Intersection Summary

HCM 2010 Signalized Intersection Summary
8: Kitching St & Alessandro Blvd

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	651	168	22	434	34	114	176	9	24	256	76
Future Volume (veh/h)	122	651	168	22	434	34	114	176	9	24	256	76
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	139	740	191	25	493	39	130	200	10	27	291	86
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	959	731	68	637	586	656	478	24	338	735	213
Arrive On Green	0.04	0.09	0.09	0.04	0.18	0.18	0.19	0.27	0.27	0.19	0.27	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1759	88	1774	2708	786
Grp Volume(v), veh/h	139	740	191	25	493	39	130	0	210	27	188	189
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	0	1847	1774	1770	1724
Q Serve(g_s), s	5.4	14.3	1.1	1.0	9.3	0.0	2.2	0.0	6.5	0.9	6.1	6.3
Cycle Q Clear(g_c), s	5.4	14.3	1.1	1.0	9.3	0.0	2.2	0.0	6.5	0.9	6.1	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.46
Lane Grp Cap(c), veh/h	230	959	731	68	637	586	656	0	501	338	480	468
V/C Ratio(X)	0.60	0.77	0.26	0.37	0.77	0.07	0.20	0.00	0.42	0.08	0.39	0.40
Avail Cap(c_a), veh/h	304	1062	777	177	809	664	656	0	501	338	480	468
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	29.8	6.0	32.8	27.3	14.2	23.8	0.0	21.0	23.3	20.8	20.9
Incr Delay (d2), s/veh	2.3	2.9	0.2	3.3	3.6	0.0	0.1	0.0	2.6	0.1	2.4	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	7.4	1.8	0.5	4.8	0.5	1.1	0.0	3.7	0.4	3.2	3.3
LnGrp Delay(d),s/veh	34.0	32.6	6.2	36.1	31.0	14.3	24.0	0.0	23.5	23.4	23.2	23.4
LnGrp LOS	C	C	A	D	C	B	C		C	C	C	C
Approach Vol, veh/h		1070			557			340			404	
Approach Delay, s/veh		28.1			30.0			23.7			23.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	23.0	6.7	23.0	17.3	23.0	13.1	16.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	19.0	7.0	21.0	7.0	19.0	12.0	16.0
Max Q Clear Time (g_c+I1), s	2.9	8.5	3.0	16.3	4.2	8.3	7.4	11.3
Green Ext Time (p_c), s	0.2	0.7	0.0	2.4	0.1	1.5	2.3	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	986	57	0	792	0	30
Future Vol, veh/h	986	57	0	792	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1072	62	0	861	0	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1134	0	-	567
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	612	-	0	467
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	612	-	-	467
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	467	-	-	612	-
HCM Lane V/C Ratio	0.07	-	-	-	-
HCM Control Delay (s)	13.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	15	0	0	25	0	934	46	0	1241	15
Future Vol, veh/h	0	0	15	0	0	25	0	934	46	0	1241	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	92	91	92	92	92	91	91	92	92	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	16	0	0	27	0	1026	50	0	1364	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	690	-	-	538	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	332	0	0	417	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	332	-	-	417	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.4	14.2	0	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	332	417	-	-
HCM Lane V/C Ratio	-	-	0.05	0.065	-	-
HCM Control Delay (s)	-	-	16.4	14.2	-	-
HCM Lane LOS	-	-	C	B	-	-
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-	-

HCM 2010 Signalized Intersection Summary
1: Indian St & Alessandro Blvd

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	414	69	70	1162	51	165	307	85	94	240	83
Future Volume (veh/h)	51	414	69	70	1162	51	165	307	85	94	240	83
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	57	460	77	78	1291	57	183	341	94	104	267	92
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	1196	196	138	1417	63	224	708	192	292	769	259
Arrive On Green	0.07	0.27	0.27	0.08	0.28	0.28	0.13	0.26	0.26	0.16	0.30	0.30
Sat Flow, veh/h	1774	4404	722	1774	4994	220	1774	2752	748	1774	2601	876
Grp Volume(v), veh/h	57	352	185	78	876	472	183	218	217	104	180	179
Grp Sat Flow(s),veh/h/ln	1774	1695	1735	1774	1695	1824	1774	1770	1731	1774	1770	1708
Q Serve(g_s), s	2.2	5.9	6.1	3.0	17.5	17.5	7.0	7.3	7.5	3.6	5.6	5.8
Cycle Q Clear(g_c), s	2.2	5.9	6.1	3.0	17.5	17.5	7.0	7.3	7.5	3.6	5.6	5.8
Prop In Lane	1.00		0.42	1.00		0.12	1.00		0.43	1.00		0.51
Lane Grp Cap(c), veh/h	117	921	471	138	962	518	224	455	445	292	523	505
V/C Ratio(X)	0.49	0.38	0.39	0.56	0.91	0.91	0.82	0.48	0.49	0.36	0.34	0.35
Avail Cap(c_a), veh/h	177	921	471	203	969	521	253	455	445	292	523	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	20.7	20.8	31.1	24.2	24.2	29.8	22.0	22.1	25.9	19.3	19.4
Incr Delay (d2), s/veh	3.1	0.3	0.5	0.3	1.4	2.6	16.9	3.6	3.8	0.7	1.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.8	3.0	1.5	8.3	9.1	4.5	4.0	4.0	1.9	3.0	3.0
LnGrp Delay(d),s/veh	34.7	21.0	21.3	31.4	25.6	26.8	46.7	25.6	25.9	26.7	21.1	21.3
LnGrp LOS	C	C	C	C	C	C	D	C	C	C	C	C
Approach Vol, veh/h		594			1426			618			463	
Approach Delay, s/veh		22.4			26.3			32.0			22.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	22.0	9.5	23.0	12.8	24.7	8.6	23.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	18.0	8.0	19.0	10.0	17.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	5.6	9.5	5.0	8.1	9.0	7.8	4.2	19.5
Green Ext Time (p_c), s	0.8	1.5	0.0	2.4	0.0	1.5	0.8	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	26.1
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
2: Perris Blvd & Cottonwood Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	194	57	70	215	139	54	1048	55	114	1025	107
Future Volume (veh/h)	105	194	57	70	215	139	54	1048	55	114	1025	107
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	117	216	63	78	239	154	60	1164	61	127	1139	119
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	343	292	138	322	273	122	1213	543	295	1558	697
Arrive On Green	0.09	0.18	0.18	0.08	0.17	0.17	0.14	0.69	0.69	0.17	0.44	0.44
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	117	216	63	78	239	154	60	1164	61	127	1139	119
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.5	7.5	2.4	3.0	8.5	4.1	2.2	21.1	0.6	4.5	18.6	3.2
Cycle Q Clear(g_c), s	4.5	7.5	2.4	3.0	8.5	4.1	2.2	21.1	0.6	4.5	18.6	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	343	292	138	322	273	122	1213	543	295	1558	697
V/C Ratio(X)	0.74	0.63	0.22	0.56	0.74	0.56	0.49	0.96	0.11	0.43	0.73	0.17
Avail Cap(c_a), veh/h	177	426	362	177	426	362	177	1213	543	295	1558	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	26.3	24.3	31.1	27.5	11.6	29.0	10.6	3.7	26.2	16.2	11.9
Incr Delay (d2), s/veh	13.2	2.0	0.4	3.6	4.9	1.8	2.0	13.5	0.3	1.0	3.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	4.0	1.1	1.6	4.8	1.9	1.1	12.0	0.3	2.3	9.7	1.5
LnGrp Delay(d),s/veh	44.2	28.3	24.6	34.7	32.3	13.4	31.1	24.0	4.0	27.2	19.2	12.4
LnGrp LOS	D	C	C	C	C	B	C	C	A	C	B	B
Approach Vol, veh/h		396			471			1285			1385	
Approach Delay, s/veh		32.4			26.5			23.4			19.4	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	28.0	9.5	16.9	8.8	34.8	10.3	16.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	23.1	5.0	9.5	4.2	20.6	6.5	10.5
Green Ext Time (p_c), s	0.0	0.6	0.0	1.8	0.0	2.4	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	23.3
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Bay Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	69	91	44	72	58	57	1009	54	81	942	81
Future Volume (veh/h)	79	69	91	44	72	58	57	1009	54	81	942	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	88	77	101	49	80	64	63	1121	60	90	1047	90
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	102	134	109	110	88	404	1172	63	404	1213	543
Arrive On Green	0.09	0.14	0.14	0.06	0.11	0.11	0.08	0.11	0.11	0.08	0.11	0.11
Sat Flow, veh/h	1774	732	961	1774	960	768	1774	3417	183	1774	3539	1583
Grp Volume(v), veh/h	88	0	178	49	0	144	63	580	601	90	1047	90
Grp Sat Flow(s),veh/h/ln	1774	0	1693	1774	0	1727	1774	1770	1830	1774	1770	1583
Q Serve(g_s), s	3.3	0.0	7.1	1.9	0.0	5.6	2.3	22.8	22.8	3.3	20.4	3.6
Cycle Q Clear(g_c), s	3.3	0.0	7.1	1.9	0.0	5.6	2.3	22.8	22.8	3.3	20.4	3.6
Prop In Lane	1.00		0.57	1.00		0.44	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	152	0	236	109	0	198	404	607	628	404	1213	543
V/C Ratio(X)	0.58	0.00	0.76	0.45	0.00	0.73	0.16	0.96	0.96	0.22	0.86	0.17
Avail Cap(c_a), veh/h	177	0	387	177	0	395	404	607	628	404	1213	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.29	0.29	0.29	0.72	0.72	0.72
Uniform Delay (d), s/veh	30.8	0.0	29.0	31.7	0.0	29.9	26.1	30.5	30.5	26.5	29.4	22.0
Incr Delay (d2), s/veh	3.4	0.0	4.9	2.9	0.0	5.0	0.1	11.8	11.6	0.2	6.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.6	1.0	0.0	3.0	1.2	13.2	13.6	1.7	11.0	1.6
LnGrp Delay(d),s/veh	34.2	0.0	33.9	34.6	0.0	34.9	26.1	42.3	42.1	26.7	35.6	22.5
LnGrp LOS	C		C	C		C	C	D	D	C	D	C
Approach Vol, veh/h		266			193			1244			1227	
Approach Delay, s/veh		34.0			34.8			41.4			34.0	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	28.0	8.3	13.7	20.0	28.0	10.0	12.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	5.3	24.8	3.9	9.1	4.3	22.4	5.3	7.6
Green Ext Time (p_c), s	0.1	0.0	0.0	0.7	0.1	1.1	0.2	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	37.2
HCM 2010 LOS	D

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--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):          95                Critical Vol./Cap.(X):        0.705
Loss Time (sec):      16                Average Delay (sec/veh):       37.5
Optimal Cycle: OPTIMIZED                Level Of Service:                 D
********************************************************************************
Street Name:          Perris Blvd                       Alessandro Blvd
Approach:      North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Protected         Protected
Rights:           Include          Include           Include           Include
Min. Green:    10   19    19    10   19    19    10   15    15    10   15    15
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     232  735   120   147  541   212   138  240    71   124  738    80
Growth Adj:  1.10 1.10  1.10  1.10 1.10  1.10  1.10 1.10  1.10  1.10 1.10  1.10
Initial Bse:  255  809   132   162  595   233   152  264    78   136  812    88
Added Vol:     36   77    16    10   39     0     0   21    11    38   61    38
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  291  886   148   172  634   233   152  285    89   174  873   126
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   291  886   148   172  634   233   152  285    89   174  873   126
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  291  886   148   172  634   233   152  285    89   174  873   126
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  291  886   148   172  634   233   152  285    89   174  873   126
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.95  0.85  0.95 0.95  0.85  0.95 0.95  0.85  0.95 0.89  0.89
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.62  0.38
Final Sat.:  1805 3610  1615  1805 3610  1615  1805 3610  1615  1805 4447   642
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.25  0.09  0.10 0.18  0.14  0.08 0.08  0.06  0.10 0.20  0.20
Crit Moves:  ****                        ****  ****                    ****
Green/Cycle: 0.23 0.30  0.30  0.13 0.20  0.20  0.12 0.24  0.24  0.16 0.28  0.28
Volume/Cap:  0.70 0.81  0.30  0.73 0.86  0.70  0.70 0.33  0.23  0.61 0.70  0.70
Uniform Del: 33.7 30.5  25.4  39.7 36.4  35.1  40.2 29.9  29.1  37.2 30.8  30.8
IncremntDel:  5.5  4.6   0.3  11.1  9.8   6.8  10.1  0.2   0.3   3.7  1.6   1.6
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   39.1 35.1  25.7  50.8 46.2  41.9  50.4 30.1  29.4  40.9 32.4  32.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  39.1 35.1  25.7  50.8 46.2  41.9  50.4 30.1  29.4  40.9 32.4  32.4
LOS by Move:    D    D     C     D    D     D     D    C     C     D    C     C
HCM2kAvgQ:      9   15     3     6   12     8     6    4     2     6   11    11

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HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	40	14	55	13	18	91	36	1168	19	5	42	857
Future Volume (vph)	40	14	55	13	18	91	36	1168	19	5	42	857
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.93			1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.98			0.98	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1705			1825	1583	1770	5073			1770	5052
Flt Permitted		0.87			0.86	1.00	0.95	1.00			0.34	1.00
Satd. Flow (perm)		1503			1600	1583	1770	5073			626	5052
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	16	61	14	20	101	40	1298	21	6	47	952
RTOR Reduction (vph)	0	54	0	0	0	90	0	1	0	0	0	5
Lane Group Flow (vph)	0	67	0	0	34	11	40	1318	0	0	53	990
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		custom	Prot	NA
Protected Phases		4			8		5	2			1	6
Permitted Phases	4			8		8				1		
Actuated Green, G (s)		7.6			7.6	7.6	4.2	38.5			11.9	46.2
Effective Green, g (s)		7.6			7.6	7.6	4.2	38.5			11.9	46.2
Actuated g/C Ratio		0.11			0.11	0.11	0.06	0.55			0.17	0.66
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		163			173	171	106	2790			106	3334
v/s Ratio Prot							0.02	c0.26				0.20
v/s Ratio Perm		c0.04			0.02	0.01					c0.08	
v/c Ratio		0.41			0.20	0.06	0.38	0.47			0.50	0.30
Uniform Delay, d1		29.1			28.4	28.0	31.6	9.6			26.4	5.0
Progression Factor		1.00			1.00	1.00	0.39	0.15			0.66	0.66
Incremental Delay, d2		1.7			0.6	0.2	1.4	0.4			1.7	0.1
Delay (s)		30.8			29.0	28.2	13.8	1.8			19.2	3.4
Level of Service		C			C	C	B	A			B	A
Approach Delay (s)		30.8			28.4			2.2				4.2
Approach LOS		C			C			A				A

Intersection Summary			
HCM 2000 Control Delay	5.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

8/3/2016

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	39
Future Volume (vph)	39
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	43
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	525	173	66	873	80	340	1011	117	87	708	131
Future Volume (veh/h)	129	525	173	66	873	80	340	1011	117	87	708	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	143	583	192	73	970	89	378	1123	130	97	787	146
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	737	242	134	843	77	304	1453	168	177	1049	193
Arrive On Green	0.10	0.28	0.28	0.08	0.26	0.26	0.17	0.31	0.31	0.03	0.08	0.08
Sat Flow, veh/h	1774	2620	861	1774	3279	301	1774	4624	535	1774	4318	795
Grp Volume(v), veh/h	143	393	382	73	524	535	378	823	430	97	617	316
Grp Sat Flow(s),veh/h/ln	1774	1770	1711	1774	1770	1810	1774	1695	1768	1774	1695	1722
Q Serve(g_s), s	5.5	14.4	14.4	2.8	18.0	18.0	12.0	15.4	15.4	3.8	12.5	12.6
Cycle Q Clear(g_c), s	5.5	14.4	14.4	2.8	18.0	18.0	12.0	15.4	15.4	3.8	12.5	12.6
Prop In Lane	1.00		0.50	1.00		0.17	1.00		0.30	1.00		0.46
Lane Grp Cap(c), veh/h	177	498	481	134	455	465	304	1065	556	177	823	418
V/C Ratio(X)	0.81	0.79	0.79	0.54	1.15	1.15	1.24	0.77	0.77	0.55	0.75	0.76
Avail Cap(c_a), veh/h	177	498	481	177	455	465	304	1065	556	177	823	418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	30.8	23.2	23.3	31.2	26.0	26.0	29.0	21.7	21.7	32.3	30.1	30.2
Incr Delay (d2), s/veh	23.2	8.4	8.8	3.4	90.4	90.1	134.0	5.4	10.1	3.4	6.0	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.2	8.0	1.5	20.1	20.6	17.2	8.0	9.1	2.0	6.5	7.4
LnGrp Delay(d),s/veh	54.0	31.6	32.1	34.6	116.4	116.1	163.0	27.2	31.8	35.7	36.1	41.9
LnGrp LOS	D	C	C	C	F	F	F	C	C	D	D	D
Approach Vol, veh/h		918			1132			1631			1030	
Approach Delay, s/veh		35.3			111.0			59.9			37.8	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	26.0	9.3	23.7	16.0	21.0	11.0	22.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	22.0	7.0	18.0	12.0	17.0	7.0	18.0
Max Q Clear Time (g_c+I1), s	5.8	17.4	4.8	16.4	14.0	14.6	7.5	20.0
Green Ext Time (p_c), s	0.7	2.9	0.0	0.8	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.5
HCM 2010 LOS	E

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd 8/3/2016

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	50	18	567	12	3	4	1007	15	43	3	21	11
Future Volume (vph)	50	18	567	12	3	4	1007	15	43	3	21	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.91			1.00		
Frt		1.00	1.00	0.85		1.00	1.00			0.96		
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.97		
Satd. Flow (prot)		1770	3539	1583		1770	5074			1729		
Flt Permitted		0.21	1.00	1.00		1.00	1.00			0.80		
Satd. Flow (perm)		394	3539	1583		1863	5074			1431		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	20	630	13	3	4	1119	17	48	3	23	12
RTOR Reduction (vph)	0	0	0	6	0	0	2	0	0	17	0	0
Lane Group Flow (vph)	0	76	630	7	0	7	1134	0	0	57	0	0
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA		Perm	NA		Perm
Protected Phases		7	4			3	8			2		
Permitted Phases	7			4	3				2			6
Actuated Green, G (s)		18.9	36.0	36.0		3.3	20.4			18.7		
Effective Green, g (s)		18.9	36.0	36.0		3.3	20.4			18.7		
Actuated g/C Ratio		0.27	0.51	0.51		0.05	0.29			0.27		
Clearance Time (s)		4.0	4.0	4.0		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0			3.0		
Lane Grp Cap (vph)		106	1820	814		87	1478			382		
v/s Ratio Prot			0.18				c0.22					
v/s Ratio Perm		c0.19		0.00		0.00				c0.04		
v/c Ratio		0.72	0.35	0.01		0.08	0.77			0.15		
Uniform Delay, d1		23.1	10.0	8.3		31.9	22.6			19.6		
Progression Factor		0.95	0.77	1.00		0.95	0.52			1.00		
Incremental Delay, d2		15.6	0.1	0.0		0.3	1.7			0.8		
Delay (s)		37.5	7.8	8.3		30.5	13.6			20.4		
Level of Service		D	A	A		C	B			C		
Approach Delay (s)			11.0				13.7			20.4		
Approach LOS			B				B			C		

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

8/3/2016

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	78
Future Volume (vph)	1	78
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.88	
Flt Protected	0.99	
Satd. Flow (prot)	1634	
Flt Permitted	0.97	
Satd. Flow (perm)	1598	
Peak-hour factor, PHF	0.90	0.90
Adj. Flow (vph)	1	87
RTOR Reduction (vph)	64	0
Lane Group Flow (vph)	36	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	18.7	
Effective Green, g (s)	18.7	
Actuated g/C Ratio	0.27	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	426	
v/s Ratio Prot		
v/s Ratio Perm	0.02	
v/c Ratio	0.09	
Uniform Delay, d1	19.2	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	19.6	
Level of Service	B	
Approach Delay (s)	19.6	
Approach LOS	B	

Intersection Summary

HCM 2010 Signalized Intersection Summary
8: Kitching St & Alessandro Blvd

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	461	99	42	783	66	197	210	55	39	138	79
Future Volume (veh/h)	66	461	99	42	783	66	197	210	55	39	138	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	73	512	110	47	870	73	219	233	61	43	153	88
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	1077	719	106	1021	546	517	499	131	101	569	310
Arrive On Green	0.03	0.10	0.10	0.06	0.29	0.29	0.15	0.35	0.35	0.06	0.26	0.26
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1424	373	1774	2213	1207
Grp Volume(v), veh/h	73	512	110	47	870	73	219	0	294	43	121	120
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	0	1797	1774	1770	1650
Q Serve(g_s), s	2.8	9.6	0.8	1.8	16.2	1.4	4.0	0.0	8.9	1.6	3.8	4.1
Cycle Q Clear(g_c), s	2.8	9.6	0.8	1.8	16.2	1.4	4.0	0.0	8.9	1.6	3.8	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.73
Lane Grp Cap(c), veh/h	134	1077	719	106	1021	546	517	0	630	101	455	424
V/C Ratio(X)	0.54	0.48	0.15	0.44	0.85	0.13	0.42	0.00	0.47	0.43	0.27	0.28
Avail Cap(c_a), veh/h	177	1112	735	177	1112	587	517	0	630	177	455	424
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	26.2	5.6	31.8	23.5	6.7	27.0	0.0	17.6	31.9	20.7	20.8
Incr Delay (d2), s/veh	3.2	0.3	0.1	2.9	6.1	0.1	0.6	0.0	2.5	2.9	1.4	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.7	0.9	1.0	8.7	0.6	2.0	0.0	4.8	0.9	2.0	2.1
LnGrp Delay(d),s/veh	36.1	26.5	5.7	34.6	29.6	6.9	27.6	0.0	20.1	34.8	22.1	22.5
LnGrp LOS	D	C	A	C	C	A	C		C	C	C	C
Approach Vol, veh/h		695			990			513			284	
Approach Delay, s/veh		24.2			28.2			23.3			24.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	28.5	8.2	25.3	14.5	22.0	9.3	24.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	18.0	7.0	22.0	7.0	18.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	3.6	10.9	3.8	11.6	6.0	6.1	4.8	18.2
Green Ext Time (p_c), s	0.0	1.4	0.0	2.7	0.1	0.9	0.8	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	593	14	0	1178	0	55
Future Vol, veh/h	593	14	0	1178	0	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	659	16	0	1309	0	61

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	674	0	-	337
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	913	-	0	659
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	913	-	-	659
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	659	-	-	913	-
HCM Lane V/C Ratio	0.093	-	-	-	-
HCM Control Delay (s)	11	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	8	0	0	44	0	1303	12	0	940	10
Future Vol, veh/h	0	0	8	0	0	44	0	1303	12	0	940	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	9	0	0	49	0	1448	13	0	1044	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	528	-	-	731	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	424	0	0	312	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	424	-	-	312	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.7	18.7	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	424	312	-	-
HCM Lane V/C Ratio	-	-	0.021	0.157	-	-
HCM Control Delay (s)	-	-	13.7	18.7	-	-
HCM Lane LOS	-	-	B	C	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.5	-	-

HCM 2010 Signalized Intersection Summary
1: Indian St & Alessandro Blvd

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	1239	127	98	843	84	133	264	94	182	353	74
Future Volume (veh/h)	157	1239	127	98	843	84	133	264	94	182	353	74
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	165	1304	134	103	887	88	140	278	99	192	372	78
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	1404	144	152	1084	107	229	626	218	254	751	156
Arrive On Green	0.15	0.30	0.30	0.17	0.46	0.46	0.13	0.24	0.24	0.14	0.26	0.26
Sat Flow, veh/h	1774	4686	482	1774	4706	465	1774	2577	897	1774	2919	606
Grp Volume(v), veh/h	165	943	495	103	638	337	140	189	188	192	224	226
Grp Sat Flow(s),veh/h/ln	1774	1695	1778	1774	1695	1781	1774	1770	1704	1774	1770	1756
Q Serve(g_s), s	6.1	18.9	18.9	3.8	11.4	11.5	5.2	6.3	6.6	7.3	7.5	7.7
Cycle Q Clear(g_c), s	6.1	18.9	18.9	3.8	11.4	11.5	5.2	6.3	6.6	7.3	7.5	7.7
Prop In Lane	1.00		0.27	1.00		0.26	1.00		0.53	1.00		0.35
Lane Grp Cap(c), veh/h	275	1016	533	152	781	410	229	430	414	254	455	451
V/C Ratio(X)	0.60	0.93	0.93	0.68	0.82	0.82	0.61	0.44	0.45	0.76	0.49	0.50
Avail Cap(c_a), veh/h	275	1017	533	177	920	483	229	430	414	254	455	451
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	23.8	23.8	28.1	17.6	17.6	28.8	22.5	22.6	28.8	22.1	22.2
Incr Delay (d2), s/veh	3.6	14.2	22.8	0.8	0.5	0.9	4.7	3.2	3.6	12.2	3.8	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	10.8	12.6	1.9	5.2	5.5	2.9	3.5	3.5	4.4	4.1	4.2
LnGrp Delay(d),s/veh	31.2	37.9	46.5	28.9	18.1	18.6	33.6	25.7	26.1	41.0	25.9	26.1
LnGrp LOS	C	D	D	C	B	B	C	C	C	D	C	C
Approach Vol, veh/h		1603			1078			517			642	
Approach Delay, s/veh		39.9			19.3			28.0			30.5	
Approach LOS		D			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	21.0	10.0	25.0	13.0	22.0	14.8	20.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	17.0	7.0	21.0	8.0	18.0	9.0	19.0
Max Q Clear Time (g_c+I1), s	9.3	8.6	5.8	20.9	7.2	9.7	8.1	13.5
Green Ext Time (p_c), s	0.0	1.3	0.0	0.1	0.1	1.6	0.1	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
2: Perris Blvd & Cottonwood Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	252	63	41	151	111	67	996	52	135	1159	102
Future Volume (veh/h)	99	252	63	41	151	111	67	996	52	135	1159	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	104	265	66	43	159	117	71	1048	55	142	1220	107
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	154	325	276	101	269	228	133	1213	543	350	1648	737
Arrive On Green	0.09	0.17	0.17	0.06	0.14	0.14	0.10	0.46	0.46	0.20	0.47	0.47
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	104	265	66	43	159	117	71	1048	55	142	1220	107
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.0	9.6	1.9	1.6	5.6	3.0	2.7	18.6	1.4	4.9	19.7	2.7
Cycle Q Clear(g_c), s	4.0	9.6	1.9	1.6	5.6	3.0	2.7	18.6	1.4	4.9	19.7	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	325	276	101	269	228	133	1213	543	350	1648	737
V/C Ratio(X)	0.68	0.82	0.24	0.43	0.59	0.51	0.53	0.86	0.10	0.41	0.74	0.15
Avail Cap(c_a), veh/h	177	426	362	177	426	362	177	1213	543	350	1648	737
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	27.8	14.8	31.9	28.0	11.2	30.4	17.6	12.9	24.5	15.3	10.7
Incr Delay (d2), s/veh	8.1	9.0	0.4	2.9	2.1	1.8	2.8	7.2	0.3	0.8	3.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.7	0.9	0.9	3.0	1.4	1.4	10.0	0.7	2.5	10.2	1.3
LnGrp Delay(d),s/veh	39.1	36.9	15.2	34.8	30.1	13.0	33.2	24.8	13.2	25.3	18.3	11.1
LnGrp LOS	D	D	B	C	C	B	C	C	B	C	B	B
Approach Vol, veh/h		435			319			1174			1469	
Approach Delay, s/veh		34.1			24.4			24.7			18.4	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.8	28.0	8.0	16.2	9.2	36.6	10.1	14.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0				
Max Q Clear Time (g_c+I1), s	6.9	20.6	3.6	11.6	4.7	21.7	6.0	7.6				
Green Ext Time (p_c), s	0.0	2.1	0.4	0.6	0.0	1.7	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			23.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
3: Perris Blvd & Bay Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	59	50	30	59	40	47	1005	72	62	1211	25
Future Volume (veh/h)	33	59	50	30	59	40	47	1005	72	62	1211	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	35	62	53	32	62	42	49	1058	76	65	1275	26
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	92	79	88	103	70	497	1846	133	127	1213	543
Arrive On Green	0.05	0.10	0.10	0.05	0.10	0.10	0.19	0.37	0.37	0.02	0.11	0.11
Sat Flow, veh/h	1774	929	794	1774	1037	702	1774	3349	241	1774	3539	1583
Grp Volume(v), veh/h	35	0	115	32	0	104	49	559	575	65	1275	26
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1739	1774	1770	1820	1774	1770	1583
Q Serve(g_s), s	1.3	0.0	4.5	1.2	0.0	4.0	1.6	17.7	17.7	2.5	24.0	1.0
Cycle Q Clear(g_c), s	1.3	0.0	4.5	1.2	0.0	4.0	1.6	17.7	17.7	2.5	24.0	1.0
Prop In Lane	1.00		0.46	1.00		0.40	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	88	0	171	88	0	173	497	975	1003	127	1213	543
V/C Ratio(X)	0.40	0.00	0.67	0.37	0.00	0.60	0.10	0.57	0.57	0.51	1.05	0.05
Avail Cap(c_a), veh/h	177	0	394	177	0	397	497	975	1003	177	1213	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.09	0.09	0.09	0.67	0.67	0.67
Uniform Delay (d), s/veh	32.3	0.0	30.4	32.2	0.0	30.2	21.1	15.5	15.5	33.0	31.0	20.9
Incr Delay (d2), s/veh	2.9	0.0	4.5	2.5	0.0	3.4	0.0	0.2	0.2	2.1	36.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.4	0.7	0.0	2.1	0.8	8.6	8.9	1.3	17.8	0.5
LnGrp Delay(d),s/veh	35.2	0.0	35.0	34.8	0.0	33.6	21.1	15.7	15.7	35.1	67.0	21.0
LnGrp LOS	D		C	C		C	C	B	B	D	F	C
Approach Vol, veh/h		150			136			1183			1366	
Approach Delay, s/veh		35.0			33.8			15.9			64.6	
Approach LOS		D			C			B			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	42.6	7.5	10.9	23.6	28.0	7.5	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	24.0	7.0	16.0	7.0	24.0	7.0	16.0
Max Q Clear Time (g_c+I1), s	4.5	19.7	3.2	6.5	3.6	26.0	3.3	6.0
Green Ext Time (p_c), s	0.0	2.6	0.0	0.3	2.1	0.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	41.3
HCM 2010 LOS	D

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Perris Blvd/Alessandro Blvd

Cycle (sec): 95
Loss Time (sec): 16
Optimal Cycle: OPTIMIZED
Critical Vol./Cap.(X): 0.945
Average Delay (sec/veh): 51.3
Level Of Service: D

Street Name:	Perris Blvd						Alessandro Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	10	15	15	10	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 2 0 1			1 0 2 0 1			1 0 2 0 1			1 0 2 1 0		
Volume Module:												
Base Vol:	229	572	107	149	730	128	397	727	257	191	485	78
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	252	629	118	164	803	141	437	800	283	210	534	86
Added Vol:	33	74	39	41	99	0	0	78	24	38	50	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	285	703	157	205	902	141	437	878	307	248	584	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	285	703	157	205	902	141	437	878	307	248	584	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	285	703	157	205	902	141	437	878	307	248	584	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	285	703	157	205	902	141	437	878	307	248	584	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	0.95	0.85	0.95	0.95	0.85	0.95	0.89	0.89
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.54	0.46
Final Sat.:	1805	3610	1615	1805	3610	1615	1805	3610	1615	1805	4284	784
Capacity Analysis Module:												
Vol/Sat:	0.16	0.19	0.10	0.11	0.25	0.09	0.24	0.24	0.19	0.14	0.14	0.14
Crit Moves:	****				****		****				****	
Green/Cycle:	0.16	0.27	0.27	0.15	0.26	0.26	0.25	0.26	0.26	0.15	0.16	0.16
Volume/Cap:	0.96	0.72	0.36	0.74	0.96	0.34	0.96	0.93	0.73	0.93	0.86	0.86
Uniform Del:	39.4	31.5	28.1	38.4	34.8	28.6	35.2	34.3	32.0	40.0	39.0	39.0
IncremntDel:	42.5	2.7	0.5	10.3	21.2	0.5	33.1	15.3	6.3	37.0	9.6	9.6
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	82.0	34.1	28.6	48.7	55.9	29.0	68.3	49.6	38.3	77.0	48.5	48.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.0	34.1	28.6	48.7	55.9	29.0	68.3	49.6	38.3	77.0	48.5	48.5
LOS by Move:	F	C	C	D	E	C	E	D	D	E	D	D
HCM2kAvgQ:	13	11	4	7	19	4	18	18	10	11	10	10

HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	53	45	22	11	18	62	15	1029	19	30	116	1274
Future Volume (vph)	53	45	22	11	18	62	15	1029	19	30	116	1274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor		1.00			1.00	1.00	1.00	0.91			1.00	0.91
Frt		0.98			1.00	0.85	1.00	1.00			1.00	0.99
Flt Protected		0.98			0.98	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)		1777			1827	1583	1770	5071			1770	5040
Flt Permitted		0.84			0.91	1.00	0.95	1.00			0.25	1.00
Satd. Flow (perm)		1530			1690	1583	1770	5071			459	5040
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	47	23	12	19	65	16	1083	20	32	122	1341
RTOR Reduction (vph)	0	13	0	0	0	57	0	3	0	0	0	6
Lane Group Flow (vph)	0	113	0	0	31	8	16	1100	0	0	154	1420
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		custom	Prot	NA
Protected Phases		4			8		5	2			1	6
Permitted Phases	4			8		8				1		
Actuated Green, G (s)		9.1			9.1	9.1	1.5	20.7			28.2	47.4
Effective Green, g (s)		9.1			9.1	9.1	1.5	20.7			28.2	47.4
Actuated g/C Ratio		0.13			0.13	0.13	0.02	0.30			0.40	0.68
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		198			219	205	37	1499			184	3412
v/s Ratio Prot							0.01	c0.22				0.28
v/s Ratio Perm		c0.07			0.02	0.01					c0.34	
v/c Ratio		0.57			0.14	0.04	0.43	0.73			0.84	0.42
Uniform Delay, d1		28.6			27.0	26.6	33.8	22.2			18.8	5.1
Progression Factor		1.00			1.00	1.00	0.43	0.44			0.41	0.25
Incremental Delay, d2		3.9			0.3	0.1	5.8	2.3			3.2	0.0
Delay (s)		32.5			27.3	26.7	20.4	12.0			10.9	1.3
Level of Service		C			C	C	C	B			B	A
Approach Delay (s)		32.5			26.9			12.1				2.2
Approach LOS		C			C			B				A

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Perris Blvd & Brodiaea Ave

8/3/2016

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	81
Future Volume (vph)	81
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	85
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 2010 Signalized Intersection Summary
6: Perris Blvd & Cactus Ave

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	697	315	80	532	68	273	913	66	131	1060	69
Future Volume (veh/h)	88	697	315	80	532	68	273	913	66	131	1060	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	93	734	332	84	560	72	287	961	69	138	1116	73
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	644	291	143	687	88	279	1384	99	237	1280	84
Arrive On Green	0.13	0.27	0.27	0.08	0.22	0.22	0.16	0.29	0.29	0.04	0.09	0.09
Sat Flow, veh/h	1774	2371	1072	1774	3156	405	1774	4845	347	1774	4878	319
Grp Volume(v), veh/h	93	548	518	84	313	319	287	672	358	138	775	414
Grp Sat Flow(s),veh/h/ln	1774	1770	1674	1774	1770	1791	1774	1695	1801	1774	1695	1806
Q Serve(g_s), s	3.4	19.0	19.0	3.2	11.8	11.8	11.0	12.4	12.4	5.3	15.8	15.8
Cycle Q Clear(g_c), s	3.4	19.0	19.0	3.2	11.8	11.8	11.0	12.4	12.4	5.3	15.8	15.8
Prop In Lane	1.00		0.64	1.00		0.23	1.00		0.19	1.00		0.18
Lane Grp Cap(c), veh/h	238	480	454	143	385	390	279	969	515	237	890	474
V/C Ratio(X)	0.39	1.14	1.14	0.59	0.81	0.82	1.03	0.69	0.70	0.58	0.87	0.87
Avail Cap(c_a), veh/h	238	480	454	177	455	461	279	969	515	237	890	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93
Uniform Delay (d), s/veh	27.7	25.5	25.5	31.1	26.0	26.0	29.5	22.3	22.3	31.5	30.8	30.8
Incr Delay (d2), s/veh	1.0	85.5	86.9	3.8	9.4	9.5	61.7	4.1	7.6	3.3	10.8	18.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	20.6	19.7	1.7	6.7	6.9	10.1	6.3	7.2	2.9	8.8	10.4
LnGrp Delay(d),s/veh	28.7	111.0	112.4	34.9	35.4	35.6	91.2	26.4	29.9	34.8	41.6	49.2
LnGrp LOS	C	F	F	C	D	D	F	C	C	C	D	D
Approach Vol, veh/h		1159			716			1317			1327	
Approach Delay, s/veh		105.1			35.4			41.5			43.3	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	24.0	9.6	23.0	15.0	22.4	13.4	19.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	20.0	7.0	19.0	11.0	17.0	8.0	18.0
Max Q Clear Time (g_c+I1), s	7.3	14.4	5.2	21.0	13.0	17.8	5.4	13.8
Green Ext Time (p_c), s	0.5	2.9	0.0	0.0	0.0	0.0	1.6	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	57.3
HCM 2010 LOS	E

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

8/3/2016

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	28	66	1035	39	4	7	823	11	30	2	14	8
Future Volume (vph)	28	66	1035	39	4	7	823	11	30	2	14	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0			4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.91			1.00		
Frt		1.00	1.00	0.85		1.00	1.00			0.96		
Flt Protected		0.95	1.00	1.00		0.95	1.00			0.97		
Satd. Flow (prot)		1770	3539	1583		1770	5075			1729		
Flt Permitted		0.16	1.00	1.00		1.00	1.00			0.82		
Satd. Flow (perm)		297	3539	1583		1863	5075			1463		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	69	1089	41	4	7	866	12	32	2	15	8
RTOR Reduction (vph)	0	0	0	16	0	0	2	0	0	12	0	0
Lane Group Flow (vph)	0	98	1089	25	0	11	876	0	0	37	0	0
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA		Perm	NA		Perm
Protected Phases		7	4			3	8			2		
Permitted Phases	7			4	3				2			6
Actuated Green, G (s)		25.1	42.6	42.6		1.4	18.9			14.0		
Effective Green, g (s)		25.1	42.6	42.6		1.4	18.9			14.0		
Actuated g/C Ratio		0.36	0.61	0.61		0.02	0.27			0.20		
Clearance Time (s)		4.0	4.0	4.0		4.0	4.0			4.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0			3.0		
Lane Grp Cap (vph)		106	2153	963		37	1370			292		
v/s Ratio Prot			0.31				c0.17					
v/s Ratio Perm		c0.33		0.02		0.01				c0.03		
v/c Ratio		0.92	0.51	0.03		0.30	0.64			0.13		
Uniform Delay, d1		21.5	7.7	5.4		33.8	22.5			23.0		
Progression Factor		0.54	0.19	0.00		0.77	0.37			1.00		
Incremental Delay, d2		12.0	0.0	0.0		3.9	0.9			0.9		
Delay (s)		23.8	1.5	0.0		30.0	9.1			23.9		
Level of Service		C	A	A		C	A			C		
Approach Delay (s)			3.2				9.4			23.9		
Approach LOS			A				A			C		

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

8/3/2016

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	57
Future Volume (vph)	1	57
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.88	
Flt Protected	0.99	
Satd. Flow (prot)	1635	
Flt Permitted	0.97	
Satd. Flow (perm)	1602	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	1	60
RTOR Reduction (vph)	48	0
Lane Group Flow (vph)	21	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	14.0	
Effective Green, g (s)	14.0	
Actuated g/C Ratio	0.20	
Clearance Time (s)	4.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	320	
v/s Ratio Prot		
v/s Ratio Perm	0.01	
v/c Ratio	0.07	
Uniform Delay, d1	22.7	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	23.1	
Level of Service	C	
Approach Delay (s)	23.1	
Approach LOS	C	

Intersection Summary

HCM 2010 Signalized Intersection Summary
8: Kitching St & Alessandro Blvd

8/3/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	820	185	34	548	57	125	194	28	63	282	84
Future Volume (veh/h)	134	820	185	34	548	57	125	194	28	63	282	84
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	141	863	195	36	577	60	132	204	29	66	297	88
Adj No. of Lanes	1	2	1	1	2	1	2	1	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1070	757	89	733	443	605	553	79	128	657	191
Arrive On Green	0.05	0.10	0.10	0.05	0.21	0.21	0.18	0.35	0.35	0.07	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	1596	227	1774	2706	787
Grp Volume(v), veh/h	141	863	195	36	577	60	132	0	233	66	192	193
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	0	1823	1774	1770	1724
Q Serve(g_s), s	5.4	16.7	1.2	1.4	10.8	1.1	2.3	0.0	6.7	2.5	6.5	6.7
Cycle Q Clear(g_c), s	5.4	16.7	1.2	1.4	10.8	1.1	2.3	0.0	6.7	2.5	6.5	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.46
Lane Grp Cap(c), veh/h	258	1070	757	89	733	443	605	0	631	128	430	419
V/C Ratio(X)	0.55	0.81	0.26	0.40	0.79	0.14	0.22	0.00	0.37	0.51	0.45	0.46
Avail Cap(c_a), veh/h	304	1163	799	177	910	522	605	0	631	177	430	419
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	29.5	5.4	32.2	26.3	7.4	24.7	0.0	17.1	31.3	22.5	22.6
Incr Delay (d2), s/veh	1.5	3.4	0.2	2.9	3.7	0.1	0.2	0.0	1.7	3.2	3.3	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	8.7	1.6	0.7	5.7	0.5	1.1	0.0	3.7	1.3	3.6	3.6
LnGrp Delay(d),s/veh	32.6	32.9	5.6	35.1	30.0	7.6	24.9	0.0	18.8	34.5	25.9	26.2
LnGrp LOS	C	C	A	D	C	A	C		B	C	C	C
Approach Vol, veh/h		1199			673			365			451	
Approach Delay, s/veh		28.4			28.3			21.0			27.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	28.2	7.5	25.2	16.3	21.0	14.2	18.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	7.0	17.0	7.0	23.0	7.0	17.0	12.0	18.0
Max Q Clear Time (g_c+I1), s	4.5	8.7	3.4	18.7	4.3	8.7	7.4	12.8
Green Ext Time (p_c), s	0.0	1.0	0.0	2.5	0.2	1.3	2.6	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

HCM 2010 TWSC
9: Alessandro Blvd

8/3/2016

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1188	57	0	938	0	30
Future Vol, veh/h	1188	57	0	938	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1251	60	0	987	0	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1311	0	-	655
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	524	-	0	409
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	524	-	-	409
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	409	-	-	524	-
HCM Lane V/C Ratio	0.077	-	-	-	-
HCM Control Delay (s)	14.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	17	0	0	25	0	1143	46	0	1490	17
Future Vol, veh/h	0	0	17	0	0	25	0	1143	46	0	1490	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	26	0	1203	48	0	1568	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	793	-	-	626	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	284	0	0	366	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	284	-	-	366	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	15.6	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	284	366	-	-
HCM Lane V/C Ratio	-	-	0.063	0.072	-	-
HCM Control Delay (s)	-	-	18.5	15.6	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-	-

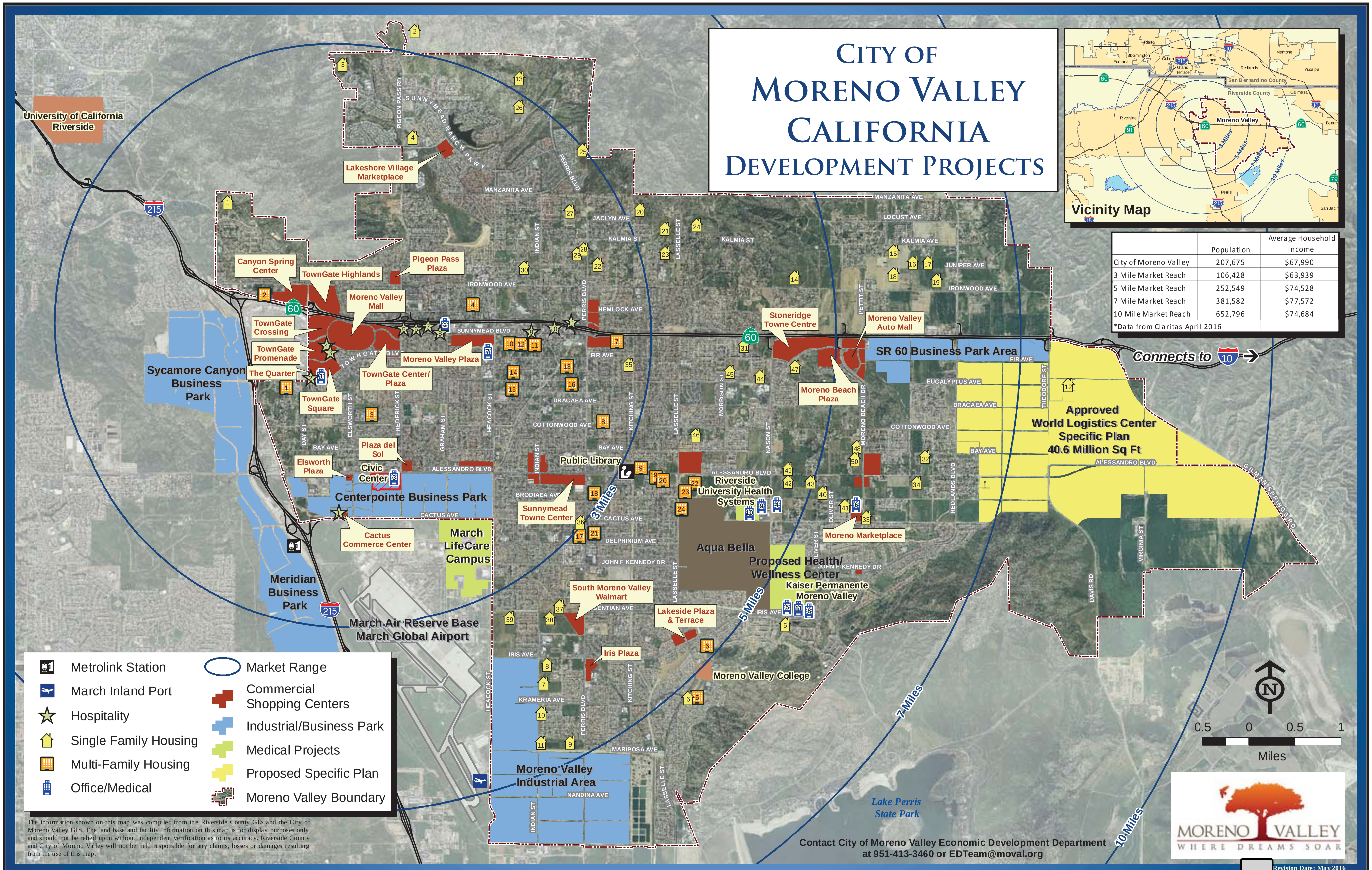
Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

transpogroup
WHAT TRANSPORTATION CAN BE.

APPENDIX D

Cumulative Projects Traffic Data

City of Moreno Valley California Development Projects



	Population	Average Household Income
City of Moreno Valley	207,675	$67,990
3 Mile Market Reach	106,428	$63,939
5 Mile Market Reach	252,549	$74,528
7 Mile Market Reach	381,582	$77,572
10 Mile Market Reach	652,796	$74,684

*Data from Claritas April 2016

1.k

COMMERCIAL
d e v e l o p m e n t

The City of Moreno Valley is a growing city with a bright future. Strategically located in the Inland Empire of Southern California, with a market area of over two million people and abundant developable land, savvy developers and retailers continue to choose Moreno Valley for growth and success. The City of Moreno Valley is dedicated to fostering new businesses and well-managed growth to create a superb quality of life. *Take a look at what's happening!*

Commercial Centers

Center Name	Size (sq. ft.)	Traffic Counts (ADT) East/West	Traffic Counts (ADT) North/South
TownGate Highlands	251,900	270,000	24,200
Moreno Valley Mall	1,200,000	270,000	38,000
Stoneridge Towne Centre	579,295	163,000	20,100
TownGate Center/Plaza	465,000	257,000	33,700
Moreno Beach Plaza	350,000	139,000	14,900
Moreno Valley Plaza	341,000	15,300	24,900
TownGate Square	136,000	16,200	38,000
TownGate Crossing	237,000	270,000	38,000
TownGate Promenade	200,000	270,000	36,000
Moreno Beach Marketplace	175,000	8,400	17,300
Lakeside Plaza & Terrace	143,000	18,800	13,300
Lakeshore Village	140,000	9,400	--
*Alessandro & Lasselle	140,000	17,500	13,300
Moreno Marketplace	93,788	6,400	15,900
Iris Plaza	87,120	18,800	20,300
Elsworth Plaza	30,000	27,700	--
Cactus Commerce Center	16,000	36,100	--
*Rancho Belago Plaza	14,000	3,800	14,300

** Approved Projects*

Office/Medical

Map #	Name	Size (sq. ft.)
1	TownGate Square	170,000
2	Olivewood Plaza	22,758
3	Centerpointe Office Area	258,000
4	Moreno Valley Medical Plaza	217,000
5	Moreno Valley Medical Overlay Area	122,250
6	Renaissance Village	98,400
7	Riverside County Office Building	52,000
8	Fresenius Medical Care	12,000
9	Integrated Care Communities	44,000
10	Riverside University Health System Expansion	34,749
11	Kaiser Permanente Moreno Valley Emergency Room Expansion	8,500

Industrial/Job Centers

Areas	Occupied/ Leased (sq. ft.)	Available/ Approved (sq. ft.)	Proposed (sq. ft.)
Centerpointe Business Park	4,241,407	968,508	--
Moreno Valley Industrial Area	9,781,639	5,019,868	3,586,469
SR-60 Business Park Area	2,620,887	2,279,498	--
Approved World Logistics Center —	—	—	40,600,000
Meridian Business Park	*Adjacent to the City of Moreno Valley, two business parks provide additional daytime population utilizing services within Moreno Valley.*		

Hospitality Development

Map #	Hotel Name	# Guest Rooms
	Centerpointe Hotel:	
1	Hawthorn Inn (approved)	79
	TownGate Hotels:	
2	Hampton Inn & Suites	115
3	Ayres Hotel & Spa	127
	Sunnymead Area Hotels:	
4	La Quinta Inn & Suites	58
5	Sleep Inn & Suites (approved)	66
6	Best Western Hotel & Suites	59
7	Comfort Inn	92
8	Holiday Inn Express	153
9	Travelers Inn	55
10	Econo Lodge	51

RESIDENTIAL
d e v e l o p m e n t

New Single-Family Development: 3,938 Units

Map #	Tract	Builder/Applicant	# of Units	Status
1	33626	Kincaid Development, Inc.	23	Approved
2	31394	Pigeon Pass Ltd.	78	Approved
3	29343	Professors Fund IV	58	Approved
4	32515	Mission Pacific Land Co.	184	Recorded
5	30268	Pacific Communities	83	Under
6	36401	Continental East Fund III, LLC	93	Approved Construction
7	34151	Moreno Valley Property Investment LLC	37	Approved
8	33810	David Boyle Engineering	16	Approved
9	31442	SKG Pacific Enterprises Inc.	63	Approved
10	33024	Adam Wislar	8	Approved
11	32716	Bob Rogers	57	Approved
12	36719	Kuo Ming Lee	34	In Process
13	32005	Red Hill Village, LLC	214	Approved
14	PA15-0039	Global Investment & DEV LLC.	181	In Process
15	32460	Sussex Capital Group	57	Approved
16	32459	Sussex Capital Group	11	Approved
17	30411	Pacific Communities	25	Approved
18	33962	The Industrial Group	31	Approved
19	30998	Pacific Communities	47	Approved
20	36983	Construction Specialist Group LLC.	53	In Process
21	31517	Professors Prop Six Winchesters Associates	83	Approved
22	31297	Randy McFarland	7	Approved
23	33436	Winchester Associates	105	Approved
24	28860	Professor's Fund IV, LLC Winchester Associates, Inc.	9	Approved
25	31592	CV Communities	139	Approved
26	33388	SCH Development, LLC	16	Approved
27	27251	RSI	104	Approved
28	35663	OFA	12	Approved
29	31621	Skyline Homes	12	Approved
30	36761	Right Solutions, LLC	7	In Process
31	33256	Pacific Communities	79	Under Construction
32	36372	Motlagh Family Trust	25	In Process
33	36436	CV Communities	159	Approved
34	32844	Winchester Associates	17	Approved
35	34043	RM3 Building and Development	12	Approved
36	36708	Nova Homes	127	In Process
37	22180	MPLC Legacy 140 Partners, LP	543	Recorded
38	36760	Mission Pacific Land Co.	189	In Process
39	34748	Rados	135	Approved
40	32284	Joe Anderson	32	Approved
41	36882	Frontier Homes	40	Approved
42	32548	Gabel, Cook and Associates	107	Approved
43	32218	Granite Capital Winchesters Associates	63	Approved
44	31305	Richmond American/ Richland Communities, Inc.	87	Approved
45	32126	Salvador Torres	35	Approved
46	PA16-0009	Macjones Holdings	16	In Process
47	32835	Beazer Homes	272	Approved
48	32408	Sandstone, Inc.	80	Approved
49	32645	Winchester Associates	53	Approved
50	31618	Frontier Homes	56	Under Construction

New Multi-Family Development: 2,420 Units

Map #	Tract	Builder/Applicant	# of Units	Status
1	PA15-0042	Latco SC Inc.	112	Approved
2	35414	Oak Park Partners	266	In Process
3	32215	Winchester Associates "Scottish Village"	194	Approved
4	PA14-0027	Tilak Chopra	38	In Process
5	32917	Continental East	227	Approved
6	32142	GHA	46	Approved
7	31814	Jesse Huizar	60	Approved
8	34544	Cottonwood 939 LLC	84	In Process
9	34216	Creative Design Assoc.	39	Approved
10	33771	Jian Qiang Liu	12	Approved
11	PA15-0031	Cal Choice Inv. Inc.	20	In Process
12	35663	Jimmy Lee	12	Approved
13	35369	Tason Myers Property	12	Approved
14	35769	Michael Chen	16	Approved
15	PA09-0006	Jim Nydam	15	Approved
16	35304	Jimmy Lee	12	Approved
17	33417	Jimmy Lee	60	Approved
18	34988	Status Properties	271	Approved
19	32756	Jimmy Lee	24	Approved
20	34681	Perris Pacific Company	49	Approved
21	33607	TL Group Corp.	52	Approved
22	PA15-0046	Granite Capitol	438	In Process
23	PA13-0006	Rancho Belago Developers, Inc.	141	Approved
24	PA14-0028	MV Bella Vista GP, LLC	220	In Process

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MORENO VALLEY
ECONOMIC DEVELOPMENT

1.k

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

APPENDIX E

SimTraffic Queuing Reports

Intersection: 8: Kitching St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	L	TR	L
Maximum Queue (ft)	88	128	141	54	58	236	212	43	115	150	154	61
Average Queue (ft)	37	62	72	9	15	142	98	12	25	82	65	22
95th Queue (ft)	76	105	118	33	43	214	185	35	75	135	126	53
Link Distance (ft)		1359	1359			435	435			383	383	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	105			150	225			200	200			80
Storage Blk Time (%)	0	0	0			1	0			0		0
Queuing Penalty (veh)	0	0	0			0	0			0		0

Intersection: 8: Kitching St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	94	76
Average Queue (ft)	41	28
95th Queue (ft)	81	61
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	1	
Queuing Penalty (veh)	0	

Intersection: 10: Perris Blvd

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	30	30	64
Average Queue (ft)	2	5	3
95th Queue (ft)	16	23	28
Link Distance (ft)	123	123	281
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 381

Intersection: 8: Kitching St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	L	TR	L
Maximum Queue (ft)	177	194	164	63	59	205	176	50	54	122	137	66
Average Queue (ft)	65	63	72	22	16	116	68	15	18	48	52	19
95th Queue (ft)	127	128	129	50	42	187	143	40	45	96	105	52
Link Distance (ft)		1359	1359			435	435			383	383	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	105			150	225			200	200			80
Storage Blk Time (%)	3	1	0			0	0					0
Queuing Penalty (veh)	9	1	1			0	0					0

Intersection: 8: Kitching St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	138	104
Average Queue (ft)	69	34
95th Queue (ft)	119	68
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	5	
Queuing Penalty (veh)	1	

Intersection: 10: Perris Blvd & Able Storage

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	38	30	79
Average Queue (ft)	7	6	9
95th Queue (ft)	29	25	44
Link Distance (ft)	123	123	281
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 353

Intersection: 8: Kitching St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	L	TR	L
Maximum Queue (ft)	95	139	122	42	59	265	237	43	146	174	191	65
Average Queue (ft)	40	60	71	10	15	151	104	12	34	84	71	20
95th Queue (ft)	80	108	113	33	41	221	192	37	98	154	140	52
Link Distance (ft)		1359	1359			435	435			383	383	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	105			150	225			200	200			80
Storage Blk Time (%)	1	0	0			1	0		0	0		0
Queuing Penalty (veh)	1	0	0			0	0		0	0		0

Intersection: 8: Kitching St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	100	68
Average Queue (ft)	44	28
95th Queue (ft)	84	58
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	1	
Queuing Penalty (veh)	0	

Intersection: 9: Alessandro Blvd

Movement	WB	NB
Directions Served	L	R
Maximum Queue (ft)	18	75
Average Queue (ft)	1	33
95th Queue (ft)	8	54
Link Distance (ft)		178
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 10: Perris Blvd

Movement	EB	WB	NB	NB	SB
Directions Served	R	R	L	T	L
Maximum Queue (ft)	43	49	29	27	28
Average Queue (ft)	7	20	2	1	3
95th Queue (ft)	30	46	14	13	16
Link Distance (ft)	123	145		288	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		50
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Network Summary

Network wide Queuing Penalty: 361

Intersection: 8: Kitching St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	L	TR	L
Maximum Queue (ft)	194	246	218	58	64	240	190	58	91	104	151	73
Average Queue (ft)	70	66	74	23	17	122	71	15	21	46	55	19
95th Queue (ft)	138	156	156	51	46	193	151	41	53	90	111	51
Link Distance (ft)		1359	1359			435	435			383	383	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	105			150	225			200	200			80
Storage Blk Time (%)	4	2	1			0	0					0
Queuing Penalty (veh)	14	3	2			0	0					0

Intersection: 8: Kitching St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	155	106
Average Queue (ft)	73	34
95th Queue (ft)	125	73
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	6	
Queuing Penalty (veh)	1	

Intersection: 9: Alessandro Blvd

Movement	EB	WB	NB
Directions Served	TR	L	R
Maximum Queue (ft)	14	31	55
Average Queue (ft)	1	4	23
95th Queue (ft)	6	20	50
Link Distance (ft)	630		178
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 10: Perris Blvd

Movement	EB	WB	NB	NB	SB	SB
Directions Served	R	R	L	T	L	TR
Maximum Queue (ft)	39	36	36	5	29	4
Average Queue (ft)	15	16	6	0	6	0
95th Queue (ft)	40	41	25	3	24	3
Link Distance (ft)	123	145		288		874
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			50		50	
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Network Summary

Network wide Queuing Penalty: 413

Intersection: 1: Indian St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	TR	L
Maximum Queue (ft)	87	188	147	114	108	164	196	217	218	191	143	100
Average Queue (ft)	37	98	47	38	46	78	111	131	93	75	58	55
95th Queue (ft)	74	154	102	77	91	156	184	205	170	140	107	99
Link Distance (ft)		749	749	749		2543	2543	2543		604	604	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	270				240				270			100
Storage Blk Time (%)									1	0		2
Queuing Penalty (veh)									1	0		2

Intersection: 1: Indian St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	170	124
Average Queue (ft)	75	52
95th Queue (ft)	137	99
Link Distance (ft)	606	606
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	3	
Queuing Penalty (veh)	3	

Intersection: 2: Perris Blvd & Cottonwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	154	214	51	145	200	100	76	220	240	39	180	317
Average Queue (ft)	59	88	18	49	96	39	31	73	83	7	74	172
95th Queue (ft)	110	159	41	99	165	72	65	148	163	23	151	275
Link Distance (ft)		629			366			1254	1254	1254		380
Upstream Blk Time (%)												0
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	100		100	115		200	90				90	
Storage Blk Time (%)	2	5		1	6		0	4			6	26
Queuing Penalty (veh)	5	8		2	12		2	2			30	29

Intersection: 2: Perris Blvd & Cottonwood Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	280	198
Average Queue (ft)	141	32
95th Queue (ft)	240	110
Link Distance (ft)	380	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	10	0
Queuing Penalty (veh)	11	0

Intersection: 3: Perris Blvd & Bay Ave

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	105	170	67	141	94	225	242	120	170	190	52
Average Queue (ft)	48	70	27	63	40	80	101	54	56	67	12
95th Queue (ft)	87	127	58	113	80	169	181	104	134	148	39
Link Distance (ft)		488		341		1225	1225		1254	1254	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	50		100		140			200			100
Storage Blk Time (%)	14	18	0	3	0	2			0	2	
Queuing Penalty (veh)	23	14	0	1	0	1			0	2	

Intersection: 4: Perris Blvd & Alessandro Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	UL	L	T	T	R	UL	L	T	T	TR	UL	T
Maximum Queue (ft)	111	99	145	148	62	71	86	188	195	215	265	279
Average Queue (ft)	51	44	46	53	24	30	45	64	81	92	118	106
95th Queue (ft)	92	85	99	109	53	64	78	159	181	191	220	214
Link Distance (ft)			2543	2543	2543			1089	1089	1089		870
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	205	205				190	190				475	
Storage Blk Time (%)								2				
Queuing Penalty (veh)								3				

Intersection: 4: Perris Blvd & Alessandro Blvd

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	UL	T	T	R
Maximum Queue (ft)	284	60	201	219	243	112
Average Queue (ft)	120	20	89	96	117	50
95th Queue (ft)	230	45	157	176	201	90
Link Distance (ft)	870	870		1225	1225	1225
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			1	1		
Queuing Penalty (veh)			4	2		

Intersection: 5: Perris Blvd & Brodiaea Ave

Movement	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	143	77	71	81	151	153	106	76	137	157	196
Average Queue (ft)	58	22	35	26	52	58	28	26	24	26	40
95th Queue (ft)	111	57	59	61	122	124	83	61	82	94	120
Link Distance (ft)	203	260			1259	1259	1259		281	281	281
Upstream Blk Time (%)											0
Queuing Penalty (veh)											0
Storage Bay Dist (ft)			50	100				100			
Storage Blk Time (%)		3	1	0	2			0	1		
Queuing Penalty (veh)		2	0	0	1			0	0		

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

Intersection: 6: Perris Blvd & Cactus Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (ft)	187	237	218	75	696	678	380	511	492	473	138	172
Average Queue (ft)	83	132	115	50	506	476	345	414	338	184	53	60
95th Queue (ft)	151	205	191	87	792	780	459	636	601	391	107	128
Link Distance (ft)		588	588		661	661		470	470	470		1259
Upstream Blk Time (%)					25	24		60	6	0		
Queuing Penalty (veh)					0	0		0	0	0		
Storage Bay Dist (ft)	100			30			300				100	
Storage Blk Time (%)	9	18		52	69		72	0			4	3
Queuing Penalty (veh)	24	23		228	46		237	1			9	3

Intersection: 6: Perris Blvd & Cactus Ave

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	194	237
Average Queue (ft)	83	106
95th Queue (ft)	155	186
Link Distance (ft)	1259	1259
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	UL	T	T	TR	LTR	LTR
Maximum Queue (ft)	52	170	183	34	48	190	207	187	74	78
Average Queue (ft)	15	71	94	5	5	56	65	72	21	28
95th Queue (ft)	42	132	152	22	25	130	141	138	52	64
Link Distance (ft)		1089	1089			1359	1359	1359	273	358
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	200			95	130					
Storage Blk Time (%)			5			1				
Queuing Penalty (veh)			1			0				

Intersection: 8: Kitching St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	L	TR	L
Maximum Queue (ft)	121	166	182	53	124	300	229	53	153	176	208	70
Average Queue (ft)	42	37	44	14	29	177	132	20	34	92	84	26
95th Queue (ft)	85	106	120	41	77	269	216	45	104	160	159	60
Link Distance (ft)		1359	1359			435	435			383	383	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	105			150	225			200	200			80
Storage Blk Time (%)	0	2	1			2	0			0		0
Queuing Penalty (veh)	1	1	1			1	0			0		0

Intersection: 8: Kitching St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	115	88
Average Queue (ft)	53	32
95th Queue (ft)	96	66
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	2	
Queuing Penalty (veh)	1	

Intersection: 10: Perris Blvd

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	LT	T	TR
Maximum Queue (ft)	24	30	65	18	11
Average Queue (ft)	3	3	3	1	0
95th Queue (ft)	17	17	28	12	7
Link Distance (ft)	123	123	281	281	870
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 740

Intersection: 1: Indian St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	TR	L
Maximum Queue (ft)	234	379	316	260	147	158	173	200	178	153	157	100
Average Queue (ft)	94	234	197	140	62	65	101	121	83	82	66	89
95th Queue (ft)	175	334	295	230	115	139	162	188	148	134	122	115
Link Distance (ft)		749	749	749		2543	2543	2543		604	604	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	270				240				270			100
Storage Blk Time (%)	0	4										17
Queuing Penalty (veh)	0	7										30

Intersection: 1: Indian St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	309	284
Average Queue (ft)	152	108
95th Queue (ft)	268	214
Link Distance (ft)	606	606
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	14	
Queuing Penalty (veh)	25	

Intersection: 2: Perris Blvd & Cottonwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	154	273	148	94	197	142	118	177	193	61	180	389
Average Queue (ft)	61	101	23	29	75	39	44	89	100	9	107	231
95th Queue (ft)	119	181	64	66	141	89	90	158	173	32	197	361
Link Distance (ft)		629			366			1254	1254	1254		380
Upstream Blk Time (%)					0							1
Queuing Penalty (veh)					0							0
Storage Bay Dist (ft)	100		100	115		200	90				90	
Storage Blk Time (%)	3	7		0	3		3	5			13	36
Queuing Penalty (veh)	9	11		1	4		14	3			74	48

Intersection: 2: Perris Blvd & Cottonwood Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	372	173
Average Queue (ft)	173	34
95th Queue (ft)	293	115
Link Distance (ft)	380	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	15	0
Queuing Penalty (veh)	15	0

Intersection: 3: Perris Blvd & Bay Ave

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	99	141	64	124	90	176	190	150	182	212	71
Average Queue (ft)	28	56	21	55	36	70	92	44	43	55	5
95th Queue (ft)	71	106	52	100	72	145	163	98	114	138	35
Link Distance (ft)		488		341		1225	1225		1254	1254	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	50		100		140			200			100
Storage Blk Time (%)	5	15	0	1		1			0	1	
Queuing Penalty (veh)	5	5	0	0		0			0	0	

Intersection: 4: Perris Blvd & Alessandro Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	UL	L	T	T	R	UL	L	T	T	TR	UL	T
Maximum Queue (ft)	255	355	567	552	155	130	138	150	164	195	317	168
Average Queue (ft)	146	167	254	260	71	54	64	52	64	77	140	51
95th Queue (ft)	243	332	530	520	125	103	116	120	135	153	260	119
Link Distance (ft)			2543	2543	2543			1089	1089	1089		870
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	205	205				190	190				475	
Storage Blk Time (%)	7	2	26					0				
Queuing Penalty (veh)	32	9	116					0				

Intersection: 4: Perris Blvd & Alessandro Blvd

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	UL	T	T	R
Maximum Queue (ft)	219	80	225	530	536	98
Average Queue (ft)	63	18	169	283	291	42
95th Queue (ft)	142	51	266	509	500	77
Link Distance (ft)	870	870		1225	1225	1225
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			23	30		
Queuing Penalty (veh)			101	55		

Intersection: 5: Perris Blvd & Brodiaea Ave

Movement	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	142	78	71	52	154	153	110	126	144	138	168
Average Queue (ft)	64	20	28	13	50	48	25	55	46	52	71
95th Queue (ft)	116	53	57	41	117	112	74	104	101	103	138
Link Distance (ft)	203	260			1259	1259	1259		281	281	281
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			50	100				100			
Storage Blk Time (%)		2	1		2			2	0		
Queuing Penalty (veh)		1	0		0			8	1		

Intersection: 6: Perris Blvd & Cactus Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (ft)	190	391	452	75	260	234	364	440	390	296	175	264
Average Queue (ft)	79	223	242	55	159	113	261	270	196	90	78	128
95th Queue (ft)	175	383	408	86	233	200	424	507	419	210	149	222
Link Distance (ft)		588	588		661	661		470	470	470		1259
Upstream Blk Time (%)		1	1					13	1	0		
Queuing Penalty (veh)		0	0					0	0	0		
Storage Bay Dist (ft)	100			30			300				100	
Storage Blk Time (%)	2	40		53	55		29	0			8	17
Queuing Penalty (veh)	6	35		140	44		86	1			30	23

Intersection: 6: Perris Blvd & Cactus Ave

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	297	320
Average Queue (ft)	157	176
95th Queue (ft)	252	281
Link Distance (ft)	1259	1259
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	UL	T	T	TR	LTR	LTR
Maximum Queue (ft)	94	294	308	76	54	209	162	159	74	65
Average Queue (ft)	41	47	72	6	10	93	76	67	20	25
95th Queue (ft)	79	155	186	42	36	168	143	130	52	57
Link Distance (ft)		1089	1089			1359	1359	1359	273	358
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	200			95	130					
Storage Blk Time (%)		2	3			3				
Queuing Penalty (veh)		1	1			0				

Intersection: 8: Kitching St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	L	TR	L
Maximum Queue (ft)	190	262	269	80	81	229	206	56	93	121	169	107
Average Queue (ft)	73	83	83	29	23	141	89	19	24	50	69	49
95th Queue (ft)	148	208	215	66	55	215	177	44	62	97	131	96
Link Distance (ft)		1359	1359			435	435			383	383	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	105			150	225			200	200			80
Storage Blk Time (%)	4	10	7			0	0					2
Queuing Penalty (veh)	18	13	12			0	0					3

Intersection: 8: Kitching St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	154	124
Average Queue (ft)	82	46
95th Queue (ft)	137	92
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	9	
Queuing Penalty (veh)	5	

Intersection: 10: Perris Blvd

Movement	EB	EB	NB	NB
Directions Served	L	R	LT	T
Maximum Queue (ft)	43	34	135	42
Average Queue (ft)	7	9	12	1
95th Queue (ft)	29	32	71	20
Link Distance (ft)	123	123	281	281
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 996

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Intersection: 1: Indian St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	TR	L
Maximum Queue (ft)	78	192	152	84	107	186	204	226	180	136	127	98
Average Queue (ft)	40	101	54	37	49	98	134	149	91	74	54	60
95th Queue (ft)	75	163	117	73	90	172	204	218	156	122	101	101
Link Distance (ft)		749	749	749		2543	2543	2543		604	604	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	270				240				270			100
Storage Blk Time (%)												3
Queuing Penalty (veh)												3

Intersection: 1: Indian St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	189	146
Average Queue (ft)	75	52
95th Queue (ft)	141	107
Link Distance (ft)	606	606
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	3	
Queuing Penalty (veh)	2	

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

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Intersection: 2: Perris Blvd & Cottonwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	125	165	95	107	204	95	99	214	217	32	179	315
Average Queue (ft)	59	84	24	41	94	41	35	79	89	6	77	172
95th Queue (ft)	108	145	61	81	157	77	73	160	175	22	158	277
Link Distance (ft)		629			366			1254	1254	1254		380
Upstream Blk Time (%)												0
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	100		100	115		200	90				90	
Storage Blk Time (%)	2	5	0	0	5		1	5			6	24
Queuing Penalty (veh)	4	8	0	1	11		4	3			33	28

Intersection: 2: Perris Blvd & Cottonwood Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	264	141
Average Queue (ft)	137	28
95th Queue (ft)	238	86
Link Distance (ft)	380	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)	10	0
Queuing Penalty (veh)	11	0

Intersection: 3: Perris Blvd & Bay Ave

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	115	161	80	134	110	203	222	125	146	161	48
Average Queue (ft)	49	75	28	62	39	85	107	53	51	66	9
95th Queue (ft)	89	132	60	112	82	174	188	98	122	142	33
Link Distance (ft)		488		341		1225	1225		1254	1254	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	50		100		140			200			100
Storage Blk Time (%)	15	21	0	3	0	2				2	
Queuing Penalty (veh)	23	16	0	1	0	1				2	

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Intersection: 4: Perris Blvd & Alessandro Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	UL	L	T	T	R	UL	L	T	T	TR	UL	T
Maximum Queue (ft)	115	98	106	122	70	115	186	243	260	289	323	247
Average Queue (ft)	53	45	45	54	26	39	63	127	150	169	146	110
95th Queue (ft)	102	84	88	100	56	84	123	206	231	251	273	215
Link Distance (ft)			2543	2543	2543			630	630	630		874
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	205	205				190	190				475	
Storage Blk Time (%)							0	1				
Queuing Penalty (veh)							0	2				

Intersection: 4: Perris Blvd & Alessandro Blvd

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	UL	T	T	R
Maximum Queue (ft)	268	94	208	217	207	118
Average Queue (ft)	123	23	104	101	119	54
95th Queue (ft)	228	64	186	176	182	91
Link Distance (ft)	874	874		1225	1225	1225
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			4	1		
Queuing Penalty (veh)			13	1		

Intersection: 5: Perris Blvd & Brodiaea Ave

Movement	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	149	80	70	86	148	174	139	96	137	143	169
Average Queue (ft)	62	21	36	31	58	61	33	27	27	25	40
95th Queue (ft)	117	57	63	69	125	135	92	64	90	90	114
Link Distance (ft)	203	260			1259	1259	1259		288	288	288
Upstream Blk Time (%)											0
Queuing Penalty (veh)											0
Storage Bay Dist (ft)			50	100				100			
Storage Blk Time (%)		3	2	0	2			0	1		
Queuing Penalty (veh)		2	1	0	1			0	0		

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Intersection: 6: Perris Blvd & Cactus Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (ft)	174	257	232	74	640	632	380	517	490	474	103	157
Average Queue (ft)	80	142	128	50	501	474	358	427	326	192	51	60
95th Queue (ft)	148	216	209	88	816	799	448	615	598	408	93	127
Link Distance (ft)		588	588		661	661		470	470	470		1259
Upstream Blk Time (%)					22	19		57	7	1		
Queuing Penalty (veh)					0	0		0	0	0		
Storage Bay Dist (ft)	100			30			300				100	
Storage Blk Time (%)	8	21		53	69		75	0			1	2
Queuing Penalty (veh)	20	27		230	46		252	1			2	2

Intersection: 6: Perris Blvd & Cactus Ave

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	206	228
Average Queue (ft)	88	115
95th Queue (ft)	163	187
Link Distance (ft)	1259	1259
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	UL	T	T	R	UL	T	T	TR	LTR	LTR
Maximum Queue (ft)	101	150	182	29	78	239	225	226	82	84
Average Queue (ft)	48	70	96	4	8	151	144	142	23	33
95th Queue (ft)	91	130	164	19	44	226	218	219	58	69
Link Distance (ft)		403	403			1359	1359	1359	279	364
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	200			95	130					
Storage Blk Time (%)		0	11			17				
Queuing Penalty (veh)		0	1			1				

Queuing and Blocking Report
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Intersection: 8: Kitching St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	L	TR	L
Maximum Queue (ft)	129	247	241	71	134	341	261	60	152	177	181	62
Average Queue (ft)	43	98	112	33	29	191	149	22	34	95	79	29
95th Queue (ft)	93	191	193	62	83	287	238	51	95	151	142	58
Link Distance (ft)		1359	1359			435	435			383	383	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	105			150	225			200	200			80
Storage Blk Time (%)	0	7	4			3	1			0		0
Queuing Penalty (veh)	0	5	4			1	0			0		0

Intersection: 8: Kitching St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	116	95
Average Queue (ft)	47	35
95th Queue (ft)	91	71
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	1	
Queuing Penalty (veh)	1	

Intersection: 9: Alessandro Blvd

Movement	NB
Directions Served	R
Maximum Queue (ft)	59
Average Queue (ft)	29
95th Queue (ft)	51
Link Distance (ft)	178
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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Intersection: 10: Perris Blvd

Movement	EB	WB	SB
Directions Served	R	R	TR
Maximum Queue (ft)	30	71	6
Average Queue (ft)	10	27	0
95th Queue (ft)	33	54	4
Link Distance (ft)	123	145	874
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 767

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Intersection: 1: Indian St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	L	T	TR	L
Maximum Queue (ft)	316	379	324	266	138	162	190	214	159	143	159	100
Average Queue (ft)	101	249	208	143	65	87	118	137	80	75	62	89
95th Queue (ft)	221	360	314	230	118	147	178	198	138	127	119	113
Link Distance (ft)		749	749	749		2543	2543	2543		604	604	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	270				240				270			100
Storage Blk Time (%)		8										19
Queuing Penalty (veh)		12										33

Intersection: 1: Indian St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	318	239
Average Queue (ft)	153	108
95th Queue (ft)	279	213
Link Distance (ft)	606	606
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	14	
Queuing Penalty (veh)	25	

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Intersection: 2: Perris Blvd & Cottonwood Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	175	239	150	106	154	98	120	161	146	28	180	399
Average Queue (ft)	64	101	29	29	67	38	40	69	78	6	108	239
95th Queue (ft)	128	181	89	74	124	73	84	130	138	20	199	387
Link Distance (ft)		629			366			1254	1254	1254		380
Upstream Blk Time (%)												1
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	100		100	115		200	90				90	
Storage Blk Time (%)	2	7	0	0	2		1	3			17	34
Queuing Penalty (veh)	8	12	0	0	3		7	2			100	45

Intersection: 2: Perris Blvd & Cottonwood Ave

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	371	200
Average Queue (ft)	186	36
95th Queue (ft)	320	122
Link Distance (ft)	380	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		100
Storage Blk Time (%)	15	
Queuing Penalty (veh)	16	

Intersection: 3: Perris Blvd & Bay Ave

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	T	R
Maximum Queue (ft)	90	142	56	109	89	153	171	123	304	318	74
Average Queue (ft)	28	57	20	47	36	64	87	48	67	74	4
95th Queue (ft)	65	105	46	88	74	115	138	96	179	188	37
Link Distance (ft)		488		341		1225	1225		1254	1254	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	50		100		140			200			100
Storage Blk Time (%)	5	14		1		0			1	5	
Queuing Penalty (veh)	5	5		0		0			1	1	

Attachment: Appendix G - Traffic Impact Study (2340 : PA16-0039 Plot Plan)

Queuing and Blocking Report
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Intersection: 4: Perris Blvd & Alessandro Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	UL	L	T	T	R	UL	L	T	T	TR	UL	T
Maximum Queue (ft)	282	360	1573	1121	349	129	149	164	183	220	422	237
Average Queue (ft)	247	302	654	569	90	57	68	90	110	131	222	69
95th Queue (ft)	339	444	1394	1173	205	109	119	144	166	192	430	172
Link Distance (ft)			2543	2543	2543			630	630	630		874
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (ft)	205	205				190	190				475	
Storage Blk Time (%)	68	54	48				0	0			0	
Queuing Penalty (veh)	296	234	208				0	0			1	

Intersection: 4: Perris Blvd & Alessandro Blvd

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	UL	T	T	R
Maximum Queue (ft)	213	63	225	707	713	247
Average Queue (ft)	70	26	180	437	433	54
95th Queue (ft)	161	57	281	889	876	177
Link Distance (ft)	874	874		1225	1225	1225
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150			
Storage Blk Time (%)			23	44		
Queuing Penalty (veh)			104	90		

Intersection: 5: Perris Blvd & Brodiaea Ave

Movement	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	T	TR	UL	T	T	TR
Maximum Queue (ft)	146	55	64	82	168	161	119	136	133	125	167
Average Queue (ft)	69	22	28	19	52	55	32	61	43	55	75
95th Queue (ft)	125	49	54	62	121	117	83	113	94	104	130
Link Distance (ft)	203	260			1259	1259	1259		288	288	288
Upstream Blk Time (%)	0										
Queuing Penalty (veh)	0										
Storage Bay Dist (ft)			50	100				100			
Storage Blk Time (%)		2	1		2			3	1		
Queuing Penalty (veh)		1	0		0			11	1		

Queuing and Blocking Report
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Intersection: 6: Perris Blvd & Cactus Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (ft)	190	486	529	74	271	253	379	479	373	276	169	221
Average Queue (ft)	79	246	271	52	168	125	278	291	213	126	73	127
95th Queue (ft)	183	441	471	89	253	216	438	542	449	294	133	198
Link Distance (ft)		588	588		661	661		470	470	470		1259
Upstream Blk Time (%)		0	0					20	2	0		
Queuing Penalty (veh)		0	0					0	0	0		
Storage Bay Dist (ft)	100			30			300				100	
Storage Blk Time (%)	2	44		54	54		35	1			6	18
Queuing Penalty (veh)	6	39		143	43		106	1			20	23

Intersection: 6: Perris Blvd & Cactus Ave

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	241	261
Average Queue (ft)	162	181
95th Queue (ft)	231	246
Link Distance (ft)	1259	1259
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Apple Blossom Lane/Flaming Arrow Dr & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	UL	T	T	R	UL	T	T	TR	LTR	LTR
Maximum Queue (ft)	128	213	244	80	88	227	184	169	73	62
Average Queue (ft)	58	101	125	13	15	136	112	97	19	25
95th Queue (ft)	110	193	213	54	55	203	171	157	51	55
Link Distance (ft)		403	403			1359	1359	1359	279	364
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	200			95	130					
Storage Blk Time (%)		1	17			10				
Queuing Penalty (veh)		1	7			1				

Queuing and Blocking Report
OPYR2021_PROJ_PM

8/4/2016

Intersection: 8: Kitching St & Alessandro Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	L	TR	L
Maximum Queue (ft)	187	283	286	104	67	256	218	48	79	134	182	116
Average Queue (ft)	82	151	158	47	22	142	94	20	24	57	69	46
95th Queue (ft)	163	257	257	82	57	216	174	45	59	104	140	89
Link Distance (ft)		1359	1359			435	435			383	383	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	105			150	225			200	200			80
Storage Blk Time (%)	5	18	13			0	0					2
Queuing Penalty (veh)	21	24	25			0	0					2

Intersection: 8: Kitching St & Alessandro Blvd

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	168	124
Average Queue (ft)	83	48
95th Queue (ft)	145	95
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	7	
Queuing Penalty (veh)	5	

Intersection: 9: Alessandro Blvd

Movement	EB	NB
Directions Served	TR	R
Maximum Queue (ft)	6	56
Average Queue (ft)	0	21
95th Queue (ft)	5	51
Link Distance (ft)	630	178
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
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Intersection: 10: Perris Blvd

Movement	EB	WB
Directions Served	R	R
Maximum Queue (ft)	48	53
Average Queue (ft)	13	18
95th Queue (ft)	40	46
Link Distance (ft)	123	145
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1691

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                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):           75                Critical Vol./Cap.(X):         0.608
Loss Time (sec):       16                Average Delay (sec/veh):        27.9
Optimal Cycle: OPTIMIZED                 Level Of Service:                  C
********************************************************************************
Street Name:           Perris Blvd                     Alessandro Blvd
Approach:      North Bound       South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Protected         Protected         Protected
Rights:           Include           Include           Include           Include
Min. Green:    10    19    19    10    19    19    10    15    15    10    15    15
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    2  0  2  0  1    2  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     232   735   120   147   541   212   138   240    71   124   738    80
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  232   735   120   147   541   212   138   240    71   124   738    80
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  232   735   120   147   541   212   138   240    71   124   738    80
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   232   735   120   147   541   212   138   240    71   124   738    80
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  232   735   120   147   541   212   138   240    71   124   738    80
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:  232   735   120   147   541   212   138   240    71   124   738    80
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  0.95  0.85  0.95  0.95  0.85  0.92  0.95  0.85  0.92  0.90  0.90
Lanes:       1.00  2.00  1.00  1.00  2.00  1.00  2.00  2.00  1.00  2.00  2.71  0.29
Final Sat.:  1805  3610  1615  1805  3610  1615  3502  3610  1615  3502  4610   500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13  0.20  0.07  0.08  0.15  0.13  0.04  0.07  0.04  0.04  0.16  0.16
Crit Moves:  ****                    ****        ****                    ****
Green/Cycle: 0.18  0.28  0.28  0.15  0.25  0.25  0.13  0.21  0.21  0.14  0.22  0.22
Volume/Cap:  0.72  0.72  0.26  0.55  0.59  0.52  0.30  0.31  0.21  0.25  0.72  0.72
Uniform Del: 29.1  24.2  20.8  29.6  24.6  24.1  29.3  24.9  24.3  28.6  27.0  27.0
IncremntDel:  7.8   2.5   0.3   2.4   1.0   1.2   0.4   0.2   0.3   0.3   2.3   2.3
InitQueuDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Delay/Veh:   36.9  26.8  21.2  32.0  25.6  25.2  29.7  25.1  24.6  28.9  29.3  29.3
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  36.9  26.8  21.2  32.0  25.6  25.2  29.7  25.1  24.6  28.9  29.3  29.3
LOS by Move:    D     C     C     C     C     C     C     C     C     C     C     C
HCM2kAvgQ:      7    10     2     4     7     5     2     3     1     2     8     8
```

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
******************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
******************************************************************************
Cycle (sec):           75                Critical Vol./Cap.(X):        0.744
Loss Time (sec):       16                Average Delay (sec/veh):       30.7
Optimal Cycle: OPTIMIZED                 Level Of Service:                 C
******************************************************************************
Street Name:             Perris Blvd                     Alessandro Blvd
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:   10    19    19   10    19    19   10    15    15   10    15    15
Y+R:         4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    2  0  2  0  1    2  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    229   572   107  149   730   128  397   727   257  191   485    78
Growth Adj: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse: 229   572   107  149   730   128  397   727   257  191   485    78
Added Vol:     0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut: 229   572   107  149   730   128  397   727   257  191   485    78
User Adj:   1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:  229   572   107  149   730   128  397   727   257  191   485    78
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol: 229   572   107  149   730   128  397   727   257  191   485    78
PCE Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume: 229   572   107  149   730   128  397   727   257  191   485    78
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900  1900
Adjustment: 0.95  0.95  0.85 0.95  0.95  0.85 0.92  0.95  0.85 0.92  0.89  0.89
Lanes:      1.00  2.00  1.00 1.00  2.00  1.00 2.00  2.00  1.00 2.00  2.58  0.42
Final Sat.: 1805  3610  1615 1805  3610  1615 3502  3610  1615 3502  4375   704
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.13  0.16  0.07 0.08  0.20  0.08 0.11  0.20  0.16 0.05  0.11  0.11
Crit Moves: ****                   ****              ****        ****
Green/Cycle: 0.15 0.27  0.27 0.14  0.25  0.25 0.15  0.25  0.25 0.13  0.23  0.23
Volume/Cap: 0.82  0.59  0.25 0.59  0.80  0.31 0.75  0.82  0.65 0.41  0.49  0.49
Uniform Del: 30.7 23.9  21.6 30.2  26.2  22.7 30.5  26.7  25.4 29.8  25.2  25.2
IncremntDel: 17.3  1.0   0.3  3.5   5.0   0.4  5.8   6.2   3.7  0.6   0.3   0.3
InitQueuDel: 0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0
Delay Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Delay/Veh:  48.0  24.9  21.9 33.7  31.2  23.1 36.3  32.9  29.1 30.4  25.5  25.5
User DelAdj: 1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
AdjDel/Veh: 48.0  24.9  21.9 33.7  31.2  23.1 36.3  32.9  29.1 30.4  25.5  25.5
LOS by Move:   D     C     C    C     C     C    D     C     C    C     C     C
HCM2kAvgQ:     8     7     2    4    11     3    6    11     6    3     5     5
```

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                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
*******************************************************************************
Cycle (sec):           75                 Critical Vol./Cap.(X):         0.640
Loss Time (sec):       16                 Average Delay (sec/veh):        28.8
Optimal Cycle: OPTIMIZED                  Level Of Service:                  C
*******************************************************************************
Street Name:           Perris Blvd                     Alessandro Blvd
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    10   19    19    10   19    19    10   15    15    10   15    15
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    2  0  2  0  1    2  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     232  735   120   147  541   212   138  240    71   124  738    80
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  232  735   120   147  541   212   138  240    71   124  738    80
Added Vol:     30   10     6     6    2     0     0    6     2    13   20    20
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  262  745   126   153  543   212   138  246    73   137  758   100
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   262  745   126   153  543   212   138  246    73   137  758   100
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  262  745   126   153  543   212   138  246    73   137  758   100
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  262  745   126   153  543   212   138  246    73   137  758   100
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.95  0.85  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.89  0.89
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.65  0.35
Final Sat.:  1805 3610  1615  1805 3610  1615  3502 3610  1615  3502 4500   594
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.15 0.21  0.08  0.08 0.15  0.13  0.04 0.07  0.05  0.04 0.17  0.17
Crit Moves:  ****                  ****        ****                  ****
Green/Cycle: 0.19 0.29  0.29  0.15 0.25  0.25  0.13 0.21  0.21  0.14 0.21  0.21
Volume/Cap:  0.78 0.72  0.27  0.56 0.59  0.52  0.30 0.33  0.22  0.28 0.78  0.78
Uniform Del: 29.1 24.0  20.7  29.5 24.6  24.1  29.3 25.2  24.6  28.9 27.8  27.8
IncremntDel: 11.5  2.5   0.3   2.6  1.1   1.2   0.4  0.3   0.3   0.3  3.8   3.8
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   40.6 26.5  21.0  32.2 25.7  25.2  29.7 25.4  24.9  29.2 31.6  31.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  40.6 26.5  21.0  32.2 25.7  25.2  29.7 25.4  24.9  29.2 31.6  31.6
LOS by Move:    D    C     C     C    C     C     C    C     C     C    C     C
HCM2kAvgQ:      8   10     2     4    7     5     2    3     2     2    9     9
```

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Perris Blvd/Alessandro Blvd

Cycle (sec):	75	Critical Vol./Cap.(X):	0.772
Loss Time (sec):	16	Average Delay (sec/veh):	31.9
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Street Name:	Perris Blvd						Alessandro Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	10	15	15	10	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	2 0	1	2 0	2 1	0
Volume Module:												
Base Vol:	229	572	107	149	730	128	397	727	257	191	485	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	229	572	107	149	730	128	397	727	257	191	485	78
Added Vol:	16	5	8	23	8	0	0	24	7	16	11	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	245	577	115	172	738	128	397	751	264	207	496	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	245	577	115	172	738	128	397	751	264	207	496	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	245	577	115	172	738	128	397	751	264	207	496	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	245	577	115	172	738	128	397	751	264	207	496	89
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	0.95	0.85	0.92	0.95	0.85	0.92	0.89	0.89
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.54	0.46
Final Sat.:	1805	3610	1615	1805	3610	1615	3502	3610	1615	3502	4297	771
Capacity Analysis Module:												
Vol/Sat:	0.14	0.16	0.07	0.10	0.20	0.08	0.11	0.21	0.16	0.06	0.12	0.12
Crit Moves:	****				****			****		****		
Green/Cycle:	0.16	0.27	0.27	0.14	0.25	0.25	0.15	0.24	0.24	0.13	0.23	0.23
Volume/Cap:	0.86	0.59	0.26	0.67	0.81	0.31	0.76	0.86	0.68	0.44	0.51	0.51
Uniform Del:	30.8	23.8	21.5	30.5	26.3	22.7	30.5	27.2	25.8	29.9	25.4	25.4
IncremntDel:	22.2	1.0	0.3	6.8	5.4	0.4	6.2	8.6	4.6	0.7	0.4	0.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	52.9	24.8	21.9	37.3	31.6	23.1	36.7	35.8	30.4	30.6	25.8	25.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.9	24.8	21.9	37.3	31.6	23.1	36.7	35.8	30.4	30.6	25.8	25.8
LOS by Move:	D	C	C	D	C	C	D	D	C	C	C	C
HCM2kAvgQ:	9	7	2	5	11	3	6	12	7	3	5	5

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ST YR + PROJ AM            Wed Oct 26, 2016 14:26:55                Page 2-1
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):          80                Critical Vol./Cap.(X):         0.721
Loss Time (sec):      16                Average Delay (sec/veh):        32.8
Optimal Cycle: OPTIMIZED                Level Of Service:                  C
********************************************************************************
Street Name:           Perris Blvd                      Alessandro Blvd
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    10    19    19    10    19    19    10    15    15    10    15    15
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   2  0  2  0  1   2  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     232   735   120   147   541   212   138   240    71   124   738    80
Growth Adj:  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10  1.10
Initial Bse:  255   809   132   162   595   233   152   264    78   136   812    88
Added Vol:     36    77    16    10    39     0     0    21    11    38    61    38
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  291   886   148   172   634   233   152   285    89   174   873   126
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   291   886   148   172   634   233   152   285    89   174   873   126
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  291   886   148   172   634   233   152   285    89   174   873   126
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:  291   886   148   172   634   233   152   285    89   174   873   126
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  0.95  0.85  0.95  0.95  0.85  0.92  0.95  0.85  0.92  0.89  0.89
Lanes:       1.00  2.00  1.00  1.00  2.00  1.00  2.00  2.00  1.00  2.00  2.62  0.38
Final Sat.:  1805  3610  1615  1805  3610  1615  3502  3610  1615  3502  4447   642
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16  0.25  0.09  0.10  0.18  0.14  0.04  0.08  0.06  0.05  0.20  0.20
Crit Moves:  ****                    ****        ****                    ****
Green/Cycle: 0.20  0.29  0.29  0.15  0.24  0.24  0.13  0.22  0.22  0.15  0.24  0.24
Volume/Cap:  0.82  0.85  0.32  0.65  0.74  0.61  0.35  0.36  0.25  0.34  0.82  0.82
Uniform Del: 30.7  26.9  22.3  32.2  28.2  27.2  32.0  26.5  25.8  30.7  28.7  28.7
IncremntDel: 13.7   6.9   0.4   5.5   3.4   2.8   0.5   0.3   0.4   0.4   4.4   4.4
InitQueuDel:  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Delay/Veh:   44.4  33.7  22.7  37.7  31.7  30.0  32.5  26.8  26.2  31.1  33.2  33.2
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  44.4  33.7  22.7  37.7  31.7  30.0  32.5  26.8  26.2  31.1  33.2  33.2
LOS by Move:    D     C     C     D     C     C     C     C     C     C     C     C
HCM2kAvgQ:      9    14     3     5     9     6     2     3     2     2    11    11

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ST YR + PROJ PM          Wed Oct 26, 2016 14:28:08                Page 2-1
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                      Level Of Service Computation Report
             2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):            90                Critical Vol./Cap.(X):          0.878
Loss Time (sec):        16                Average Delay (sec/veh):         40.3
Optimal Cycle: OPTIMIZED                  Level Of Service:                   D
********************************************************************************
Street Name:              Perris Blvd                     Alessandro Blvd
Approach:       North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Protected         Protected
Rights:           Include          Include           Include           Include
Min. Green:    10    19    19    10    19    19    10    15    15    10    15    15
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    2  0  2  0  1    2  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     229  572   107   149  730   128   397  727   257   191  485    78
Growth Adj:  1.10 1.10  1.10  1.10 1.10  1.10  1.10 1.10  1.10  1.10 1.10  1.10
Initial Bse:  252  629   118   164  803   141   437  800   283   210  534    86
Added Vol:     33   74    39    41   99     0     0   78    24    38   50    21
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  285  703   157   205  902   141   437  878   307   248  584   107
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   285  703   157   205  902   141   437  878   307   248  584   107
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  285  703   157   205  902   141   437  878   307   248  584   107
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  285  703   157   205  902   141   437  878   307   248  584   107
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.95  0.85  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.89  0.89
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.54  0.46
Final Sat.:  1805 3610  1615  1805 3610  1615  3502 3610  1615  3502 4284   784
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.19  0.10  0.11 0.25  0.09  0.12 0.24  0.19  0.07 0.14  0.14
Crit Moves:  ****                   ****              ****        ****
Green/Cycle: 0.17 0.29  0.29  0.16 0.27  0.27  0.16 0.27  0.27  0.11 0.22  0.22
Volume/Cap:  0.92 0.67  0.33  0.73 0.92  0.32  0.77 0.92  0.71  0.64 0.63  0.63
Uniform Del: 36.6 28.2  25.1  36.2 31.7  26.1  36.2 32.1  30.0  38.3 32.1  32.1
IncremntDel: 30.1  1.7   0.4   9.3 12.8   0.4   6.6 13.1   5.7   3.5  1.2   1.2
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   66.7 29.9  25.6  45.5 44.5  26.5  42.7 45.1  35.6  41.8 33.3  33.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  66.7 29.9  25.6  45.5 44.5  26.5  42.7 45.1  35.6  41.8 33.3  33.3
LOS by Move:    E    C     C     D    D     C     D    D     D     D    C     C
HCM2kAvgQ:     12   10     4     7   17     3     8   17     9     5    7     7

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Perris Blvd/Alessandro Blvd

Cycle (sec):	75	Critical Vol./Cap.(X):	0.701
Loss Time (sec):	16	Average Delay (sec/veh):	31.5
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Street Name:	Perris Blvd						Alessandro Blvd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	19	19	10	19	19	10	15	15	10	15	15
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	2 0	2 0	1	2 0	2 1	0
Volume Module:												
Base Vol:	232	735	120	147	541	212	138	240	71	124	738	80
Growth Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Initial Bse:	255	809	132	162	595	233	152	264	78	136	812	88
Added Vol:	7	67	10	5	36	0	0	15	9	25	41	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	262	876	142	167	631	233	152	279	87	161	853	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	262	876	142	167	631	233	152	279	87	161	853	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	262	876	142	167	631	233	152	279	87	161	853	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	262	876	142	167	631	233	152	279	87	161	853	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	0.95	0.85	0.92	0.95	0.85	0.92	0.89	0.89
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.67	0.33
Final Sat.:	1805	3610	1615	1805	3610	1615	3502	3610	1615	3502	4530	568
Capacity Analysis Module:												
Vol/Sat:	0.15	0.24	0.09	0.09	0.17	0.14	0.04	0.08	0.05	0.05	0.19	0.19
Crit Moves:	****				****		****				****	
Green/Cycle:	0.17	0.28	0.28	0.15	0.25	0.25	0.13	0.22	0.22	0.14	0.23	0.23
Volume/Cap:	0.83	0.87	0.31	0.63	0.69	0.57	0.33	0.36	0.25	0.32	0.83	0.83
Uniform Del:	29.9	25.7	21.3	30.0	25.3	24.4	29.4	25.0	24.4	28.8	27.7	27.7
IncremntDel:	17.1	8.0	0.4	4.7	2.3	1.9	0.4	0.3	0.4	0.4	5.4	5.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.1	33.6	21.7	34.7	27.6	26.4	29.9	25.3	24.8	29.2	33.1	33.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.1	33.6	21.7	34.7	27.6	26.4	29.9	25.3	24.8	29.2	33.1	33.1
LOS by Move:	D	C	C	C	C	C	C	C	C	C	C	C
HCM2kAvgQ:	9	13	3	5	8	5	2	3	2	2	11	11

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ST YR 2021 PM              Wed Oct 26, 2016 16:25:30                Page 2-1
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--------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #4 Perris Blvd/Alessandro Blvd
********************************************************************************
Cycle (sec):            85                 Critical Vol./Cap.(X):         0.862
Loss Time (sec):        16                 Average Delay (sec/veh):        38.4
Optimal Cycle: OPTIMIZED                   Level Of Service:                  D
********************************************************************************
Street Name:           Perris Blvd                      Alessandro Blvd
Approach:       North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Protected         Protected
Rights:           Include          Include           Include           Include
Min. Green:    10   19    19    10   19    19    10   15    15    10   15    15
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    2  0  2  0  1    2  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     229  572   107   149  730   128   397  727   257   191  485    78
Growth Adj:  1.10 1.10  1.10  1.10 1.10  1.10  1.10 1.10  1.10  1.10 1.10  1.10
Initial Bse:  252  629   118   164  803   141   437  800   283   210  534    86
Added Vol:     17   68    31    18   90     0     0   55    16    22   39    10
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  269  697   149   182  893   141   437  855   299   232  573    96
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   269  697   149   182  893   141   437  855   299   232  573    96
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  269  697   149   182  893   141   437  855   299   232  573    96
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  269  697   149   182  893   141   437  855   299   232  573    96
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.95  0.85  0.95 0.95  0.85  0.92 0.95  0.85  0.92 0.89  0.89
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  2.00 2.00  1.00  2.00 2.57  0.43
Final Sat.:  1805 3610  1615  1805 3610  1615  3502 3610  1615  3502 4350   728
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.15 0.19  0.09  0.10 0.25  0.09  0.12 0.24  0.18  0.07 0.13  0.13
Crit Moves:  ****                  ****              ****        ****
Green/Cycle: 0.16 0.28  0.28  0.15 0.27  0.27  0.16 0.26  0.26  0.12 0.22  0.22
Volume/Cap:  0.91 0.68  0.32  0.67 0.91  0.32  0.80 0.91  0.71  0.56 0.60  0.60
Uniform Del: 35.0 27.0  24.0  34.2 30.0  24.7  34.6 30.5  28.6  35.4 29.7  29.7
IncremntDel: 30.7  1.8   0.4   6.5 12.5   0.4   8.1 12.9   5.7   1.8  0.9   0.9
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   65.6 28.8  24.4  40.7 42.5  25.2  42.7 43.4  34.3  37.2 30.6  30.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  65.6 28.8  24.4  40.7 42.5  25.2  42.7 43.4  34.3  37.2 30.6  30.6
LOS by Move:    E    C     C     D    D     C     D    D     C     D    C     C
HCM2kAvgQ:     11   10     3     6   16     3     8   16     9     4    7     7
```

Revised LOS worksheets

Tables below summarize the updated results:

Intersection	Existing				Existing plus Project				Project-Added Trips		Impact?
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM	
Perris Blvd/Alessandro Blvd	27.9 sec	C	30.7 sec	C	28.8 sec	C	31.9 sec	C	115	129	no

Intersection	Near-Term 2021 Baseline				Near-Term 2021 plus Project				Project-Added Trips		Impact?
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM	
Perris Blvd/Alessandro Blvd	31.5	C	38.4	D	32.8	C	40.3	D	115	129	no

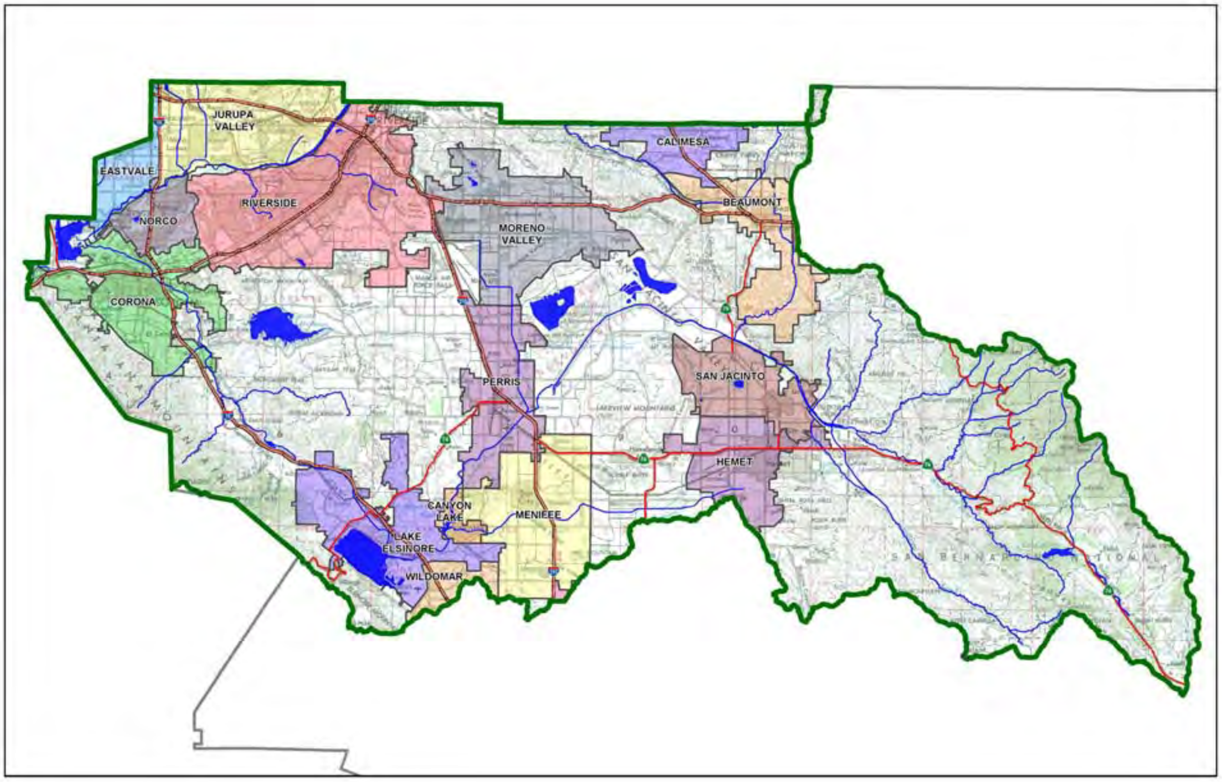
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Alessandro Apartments

Development No: APN 484-020-006, 484-020-018 & 484-020-025

Design Review/Case No: PA16-0039



☒ **Preliminary**
☐ **Final**

Original Date Prepared: June 22, 2016

Revision Date(s): September 7, 2016
October 20, 2016

Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**

Contact Information:

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OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Villa Annette LP, by Civil Landworks Corp. for the Alessandro Apartments project.

This WQMP is intended to comply with the requirements of City of Moreno Valley for Water Quality Ordinance No. 827, which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under City of Moreno Valley Water Quality Ordinance (Municipal Code Section No. 810).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature

10-18-16
Date

Robert Lattanzio
Owner's Printed Name

President
Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature

10-20-16
Date

David Caron
Preparer's Printed Name

Principal
Preparer's Title/Position

Preparer's Licensure: RCE No. 70066 Exp. 09-30-18

LICENSED PROFESSIONAL ENGINEER
DAVID V. CARON
NO. 70066
CIVIL
STATE OF CALIFORNIA

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Section A: Project and Site Information

The project site is approximately 19.47 acres of vacant lot. Project site is flat and almost barren with very little vegetation – few trees onsite. The site is planned to be developed into an apartment complex with 272 apartment units in 43 buildings including the community building. Several parking areas are proposed such as garages, carports and open parking stalls. A swimming pool is to be built adjacent to the community building. Part of the development will include landscaped areas, retaining walls, underground utilities, storm drain system, and drive aisles. As part of the Water Quality requirement for the project, infiltration basins will treat the remaining stormwater runoff from the project site.

Several trash enclosures are proposed within the project site. There are no outdoor storage areas and no car wash areas proposed for the project. Roof drains are proposed to drain into the landscaped areas before it drains into the area drain system.

Typical activities associated with the proposed development are some recreational activities, street sweeping, and landscape maintenance.

Currently the site is 100% pervious, the developed condition will decrease the pervious area to 40%. All stormwater onsite will be treated via infiltration basin. The proposed development will maintain the flow pattern of the existing condition.

**** The LID basins proposed are not quantitative structural BMPs, they function only as a LID strategy. All treatment for the water quality is in the infiltration basin.

**** The proposed infiltration basin will function as a dual water quality and storm water reduction of peak post development flow rates.

**** Brodiaea Avenue, Perris Boulevard, and Alessandro Boulevard will be improved by a separate permit through the city of Moreno Valley. All treatment BMPs will be part of that permit. The only treatment the project will provide is for Apple Blossom Lane.

PROJECT INFORMATION	
Type of Project:	Apartment Complex
Planning Area:	19.86 Acres
Community Name:	Villa Annette Apartments
Development Name:	Villa Annette
PROJECT LOCATION	
Latitude & Longitude (DMS): 33.916112, -117.224197	
Project Watershed and Sub-Watershed: Lower San Jacinto River Watershed, Moreno Valley Subwatershed, 4802110000	
APN(s): 484-020-006, 484-020-018, 484-020-025	
Map Book and Page No.: Page 716; J4 (2013)	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	R-15, Residential
Proposed or Potential SIC Code(s)	N/A
Area of Impervious Project Footprint (SF)	498,584 onsite
Total Area of proposed Impervious Surfaces within the Project Limits (SF)/or Replacement	498,584 (onsite) + 10869 (offsite) = 509,453
Does the project consist of offsite road improvements?	☒ Y ☐ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the project limits (SF)	0
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	N/A
Are there any natural hydrologic features on the project site?	☐ Y ☒ N
Is a Geotechnical Report attached?	☒ Y ☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	N/A
What is the Water Quality Design Storm Depth for the project?	0.66 inches

A.1 Maps and Site Plans

Project-specific WQMP Maps and Site Plans are included in Appendix 1.

Construction Plans are included in Appendix 2.

A.2 Identify Receiving Waters

See map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Jacinto River Reach 3		AGR, GWR, MUN, REC1, REC2, WARM, WILD	Not Applicable
San Jacinto River Reach 2 (Canyon Lake)	Nutrients, Pathogens	AGR, GWR, WILD, MUN, REC1, REC2, WARM	Not Applicable
San Jacinto River Reach 1		AGR, GWR, MUN, REC1, REC2, WARM, WILD	Not Applicable
Lake Elsinore	Nutrient, Organic Enrichment/Low Dissolved Oxygen, PCBs (Polychlorinated biphenyls), Sediment Toxicity, Unknown Toxicity	MUN, REC1, REC2, WARM, WILD	Not Applicable

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☐ Y	☒ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☒ Y	☐ N
Other *(please list in the space below as required)* Grading Plan, City of Moreno Valley, Building Plan	☒ Y	☐ N

Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

Section B: Optimize Site Utilization (LID Principles)

Site Optimization

1. The proposed project is an apartment complex with minimal areas for landscape, vegetated swales and other natural drainages that serve slow runoff velocity and reduce runoff volume. The existing drainage pattern for the project site shows two drainage areas. The northern drainage area sheet flows northwest to southeast onto Apple Blossom Lane. The southern drainage area sheet flows northwest to the southeast onto Brodiaea Avenue. Stormwater flows into an existing curb inlet to the east of the property on Brodiaea Avenue.

   The proposed development creates several small drainage areas. Consequently the runoff from some of the proposed drainage areas are captured and treated using LID BMP's. The project site will capture these runoffs using catch basins and inlets and discharge into proposed storm drain system. The proposed storm drain pipes, in each respective drainage areas, are designed to flow southeast where the proposed infiltration basins are located. The infiltration basins will be design to provide the same runoff flow and volume reducing benefits as natural drainages.

2. The project site proposes capturing all site stormwater runoff via yard inlets and catch basins, then routed to the infiltration basins with natural infiltrating capacity. As a pre-treatment for the site, catch basins will be installed with filter inserts. The infiltration basins will provide the infiltration properties in order to reduce the quantity and velocity of the project site.

3. The project site will be fully developed and will be re-vegetated with native and/or drought-tolerant species. There is very little vegetation in the existing condition. The existing site has no natural areas to conserve.

4. Runoff from the parking areas will be diverted to LID areas via curb openings. LID areas will contain catch basins to convey stormwater toward the infiltration basins. Runoff from the site will be infiltrated so as to treat the first flush.

5. The roof runoff is proposed to drain into landscaped areas before entering the area drain system. Several landscaped areas are designed to be 2 to 3 inches below the finish grade to help in treating and retaining some of the runoff before it continues to flow into the proposed infiltration basin. Some drainage areas will disperse the runoff flow to the proposed filter catch basins. Both conditions mentioned above will show that the project proposes to disperse runoff to adjacent pervious areas to the maximum extent practicable.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1]	Area (Sq. Ft.)	DMA Type
DMA-1A	Roofs	94,459	Type D
DMA-1B	Concrete or Asphalt	192,426	Type D
DMA-1C	Landscaping	200,872	Type D
DMA-2A	Roofs	70,892	Type D
DMA-2B	Concrete or Asphalt	140,807	Type D
DMA-2C	Landscaping	165,763	Type D
DMA-3B	Concrete or Asphalt	10,869	Type D
DMA-3C	Landscaping	1,914	Type D
TOTAL		878,002	

[1]Reference Table 2-1 in the WQMP Guidance Document to populate this column

Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

~~**Table C.2** Type 'A', Self-Treating Areas~~

~~DMA Name or ID~~	~~Area (Sq. Ft.)~~	~~Stabilization Type~~	~~Irrigation Type (if any)~~
N/A			

~~**Table C.3** Type 'B', Self-Retaining Areas~~

~~**Self-Retaining Area**~~				~~**Type 'C' DMAs that are draining to the Self-Retaining Area**~~		
~~DMA Name/ ID~~	~~Post-project surface type~~	~~Area (square feet)~~	~~Storm Depth (inches)~~	~~DMA Name / ID~~	~~[C] from Table C.4 =~~	~~Required Retention Depth (inches)~~
		~~[A]~~	~~[B]~~		~~[C]~~	~~[D]~~
N/A						

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

~~**Table C.4** Type 'C', Areas that Drain to Self-Retaining Areas~~

~~**DMA**~~					~~**Receiving Self-Retaining DMA**~~		
~~DMA Name/ ID~~	~~Area (square feet)~~	~~Post-project surface type~~	~~Runoff factor~~	~~Product~~	~~DMA name /ID~~	~~Area (square feet)~~	~~Ratio~~
	~~[A]~~		~~[B]~~	~~[C] = [A] x [B]~~		~~[D]~~	~~[C]/[D]~~
N/A							

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA-1	Infiltration Basin, IMP – 1
DMA-2	Infiltration Basin, IMP - 2

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site. If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		x
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?		X
If Yes, list affected DMAs:		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here:		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

☐ Reclaimed water will be used for the non-potable water demands for the project.

☐Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☒The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If neither of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape:

Type of Landscaping (Conservation Design or Active Turf):

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces:

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor:

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area:

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	**Available Irrigated Landscape (Step 1)**

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users:

Project Type:

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces:

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-1 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor:

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users:

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	Projected number of toilet users (Step 1)

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand:

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces:

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-3 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-3:

Step 4: Multiply the unit value obtained from Step 4 by the total of impervious areas from Step 3 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use:

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment, unless a site-specific analysis has been completed that demonstrates technical infeasibility as noted in D.3 below.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☐ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

**** Project proposes to address the Design Capture Volume (DCV) requirement for the entire project area by proposing to construct infiltration basins.**

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy 1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	No LID (Alternative Compliance)
DMA-1	☒	☐	☐	☐	☐
DMA-2	☒	☐	☐	☐	☐
DMA-3	☒	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

Proposed project will utilize Infiltration BMP by proposing to construct Infiltration basins.

D.5 LID BMP Sizing

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet) [A]	Post-Project Surface Type	Effective Impervious Fraction, I_f [B]	DMA Runoff Factor [C]	DMA Areas x Runoff Factor [A] x [C]	*Enter BMP Name / Identifier Here*		
DMA-1A	*94,459*	*Roofs*	*1.0*	*0.892*	*84,257*			
DMA-1B	*192,426*	*Concrete or Asphalt*	*1.0*	*0.892*	*171,644*			
DMA-1C	*200,872*	*Landscaping*	*0.1*	*0.110*	*22,188*			
DMA-2A	*70,892*	*Roofs*	*1.0*	*0.892*	*63,236*			
DMA-2B	*140,807*	*Concrete or Asphalt*	*1.0*	*0.892*	*125,600*			
DMA-2C	*165,763*	*Landscaping*	*0.1*	*0.110*	*18,310*			
DMA-3A	*10,869*	*Concrete or Asphalt*	*0.1*	*0.892*	*9,695*			
DMA-3B	*1,914*	*Landscaping*	*1.0*	*0.11*	*211*	*Design Storm Depth (in)*	*Design Capture Volume, **V_{BMP}** (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	A_T = 878,002				Σ= 494,141	E=0.66	F=27,243	***G=51,626***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

E.1 Identify Pollutants of Concern

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☒ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☐ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☒ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☐	☒	☐	☐	☒	☐	☐

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

~~E.2 Stormwater Credits~~

~~Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.~~

Table E.2 Water Quality Credits

~~Qualifying Project Categories~~	~~Credit Percentage[2]~~
Total Credit Percentage[1]	

[1]Cannot Exceed 50%
[2]Obtain corresponding data from Table 3-8 in the WQMP Guidance Document

~~E.3 Sizing Criteria~~

~~After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.~~

~~**Table E.3** Treatment Control BMP Sizing~~

~~DMA Type/ID~~	~~DMA Area (square feet)~~ ~~[A]~~	~~Post-Project Surface Type~~	~~Effective Impervious Fraction, I_f~~ ~~[B]~~	~~DMA Runoff Factor~~ ~~[C]~~	~~DMA Area x Runoff Factor~~ ~~[A] x [C]~~		~~*Enter BMP Name / Identifier Here*~~		
						~~*Design Storm Depth (in)*~~	~~*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*~~	~~*Total Storm Water Credit % Reduction*~~	~~*Proposed Volume or Flow on Plans (cubic feet or cfs)*~~
	~~$A_T = \Sigma[A]$~~				~~Σ= [D]~~	~~[E]~~	~~$[F] = \frac{[D]x[E]}{[G]}$~~	~~[F] X (1-[H])~~	~~[I]~~

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12
[H] is from the Total Credit Percentage as Calculated from Table E.2 above
[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
Infiltration Basin	Metal	High
Infiltration Basin	Pathogens	High

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.
[2] Cross Reference Table E.1 above to populate this column.
[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	N/A		
Volume (Cubic Feet)	N/A		

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Sensitivity Maps.

Does the project qualify for this HCOC Exemption? ☒ Y ☐ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

The proposed development drains to a natural sump, (Lake Elsinore). Therefore, mitigation not required.

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Section G: Source Control BMPs

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951-955-1200 to verify.	• Maintain and periodically repaint or replace inlet markings. • Provide stormwater pollution prevention information to new site owners, lessees, or operators. • See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Landscape/Outdoor Pesticide Use	The final landscape plans will accomplish the following: • Preserve existing native trees, shrubs and ground cover to the maximum extent possible. • Where landscaped areas are used to retain or detain stormwater, specify plants are tolerant of saturated soil conditions.	• Maintain landscaping using minimum or no pesticides. • Provide IPM information to new owners, lessees and operators. • See applicable operational BMPs in "What you should know for… Landscape and Gardening" at http://rcflood.org/stormwater • Do not dispose of collected vegetation into waterways or storm drainage systems.
Pools, spas, ponds, decorative fountains, and other water features	If the co-permitee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.	• See applicable operational BMPs in "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood/org/stormwater/.
Refuse areas	• Trash enclosures are designed as not to discharge water out to the street. Trash bins are enclosed and covered.	• Trash is collected regularly to prevent vector problems. • Trash is to be co vered at all times to prevent the introduction or rain water that

	• Signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	could leach out of the trash bins. • Sweep around the trash enclosure areas and make sure that trash is kept inside the trash bins.
Sidewalks		• Prevent accumulation of litter and debris. See Appendix 8

Section H: Construction Plan Checklist

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)
IMP – 1	Infiltration Basin	FWQMP DMA Layout
IMP – 2	Infiltration Basin	FWQMP DMA Layout
IMP – 3	Infiltration trench	FWQMP DMA Layout

Construction Plan checklist will be included in Final WQMP Report.

Section I: Operation, Maintenance and Funding

Maintenance Mechanism:

Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☒ Y ☐ N

During Construction, the site developer, Villa Annette LP, shall be responsible for installing, inspecting and maintaining all BMPs. The developer will be responsible for the management of the project site plus implementation and maintenance of the BMPs required by the WQMP until such time as these responsibilities have been transferred to the Property Managers for the proposed Moreno Valley apartments.

Post-construction, the Property Mangers for the Villa Annette Apartments shall be responsible for inspecting and maintain the BMPs.

Maintenance and inspection activities for the identified BMPs will be performed as indicated in Appendix 9.

The contact information for the responsible parties are provided below.

Prior to transfer

Project owner: Villa Annette LP
Robert Latanzio
940 Calle Negocio, Suite 200
San Clemente, CA 92673

Upon Transfer: Property Manager for Moreno Valley Apartments

Villa Annette LP shall be responsible for funding the maintenance of the proposed BMPs included in this report until such time that responsibility for the project site is transferred to the property management.

Appendix 1: Maps and Site Plans

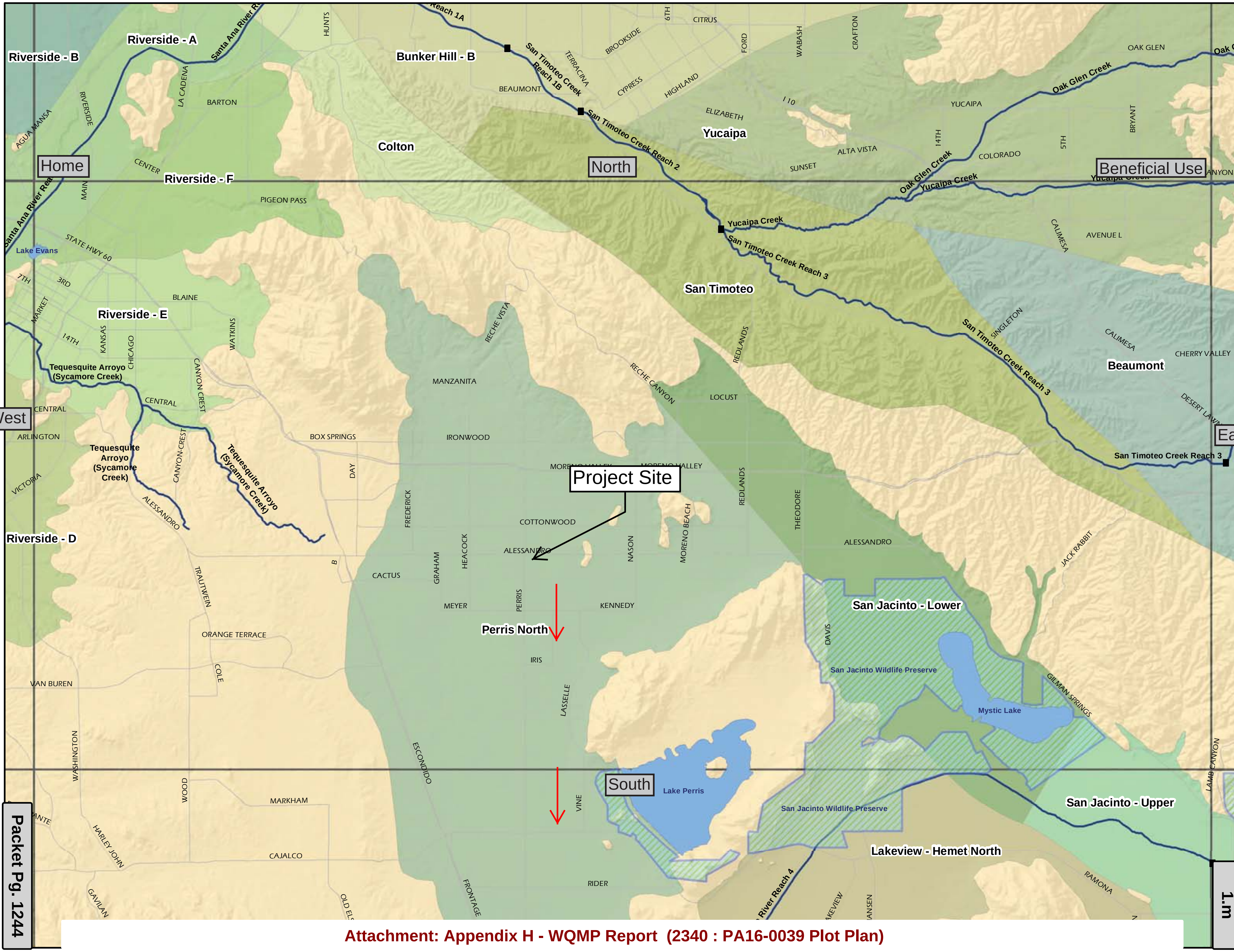
Location Map, WQMP Site Plan and Receiving Waters Map

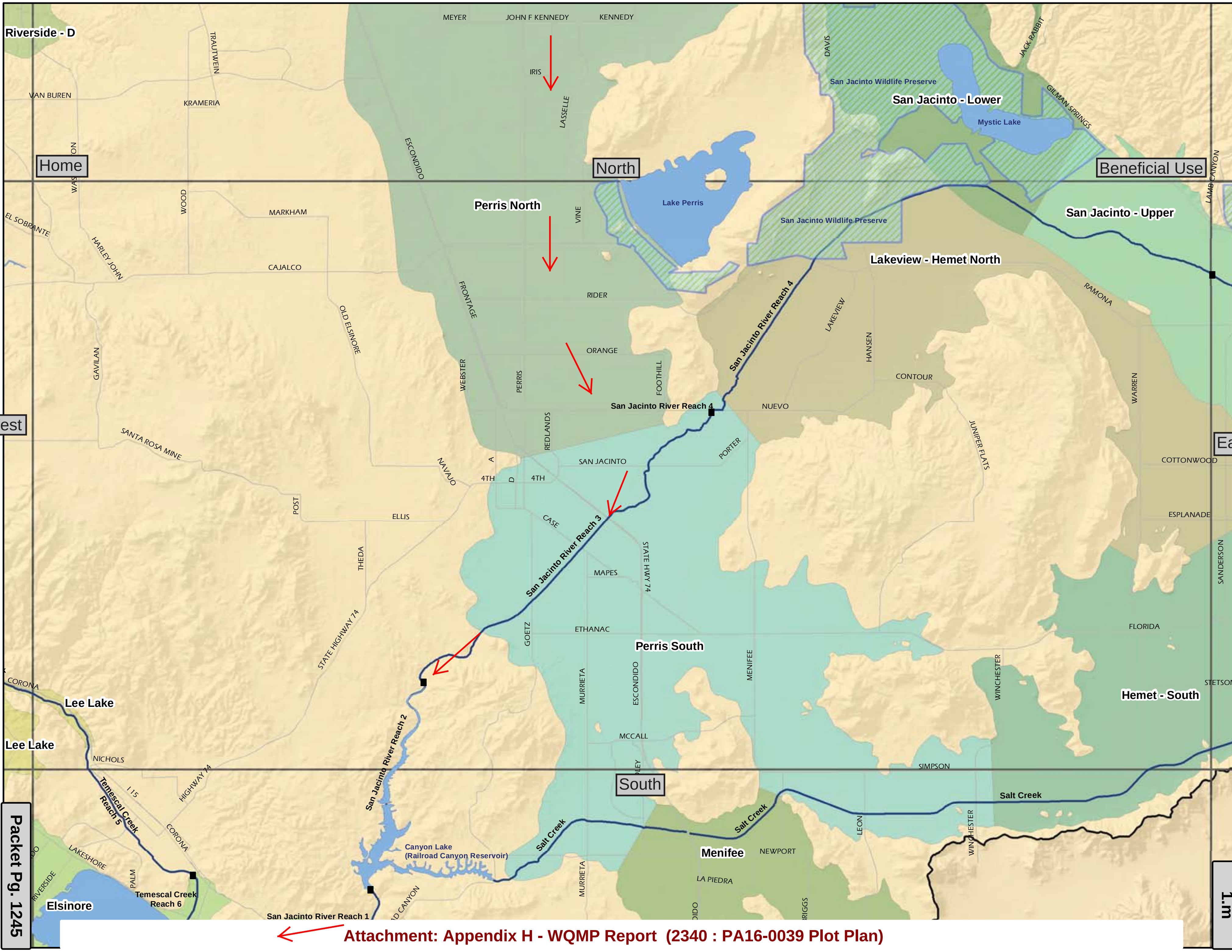
SITE VICINITY MAP

DATE: 1-14-16	ALESSANDRO BLVD AND PERRIS BLVD	
SCALE: AS SHOWN		DRAWN BY: P. NONG

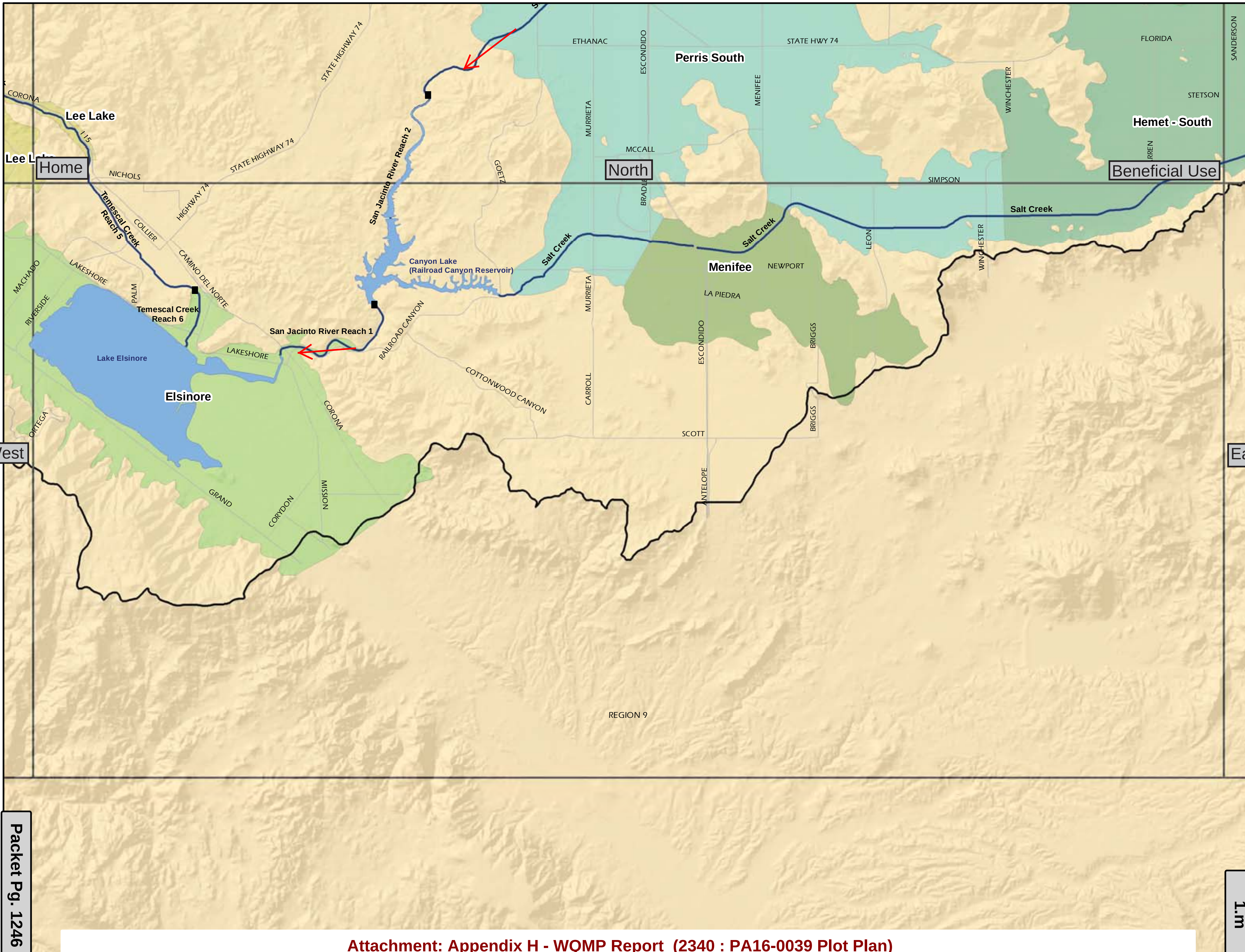
SITE LOCATION MAP

DATE: 1-14-16	ALESSANDRO BLVD AND PERRIS BLVD	
SCALE: AS SHOWN		
		DRAWN BY: P. NONG

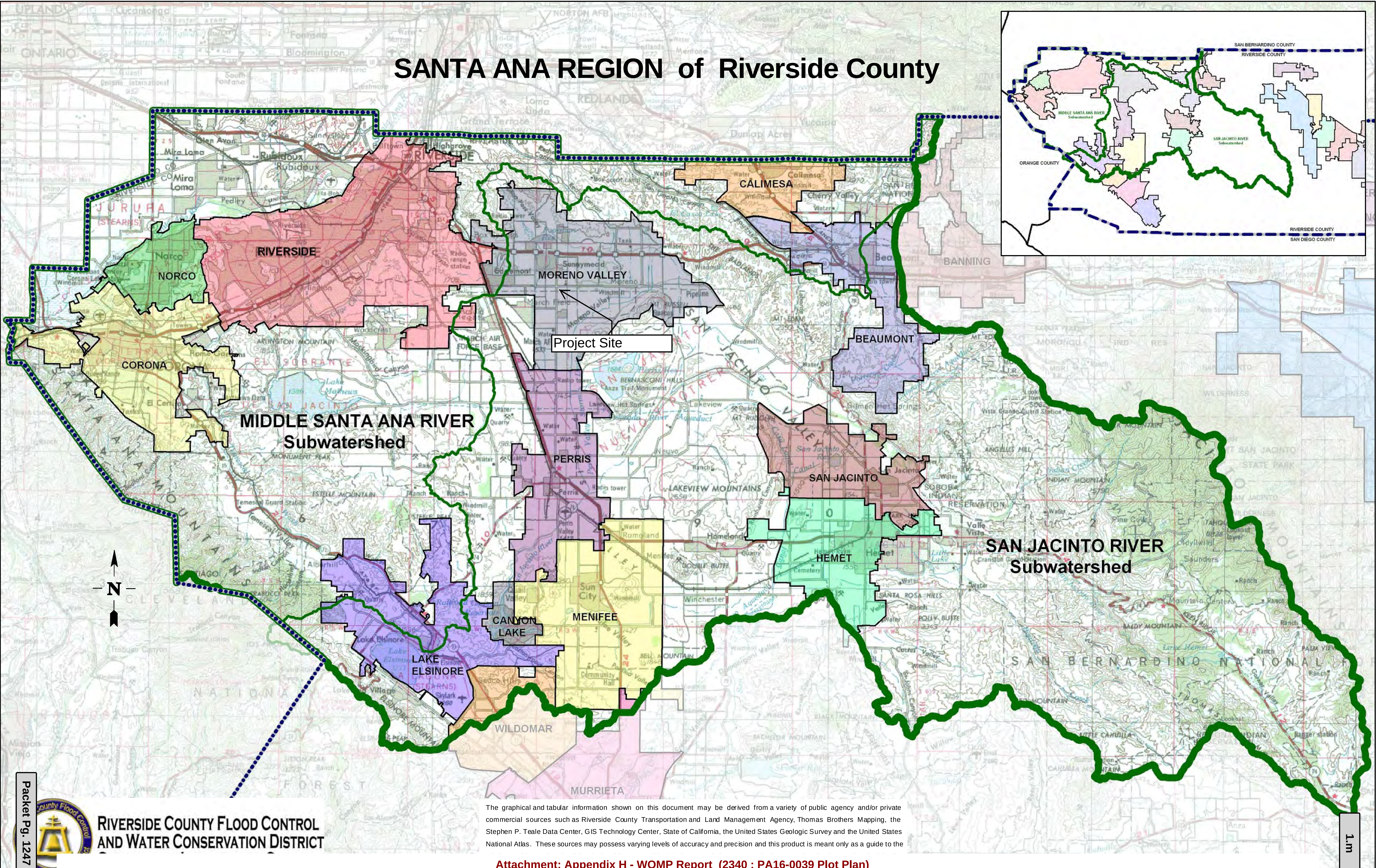

Project Site
Home
North
Beneficial Use
West
East
South
Riverside - A
Riverside - B
Riverside - D
Riverside - E
Riverside - F
Bunker Hill - B
Colton
Yucaipa
San Timoteo
Beaumont
Perris North
San Jacinto - Lower
San Jacinto - Upper
Lakeview - Hemet North
San Timoteo Creek Reach 1B
San Timoteo Creek Reach 2
San Timoteo Creek Reach 3
Yucaipa Creek
Oak Glen Creek
Tequesquite Arroyo (Sycamore Creek)
San Jacinto Wildlife Preserve
Mystic Lake
Lake Perris
Lake Evans
1.m



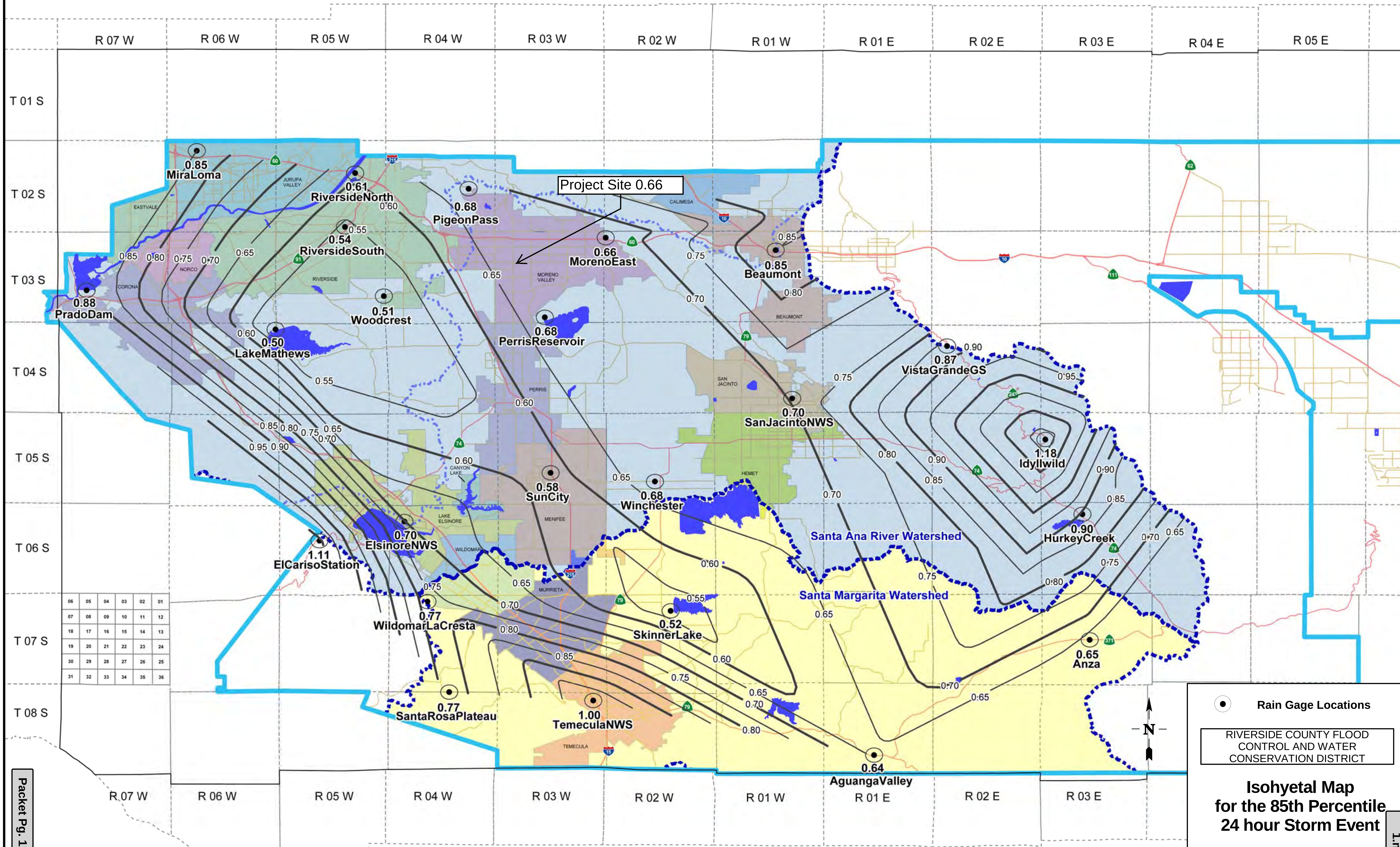
Riverside - D
Home
North
Beneficial Use
West
East
South
MEYER
JOHN F KENNEDY
KENNEDY
TRAUTWEIN
IRIS
LASSELLE
VAN BUREN
KRAMERIA
ESCONDIDO
DAVIS
JACK RABBIT
San Jacinto Wildlife Preserve
San Jacinto - Lower
Mystic Lake
GILMAN SPRINGS
LAMB CANYON
Lake Perris
Perris North
VINE
WOOD
MARKHAM
EL SOBRANTE
HARLEY JOHN
CAJALCO
San Jacinto Wildlife Preserve
San Jacinto - Upper
Lakeview - Hemet North
RAMONA
FRONTAGE
RIDER
OLD ELSINORE
San Jacinto River Reach 4
LAKEVIEW
HANSEN
GAVILAN
ORANGE
CONTOUR
WEBSTER
PERRIS
FOOTHILL
WARREN
San Jacinto River Reach 4
NUEVO
REDLANDS
SANTA ROSA MINE
PORTER
JUNIPER FLATS
COTTONWOOD
SAN JACINTO
NAVAJO
4TH
D
4TH
POST
ELLIS
CASE
San Jacinto River Reach 3
ESPLANADE
THEDA
STATE HWY 74
MAPES
SANDERSON
STATE HIGHWAY 74
ETHANAC
GOETZ
FLORIDA
Perris South
MENIFEE
CORONA
Lee Lake
MURRIETA
ESCONDIDO
WINCHESTER
STETSON
Hemet - South
Lee Lake
MCCALL
NICHOLS
HIGHWAY 74
San Jacinto River Reach 2
SIMPSON
Temescal Creek Reach 5
I 15
CORONA
Salt Creek
LAKESHORE
Salt Creek
Salt Creek
LEON
WINCHESTER
Canyon Lake
(Railroad Canyon Reservoir)
Menifee
NEWPORT
RIVERSIDE
PALM
Temescal Creek Reach 6
LA PIEDRA
MURRIETA
Elsinore
San Jacinto River Reach 1
BRIGGS



Home
North
Beneficial Use
West
East
Lee Lake
Perris South
Hemet - South
Menifee
Elsinore
Lake Elsinore
Canyon Lake
(Railroad Canyon Reservoir)
Salt Creek
San Jacinto River Reach 2
San Jacinto River Reach 1
Temescal Creek
Reach 5
Temescal Creek
Reach 6
ETHANAC
STATE HWY 74
FLORIDA
STETSON
SANDERSON
ESCONDIDO
MENIFEE
WINCHESTER
MURRIETA
MCCALL
SIMPSON
NICHOLS
STATE HIGHWAY 74
HIGHWAY 74
CORONA
COLLIER
CAMINO DEL NORTE
LAKESHORE
MACHADO
RIVERSIDE
PALM
RAILROAD CANYON
COTTONWOOD CANYON
CARROLL
NEWPORT
LA PIEDRA
BRIGGS
LEON
SCOTT
ANTELOPE
ORTEGA
GRAND
CORYDON
MISSION
REGION 9



SANTA ANA REGION of Riverside County
MIDDLE SANTA ANA RIVER
Subwatershed
SAN JACINTO RIVER
Subwatershed
Project Site
RIVERSIDE
NORCO
CORONA
MORENO VALLEY
CALIMESA
BEAUMONT
BANNING
PERRIS
SAN JACINTO
HEMET
MENIFEE
CANYON LAKE
LAKE ELSINORE
WILDOMAR
MURRIETA
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
ORANGE COUNTY
SAN DIEGO COUNTY
N
RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
June 2009
The graphical and tabular information shown on this document may be derived from a variety of public agency and/or private commercial sources such as Riverside County Transportation and Land Management Agency, Thomas Brothers Mapping, the Stephen P. Teale Data Center, GIS Technology Center, State of California, the United States Geologic Survey and the United States National Atlas. These sources may possess varying levels of accuracy and precision and this product is meant only as a guide to the

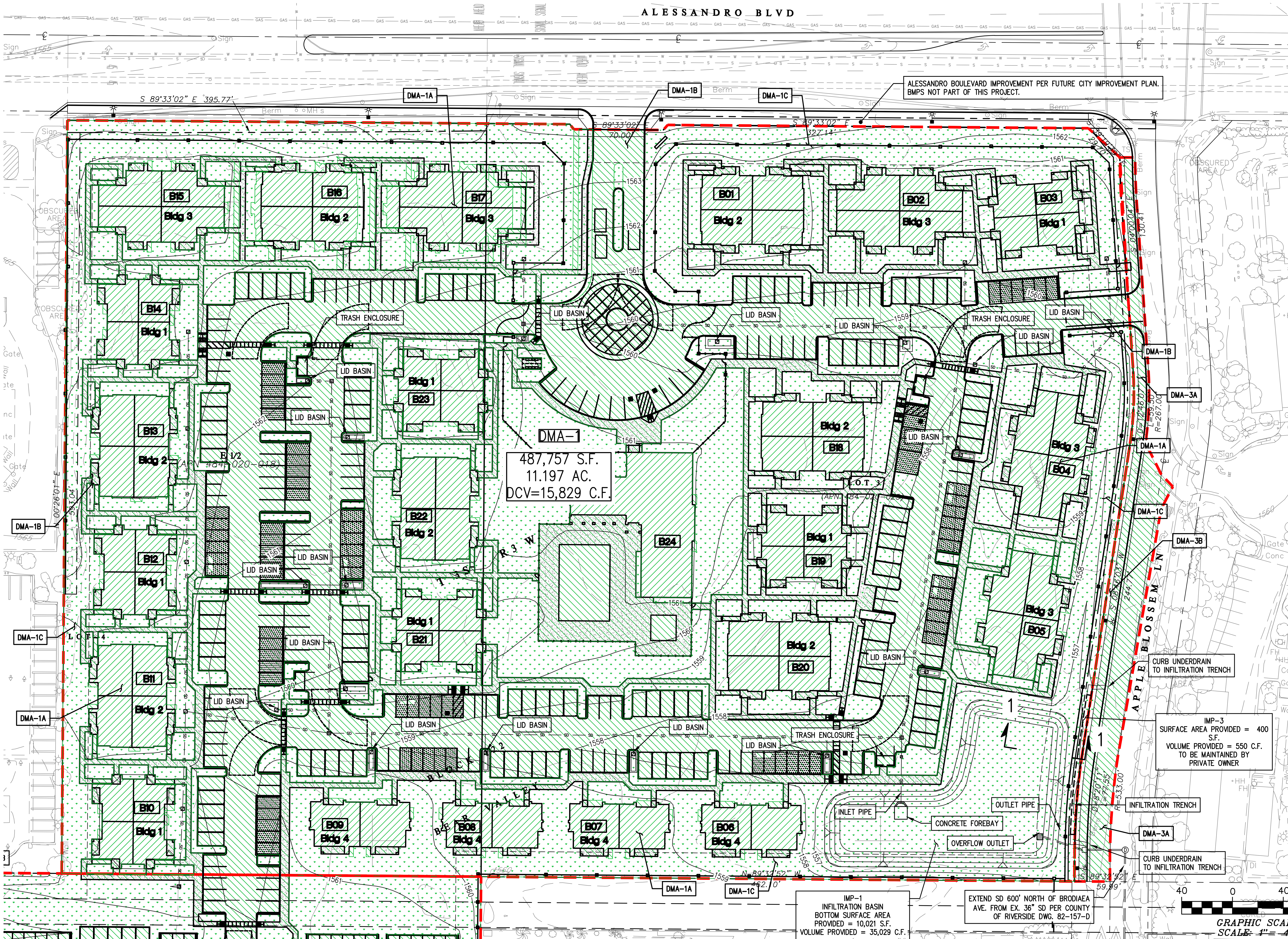

Project Site 0.66
0.85 MiraLoma
0.61 RiversideNorth
0.68 PigeonPass
0.66 MorenoEast
0.85 Beaumont
0.54 RiversideSouth
0.88 PradoDam
0.51 Woodcrest
0.68 PerrisReservoir
0.50 LakeMathews
0.87 VistaGrandeGS
0.70 SanJacintoNWS
1.18 Idyllwild
0.58 SunCity
0.68 Winchester
0.70 ElsinoreNWS
1.11 ElCarisoStation
0.90 HurkeyCreek
Santa Ana River Watershed
Santa Margarita Watershed
0.77 WildomarLaCresta
0.52 SkinnerLake
0.65 Anza
0.77 SantaRosaPlateau
1.00 TemeculaNWS
0.64 AguangaValley
Rain Gage Locations
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
Isohyetal Map for the 85th Percentile 24 hour Storm Event
July 2011

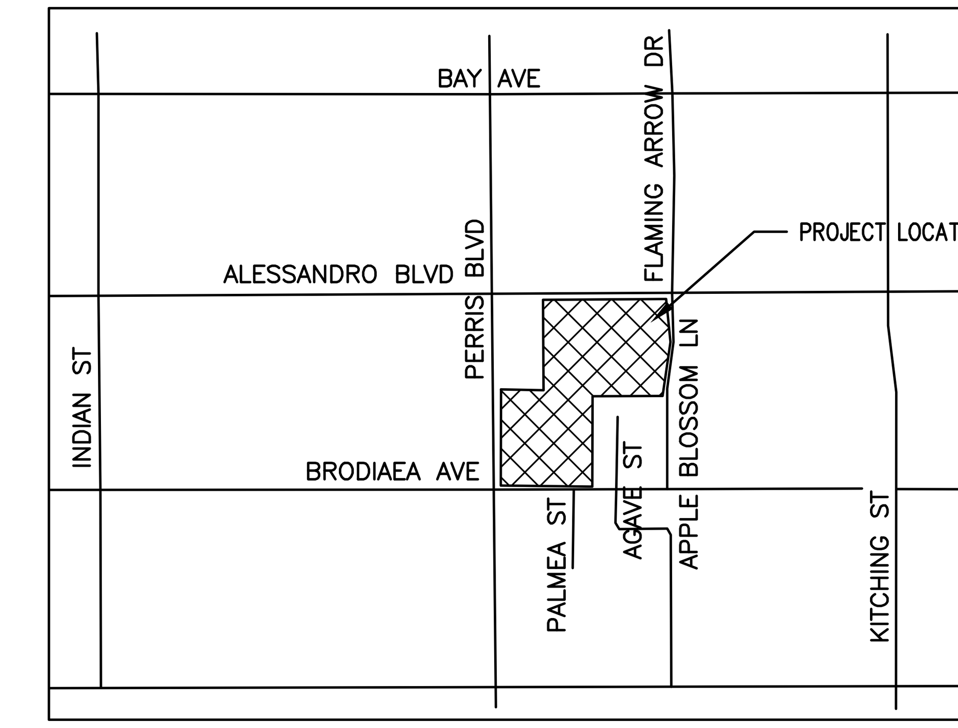
2010 California 303(d) List of Water Quality Limited Segments*

Water quality limited segments requiring a TMDL(5A), being addressed by TMDL(5B), and/or being addressed by an action other than TMDL(5C).

REGION	REGION NAME	WATER BODY NAME	WBID	WATER BODY TYPE	WBTYPE CODE	INTEGRATED REPORT CATEGORY	USGS CATALOGING UNIT*	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT	POLLUTANT	POLLUTANT CATEGORY	FINAL LISTING DECISION	TMDL REQUIREMENT STATUS**	EXPECTED TMDL COMPLETION DATE***	EXPECTED ATTAINMENT DATE***	USEPA TMDL APPROVED DATE***	COMMENTS INCLUDED ON 303(d) LIST
8	Regional Board 8 - Santa Ana Region	Canyon Lake (Railroad Canyon Reservoir)	CAL8021100019990208151525	Lake & Reservoir	L	5	18070202	80211000	453	Acres	Nutrients	Nutrients	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			9/1/2005	
8	Regional Board 8 - Santa Ana Region	Canyon Lake (Railroad Canyon Reservoir)	CAL8021100019990208151525	Lake & Reservoir	L	5	18070202	80211000	453	Acres	Pathogens	Pathogens	List on 303(d) list (TMDL required list)	5A	2006			
8	Regional Board 8 - Santa Ana Region	Chino Creek Reach 1A (Santa Ana River R5 con to just downstream of confl with Mill Creek)	CAR8012100020080715125447	River & Stream	R	5	18070203	80121000	0.8	Miles	Nutrients	Nutrients	List on 303(d) list (TMDL required list)	5A	2019			
8	Regional Board 8 - Santa Ana Region	Chino Creek Reach 1A (Santa Ana River R5 con to just downstream of confl with Mill Creek)	CAR8012100020080715125447	River & Stream	R	5	18070203	80121000	0.8	Miles	Pathogens	Pathogens	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			5/16/2007	
8	Regional Board 8 - Santa Ana Region	Chino Creek Reach 1B (Mill Creek confl to start of concrete lined channel)	CAR8012100020080715104015	River & Stream	R	5	18070203	80121000	7.0	Miles	Chemical oxygen demand (COD)	Miscellaneous	List on 303(d) list (TMDL required list)	5A	2021			
8	Regional Board 8 - Santa Ana Region	Chino Creek Reach 1B (Mill Creek confl to start of concrete lined channel)	CAR8012100020080715104015	River & Stream	R	5	18070203	80121000	7.0	Miles	Nutrients	Nutrients	List on 303(d) list (TMDL required list)	5A	2019			
8	Regional Board 8 - Santa Ana Region	Chino Creek Reach 1B (Mill Creek confl to start of concrete lined channel)	CAR8012100020080715104015	River & Stream	R	5	18070203	80121000	7.0	Miles	Pathogens	Pathogens	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			5/16/2007	
8	Regional Board 8 - Santa Ana Region	Chino Creek Reach 2 (Beginning of concrete channel to confl w San Antonio Creek)	CAR8012100019990211094451	River & Stream	R	5	18070203	80121000	2.5	Miles	Coliform Bacteria	Pathogens	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			5/16/2007	
8	Regional Board 8 - Santa Ana Region	Chino Creek Reach 2 (Beginning of concrete channel to confl w San Antonio Creek)	CAR8012100019990211094451	River & Stream	R	5	18070203	80121000	2.5	Miles	pH	Miscellaneous	List on 303(d) list (TMDL required list)	5A	2021			
8	Regional Board 8 - Santa Ana Region	Cucamonga Creek Reach 1 (Valley Reach)	CAR8012100019990211101136	River & Stream	R	5	18070203	80121000	10	Miles	Cadmium	Metals/Metalloids	List on 303(d) list (TMDL required list)	5A	2021			
8	Regional Board 8 - Santa Ana Region	Cucamonga Creek Reach 1 (Valley Reach)	CAR8012100019990211101136	River & Stream	R	5	18070203	80121000	10	Miles	Coliform Bacteria	Pathogens	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			5/16/2007	
8	Regional Board 8 - Santa Ana Region	Cucamonga Creek Reach 1 (Valley Reach)	CAR8012100019990211101136	River & Stream	R	5	18070203	80121000	10	Miles	Copper	Metals/Metalloids	List on 303(d) list (TMDL required list)	5A	2021			
8	Regional Board 8 - Santa Ana Region	Cucamonga Creek Reach 1 (Valley Reach)	CAR8012100019990211101136	River & Stream	R	5	18070203	80121000	10	Miles	Lead	Metals/Metalloids	List on 303(d) list (TMDL required list)	5A	2021			
8	Regional Board 8 - Santa Ana Region	Cucamonga Creek Reach 1 (Valley Reach)	CAR8012100019990211101136	River & Stream	R	5	18070203	80121000	10	Miles	Zinc	Metals/Metalloids	List on 303(d) list (TMDL required list)	5A	2021			
8	Regional Board 8 - Santa Ana Region	Cucamonga Creek Reach 2 (Mountain Reach)	CAR8012402019991013163906	River & Stream	R	5	18070203	80124020	13	Miles	pH	Miscellaneous	List on 303(d) list (TMDL required list)	5A	2021			
8	Regional Board 8 - Santa Ana Region	East Garden Grove Wintersburg Channel	CAR8011100020080924142217	River & Stream	R	5	18070201	80111000	2.9	Miles	Ammonia (Unionized)	Nutrients	List on 303(d) list (TMDL required list)	5A	2021			
8	Regional Board 8 - Santa Ana Region	Elsinore, Lake	CAL8023100019990208151100	Lake & Reservoir	L	5	18070202	80231000	2431	Acres	Nutrients	Nutrients	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			9/30/2005	
8	Regional Board 8 - Santa Ana Region	Elsinore, Lake	CAL8023100019990208151100	Lake & Reservoir	L	5	18070202	80231000	2431	Acres	Organic Enrichment/Low Dissolved Oxygen	Nutrients	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			9/30/2005	
8	Regional Board 8 - Santa Ana Region	Elsinore, Lake	CAL8023100019990208151100	Lake & Reservoir	L	5	18070202	80231000	2431	Acres	PCBs (Polychlorinated biphenyls)	Other Organics	List on 303(d) list (TMDL required list)	5A	2019			
8	Regional Board 8 - Santa Ana Region	Elsinore, Lake	CAL8023100019990208151100	Lake & Reservoir	L	5	18070202	80231000	2431	Acres	Sediment Toxicity	Toxicity	List on 303(d) list (TMDL required list)	5A	2021			
8	Regional Board 8 - Santa Ana Region	Elsinore, Lake	CAL8023100019990208151100	Lake & Reservoir	L	5	18070202	80231000	2431	Acres	Unknown Toxicity	Toxicity	Do Not Delist from 303(d) list (TMDL required list)	5A	2007			

WATER QUALITY MANAGEMENT PLAN
ALESSANDRO APARTMENTS





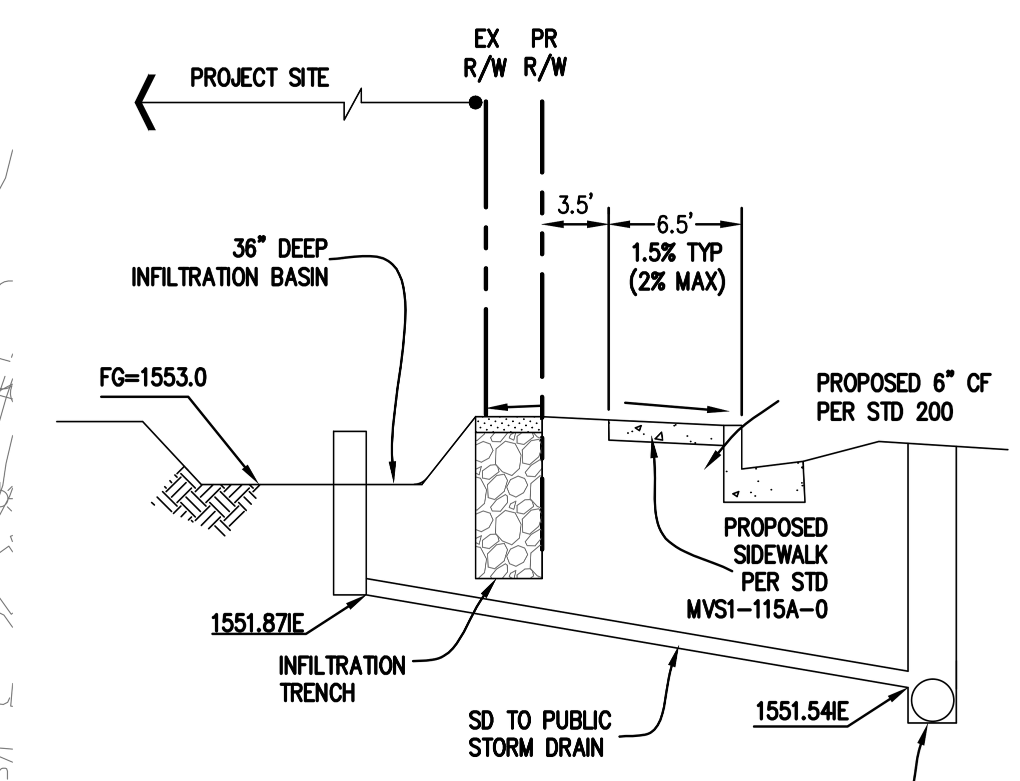
VICINITY MAP

LEGEND

ITEM	SYMBOL
DRAINAGE AREA BOUNDARY	— — — —
DMA-AREA ROOF/HARDSCAPE	DMA-X
DMA-AREA LANDSCAPE	DMA-X
DIRECTION OF SURFACE FLOW	→
DRAINAGE AREA DESIGNATION	DA-1
DRAINAGE MANAGEMENT AREA DESIGNATION	DMA-1A
CATCH BASIN (C.B.) WITH FLOW-GARD INSERTS OR APPROVED EQUIAL	C.B.

DMA AREA TABLE

DMA-X	AREA (SF)	SURFACE TYPE
DMA-1A	94,459	ROOF
DMA-1B	192,426	CONCRETE OR ASPHALT
DMA-1C	200,872	LANDSCAPE
DMA-3A	10,869	CONCRETE AND ASPHALT
DMA-3B	1,914	LANDSCAPE



SECTION 1-1

NTS

NOTES:

1. SEE SHEET 2 FOR LID BASIN AND INFILTRATION BASIN DETAIL
2. ALESSANDRO BOULEVARD, PERRIS BOULEVARD, AND BRODIAEA AVENUE IMPROVEMENT PER FUTURE CITY IMPROVEMENT PROJECT. BMPS NOT PART OF THIS PROJECT.
3. INFILTRATION BASIN TO BE UTILIZED FOR WATER QUALITY AND MITIGATION OF POST DEVELOPMENT FLOW RATES

Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 • info@civillandworks.com

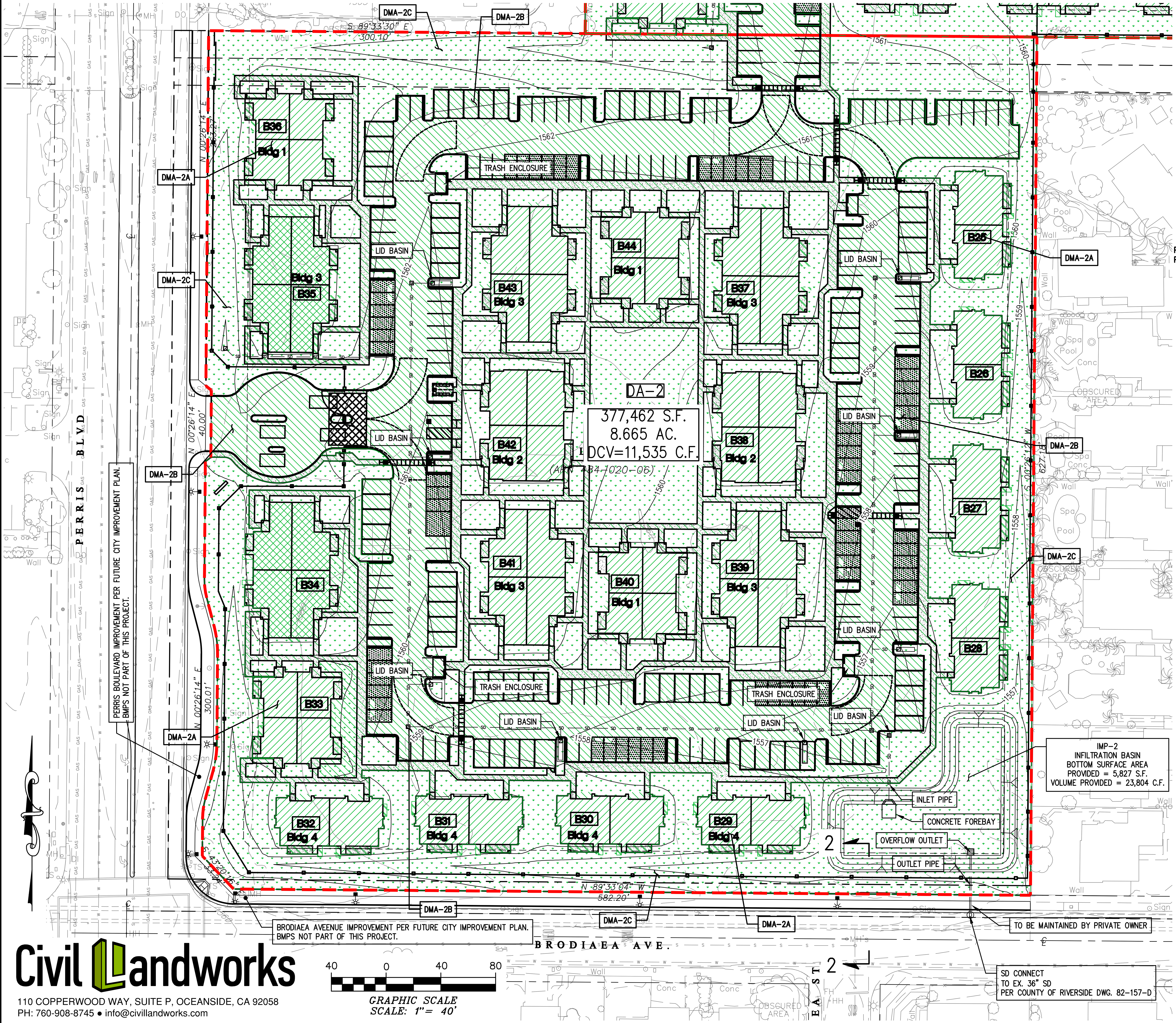
WATER QUALITY MANAGEMENT PLAN
ALESSANDRO APARTMENTS

LEGEND

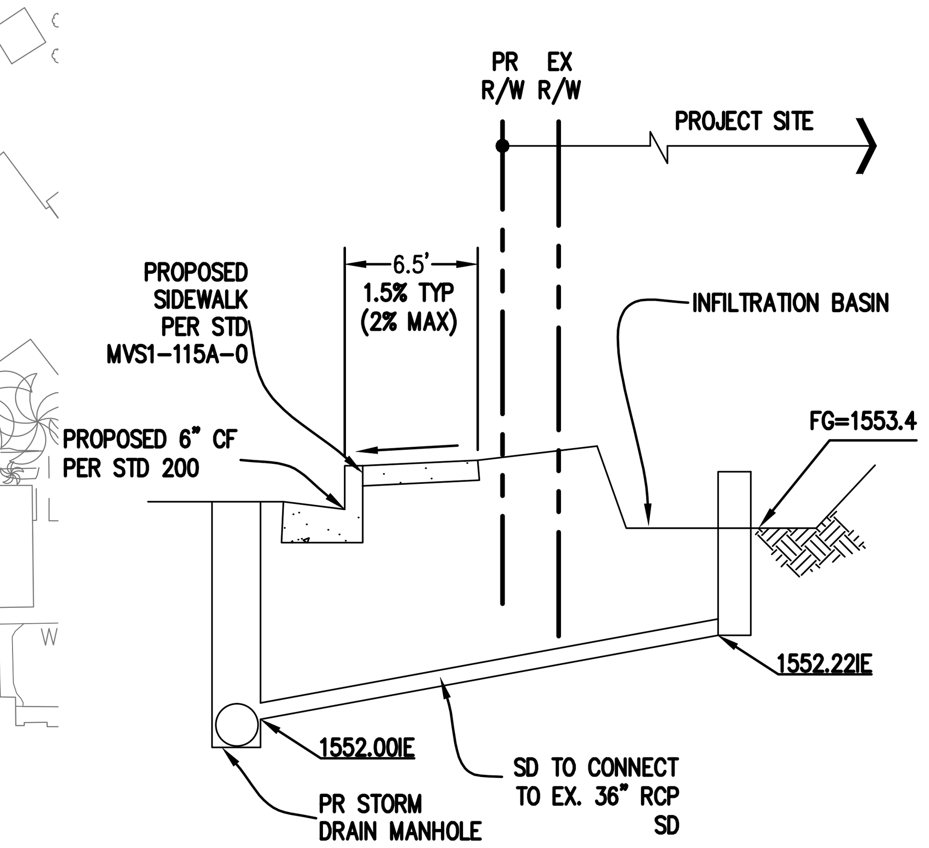
ITEM	SYMBOL
DRAINAGE AREA BOUNDARY	
DMA-AREA ROOF/HARDSCAPE	DMA-X
DMA-AREA LANDSCAPE	DMA-X
DIRECTION OF SURFACE FLOW	
DRAINAGE AREA DESIGNATION	DA-2
DRAINAGE MANAGEMENT AREA DESIGNATION	DMA-2A
CATCH BASIN (C.B.) WITH FLOW-GARD INSERTS OR APPROVED EQUAL	C.B.

DMA AREA TABLE

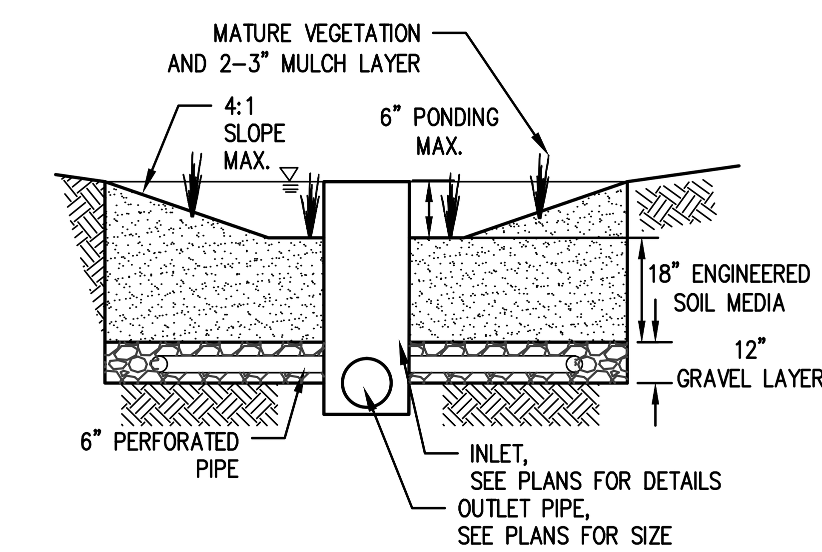
DMA-X	AREA (SF)	SURFACE TYPE
DMA-2A	70,892	ROOF
DMA-2B	140,807	CONCRETE OR ASPHALT
DMA-2C	165,763	LANDSCAPE



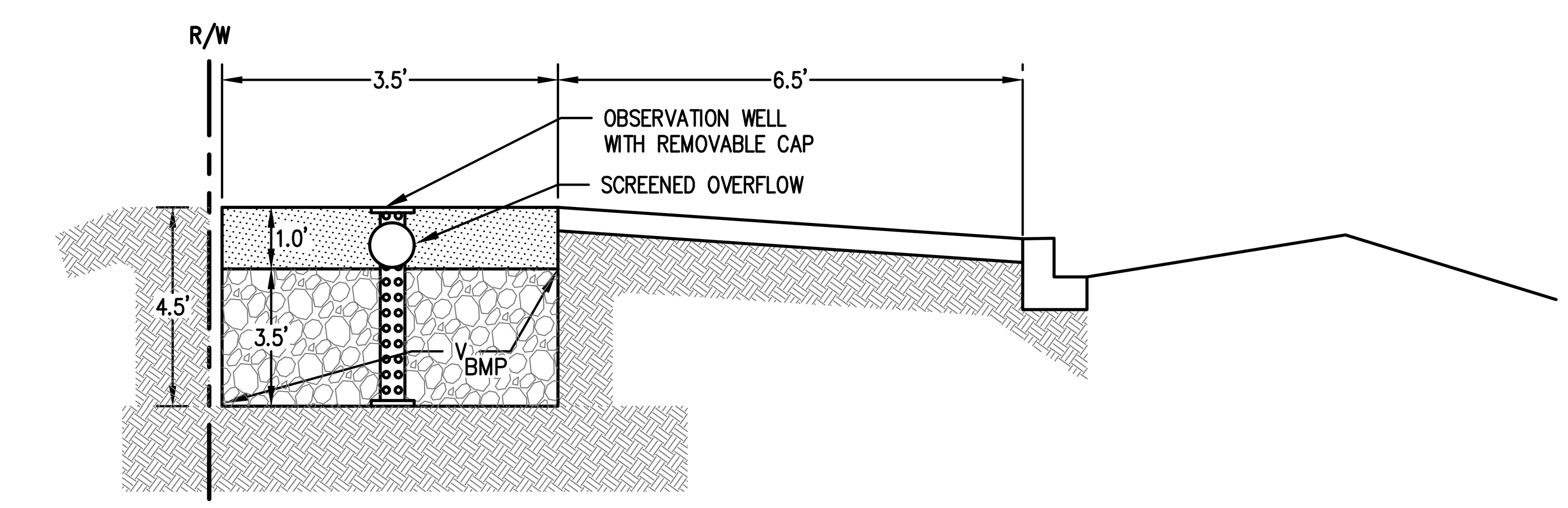
GRAPHIC SCALE
SCALE: 1" = 40'



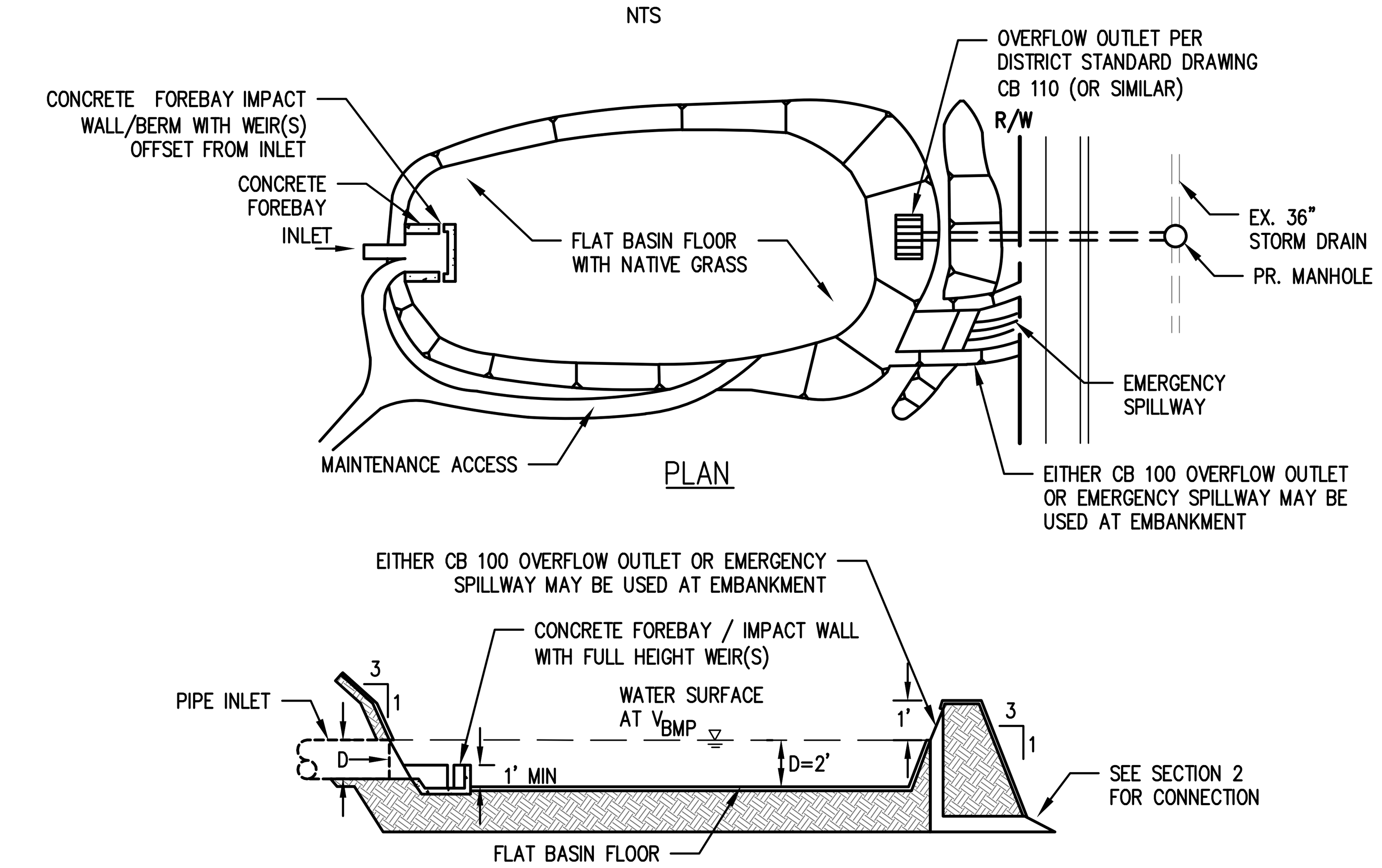
SECTION 2-2
NTS



LID BASIN
NTS



INFILTRATION TRENCH
NTS



INFILTRATION BASIN
NTS

Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 • info@civillandworks.com

Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

Appendix 2: Construction Plans

Grading and Drainage Plans

PRELIMINARY GRADING PLAN
VILLA ANNETTE, MORENO VALLEY, CA

GENERAL NOTES

1. NUMBER OF UNITS: 272 APARTMENT UNITS (1 & 2 STORIES) AND A RECREATION BUILDING.
2. ALL INTERNAL DRIVES TO BE PRIVATELY OWNED AND MAINTAINED.
3. A PROPERTY OWNER ASSOCIATION WILL BE REQUIRED TO MAINTAIN ALL COMMON FACILITIES, VISIBLE FRONT YARDS AND REVERSE FRONTAGE AREAS NOT ACCEPTED BY THE CITY'S SPECIAL DISTRICTS.
4. A PROPERTY OWNER ASSOCIATION WILL BE REQUIRED TO MAINTAIN THE PRIVATE DRIVES, COMMON AREA AMENITIES AND COMMON LANDSCAPING AREAS.
5. ALL UNITS TO BE FIRE SPRINKLERED.

ZONING

EXISTING CURRENT: R-15 RESIDENTIAL

LOT SUMMARY

GROSS ACREAGE = 19.86 ACRES
NET ACREAGE = 19.86 ACRES
DISTURBED ACREAGE = 19.86 ACRES

LAND USE SUMMARY

43 BUILDINGS
272 DWELLING UNITS
512 PARKING STALLS
1 RECREATIONAL BUILDING W/ POOL

FLOOD ZONE

THE SUBJET TRACT IS NOT WITHIN THE 500 YEAR FLOOD PLAIN, ZONE X, FEMA FLOOD INSURANCE PANEL NO. 761 of 3805

ASSESSOR'S PARCEL NUMBER

APN: 484-020-006
APN: 484-020-018
APN: 484-020-025

PROPERTY ADDRESS

ALESSANDRO BLVD,
MORENO VALLEY, CALIFORNIA

UTILITIES

ELECTRICITY:
MORENO VALLEY ELECTRIC UTILITY: 1(877)811-8700
SOUTHERN CALIFORNIA EDISON: 1(800) 684-8123
NATURAL GAS:
THE GAS COMPANY 1(800) 427-2200
TELEPHONE:
AT&T: 1(800) 310-2355
TRASH SERVICE:
WASTE MANAGEMENT OF INLAND VALLEY 1(800) 423-9986
WATER:
EASTERN MUNICIPAL WATER DISTRICT 1(951) 928-3777
SEWER:
EASTERN MUNICIPAL WATER DISTRICT 1(951) 928-3777

SCHOOL

MORENO VALLEY UNIFIED SCHOOL DISTRICT

THOMAS BROTHERS GUIDE

PAGE 717 G-6, 2006 EDITION

EARTHWORK QUANTITIES

DESCRIPTION	CUT (C.Y)	FILL (C.Y.)
MASS EXCAVATION	19,500	19,500

IMPORT/~~EXPORT~~: 0 CY
MAX CUT: 5.0 FT
MAX FILL: 3.3 FT

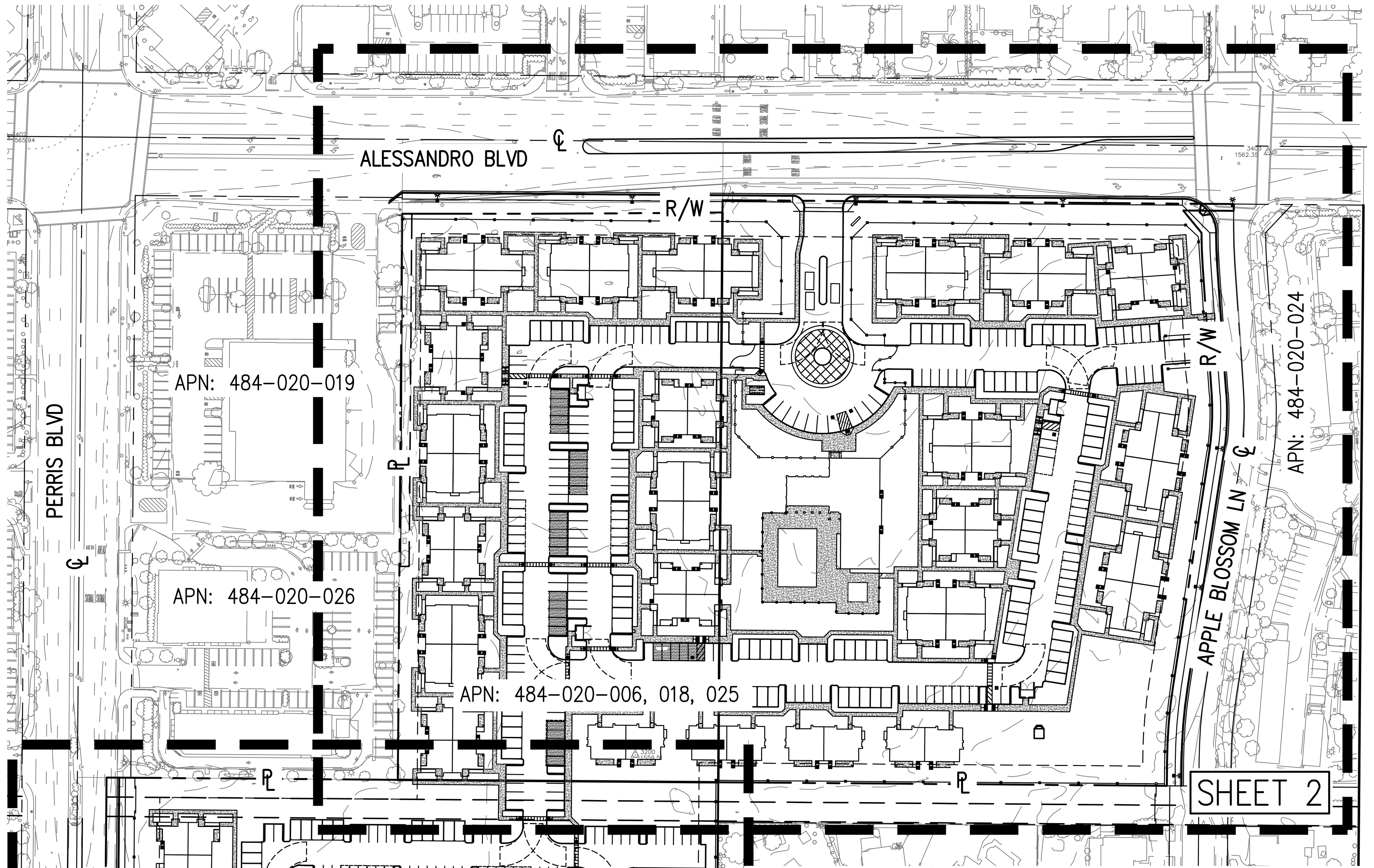
LEGAL DESCRIPTION

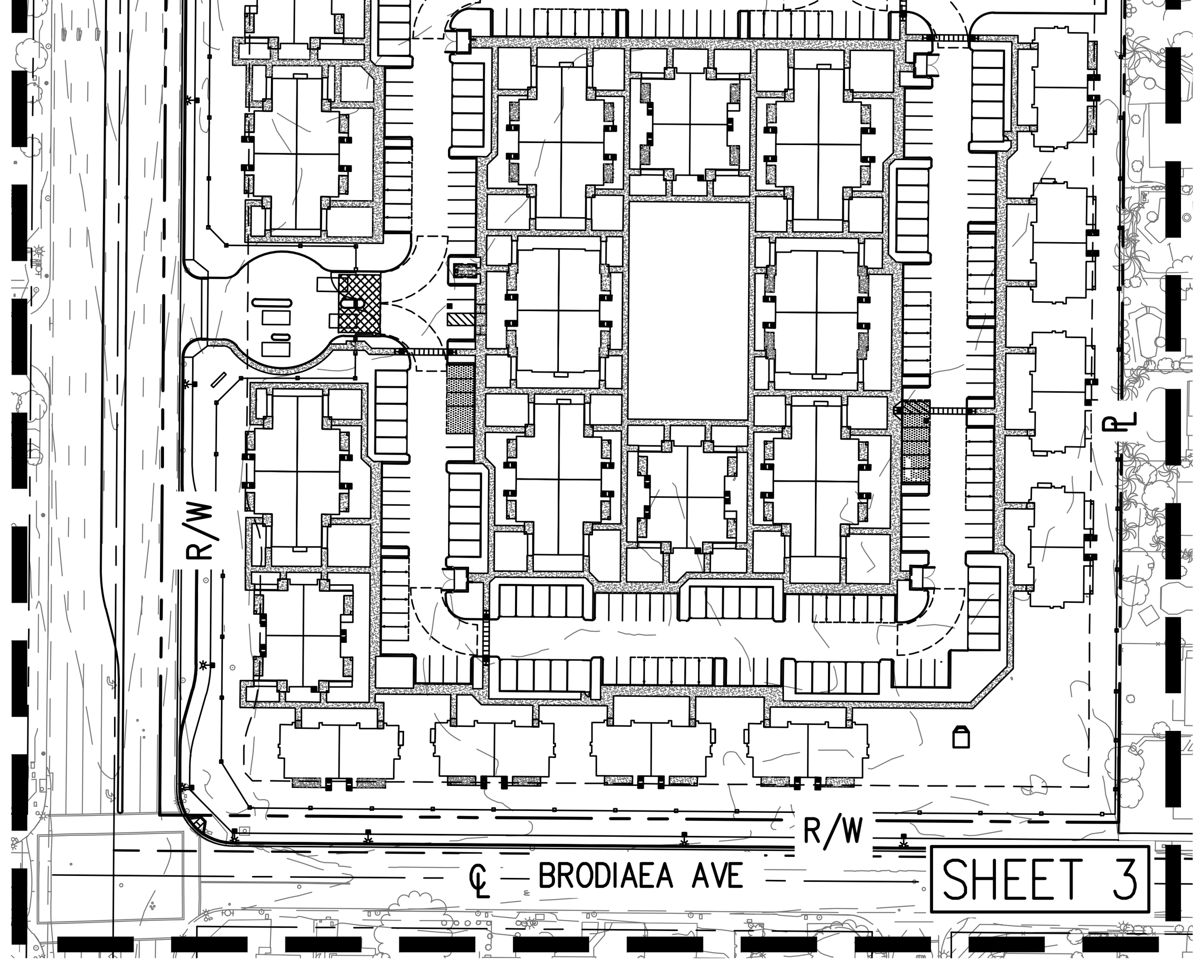
PARCEL 1:
LOT 3 IN BLOCK 122 OF MAP NO. 1 BEAR VALLEY AND ALESSANDRO DEVELOPMENT CO., IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 11, PAGES(3) 10 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAN BERNARDINO COUNTY.
EXCEPTING THEREFROM THAT PORTION DESCRIBED AS FOLLOWS:
BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 3; THENCE ALONG THE NORTH LINE OF SAID LOT 3 NORTH 89°33'40" WEST A DISTANCE OF 133.53 FEET; THENCE SOUTH 0°25'36" WEST A DISTANCE OF 25.00 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE EAST AND HAVING A RADIUS OF 500 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 4°25'56" A DISTANCE OF 38.68 FEET; THENCE SOUTH 4°00'20" EAST A DISTANCE OF 130.38 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE WEST AND HAVING A RADIUS OF 300 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 12°46'07" A DISTANCE OF 66.86 FEET; THENCE SOUTH 08°45'47" WEST A DISTANCE OF 244.76 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE EAST AND HAVING A RADIUS OF 500 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 8°20'11" A DISTANCE OF 72.25 FEET; THENCE SOUTH 0°25'36" WEST A DISTANCE OF 25.00 FEET TO THE SOUTH LINE OF SAID LOT 3, SAID POINT LYING 165.00 FEET FROM THE SOUTHEAST CORNER OF SAID LOT 3; THENCE ALONG SAID SOUTH LINE SOUTH 89°33'26" EAST A DISTANCE OF 165.00 FEET TO SAID SOUTHEAST CORNER; THENCE ALONG THE EAST LINE OF SAID LOT 3 NORTH 0°25'36" EAST A DISTANCE OF 599.99 FEET TO THE POINT OF BEGINNING SAID LAND IS ALSO SHOWN AS PARCEL 1 OF LOT LINE ADJUSTMENT NO. 902 AND CERTIFICATE OF COMPLIANCE RECORDED AUGUST 02, 2001 AS INSTRUMENT NO. 2001-364622 OF OFFICIAL RECORDS.

PARCEL 2:
LOT 5 AND THE EAST ½ OF LOT 4 BLOCK 122 OF BEAR VALLEY AND ALESSANDRO DEVELOPMENT COMPANY, IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 11, PAGE(S) 10 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAN BERNARDINO COUNTY.

EXCEPT ALL OIL, GAS AND OTHER HYDROCARBONS UNDER AND IN SAID LAND AS RESERVED BY MARY H. TRAUTWEIN, ET AL., IN DEED RECORDED OCTOBER 28, 1959 IN BOOK 2570, PAGE 564 OF OFFICIAL RECORDS.

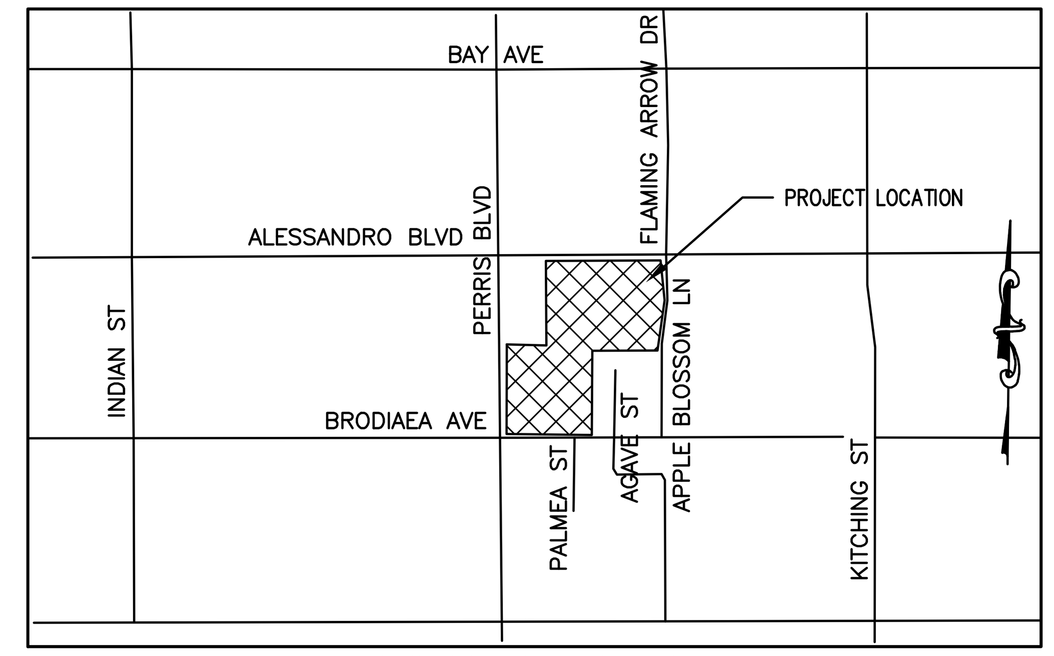
10/28/16





KEY MAP

SCALE: 1"=100'



VICINITY MAP

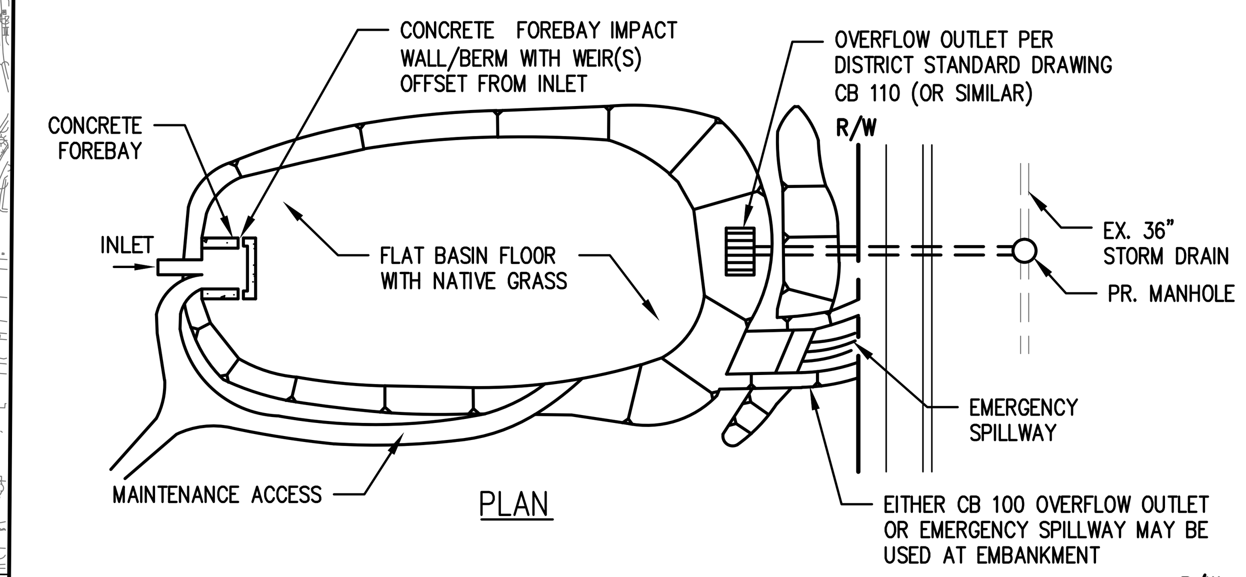
N.T.S.

NO.	REVISIONS	BY	DATE
1			
2			
3			

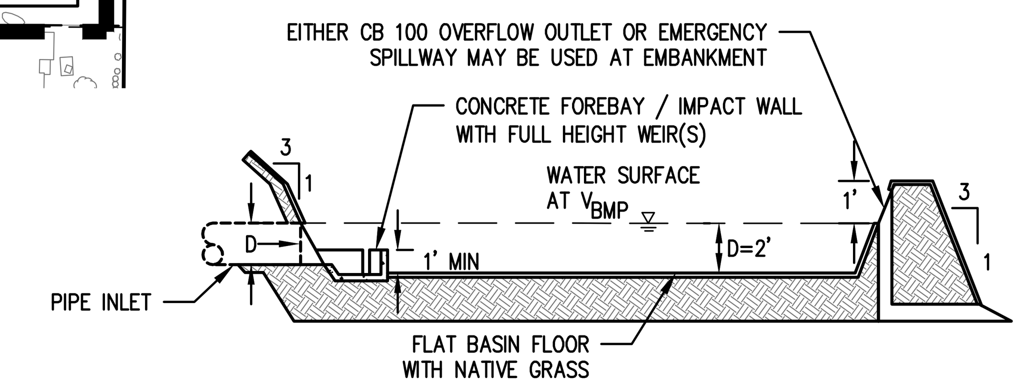
LEGEND:

FINISHED SURFACE	FS	INVERT ELEVATION	INV
FINISHED GRADE	FG	GRADE BREAK	GB
CURB FACE	CF	TOP OF CURB	TC
FLOW LINE	FL	TOP OF GRATE	TG
HIGH POINT	HP	TOP OF WALL	TW
LOW POINT	LP	TOP OF FOOTING	TF

PROPERTY LINE/ROW
CENTERLINE
EXISTING CONCRETE STORM DRAIN
EXISTING SEWER MAIN
EXISTING SEWER MANHOLE
EXISTING WATER MAIN
EXISTING GAS LINE
EXISTING ELECTRIC
EXISTING STREET LIGHTS
ELEVATION OF EXISTING
PROPOSED ELEVATION 1500.00
EXISTING CONTOUR
PROPOSED BUILDINGS
PROPOSED CONTOUR
PROPOSED C&G
DAYLIGHT LINE
SURFACE FLOW DIRECTION
PROPOSED STORM DRAIN
STORM INLET
HEADWALL
RIPRAP



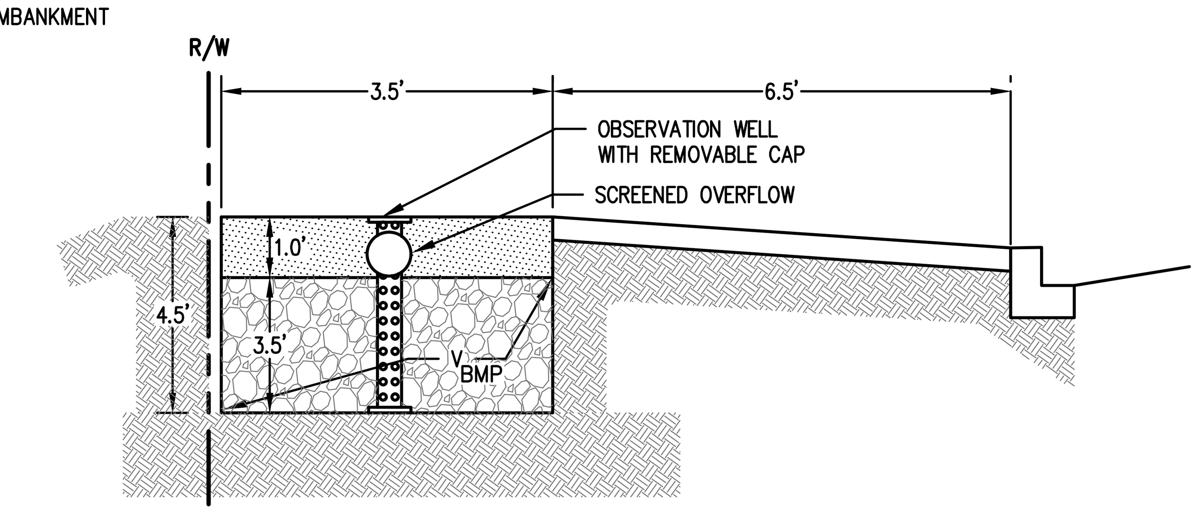
PLAN



PROFILE

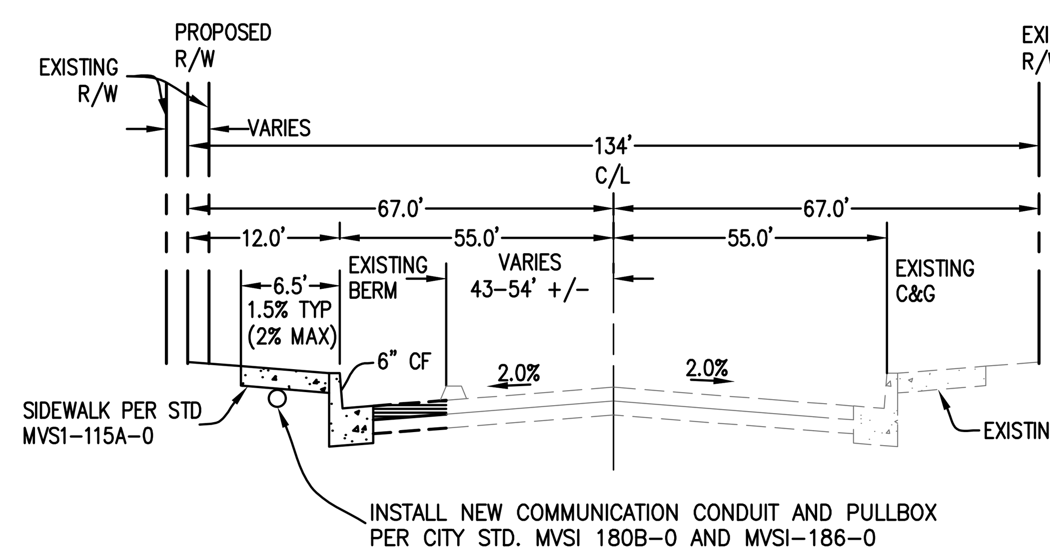
INFILTRATION BASIN

NTS

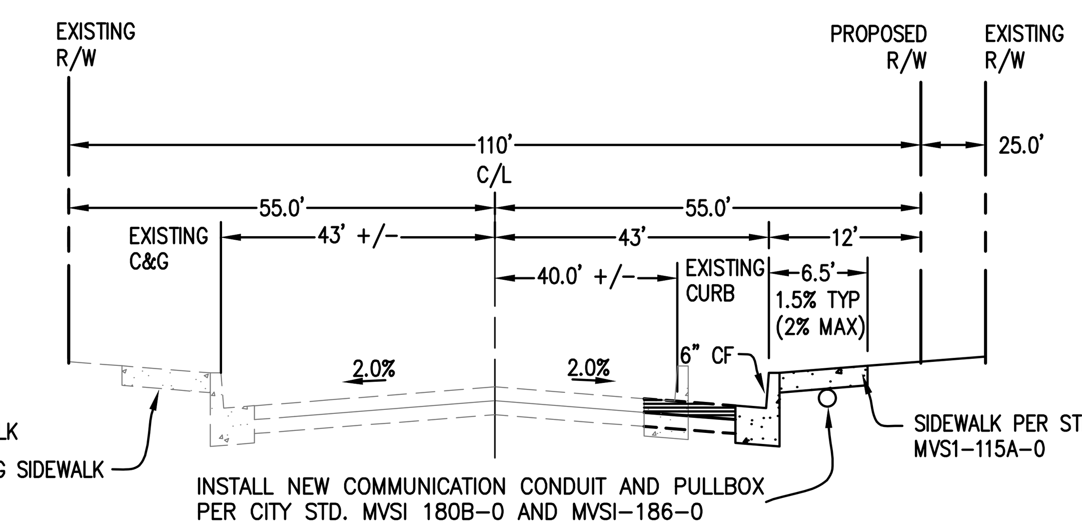


INFILTRATION TRENCH

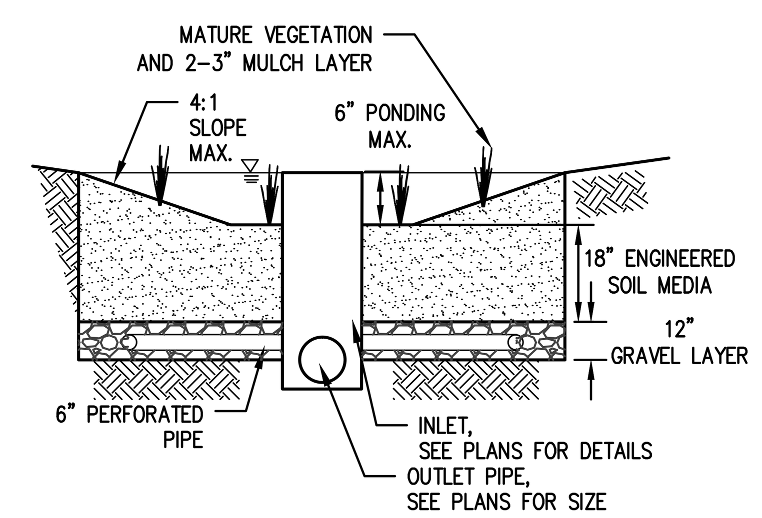
NTS



ALESSANDRO BLVD TYPICAL SECTION (WEST)
SCALE: NTS

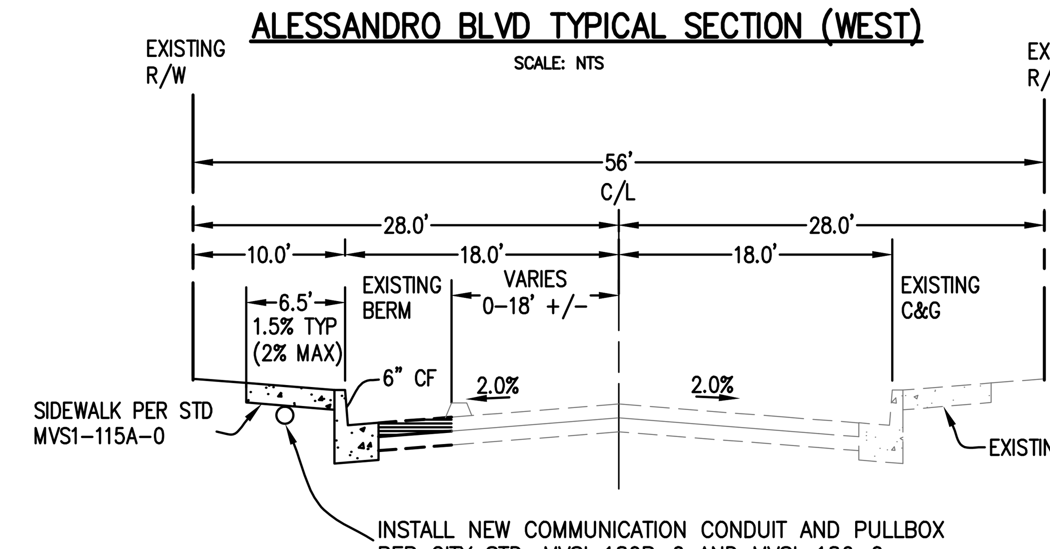


PERRIS BLVD TYPICAL SECTION (NORTH)
SCALE: NTS

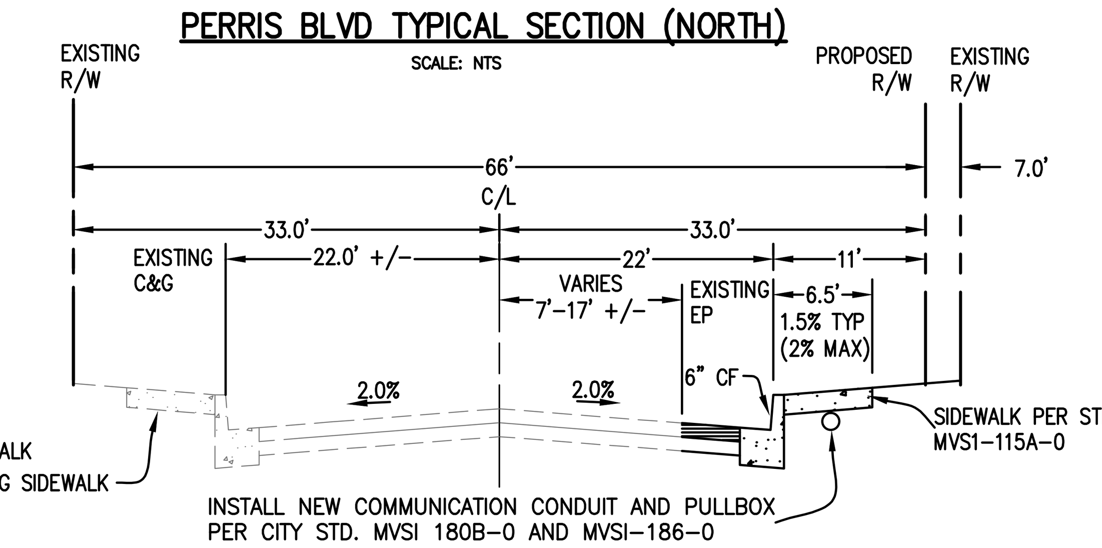


LID BASIN

NTS



APPLE BLOSSOM LANE TYPICAL SECTION (NORTH)
SCALE: NTS



BRODIAEA AVENUE TYPICAL SECTION (WEST)
SCALE: NTS

APPLICANT / DEVELOPER

VILLA ANNETTE LP
940 CALLE NEGOCIO, SUITE 200
SAN CLEMENTE, CA 92673
CONTACT: WES ALSTON
P.O. BOX 14679 LONG BEACH, CA 90853
PH: (951) 212-8468

SHEET INDEX

CIVIL ENGINEER

CIVIL LANDWORKS CORP.
110 COPPERWOOD WAY, SUITE P
OCEANSIDE, CA 92058
(760) 908-8745

DAVID V. CARON 10-28-16

REGISTERED PROFESSIONAL ENGINEER
DAVID V. CARON
No.C070066
EXP.09/30/18
CIVIL
STATE OF CALIFORNIA

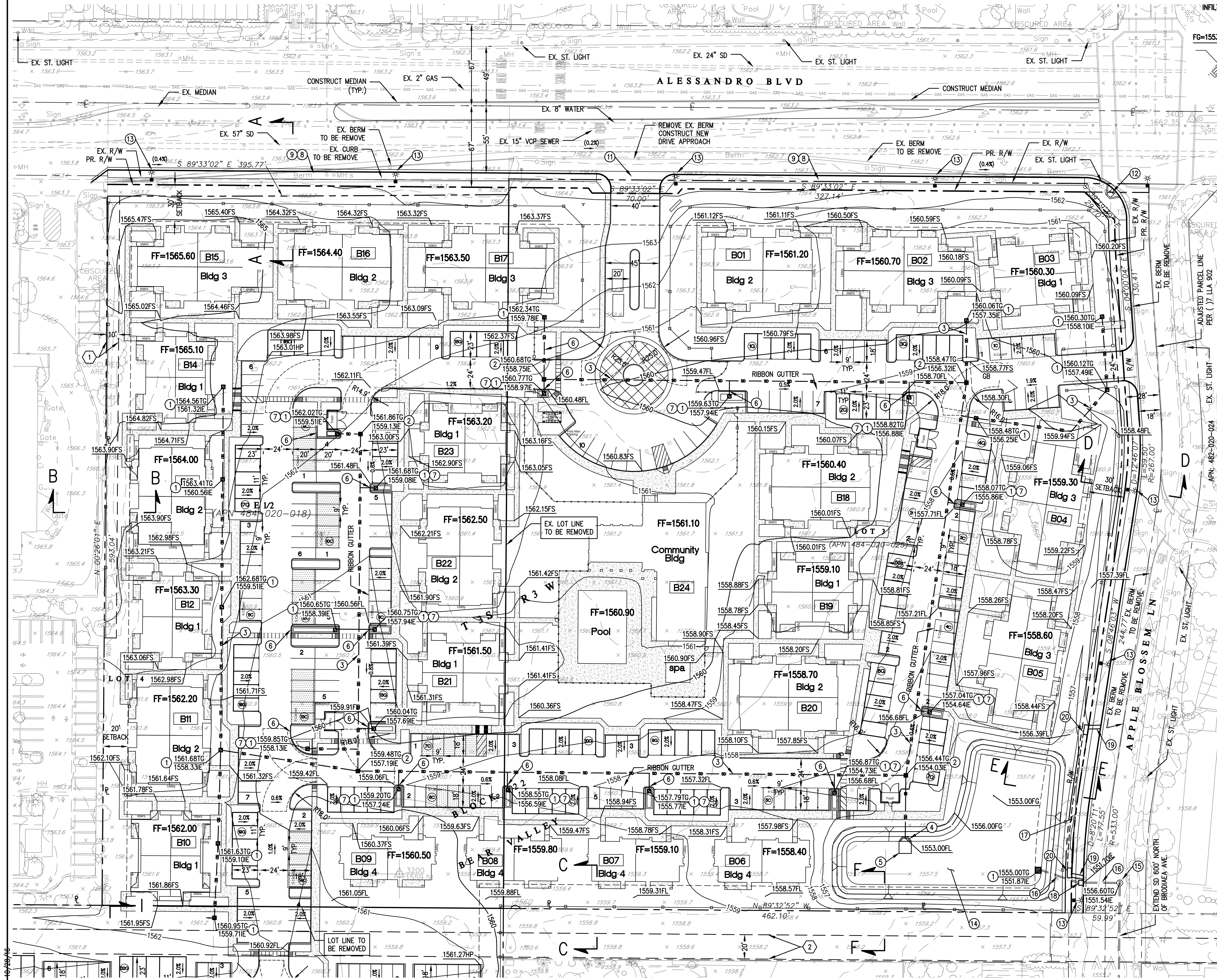
Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 • info@civillandworks.com

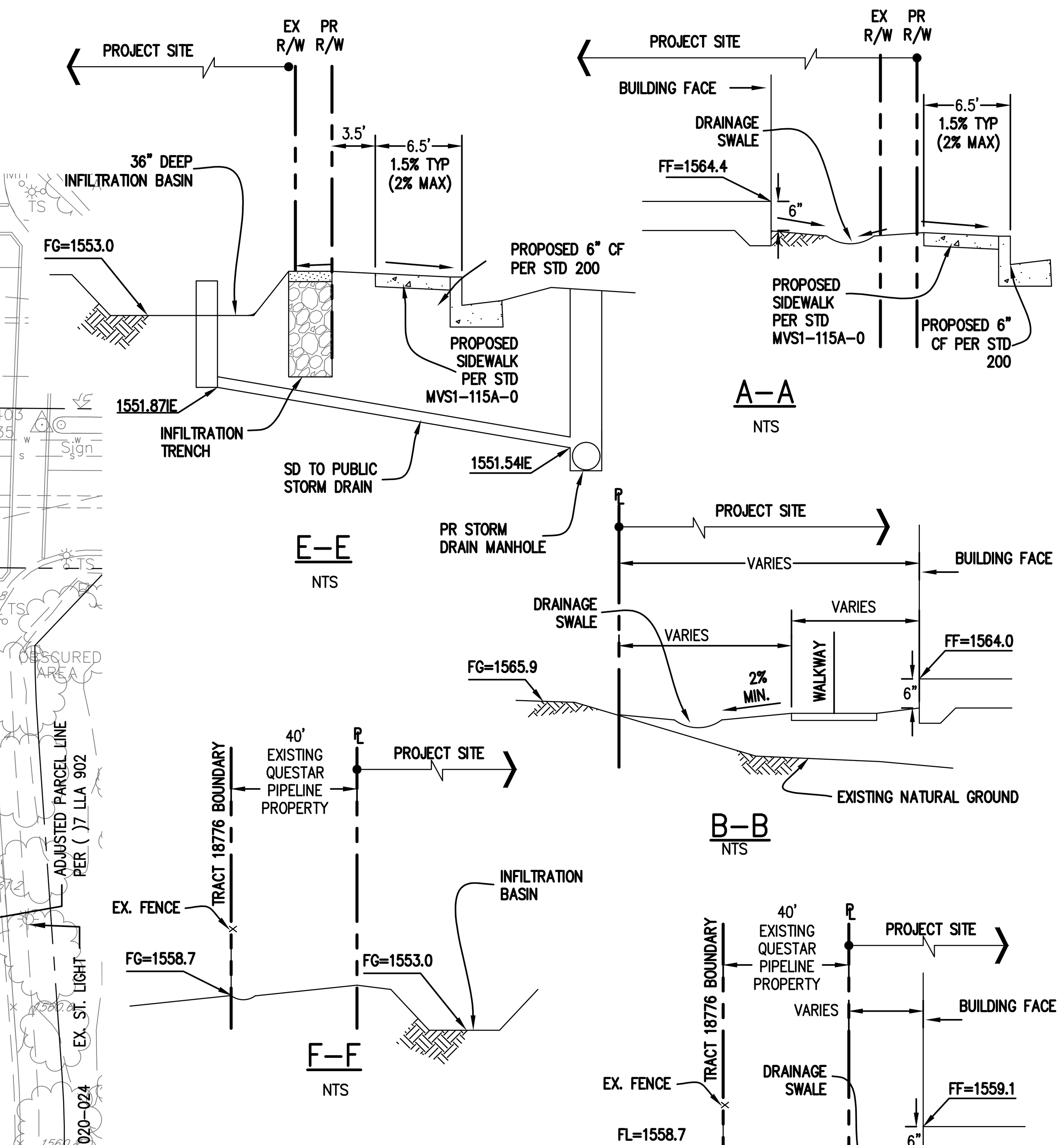
SHEET 1 OF 3

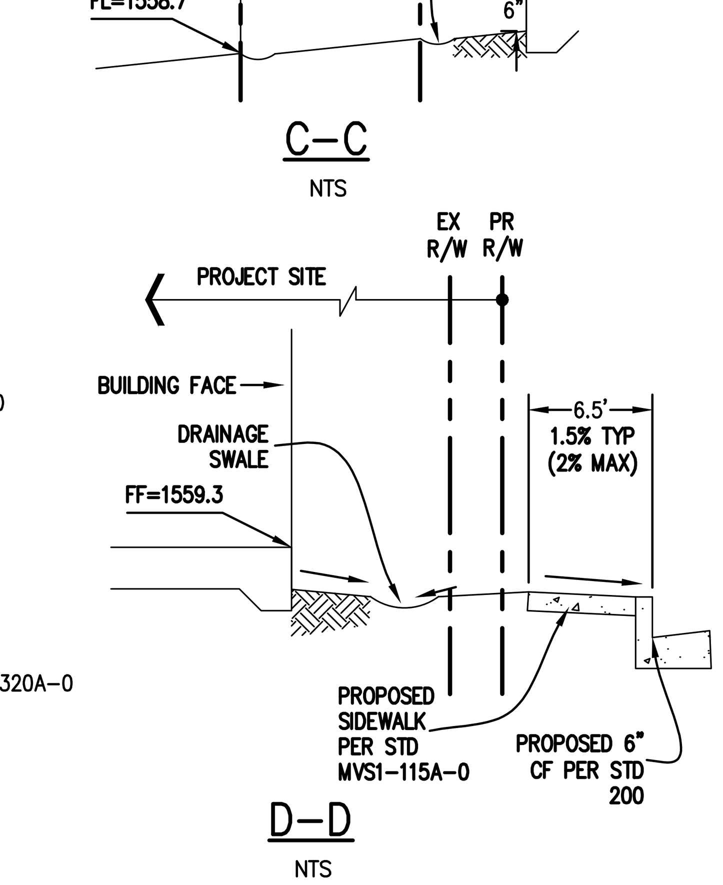
Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

PRELIMINARY GRADING PLAN

VILLA ANNETTE







CONSTRUCTION NOTES

1. PVT. STORM DRAIN INLET
2. PVT. STORM DRAIN CLEANOUT
3. PVT. STORM DRAIN MAIN
4. HEADWALL
5. CONCRETE FOREBAY
6. CURB OPENING
7. LID BASIN SEE DETAIL SHEET 1
8. 6" CURB AND GUTTER PER CITY STD. MVSI-120A-0
9. 4" PCC SIDEWALK PER CITY STD. MVSI-115A-0
10. BUS STOP PER CITY STD. MVSI-161-0
11. DRIVEWAY PER CITY STD. MVSI-112C-0
12. CURB RAMP TYPE 1 PER CITY STD. MVSI-114A-0
13. STREET LIGHT PER CITY STD. MVLT-400B-0
14. INFILTRATION BASIN. SEE DETAIL SHEET 1
15. STORM DRAIN MANHOLE OUT PER CITY STD. MVFE-320A-0
16. 18" RCP STORM DRAIN
17. INFILTRATION TRENCH. SEE DETAIL SHEET 1
18. CURB INLET PER CITY STD. MVFE-300A-0
19. CURB UNDERDRAIN TO VEGETATED STRIP
20. VEGETATED STRIP TO INFILTRATION BASIN

EASEMENT NOTES

1. 10' SOCAL EDISON EASEMENT PER [9]
2. 20' EMNT 4 CORNERS PIPELINE CO PER [6] 2205 OR 147, JAN 10, 1958

ENGINEER

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DAVID V. CARON 10-28-16

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REGISTERED PROFESSIONAL ENGINEER
DAVID V. CARON
No.C070066
EXP.09/30/18
CIVIL
STATE OF CALIFORNIA

40 0 40 80
GRAPHIC SCALE
SCALE: 1" = 40'

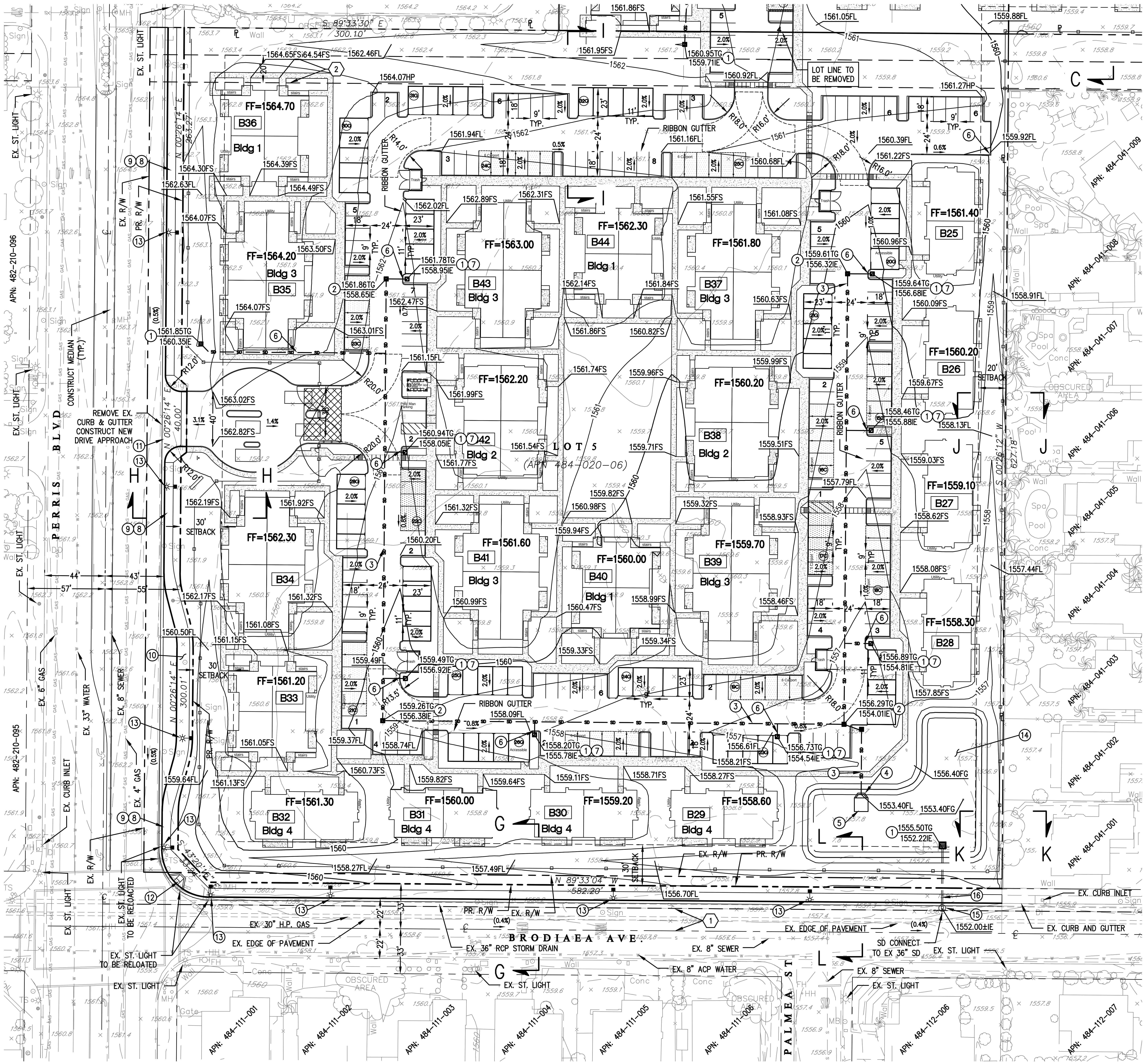
SHEET 2 OF 3

10/28/16

Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

PRELIMINARY GRADING PLAN

VILLA ANNETTE



CONSTRUCTION NOTES

1. PVT. STORM DRAIN INLET
2. PVT. STORM DRAIN CLEANOUT
3. PVT. STORM DRAIN MAIN
4. HEADWALL
5. CONCRETE FOREBAY
6. CURB OPENING
7. LID BASIN SEE DETAIL SHEET 1
8. 6" CURB AND GUTTER PER CITY STD. MVSI-120A-0
9. 4" PCC SIDEWALK PER CITY STD. MVSI-115A-0
10. BUS STOP PER CITY STD. MVSI-161-0
11. DRIVEWAY PER CITY STD. MVSI-112C-0
12. CURB RAMP TYPE 1 PER CITY STD. MVSI-114A-0
13. STREET LIGHT PER CITY STD. MVLT-400B-0
14. INFILTRATION BASIN. SEE DETAIL SHEET 1
15. STORM DRAIN MANHOLE OUT PER CITY STD. MVFE-320A-0
16. 18" RCP STORM DRAIN

EASEMENT NOTES

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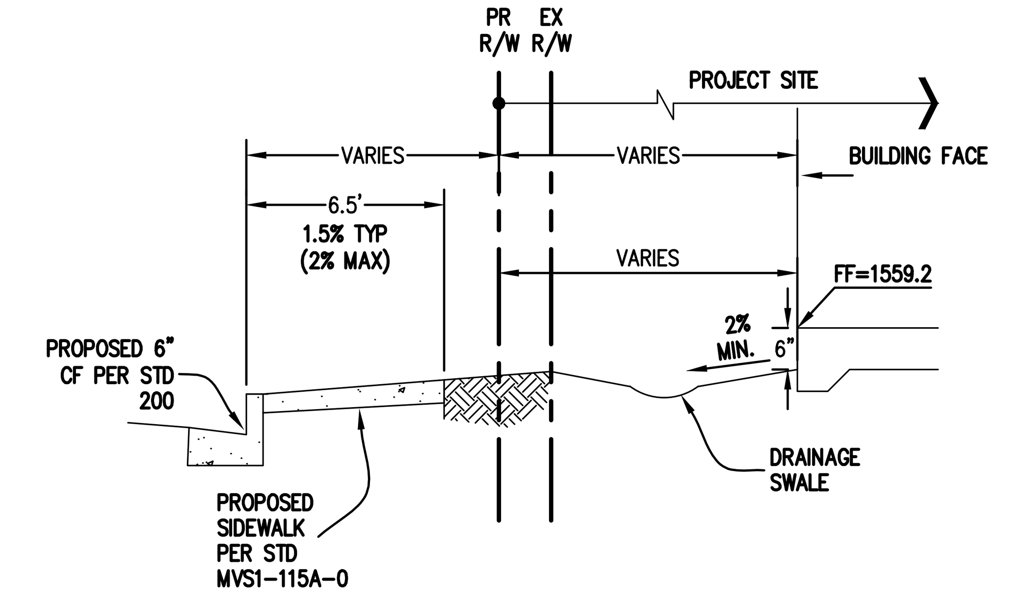
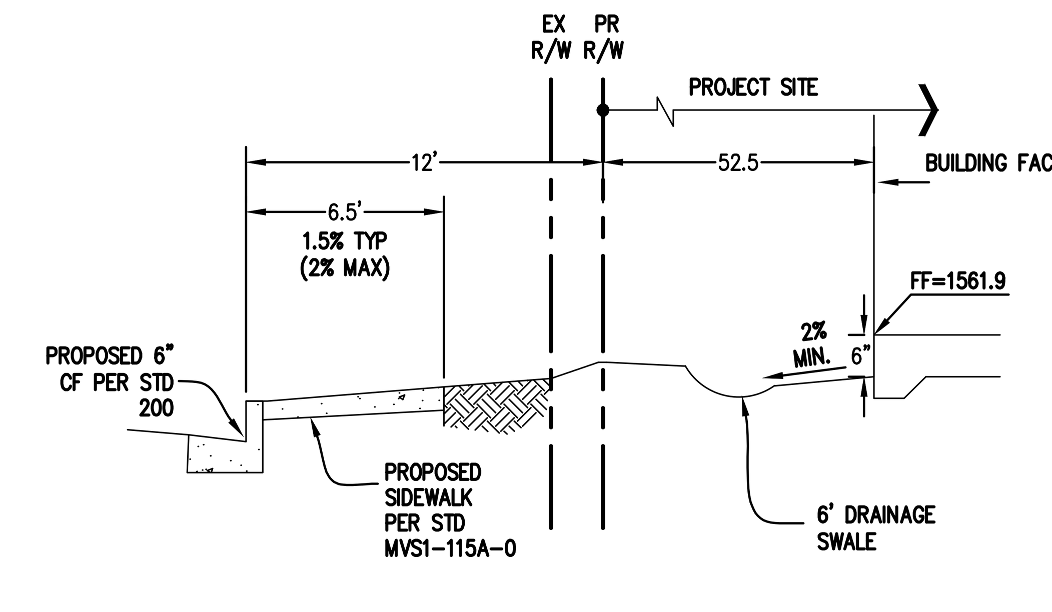
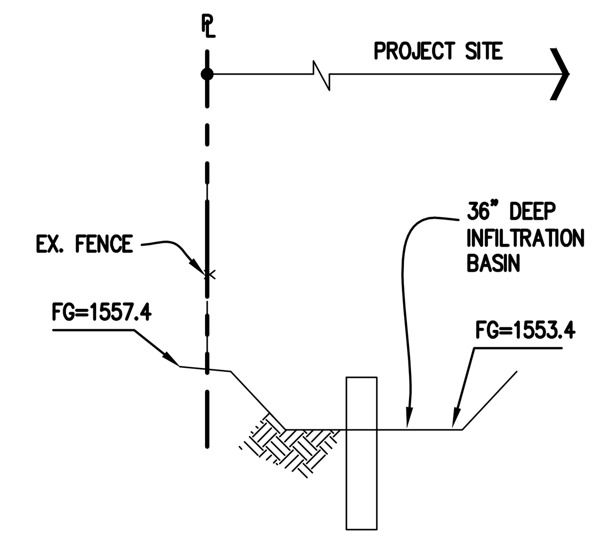
2. 20' EMNT 4 CORNERS PIPELINE CO PER [6] 2205 OR 147, JAN 10, 1958



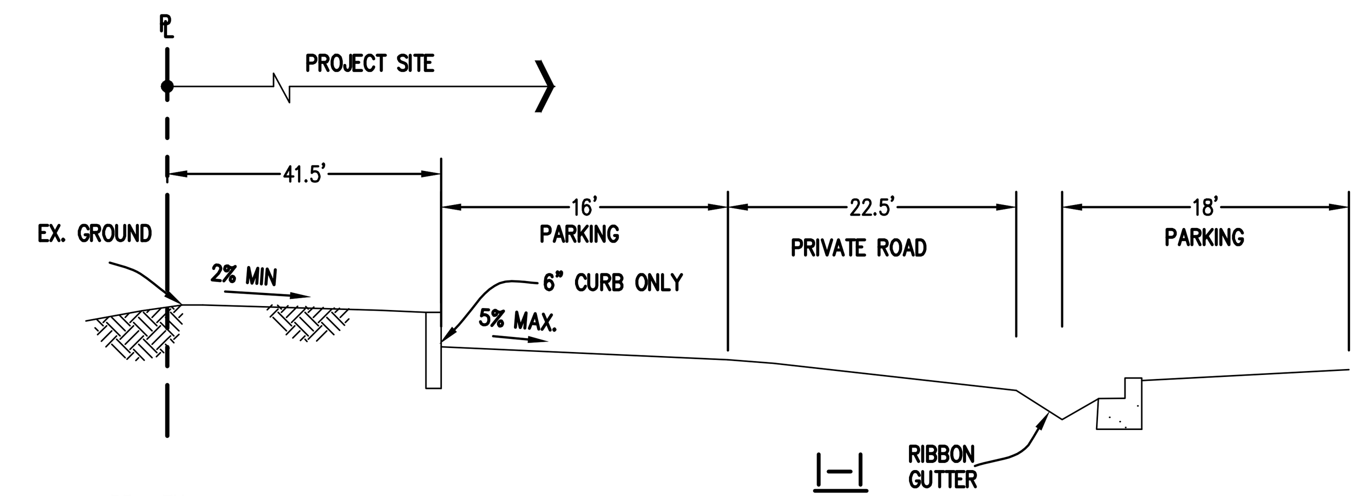
G-G
NTS



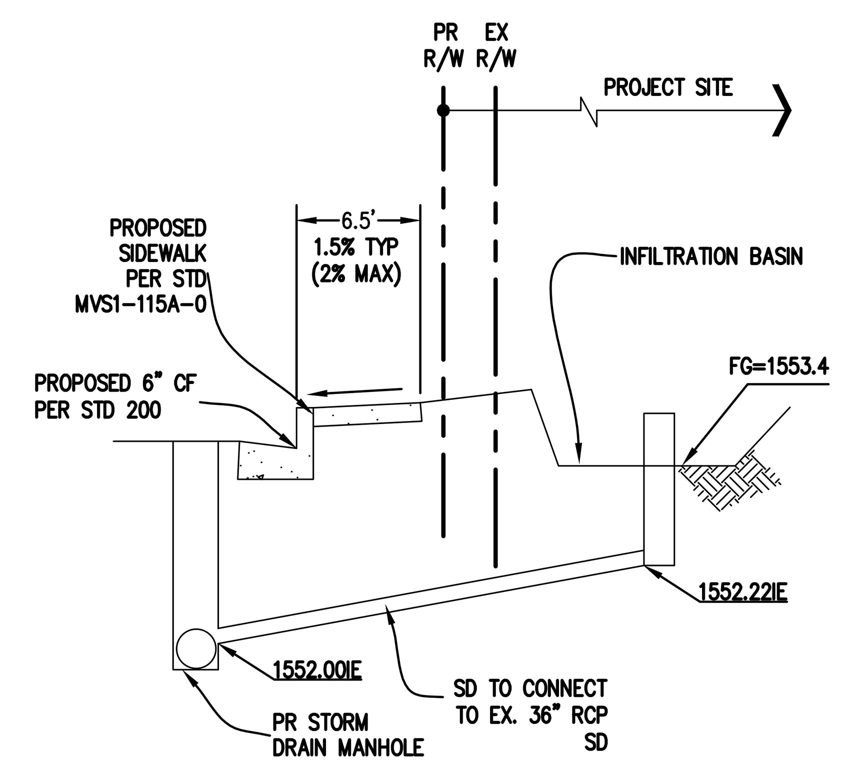
H-H
NTS



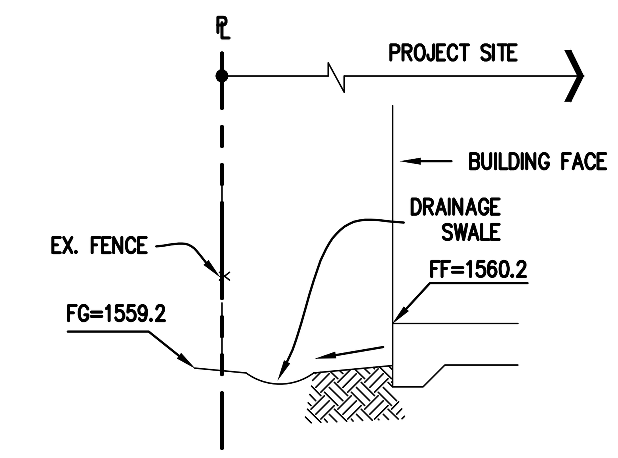
K-K
NTS



I-I
NTS



L-L
NTS



J-J
NTS

40 0 40 80

GRAPHIC SCALE
SCALE: 1" = 40'

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ENGINEER

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DAVID V. CARON 10-24-16

SHEET 3 OF 3

10/28/16

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

ALTA CALIFORNIA
GEOTECHNICAL INC.

170 North Maple Street, Suite 108
Corona, CA 92880
www.altageotechnical.com

LATCO SC, INC.
940 Calle Negocio, Suite 200
San Clemente, California 92673

June 28, 2016
Project Number 1-0192

Attention: Mr. Robert Lattanzio

Subject: ***SUMMARY OF INFILTRATION TESTING***
Alessandro Apartment Project
City of Moreno Valley, California

References: See Appendix A

Mr. Lattanzio:

Presented herein is Alta California Geotechnical, Inc.'s (Alta) summary of infiltration testing for the proposed Alessandro Apartment Project, located in the City of Moreno Valley, California. This report is based on recent infiltration testing conducted onsite based on the WQMP system locations provided by Civil Landworks. Our testing was conducted at the locations shown on the attached Plates 1 and 2.

Presented below is a brief summary of onsite geotechnical conditions, a discussion of the proposed WQMP system, a summary of our infiltration testing, and design recommendations for the system.

Site Geotechnical Conditions

Alta recently conducted a subsurface investigation (including infiltration testing) on the site in June of 2016 (Reference 1). Based on the subsurface information and review of the referenced geologic map (Reference 4), the proposed BMP locations are underlain by very old alluvial fan deposits, composed primarily of sand and silty/clayey sands in a medium dense condition. Infiltration testing at four (4) locations was conducted as part of our preliminary investigation

Alta appreciates the opportunity to provide geotechnical consulting services for your project.

Sincerely,
Alta California Geotechnical, Inc.

MINA TAWFIK
Associate Civil Engineer

Reviewed By:

SCOTT A. GRAY/RGE 2857
Reg. Exp.: 12-31-16
Registered Geotechnical Engineer
Vice President

REGISTERED PROFESSIONAL ENGINEER
SCOTT A. GRAY
No. 2857
Exp. 12-31-16
GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (3) Addressee

MT: SAG: 1-0192, June 28, 2016 (Summary of Infiltration Testing, Alessandro Apt.)

APPENDIX A

REFERENCES

APPENDIX A

References

1. Alta California Geotechnical, Inc., 2016, Preliminary Geotechnical Investigation, Alessandro Apartment Project, Southwest Corner Alessandro Boulevard and Perris Boulevard, City of Moreno Valley, California, dated June 27, 2016 (Project Number 1-0192).
2. County of Riverside, Low Impact Development BMP Design Handbook, Riverside, Rev. September, 2011.
3. California Department of Water Resources, 2014, Water Data Library. http://www.water.ca.gov/waterdatalibrary/
4. Morton, D.M. and Matti, B. 2001, Geologic Map of the Sunny Mead 7.5' Quadrangle, Riverside County, California, Version 1.0, California Division of Mines and Geology Open-File Report 01-450.

APPENDIX B

BORING LOGS

Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description
Coarse Grained Soils More than 50% retained on No. 200 sieve	Gravel and Gravelly Soils More than 50% of coarse fraction retained on No,. 4 sieve		GW	Well-graded gravels or gravel sand mixtures, little or no fines
			GP	Poorly-graded gravels or gravel sand mixture, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils More than 50% of coarse fraction passes on No,. 4 sieve		SW	Well-graded sands or gravelly sands, little or no fines
			SP	Poorly-graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, and-clay mixtures

Major Divisions		grf	ltr	
Fine Grained Soils More than 50% passes on No. 200 sieve	Silts And Clays LL,<50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silt-clays of low plasticity
	Silts And Clays LL,<50		MH	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
			VH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

BOUNDARY CLASSIFICATION: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

U.S. STANDARD SERIES SIEVE — 200, 40, 10, 4

CLEAR SQUARE SIEVE OPENINGS — 3/4", 3", 12"

Silts and Clays	Sand			Gravel		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

RELATIVE DENSITY

Sands and Gravels	Blows/Foot (SPT)
Very Loose	<4
Loose	4-10
Medium Dense	11-30
Dense	31-50
Very Dense	>50

CONSISTENCY CLASSIFICATION

Silts and Clays	Criteria
Very Soft	Thumb penetrates soil >1 in.
Soft	Thumb penetrates soil 1 in.
Firm	Thumb penetrates soil 1/4 in.
Stiff	Readily indented with thumbnail
Very Stiff	Thumbnail will not indent soil

HARDNESS

Bedrock
Soft
Moderately Hard
Hard
Very Hard

LABORATORY TESTS

Symbol	Test
DS	Direct Shear
DSR	Direct Shear (Remolded)
CON	
SA	Sieve Analysis
MAX	Maximum Density
RV	Resistance (R) Value
EI	Expansion Index
SE	Sand Equivalent
AL	Atterberg Limits
CHEM	Chemical Analysis
HY	Hydrometer Analysis

SOIL MOISTURE

Increasing Visual Moisture Content

- Dry - Dry to touch
- Moist - Damp, but no visible free water
- wet - Visible free water

SIZE PROPORTIONS

Trace - <5%

Few - 5 to 10%

Some - 15 to 25%

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	P-1
DATE FINISHED	6/1/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.		NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP			

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	TOPSOIL: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. VERY OLD ALLUVIAL FAN DEPOSITS (Qvof): SILTY SAND, fine grained, very light brown, dry, loose.				
						@4 ft. brown, fine grained, damp.				
5										
						@7 ft. orangish brown.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192 PLATE B-10

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO. 1-0192
DATE STARTED 6/1/16
DATE FINISHED 6/1/16
DRILLER Martini Drilling
TYPE OF DRILL RIG Hollow stem auger

PROJECT NAME Alessandro Apartment
GROUND ELEV.
GW DEPTH (FT)
DRIVE WT.
DROP

BORING DESIG. P-2
LOGGED BY MT
NOTE

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	TOPSOIL: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. VERY OLD ALLUVIAL FAN DEPOSITS (Qvof): SILTY SAND, fine grained, light tannish brown, dry, loose.				
						@3 ft. light brown, damp.				
5										
						@8 ft. orangish brown.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192 PLATE B-11

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment		
DATE STARTED	6/1/16	GROUND ELEV.		BORING DESIG.	P-3
DATE FINISHED	6/1/16	GW DEPTH (FT)		LOGGED BY	MT
DRILLER	Martini Drilling	DRIVE WT.		NOTE	
TYPE OF DRILL RIG	Hollow stem auger	DROP			

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	TOPSOIL: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. VERY OLD ALLUVIAL FAN DEPOSITS (Qvof): SILTY SAND, fine grained, tannish brown, dry, loose.				
5						@5 ft. brown, damp.				
						@7 ft. dark brown to dark tannish brown, moist.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192 PLATE B-12

GEOTECHNICAL BORING LOG

SHEET 1 OF 1

PROJECT NO.	1-0192	PROJECT NAME	Alessandro Apartment
DATE STARTED	6/13/16	GROUND ELEV.	
DATE FINISHED	6/13/16	GW DEPTH (FT)	
DRILLER	2R Drilling	DRIVE WT.	
TYPE OF DRILL RIG	Hollow stem auger	DROP	

BORING DESIG. P-4
LOGGED BY MT
NOTE

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	TOPSOIL: SILTY SAND, fine to very fine grained, light brown, dry, loose.				
					SM	@1 ft. VERY OLD ALLUVIAL FAN DEPOSITS (Qvof): SILTY SAND, fine grained, dark tannish brown, damp, loose, coarse grained lithics.				
5						@5 ft. brown, moist.				
						@8 ft. dark brown.				
10						TOTAL DEPTH 10 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0192 PLATE B-13

APPENDIX C

INFILTRATION TEST DATA

Project Number	1-0192			
Test Designation	P-1	Date of Test	6/3/2016	
Boring Diameter (inches)	8	Test Type	Infiltration	

Time (minutes)	Depth of Boring (ft)	Initial Water Level (ft)	Final Water Level (ft)	Change in Height (ft)
15	10	0.0	5.8	-5.80
15	10	0.0	4.9	-4.90
30	10	0.0	8.6	-8.60
30	10	0.0	8.4	-8.40
30	10	0.0	7.9	-7.90
30	10	0.0	7.4	-7.40
30	10	0.0	7.0	-7.00
30	10	0.0	6.9	-6.90

Final Calculations

Initial Height (I) in inches	120.0			
Final height (F) in inches	37.2			
Change in Height (inches)	82.8			
Change in Time (minutes)	30			
Radius of Hole (inches)	4			
Havg (inches)	78.6	Havg=	(I-F)/2+I	inches
Infiltration Rate (inch/hr)	4.11	Inf. Rate=	((I-F)(60min/hr)(Radius))/time(radius+2(Havg))	
		(Porchet Method)		

Plate C-1

Project Number	1-0192			
Test Designation	P-2	Date of Test	6/3/2016	
Boring Diameter (inches)	8	Test Type	Infiltration	

Time (minutes)	Depth of Boring (ft)	Initial Water Level (ft)	Final Water Level (ft)	Change in Height (ft)
15	10	0.0	4.6	-4.60
30	10	0.0	7.4	-7.40
30	10	0.0	7.1	-7.10
30	10	0.0	6.6	-6.60
30	10	0.0	6.1	-6.10
30	10	0.0	5.9	-5.90
30	10	0.0	5.7	-5.70
30	10	0.0	5.6	-5.60

Final Calculations

Initial Height (I) in inches	120.0		
Final height (F) in inches	52.8		
Change in Height (inches)	67.2		
Change in Time (minutes)	30		
Radius of Hole (inches)	4		
Havg (inches)	86.4	Havg= (I-F)/2+I	inches
Infiltration Rate (inch/hr)	3.04	Inf. Rate= ((I-F)(60min/hr)(Radius))/time(radius+2(Havg)) (Porchet Method)	

Plate C-2

Project Number	1-0192			
Test Designation	P-3	Date of Test	6/6/2016	
Boring Diameter (inches)	8	Test Type	Infiltration	

Time (minutes)	Depth of Boring (ft)	Initial Water Level (ft)	Final Water Level (ft)	Change in Height (ft)
15	10	0.0	4.4	-4.40
30	10	0.0	6.7	-6.70
30	10	0.0	6.3	-6.30
30	10	0.0	5.7	-5.70
30	10	0.0	5.5	-5.50
30	10	0.0	4.9	-4.90
30	10	0.0	4.3	-4.30
30	10	0.0	4.0	-4.00
30	10	0.0	4.0	-4.00

Final Calculations

Initial Height (I) in inches	120.0
Final height (F) in inches	72.0
Change in Height (inches)	48.0
Change in Time (minutes)	30
Radius of Hole (inches)	4

Havg (inches)	96	Havg= (I-F)/2+I inches
Infiltration Rate (inch/hr)	1.96	Inf. Rate= ((I-F)(60min/hr)(Radius))/time(radius+2(Havg)) (Porchet Method)

Plate C-3

Project Number	1-0192		
Test Designation	P-4	Date of Test	6/14/2016
Boring Diameter (inches)	8	Test Type	Infiltration

Time (minutes)	Depth of Boring (ft)	Initial Water Level (ft)	Final Water Level (ft)	Change in Height (ft)
15	10	0.0	5.6	-5.60
15	10	0.0	4.8	-4.80
30	10	0.0	8.4	-8.40
30	10	0.0	7.8	-7.80
30	10	0.0	7.5	-7.50
30	10	0.0	7.1	-7.10
30	10	0.0	6.9	-6.90
30	10	0.0	6.3	-6.30
30	10	0.0	5.9	-5.90
30	10	0.0	5.7	-5.70
30	10	0.0	5.7	-5.70

Final Calculations

Initial Height (I) in inches	120.0	
Final height (F) in inches	51.6	
Change in Height (inches)	68.4	
Change in Time (minutes)	30	
Radius of Hole (inches)	4	
Havg (inches)	85.8	Havg= (I-F)/2+I inches
Infiltration Rate (inch/hr)	3.12	Inf. Rate= ((I-F)(60min/hr)(Radius))/time(radius+2(Havg))

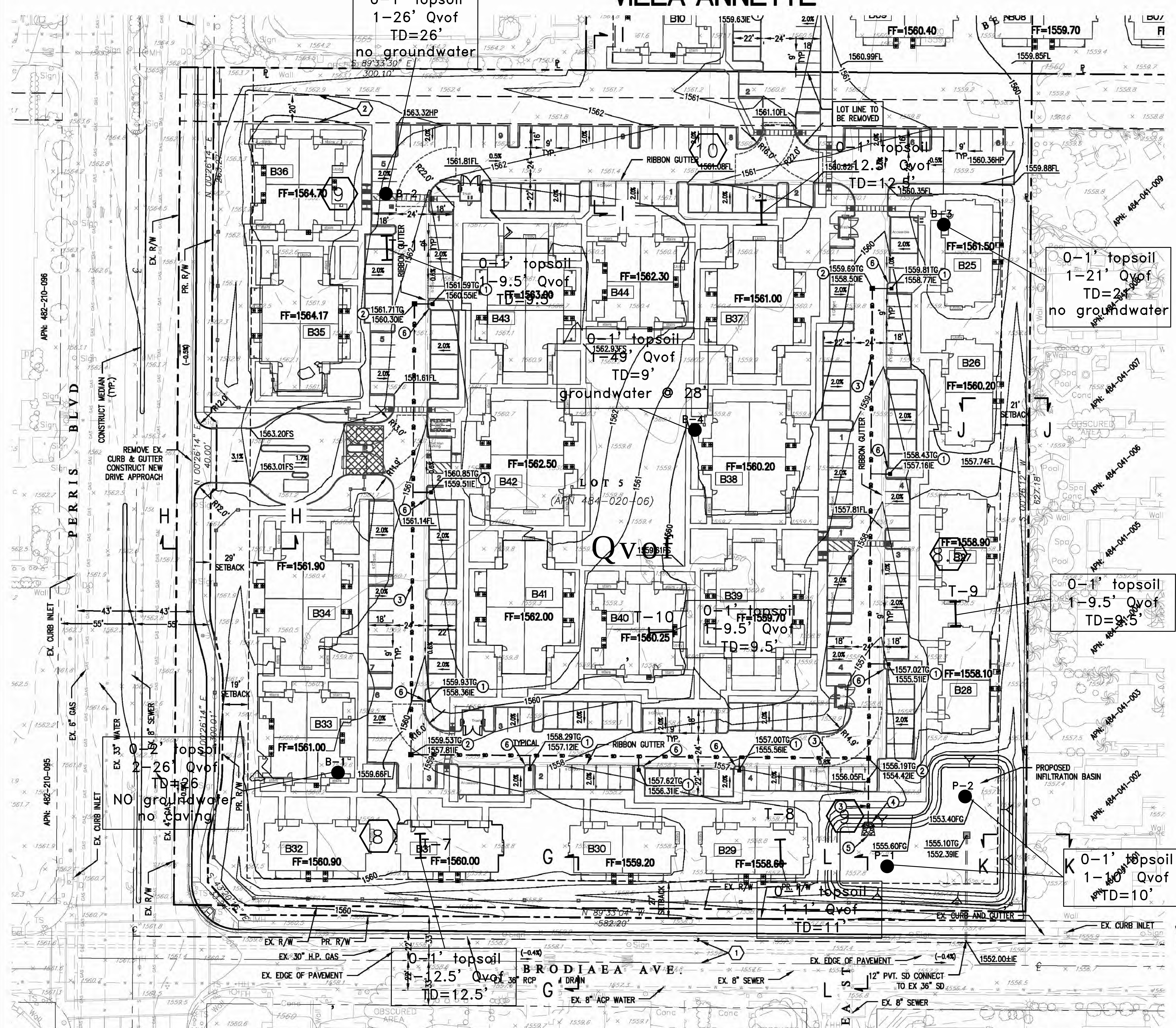
Plate C-4

Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

PRELIMINARY GRADING PLAN
VILLA ANNETTE
ALESSANDRO BLVD
APPLE BLOSSEM LN
LEGEND
Qvof VERY OLD ALLUVIAL FAN DEPOSIT
B-1 APPROXIMATE LOCATION OF BACKHOE TEST PIT
T-1 APPROXIMATE LOCATION OFHOLLOW STEM AUGER BORING
9 ESTIMATED REMOVAL DEPTH
P-1 LOCATION OF INFILTRATION TESTING
0-1' topsoil
1-10' Qvof
TD=10'
0-1' topsoil
1-11' Qvof
TD=11'
0-1' topsoil
1-11' Qvof
TD=11'
no groundwater
0-1' topsoil
1-13' Qvof
TD=13'
no groundwater
0-1.5' topsoil
1.5-51.5' Qvof
TD=51.5'
groundwater @ 26'
0-1' topsoil
1-11.5' Qvof
TD=11'
0-1' topsoil
1-12' Qvof
TD=12'
0-1' topsoil
1-12' Qvof
TD=12'
0-1' topsoil
1-21' Qvof
TD=21'
no groundwater
0-1' topsoil
1-10' Qvof
TD=10'
no groundwater
0-1' topsoil
1-16' Qvof
TD=16'
no groundwater
CONSTRUCTION NOTES
1 STORM DRAIN INLET
2 STORM DRAIN CLEANOUT
3 STORM DRAIN MAIN
4 HEADWALL
5 RIPRAP ENERGY DISSIPATER
6 CURB OPENING
EASEMENT NOTES
1 10' SOCAL EDISON EASEMENT PER [9]
2 20' EMNT 4 CORNERS PIPELINE CO PER [6] 2205 OR 147, JAN 10, 1958
B-B NTS
C-C NTS
D-D NTS
F-F NTS
PROPOSED INFILTRATION BASIN
ENGINEER
CIVIL LANDWORKS CORP.
110 COPPERWOOD WAY, SUITE P
OCEANSIDE, CA 92058
760-908-8745
DAVID V. CARON 6-28-16
REGISTERED PROFESSIONAL ENGINEER
DAVID V. CARON
No.C070066
EXP.09/30/16
CIVIL
STATE OF CALIFORNIA
Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 • info@civillandworks.com
GRAPHIC SCALE
SCALE: 1"= 40'
SHEET 2 OF 3
PLATE 1
ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0192
DATE: 6-28-16

1.m

PRELIMINARY GRADING PLAN
VILLA ANNETTE

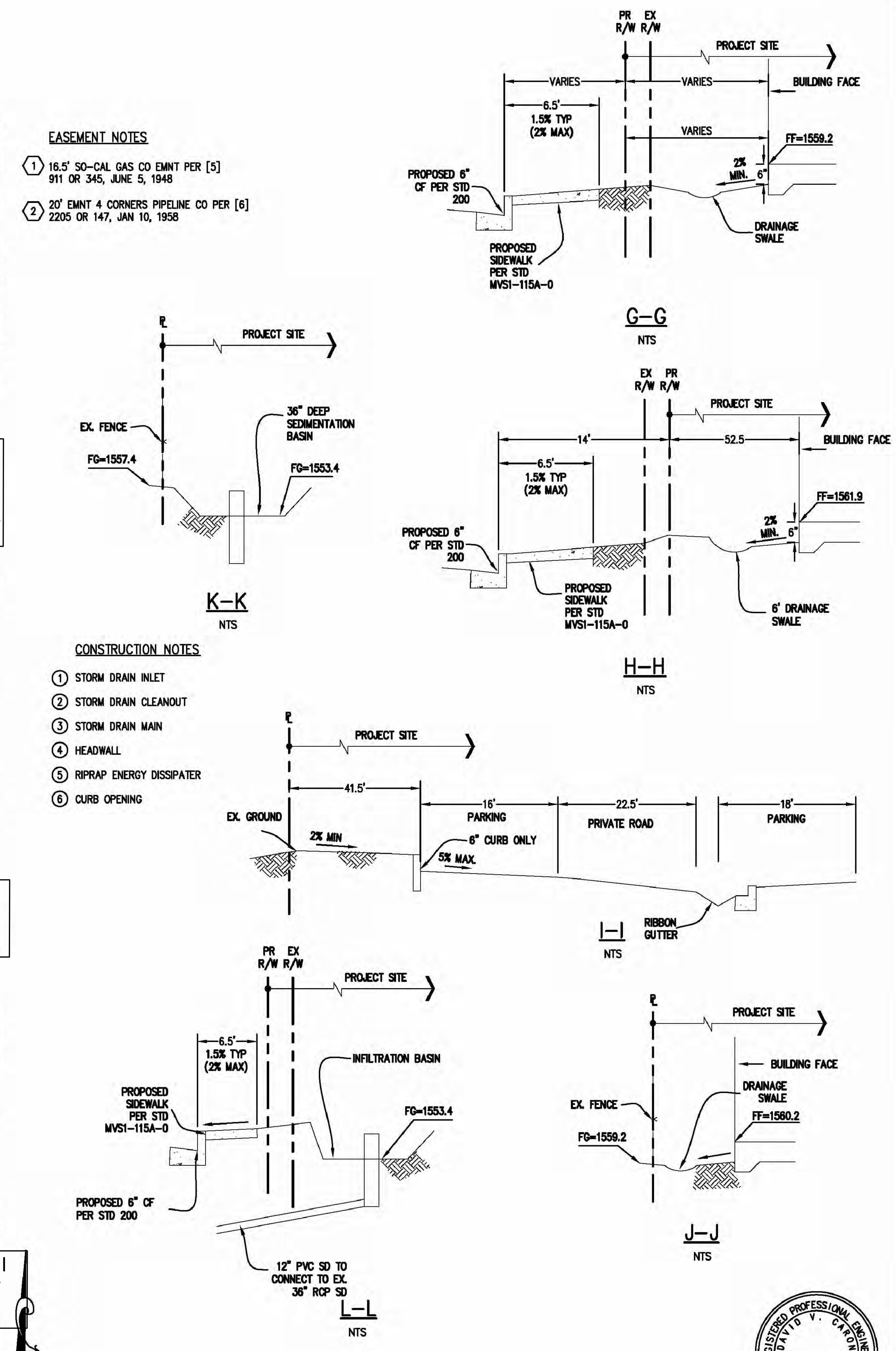


EASEMENT NOTES

1. 16.5' SO-CAL GAS CO EMNT PER [5] 911 OR 345, JUNE 5, 1948
2. 20' EMNT 4 CORNERS PIPELINE CO PER [6] 2205 OF 147, JAN 10, 1958

CONSTRUCTION NOTES

1. STORM DRAIN INLET
2. STORM DRAIN CLEANOUT
3. STORM DRAIN MAIN
4. HEADWALL
5. RIPRAP ENERGY DISSIPATER
6. CURB OPENING



SEE PLATE 1 OR LEGEND — PLATE 2

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0192
DATE: 6-28-16

GRAPHIC SCALE
SCALE: 1" = 40'

Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 • info@civillandworks.com

ENGINEER

CIVIL LANDWORKS CORP.
110 COPPERWOOD WAY, SUITE P
OCEANSIDE, CA 92058
760-908-8745

DAVID V. CARON 6-28-16

REGISTERED PROFESSIONAL ENGINEER DAVID V. CARON No.C070066 EXP.09/30/16 CIVIL STATE OF CALIFORNIA

SHEET 3 OF 3

6/27/16

Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

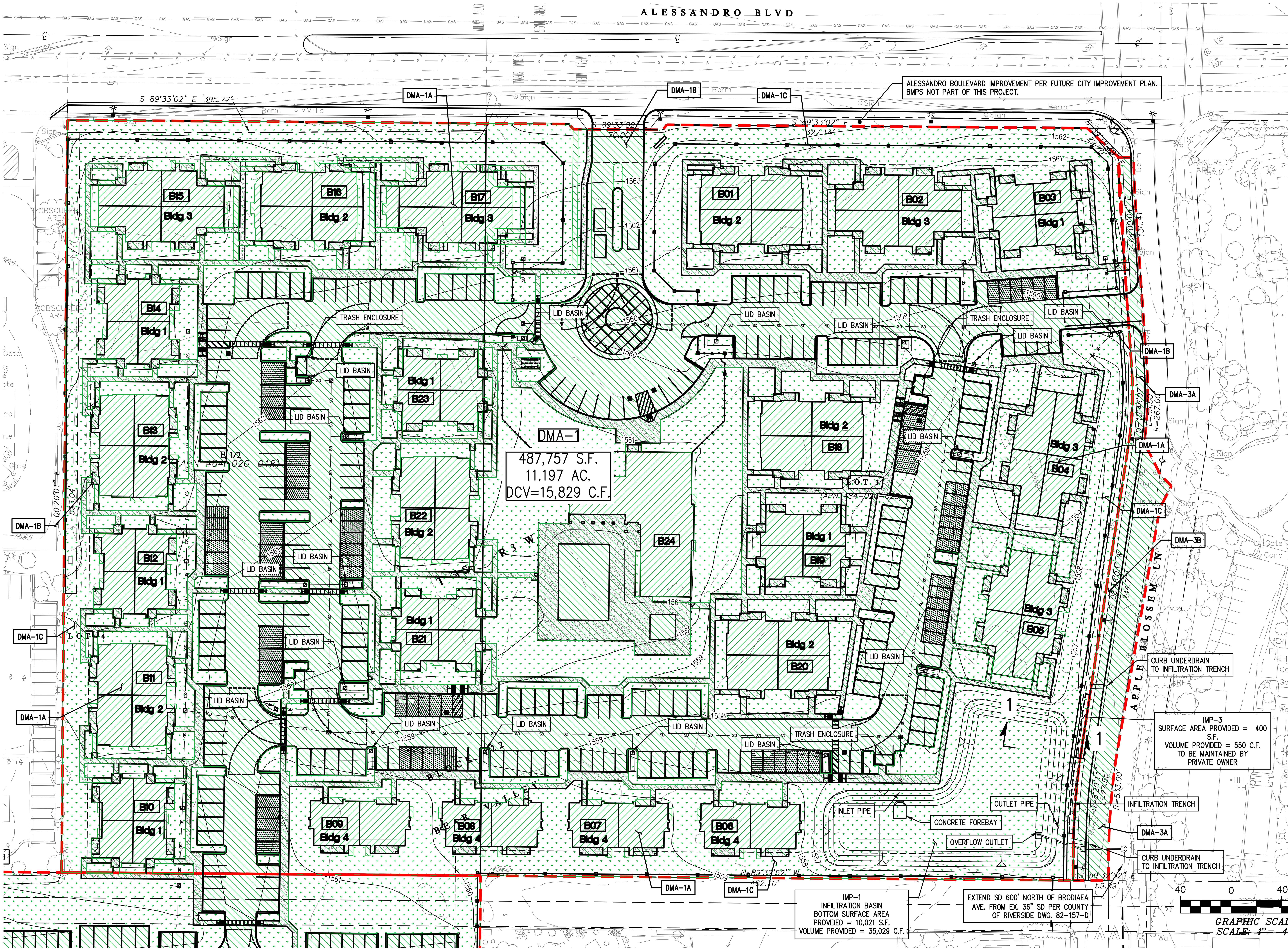
Appendix 5: LID Infeasibility

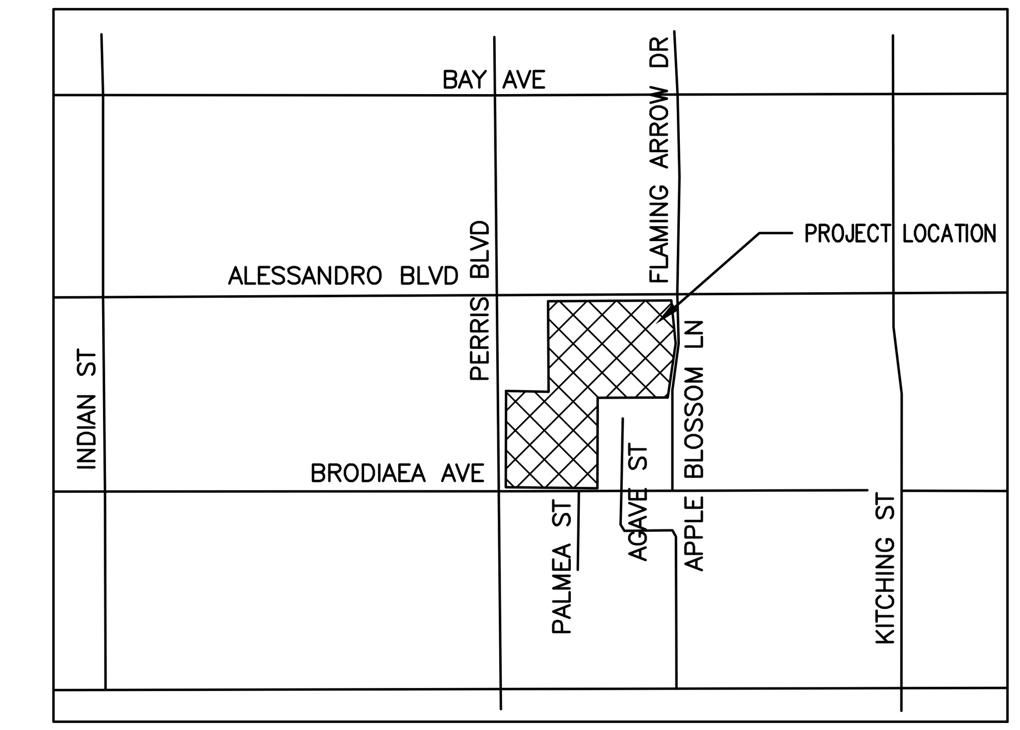
LID Technical Infeasibility Analysis

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

WATER QUALITY MANAGEMENT PLAN
ALESSANDRO APARTMENTS





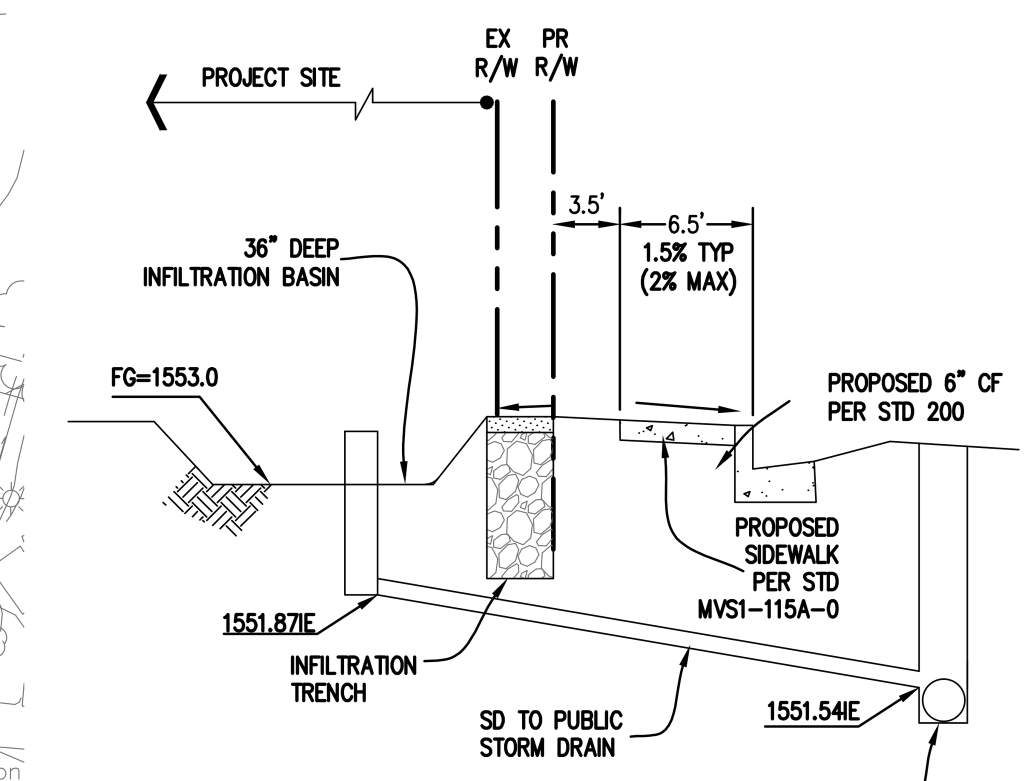
VICINITY MAP

LEGEND

ITEM	SYMBOL
DRAINAGE AREA BOUNDARY	
DMA-AREA ROOF/HARDSCAPE	DMA-X
DMA-AREA LANDSCAPE	DMA-X
DIRECTION OF SURFACE FLOW	
DRAINAGE AREA DESIGNATION	DA-1
DRAINAGE MANAGEMENT AREA DESIGNATION	DMA-1A
CATCH BASIN (C.B.) WITH FLOW-GARD INSERTS OR APPROVED EQUIAL	C.B.

DMA AREA TABLE

DMA-X	AREA (SF)	SURFACE TYPE
DMA-1A	94,459	ROOF
DMA-1B	192,426	CONCRETE OR ASPHALT
DMA-1C	200,872	LANDSCAPE
DMA-3A	10,869	CONCRETE AND ASPHALT
DMA-3B	1,914	LANDSCAPE



SECTION 1-1

NTS

NOTES:

1. SEE SHEET 2 FOR LID BASIN AND INFILTRATION BASIN DETAIL
2. ALESSANDRO BOULEVARD, PERRIS BOULEVARD, AND BRODIAEA AVENUE IMPROVEMENT PER FUTURE CITY IMPROVEMENT PROJECT. BMPS NOT PART OF THIS PROJECT.
3. INFILTRATION BASIN TO BE UTILIZED FOR WATER QUALITY AND MITIGATION OF POST DEVELOPMENT FLOW RATES

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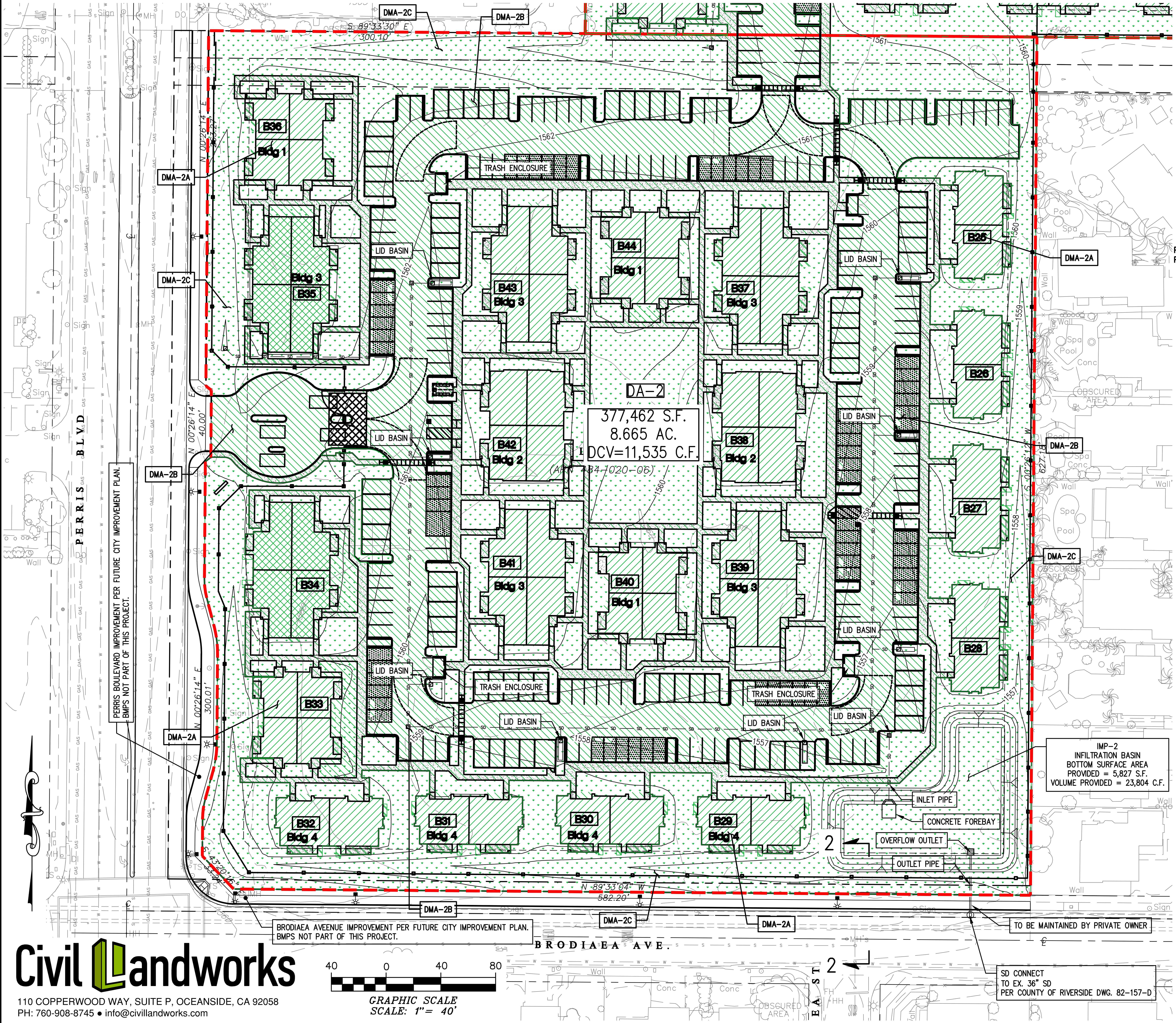
WATER QUALITY MANAGEMENT PLAN

ALESSANDRO APARTMENTS



Civil Landworks

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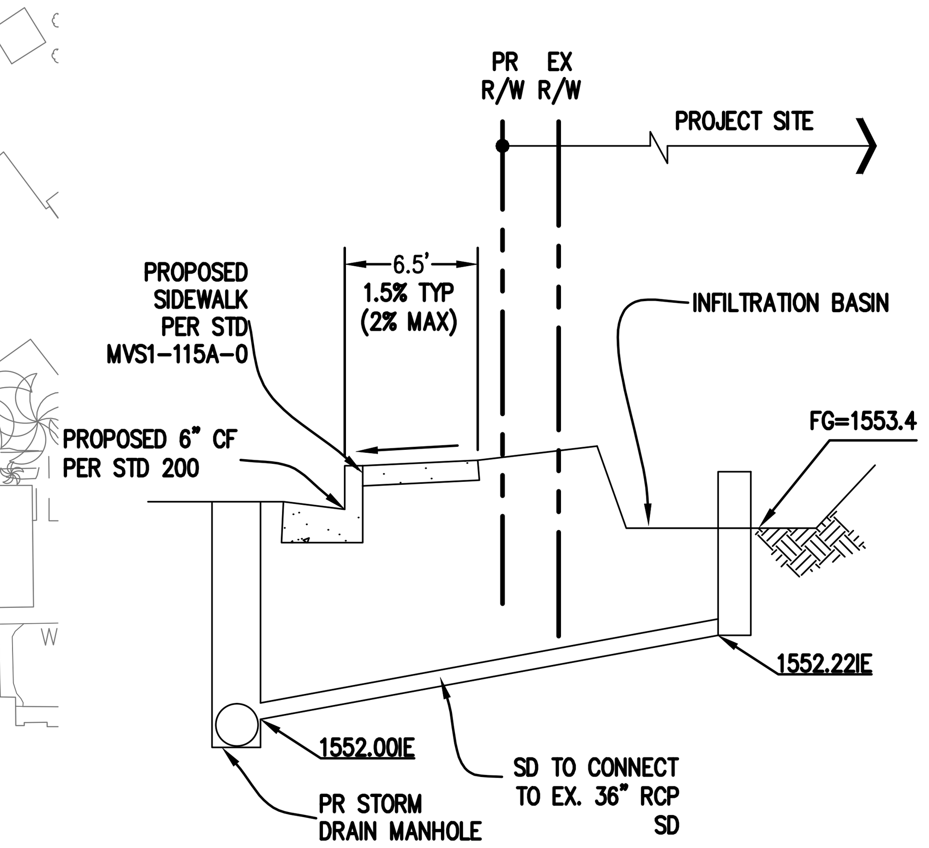
LEGEND

ITEM	SYMBOL
DRAINAGE AREA BOUNDARY	— — — —
DMA-AREA ROOF/HARDSCAPE	DMA-X
DMA-AREA LANDSCAPE	DMA-X
DIRECTION OF SURFACE FLOW	→
DRAINAGE AREA DESIGNATION	DA-2
DRAINAGE MANAGEMENT AREA DESIGNATION	DMA-2A
CATCH BASIN (C.B.) WITH FLOW-GARD INSERTS OR APPROVED EQUIAL	C.B.

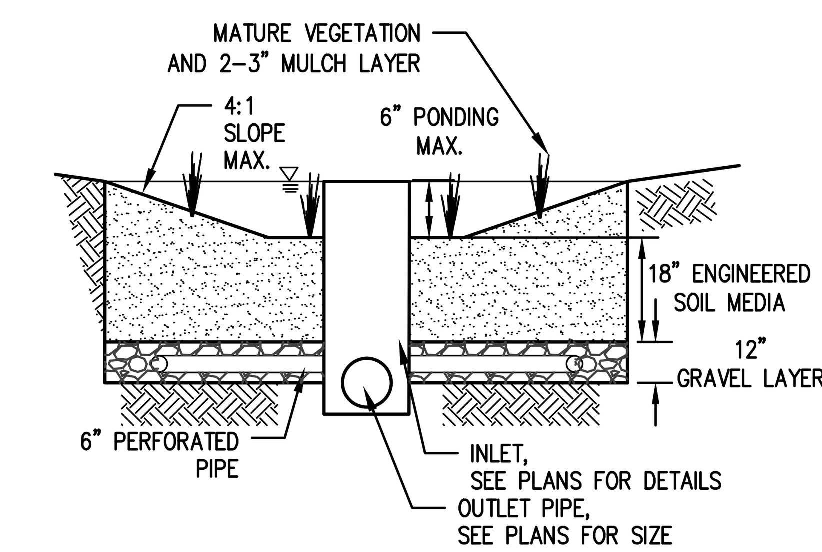
DMA AREA TABLE

DMA-X	AREA (SF)	SURFACE TYPE
DMA-2A	70,892	ROOF
DMA-2B	140,807	CONCRETE OR ASPHALT
DMA-2C	165,763	LANDSCAPE



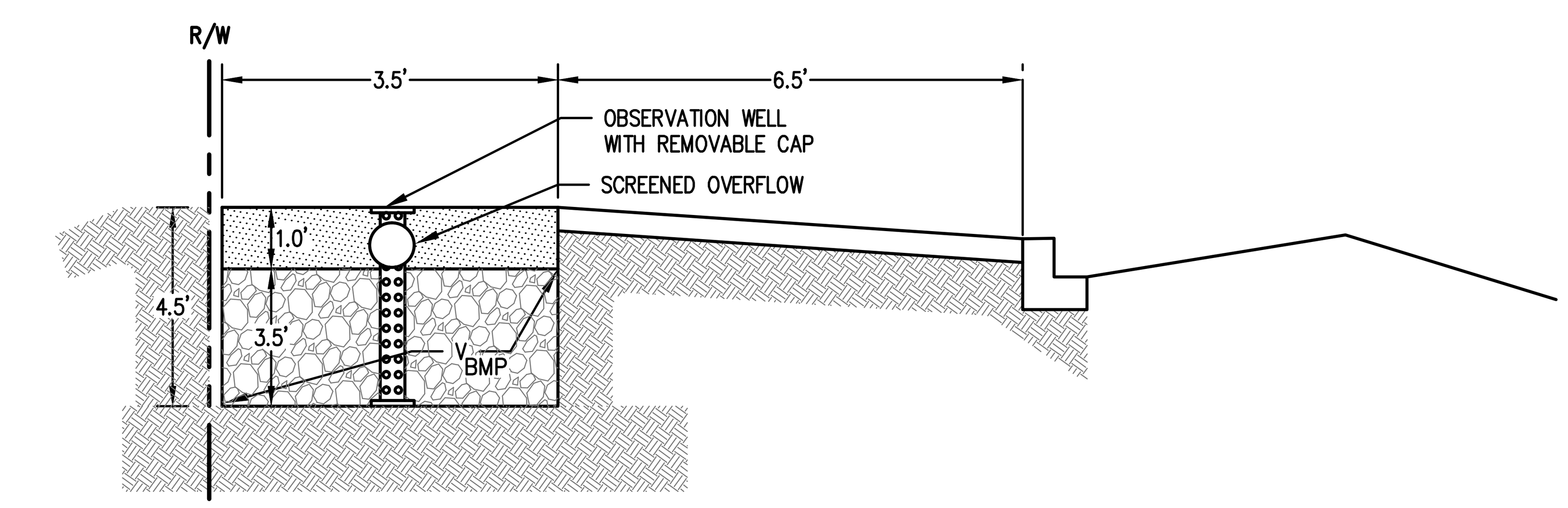
SECTION 2-2

NTS



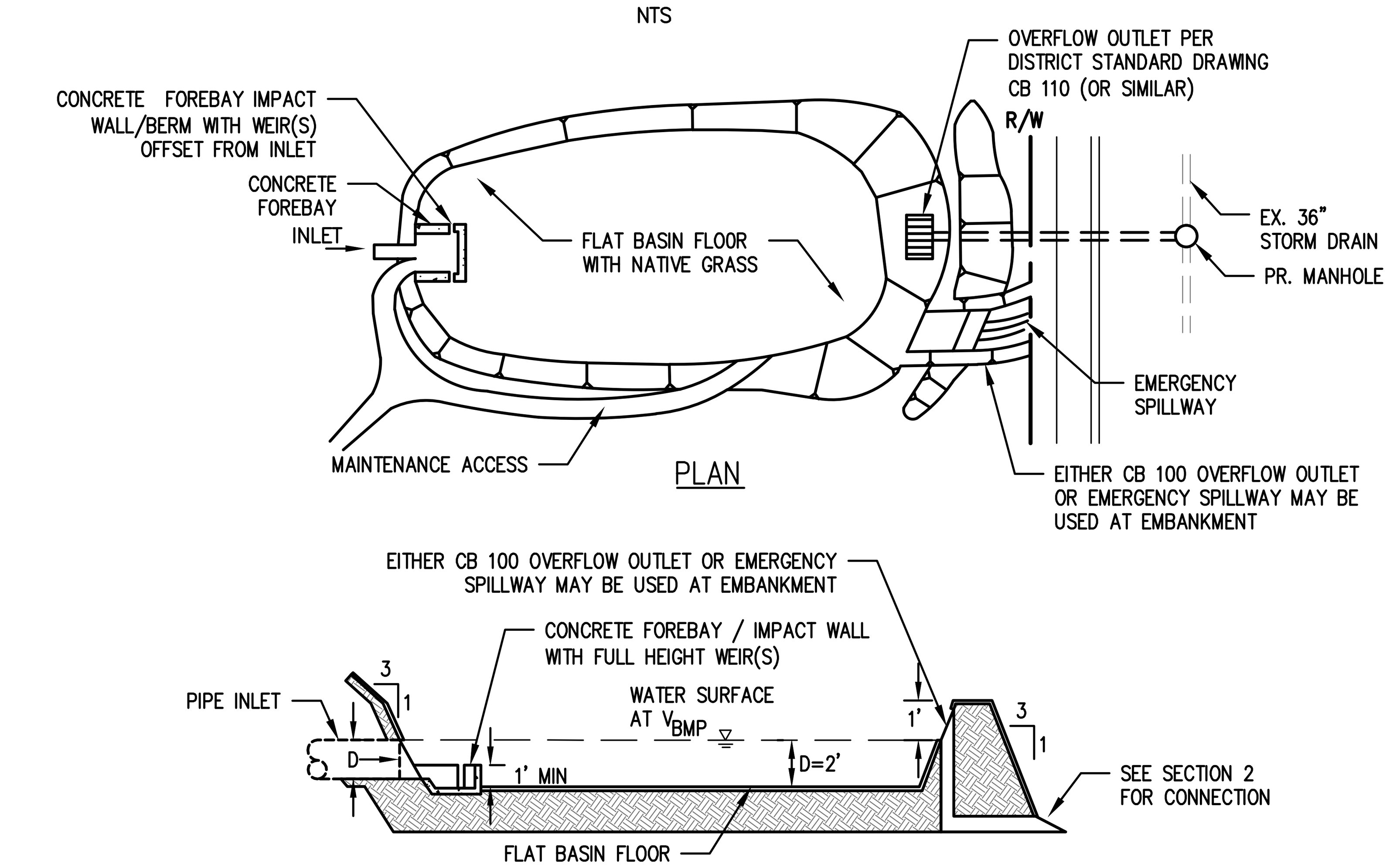
LID BASIN

NTS



INFILTRATION TRENCH

NTS



INFILTRATION BASIN

NTS

Santa Ana Watershed - BMP Design Volume, V_{BMP}

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Civilland Works — Date: 10/18/2016

Designed by: David Caron — Case No:

Company Project Number/Name: 1159D - Alessandro Apartments

BMP Identification

BMP NAME / ID: IMP - 1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E — D_{85}= 0.66 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA-1A	94,459	Roofs	1	0.89	84257.4			
DMA-1B	192,426	Concrete or Asphalt	1	0.892	171644			
DMA-1C	200,872	Ornamental Landscaping	0.1	0.110458	22187.9			
	487757	Total			278089.3	0.66	15294.9	35,029

Notes:

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID	Legend:	Required Entries
	IMP-1		Calculated Cells

Company Name: Civilland Works — Date: 10/18/201

Designed by: David Caron — County/City Case No.:

Design Volume

a) Tributary area (BMP subarea) — A_T = 11.197 acres

b) Enter V_{BMP} determined from Section 2.1 of this Handbook — V_{BMP}= 15,294 ft^3

Maximum Depth

a) Infiltration rate — I = 2 in/hr

b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook) — FS = 3

c) Calculate D_1

$$D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times FS}$$

D_1 = 4.0 ft

d) Enter the depth of freeboard (at least 1 ft) — 1 ft

e) Enter depth to historic high ground water (measured from **top** of basin) — 26 ft

f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin) — 50 ft

g) D_2 is the smaller of:

Depth to groundwater - (10 ft + freeboard) and
Depth to impermeable layer - (5 ft + freeboard)

D_2 = 15.0 ft

h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet — D_{MAX} = 4.0 ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1) — z = 4 :1

b) Proposed basin depth (excluding freeboard) — d_B = 2 ft

c) Minimum bottom surface area of basin ($A_S = V_{BMP}/d_B$) — A_S = 7647 ft^2

d) Proposed Design Surface Area — A_D = 10021 ft^2

Forebay

a) Forebay volume (minimum 0.5% V_{BMP}) — Volume = 76 ft^3

b) Forebay depth (height of berm/splashwall. 1 foot min.) — Depth = 2 ft

c) Forebay surface area (minimum) — Area = 38 ft^2

d) Full height notch-type weir — Width (W) = 12.0 in

Notes: Proposed volume calculation was determined by Civil3D CAD. See Attachment 6 for volume table.
Both first flush and large storms will be captured by infiltration basin to mitigate peak flows prior to discharge offsit

Santa Ana Watershed - BMP Design Volume, V_{BMP}

Legend: Required Entries | Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Civilland Works — Date: 10/18/2016
Designed by: David Caron — Case No:
Company Project Number/Name: 1159D - Alessandro Apartments

BMP Identification

BMP NAME / ID: IMP - 2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E — D_{85}= 0.66 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA-2A	*70,892*	*Roofs*	*1*	*0.89*	*63235.7*			
DMA-2B	*140,807*	*Concrete or Asphalt*	*1*	*0.892*	*125599.8*			
DMA-2C	*165,763*	*Ornamental Landscaping*	*0.1*	*0.110458*	*18309.8*			
	377462	***Total***			207145.3	0.66	*11393*	*23,804*

Notes:

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID	Legend:	Required Entries
	IMP-2		Calculated Cells

Company Name: Civilland Works Date: 10/18/201
Designed by: David Caron County/City Case No.:

Design Volume

a) Tributary area (BMP subarea) A_T = 8.665 acres

b) Enter V_{BMP} determined from Section 2.1 of this Handbook V_{BMP}= 11,393 ft^3

Maximum Depth

a) Infiltration rate I = 3 in/hr

b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook) FS = 3

c) Calculate D_1 $D_1 = \dfrac{\text{I (in/hr) x 72 hrs}}{\text{12 (in/ft) x FS}}$ D_1 = 6.0 ft

d) Enter the depth of freeboard (at least 1 ft) 1 ft

e) Enter depth to historic high ground water (measured from **top** of basin) 26 ft

f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin) 50 ft

g) D_2 is the smaller of:

Depth to groundwater - (10 ft + freeboard) and
Depth to impermeable layer - (5 ft + freeboard) D_2 = 15.0 ft

h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet D_{MAX} = 6.0 ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1) z = 4 :1

b) Proposed basin depth (excluding freeboard) d_B = 2 ft

c) Minimum bottom surface area of basin (A_S= V_{BMP}/d_B) A_S = 5697 ft^2

d) Proposed Design Surface Area A_D = 5827 ft^2

Forebay

a) Forebay volume (minimum 0.5% V_{BMP}) Volume = 57 ft^3

b) Forebay depth (height of berm/splashwall. 1 foot min.) Depth = 2 ft

c) Forebay surface area (minimum) Area = 28 ft^2

d) Full height notch-type weir Width (W) = 12.0 in

Notes: Proposed volume calculation was detemined by Civil3D CAD. See Attachment 6 for volume table.
Both first flush and large storms will be captured by infiltration basin to mitigate peak flows prior to discharge offsit

Santa Ana Watershed - BMP Design Volume, V_{BMP}

Legend: Required Entries | Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Civil Landworks — Date: 10/19/2016
Designed by: David Caron — Case No:
Company Project Number/Name: 1159D - Alessandro Apartments

BMP Identification

BMP NAME / ID: IMP - 3

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E — D_{85}= 0.66 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA-3A	*10,869*	*Concrete or Asphalt*	*1*	*0.89*	*9695.1*			
DMA-3B	*1,914*	*Ornamental Landscaping*	*0.1*	*0.110458*	*211.4*			
	12783	***Total***			**9906.5**	**0.66**	***544.9***	***550***

Notes:

Infiltration Trench - Design Procedure	BMP ID	Legend:	Required Entries / Calculated Cells
Company Name: Civil Landworks		Date:	10/19/2016
Designed by: David Caron		County/City Case No.:	

Design Volume

Enter the area tributary to this feature, Max = 10 acres — A_t= 0 acres

Enter V_{BMP} determined from Section 2.1 of this Handbook — V_{BMP}= 545 ft^3

Calculate Maximium Depth of the Reservoir Layer

Enter Infiltration rate — I = 2.0 in/hr

Enter Factor of Safety, FS (unitless) — FS = 3

Obtain from Table 1, Appendix A: "Infiltration Testing" of this BMP Handbook

n = 40 %

Calculate D_1.

$$D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times (n/100) \times FS}$$

D_1 = 10.00 ft

Enter depth to historic high groundwater mark (measured from finished grade) — 26 ft

Enter depth to top of bedrock or impermeable layer (measured from finished grade) — 50 ft

D_2 is the smaller of:

Depth to groundwater - 11 ft; & Depth to impermeable layer - 6 ft — D_2 = 15.0 ft

D_{MAX} is the smaller value of D_1 and D_2, must be less than or equal to 8 feet. — D_{MAX} = 8.0 ft

Trench Sizing

Enter proposed reservoir layer depth D_R, must be $\leq D_{MAX}$ — D_R = 3.50 ft

Calculate the design depth of water, d_W

Design $d_W = (D_R) \times (n/100)$ — Design d_W= 1.40 ft

Minimum Surface Area, A_S — $A_S = \frac{V_{BMP}}{d_W}$ — A_S = 389 ft^2

Proposed Design Surface Area — A_D = 390 ft^2

Minimum Width = D_R + 1 foot pea gravel — 4.50 ft

Sediment Control Provided? (Use pulldown) — Yes

Geotechnical report attached? (Use pulldown) — Yes

If the trench has been designed correctly, there should be no error messages on the spreadsheet.

Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ A. **On-site storm drain inlets**	☒ **Locations of inlets.**	☒ **Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.**	☒ **Maintain and periodically repaint or replace inlet markings.** ☒ **Provide stormwater pollution prevention information to new site owners, lessees, or operators.** ☒ **See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** ☒ **Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."**
❑ B. **Interior floor drains and elevator shaft sump pumps**		❑ **State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.**	❑ **Inspect and maintain drains to prevent blockages and overflow.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ C. **Interior parking garages**		❑ **State that parking garage floor drains will be plumbed to the sanitary sewer.**	❑ **Inspect and maintain drains to prevent blockages and overflow.**
❑ D1. **Need for future indoor & structural pest control**		❑ **Note building design features that discourage entry of pests.**	❑ **Provide Integrated Pest Management information to owners, lessees, and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ D2. **Landscape/ Outdoor Pesticide Use**	☒ **Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.** ☒ **Show self-retaining landscape areas, if any.** ☒ **Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 in guidance in Chapter 5.)**	**State that final landscape plans will accomplish all of the following:** ☒ **Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.** ☒ **Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.** ☒ **Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.** ☒ **Consider using pest-resistant plants, especially adjacent to hardscape.** ☒ **To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.**	☒ **Maintain landscaping using minimum or no pesticides.** ☒ **See applicable operational BMPs in "What you should know for … Landscape and Gardening" at http://rcflood.org/stormwater/** ☒ **Provide IPM information to new owners, lessees and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ E. **Pools, spas, ponds, decorative fountains, and other water features.**	☒ **Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environment Health Guidelines.)**	☒ **If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.**	☒ **See applicable operational BMPs in "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood.org/stormwater/**
❑ F. **Food service**	❑ **For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.** ❑ **On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.**	❑ **Describe the location and features of the designated cleaning area.** ❑ **Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.**	❑ **See the brochure, "The Food service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http//rcflood.org/stormwater/** **Provide this brochure to new site owners, lessees, and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ G. **Refuse areas**	☒ **Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.** ☒ **If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area.** ☒ **Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.**	☒ **State how site refuse will be handled and provide supporting detail to what is shown on plans.** ☒ **State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.**	☒ **State how the following will be implemented:** **Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**
❑ H. **Industrial processes.**	❑ **Show process area.**	❑ **If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."**	❑ **See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ I. **Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)**	❑ **Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area.** ❑ **Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.** ❑ **Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.**	❑ **Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.** **Where appropriate, reference documentation of compliance with the requirements of local Hazardous Materials Programs for:** ▪ **Hazardous Waste Generation** ▪ **Hazardous Materials Release Response and Inventory** ▪ **California Accidental Release (CalARP)** ▪ **Aboveground Storage Tank** ▪ **Uniform Fire Code Article 80 Section 103(b) & (c) 1991** ▪ **Underground Storage Tank** **www.cchealth.org/groups/hazmat**	❑ **See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

❑ J. Vehicle and Equipment Cleaning	❑ Show on drawings as appropriate: (1) Commercial/industrial facilities having vehicle /equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses. (2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use). (3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer. (4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.	❑ If a car wash area is not provided, describe measures taken to discourage on-site car washing and explain how these will be enforced.	Describe operational measures to implement the following (if applicable): ❑ Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system. Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/ ❑ Car dealerships and similar may rinse cars with water only.

❑ K. Vehicle/Equipment Repair and Maintenance	❑ Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater. ❑ Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas. ❑ Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.	❑ State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area. ❑ State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements. ❑ State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.	In the Stormwater Control Plan, note that all of the following restrictions apply to use the site: ❑ No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains. ❑ No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately. ❑ No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment. Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/ Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below.

❑ L. Fuel Dispensing Areas	❑ Fueling areas[1] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable. ❑ Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.		❑ The property owner shall dry sweep the fueling area routinely. ❑ See the Business Guide Sheet, "Automotive Service—Service Stations" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

[1] The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

❑ M. Loading Docks	❑ Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer. ❑ Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation. ❑ Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.		❑ Move loaded and unloaded items indoors as soon as possible. ❑ See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
❑ N. Fire Sprinkler Test Water		❑ Provide a means to drain fire sprinkler test water to the sanitary sewer.	❑ See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

O. **Miscellaneous Drain or Wash Water** ☐ **Boiler drain lines** ☐ **Condensate drain lines** ☐ **Rooftop equipment** ☐ **Drainage sumps** ☐ **Roofing, gutters, and trim.** ☐ **Other sources**		☐ **Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.** ☐ **Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.** ☐ **Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.** ☐ **Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.** ☐ **Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.** **Include controls for other sources as specified by local reviewer.**	
☒ P. **Plazas, sidewalks, and parking lots.**			☒ **Plazas, sidewalks, and parking lots shall be swept regularly to prevent the accumulation of litter and debris. Collect debris from pressure washing shall be collected to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.**

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

Appendix 11: Hydrology Calculations

100 Year 24 hour detention

Hydrology Study

272 Unit Residential Apartments
Villa Annette
Moreno Valley, California 92553

Prepared For:

LATCO Enterprises
940 Calle Negocia, Suite 200
San Clemente, California 92673
(949) 276-4402

Prepared By:

Civil Landworks Corporation
110 Copperwood Way, Suite P
Oceanside CA, USA 92058
760-908-8745

CLW No. 1159-D

October 19, 2016

1.0 INTRODUCTION

The purpose of this study is to determine the pre and post development storm water runoff and site drainage for a 100 year storm event at 24 hours.

The project proposes 43 apartment buildings, with 272 units, a community building, and a pool/spa. The project site is located in the City of Moreno Valley, California southeast of the intersection of Alessandro Boulevard and Perris Boulevard. The site is currently vacant and drains from the northwest to the southeast of the property. The project area is approximately 19.862 acres. (See Attachment 1).

2.0 DESIGN CRITERIA AND ASSUMPTIONS

1. The site soil classification as hydrologic soil type A and C. See Attachment 2.
2. Per the Riverside County Flood Control and Water Conservation District Hydrology Manual (1978) Precipitation Maps (See Attachment 2):
   - 100 Year Rainfall Event – 24 hours = 4.30 inches/hour
   - 2 Year Rainfall Event – 24 hours = 1.72 inches/hour
3. Hydrologic calculations were performed using the CIVILCAD/CIVILDESIGN Engineering software Version 8.2 per methods as outlined within the Riverside County Flood Control and Water Conservation District Hydrology Manual (1978). The Synthetic Unit Hydrology Method was used for the 2, 5, 10, and 100 year storms. The hydrology calculations for proposed and existing conditions may be found within the hydrology calculations section of this report.
4. Storm to be studied will include the 24 hour duration events for the 100-year return frequencies.
5. The 100 year storm was calculated using the Antecedent Moisture Condition II PER County of Riverside Manual.
6. Calculations using CIVILCAD/CIVILDESIGN Engineering software for the node to node component was only used to evaluate the hydrology and hydraulics for the interior drainage system. Values from those calculations were used to incorporate into WSPGW for the HGL of the major storm drains.

3.0 DISCUSSION

3.1 Existing Conditions

The site is undeveloped and is comprised of approximately 19.862 acres on 1 square shaped parcel and 1 rectangular parcel southeast of the intersection of Alessandro Boulevard and Perris Boulevard. Onsite, the rectangular parcel drains from the northwest to the southeast corner of the property, as does the square parcel.

See Attachment 6 for existing drainage patterns.

3.2 PROPOSED CONDITIONS

The proposed project consists of an apartment complex with private roads, utilities, and landscaping.

The onsite drainage is divided into two basins. The first basin consists of the northern rectangular parcel and the second basin consists of the southern square parcel.

Both basins flow from the northwest to the southeast and discharge into infiltration basins located in the southeast corner of each parcel

See Attachment 7 for proposed drainage patterns.

4.0 CONCLUSION

The proposed large area of surface area will capture the runoff from the proposed project. The ultimate flow will discharge to the southeast portion of the site and be captured by infiltration basins.

Basin A:
The existing Q max 24 hr, 100 year storm event is 5.19 cfs.
The existing max volume is 1.1661 ac.ft.
The post development Q max 24 hr, 100 year storm event is 3.95 cfs.
The post development max volume is 0.688 ac.ft.

Basin B:
The existing Q max 24 hr 100 year storm event is 3.68 cfs.
The existing max volume is 0.7178 ac.ft.
The post development Q max 24 hr, 100 year storm event is 2.82 cfs.
The post development max volume is 0.436 ac.ft.

The proposed development will reduce the Q max for the 100 year storm event by 2.10 cfs, and the maximum volume by 0.7599 ac.ft.

5.0 DECLARATION OF RESPONSIBLE CHARGE

I, hereby declare that I am the Engineer of Work for this project, that I have exercised responsible charge over the design of the project as defined in section 6703 of the business and professions code, and that the design is consistent with current standards.

ENGINEER OF WORK:

Civil Landworks Corporation
110 Copperwood Way, Suite P
Oceanside CA, USA 92058

10-19-16
Date

David V. Caron
R.C.E. 70066
Exp. 9-30-18

6.0 REFERENCES

1. Riverside County Flood Control and Water Conservation District Hydrology Manual (1978).
2. CIVILCADD/CIVILDESIGN Engineering Software, © 1989-2012 Version 8.2. Riverside County Rational Hydrology Method.

ATTACHMENT 1

VICINTY AND LOCATION MAPS

SITE VICINITY MAP

DATE: 1-14-16	ALESSANDRO BLVD AND PERRIS BLVD	
SCALE: AS SHOWN		DRAWN BY: P. NONG

SITE LOCATION MAP

DATE: 1-14-16	ALESSANDRO BLVD AND PERRIS BLVD	
SCALE: AS SHOWN		DRAWN BY: P. NONG

ATTACHMENT 2

SOIL MAP AND PRECIPITATION MAPS

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	72	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	28	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
AGRICULTURAL COVERS -					
Fallow (Land plowed but not tilled or seeded)		76	85	90	92

RCFC & WCD
HYDROLOGY MANUAL

RUNOFF INDEX NUMBERS FOR PERVIOUS AREAS

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Western Riverside Area, California

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:2,760 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0, 40, 80, 160, 240

Feet: 0, 100, 200, 400, 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 8, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 14, 2015—Jan 21, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Western Riverside Area, California (CA679)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
EpC2	Exeter sandy loam, deep, 2 to 8 percent slopes, eroded	16.0	69.9%
GyA	Greenfield sandy loam, 0 to 2 percent slopes	6.8	29.6%
HgA	Hanford fine sandy loam, 0 to 2 percent slopes	0.1	0.5%
Totals for Area of Interest		**22.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Western Riverside Area, California

EpC2—Exeter sandy loam, deep, 2 to 8 percent slopes, eroded

Map Unit Setting

National map unit symbol: hctl
Elevation: 300 to 700 feet
Mean annual precipitation: 7 to 15 inches
Mean annual air temperature: 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Exeter and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exeter

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 16 inches: sandy loam
H2 - 16 to 37 inches: sandy clay loam
H3 - 37 to 50 inches: indurated
H4 - 50 to 60 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 35 to 60 inches to duripan
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: LOAMY (1975) (R019XD029CA)

Minor Components

Ramona

Percent of map unit: 5 percent

Monserate

Percent of map unit: 5 percent

Greenfield

Percent of map unit: 5 percent

GyA—Greenfield sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hcvv
Elevation: 100 to 3,500 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Greenfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greenfield

Setting

Landform: Alluvial fans, terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 26 inches: sandy loam
H2 - 26 to 43 inches: fine sandy loam
H3 - 43 to 60 inches: loam
H4 - 60 to 72 inches: stratified loamy sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: LOAMY (1975) (R019XD029CA)

Minor Components

Hanford

Percent of map unit: 10 percent

Pachappa

Percent of map unit: 2 percent

Arlington

Percent of map unit: 2 percent

Unnamed

Percent of map unit: 1 percent

HgA—Hanford fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hcw7
Elevation: 150 to 900 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 40 inches: fine sandy loam
H3 - 40 to 60 inches: stratified loamy sand to coarse sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: LOAMY (1975) (R019XD029CA)

Minor Components

Greenfield

Percent of map unit: 5 percent

Ramona

Percent of map unit: 5 percent

Tujunga

Percent of map unit: 5 percent

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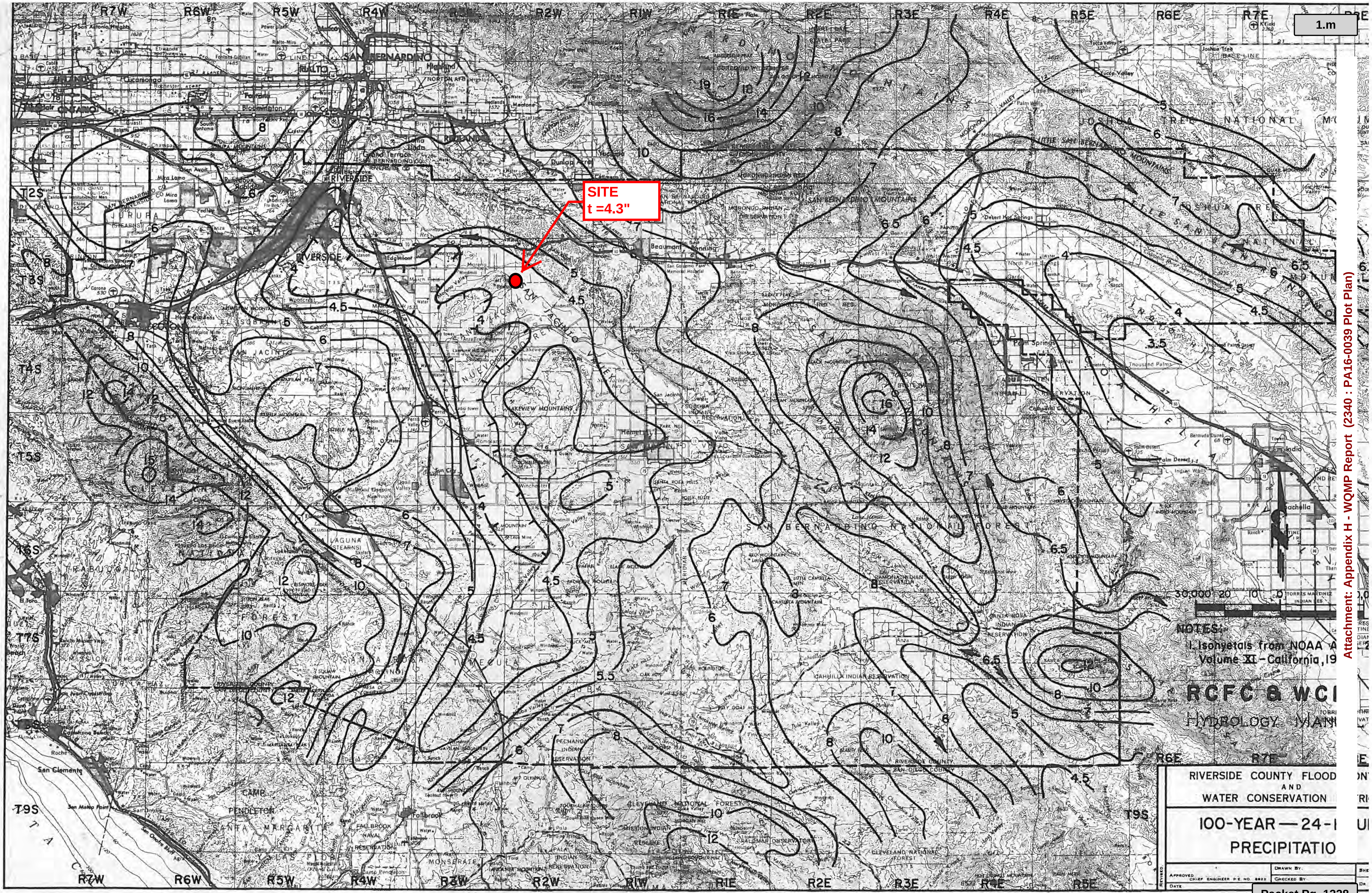
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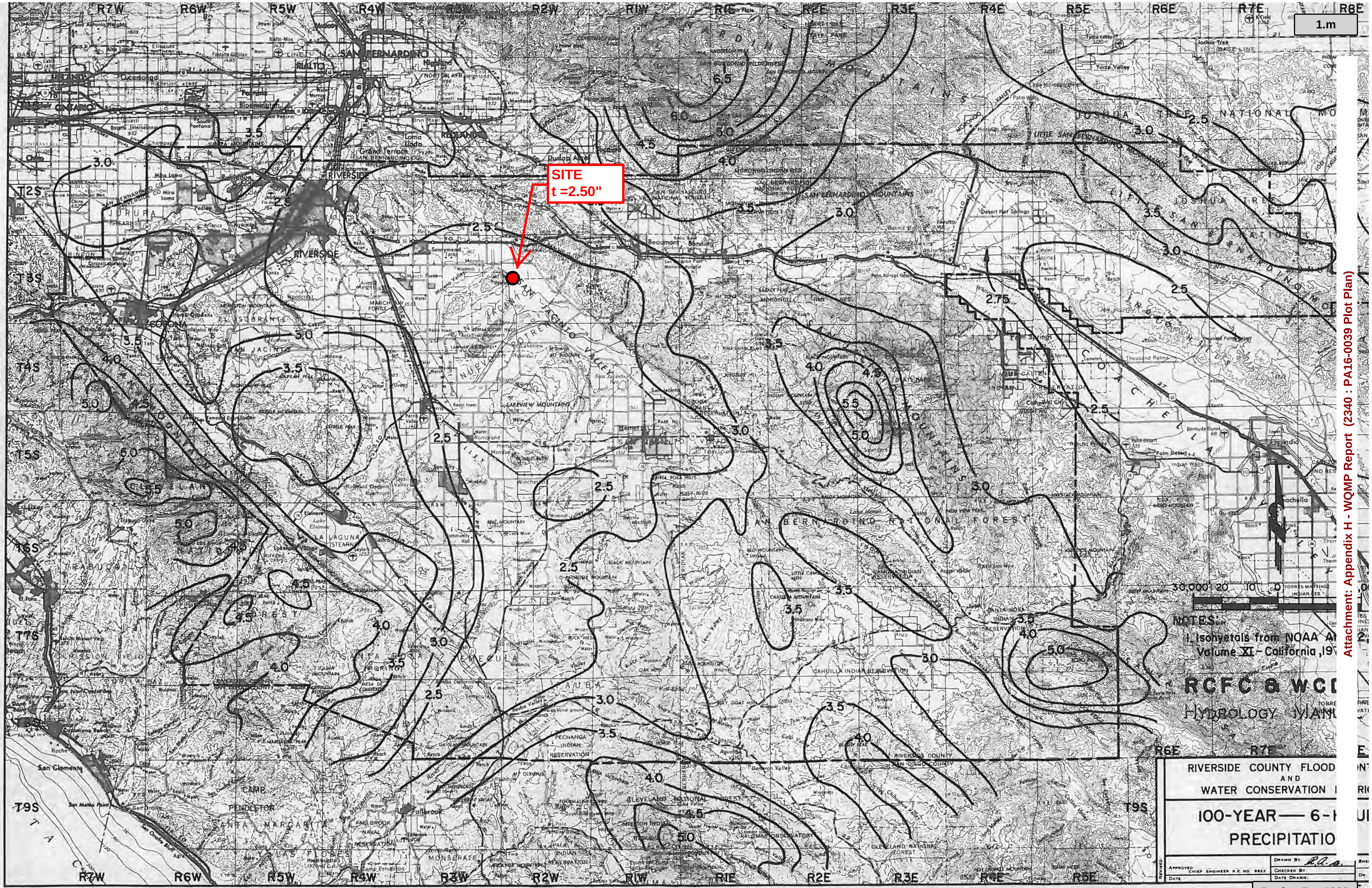
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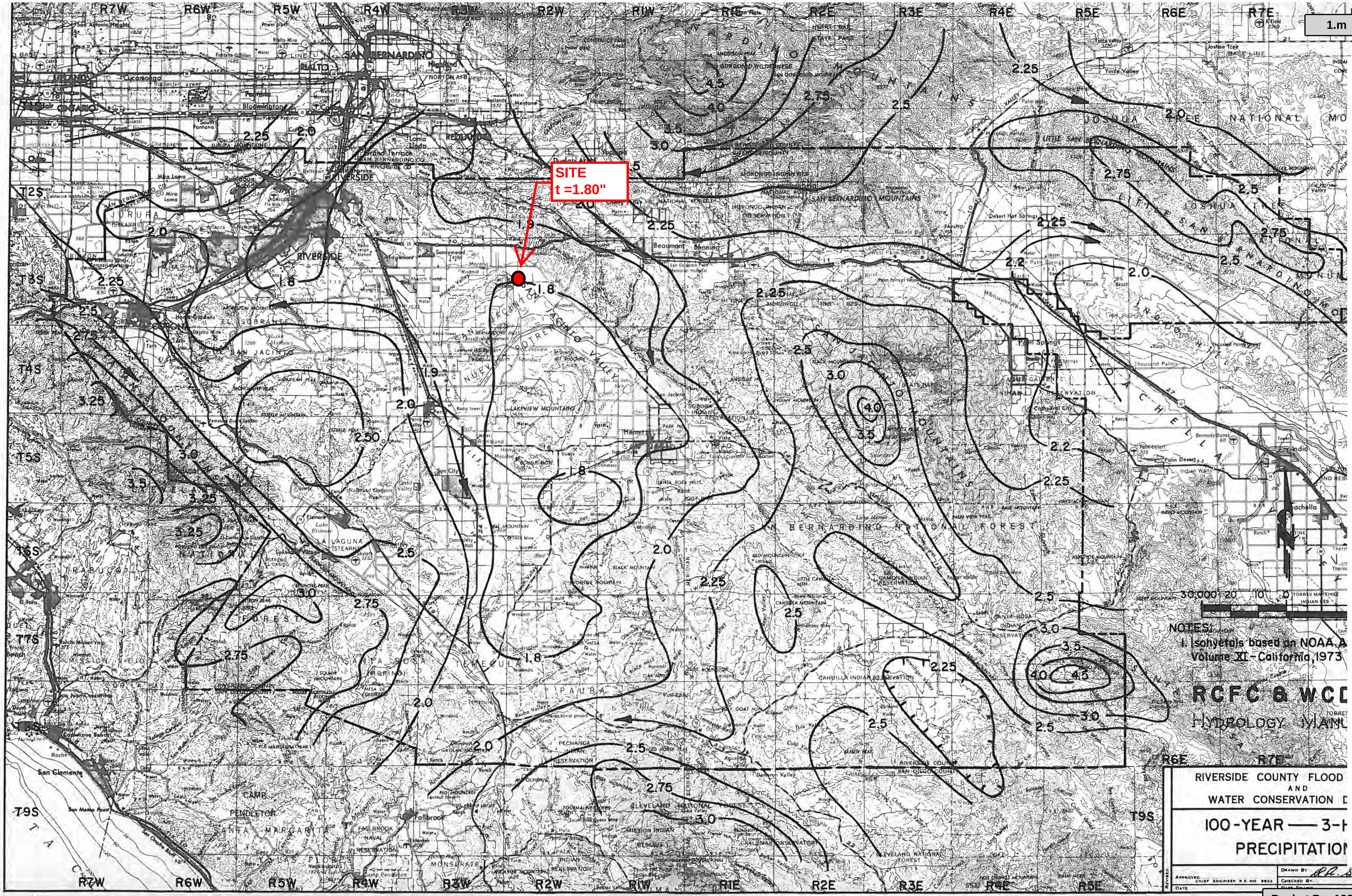
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San Jacinto
San Clemente
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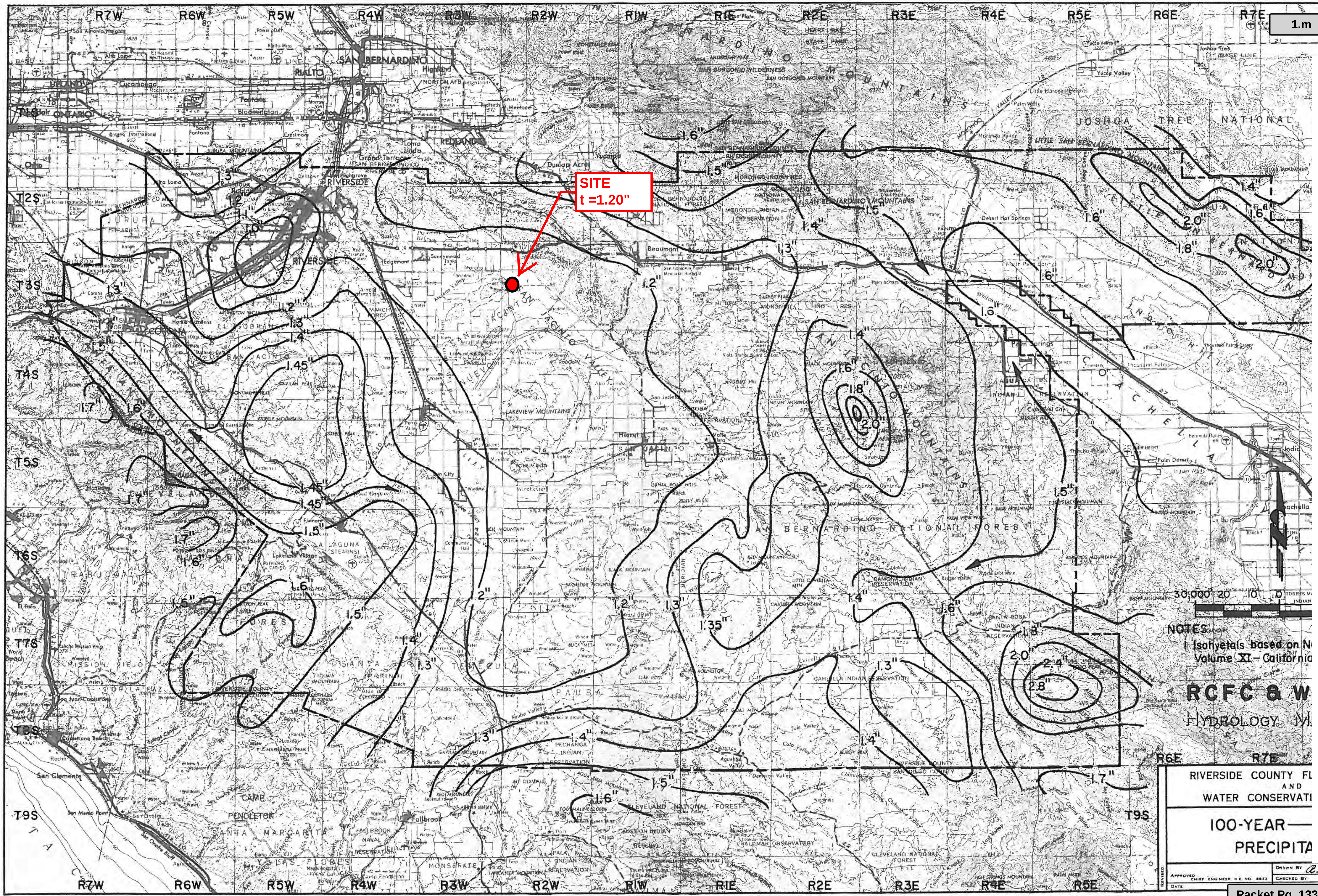
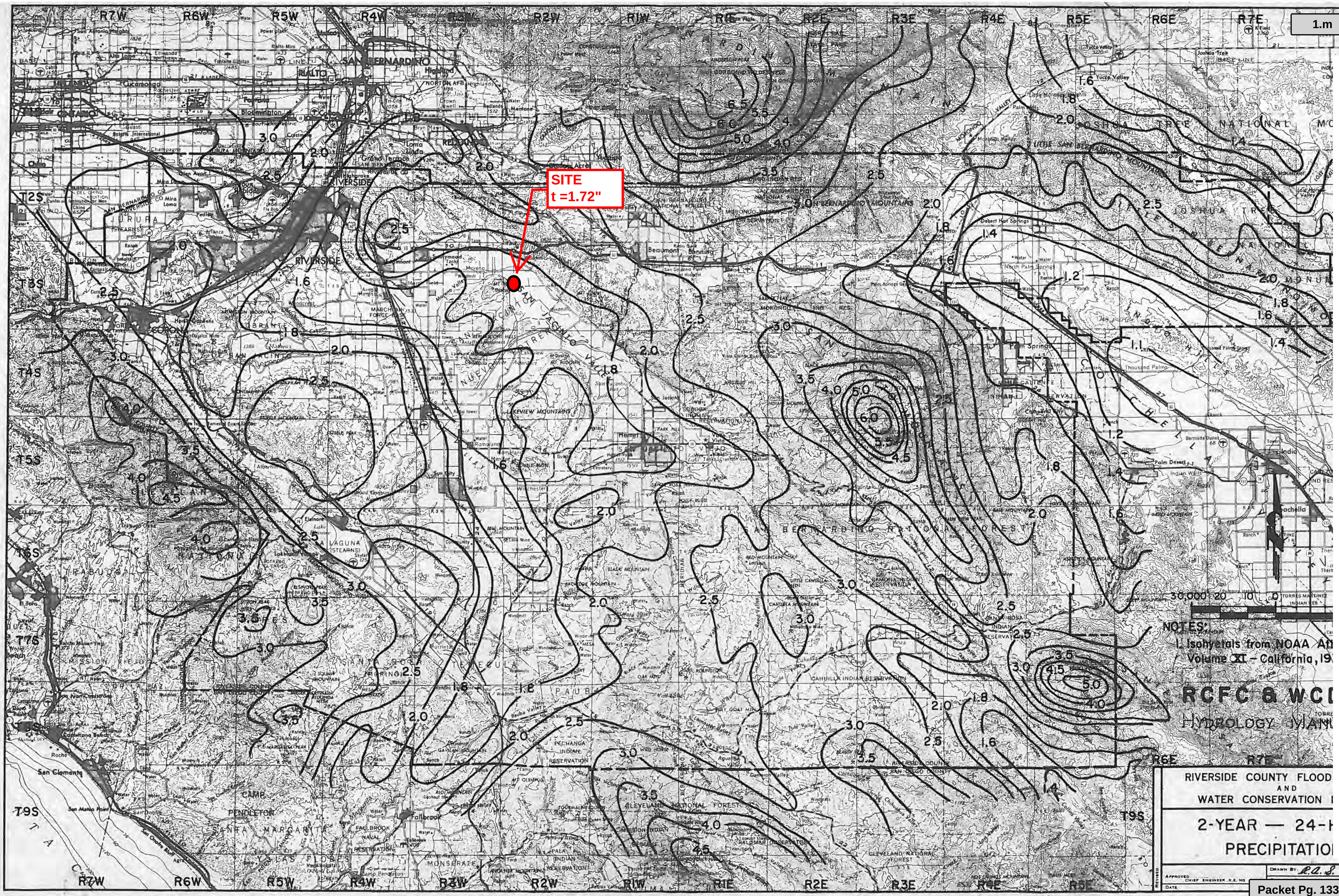


Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)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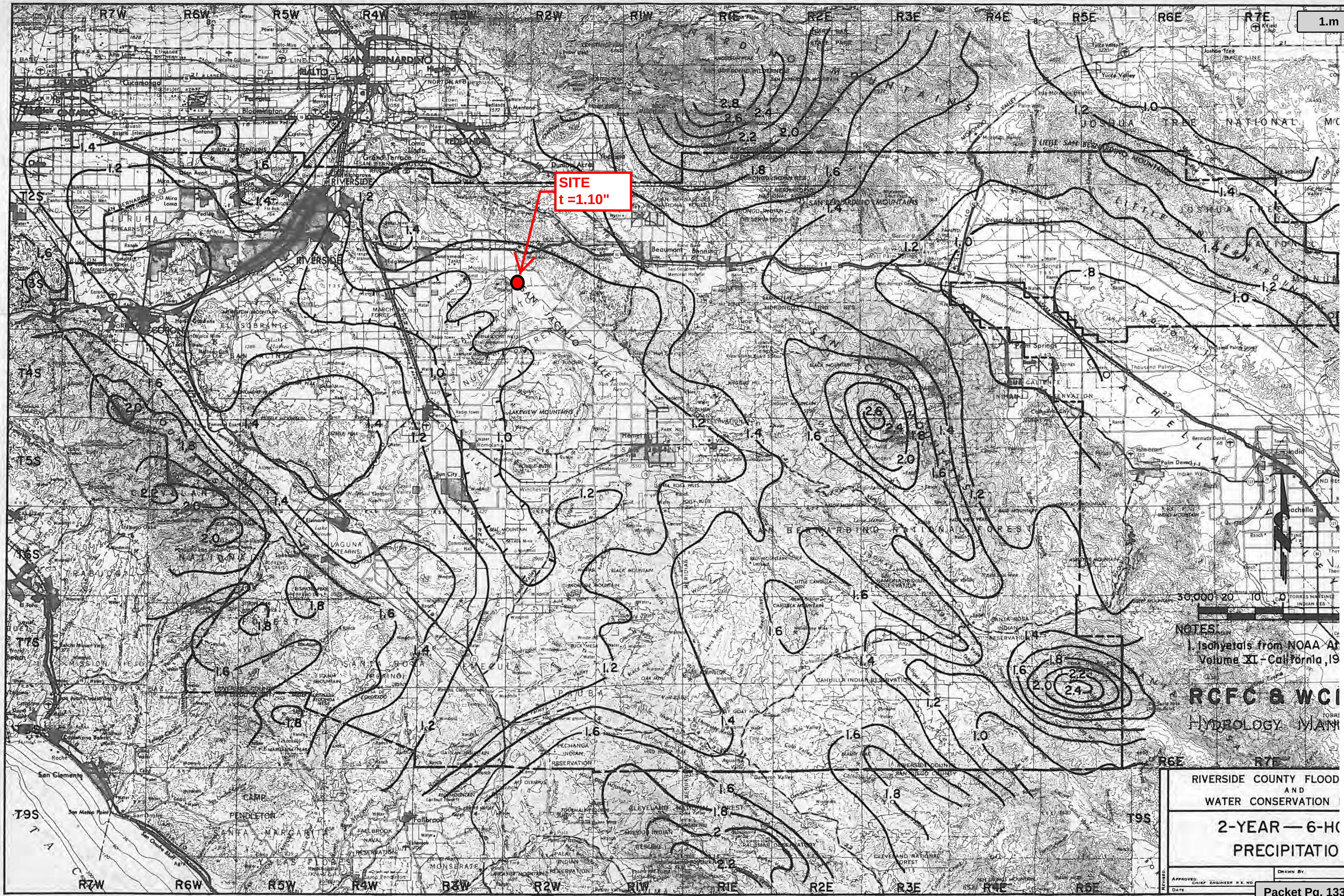
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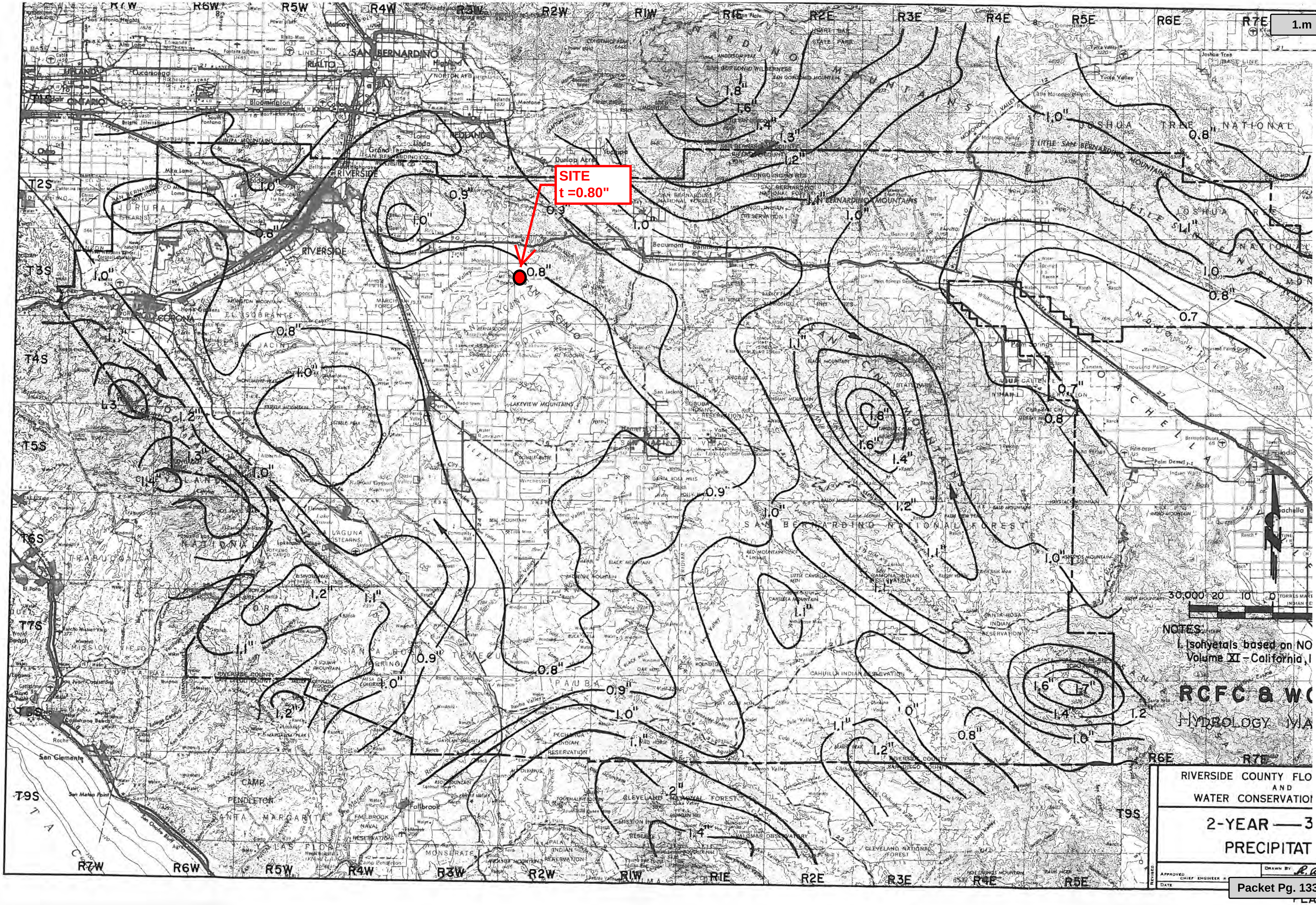
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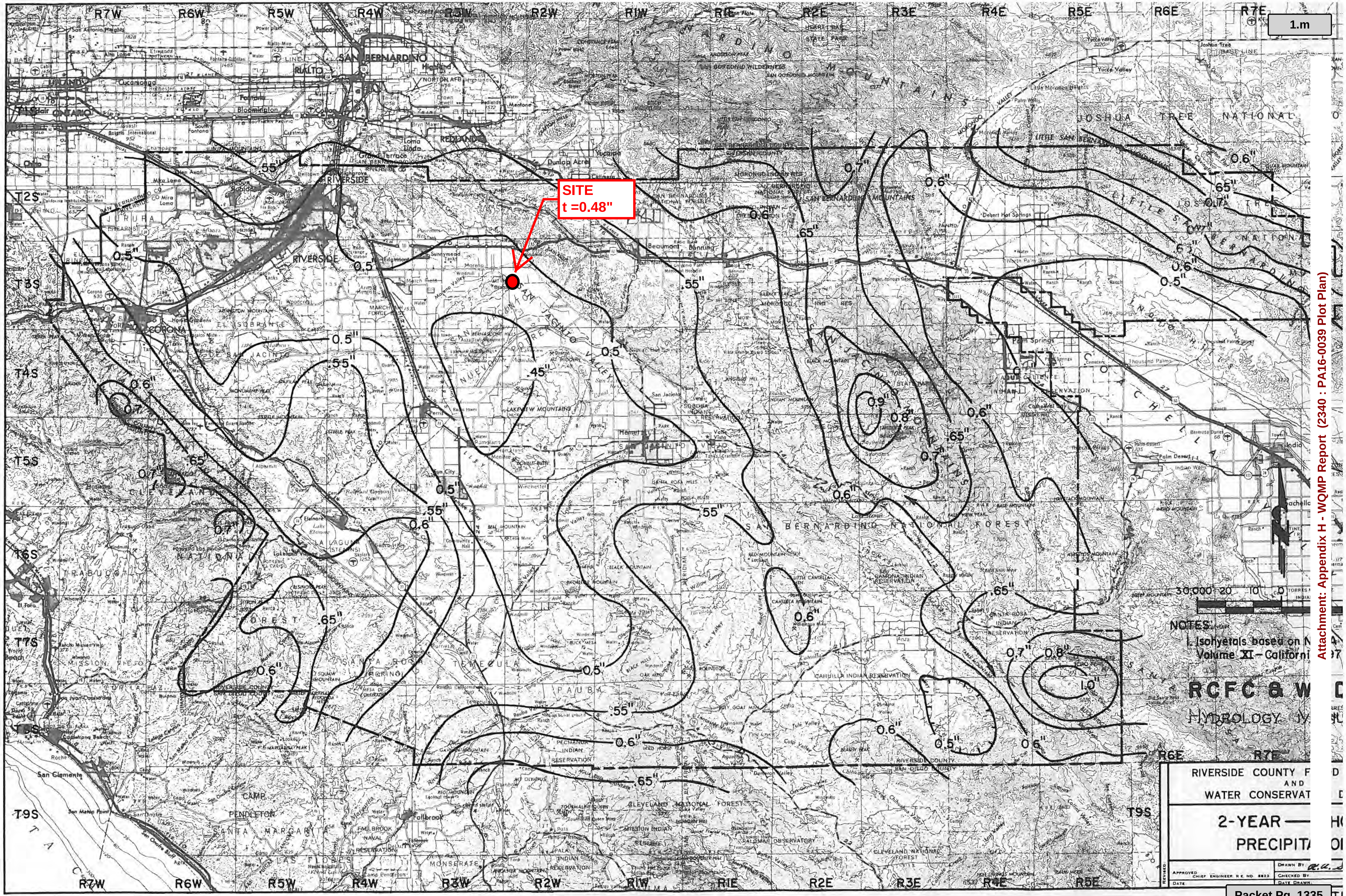
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CORONA
Hemet
San Jacinto
Beaumont
Banning
Palm Springs
Fallbrook
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ATTACHMENT 6

HYDRAULIC CALCULATIONS

Existing Area Calculations

Basin No.	Pervious areas A Soil 78 SF	Pervious areas C Soil 91 SF	Total Area Pervious only SF	Total Area Pervious only Acres	Impervious Bldg & roads SF	Impervious Bldg & roads Acres	Total Area ALL SF	Total Area ALL Acres	Percent Impervious	Runoff Index Composite
A-1	80,726	407,031	487,757	11.197	0	0.000	487,757	11.197	0%	89
B-1	178,644	198,818	377,462	8.665	0	0.000	377,462	8.665	0%	85

BASIN A

100 YEAR

```
                                 EX24HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  06/28/16 File: EX24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =    1073.00(Ft.)
Length along longest watercourse measured to centroid =     547.00(Ft.)
Length along longest watercourse =      0.203 Mi.
Length along longest watercourse measured to centroid =      0.104 Mi.
Difference in elevation =       6.80(Ft.)
Slope along watercourse =     33.4613 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.11 Min.
25% of lag time =     1.28 Min.
40% of lag time =     2.05 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.72                  19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            4.30                  48.15

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    4.300(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           89.00         0.000
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%      F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
89.0  89.0      0.141     0.000        0.141       1.000      0.141
                                                  Sum (F) =   0.141
Area averaged mean soil loss (F) (In/Hr) =  0.141
Minimum soil loss rate ((In/Hr)) =  0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
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EX24HR100YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	97.789	18.521	2.090
2	0.167	195.577	48.209	5.440
3	0.250	293.366	15.982	1.803
4	0.333	391.154	7.182	0.810
5	0.417	488.943	4.067	0.459
6	0.500	586.731	2.639	0.298
7	0.583	684.520	1.671	0.189
8	0.667	782.309	1.063	0.120
9	0.750	880.097	0.666	0.075
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.034	(0.251)	0.031	0.003
2	0.17	0.07	0.034	(0.250)	0.031	0.003
3	0.25	0.07	0.034	(0.249)	0.031	0.003
4	0.33	0.10	0.052	(0.248)	0.046	0.005
5	0.42	0.10	0.052	(0.247)	0.046	0.005
6	0.50	0.10	0.052	(0.246)	0.046	0.005
7	0.58	0.10	0.052	(0.245)	0.046	0.005
8	0.67	0.10	0.052	(0.244)	0.046	0.005
9	0.75	0.10	0.052	(0.243)	0.046	0.005
10	0.83	0.13	0.069	(0.242)	0.062	0.007
11	0.92	0.13	0.069	(0.241)	0.062	0.007
12	1.00	0.13	0.069	(0.240)	0.062	0.007
13	1.08	0.10	0.052	(0.239)	0.046	0.005
14	1.17	0.10	0.052	(0.238)	0.046	0.005
15	1.25	0.10	0.052	(0.237)	0.046	0.005
16	1.33	0.10	0.052	(0.236)	0.046	0.005
17	1.42	0.10	0.052	(0.235)	0.046	0.005
18	1.50	0.10	0.052	(0.234)	0.046	0.005
19	1.58	0.10	0.052	(0.234)	0.046	0.005
20	1.67	0.10	0.052	(0.233)	0.046	0.005
21	1.75	0.10	0.052	(0.232)	0.046	0.005
22	1.83	0.13	0.069	(0.231)	0.062	0.007
23	1.92	0.13	0.069	(0.230)	0.062	0.007
24	2.00	0.13	0.069	(0.229)	0.062	0.007
25	2.08	0.13	0.069	(0.228)	0.062	0.007
26	2.17	0.13	0.069	(0.227)	0.062	0.007
27	2.25	0.13	0.069	(0.226)	0.062	0.007
28	2.33	0.13	0.069	(0.225)	0.062	0.007
29	2.42	0.13	0.069	(0.224)	0.062	0.007
30	2.50	0.13	0.069	(0.223)	0.062	0.007
31	2.58	0.17	0.086	(0.222)	0.077	0.009
32	2.67	0.17	0.086	(0.221)	0.077	0.009
33	2.75	0.17	0.086	(0.221)	0.077	0.009
34	2.83	0.17	0.086	(0.220)	0.077	0.009
35	2.92	0.17	0.086	(0.219)	0.077	0.009
36	3.00	0.17	0.086	(0.218)	0.077	0.009
37	3.08	0.17	0.086	(0.217)	0.077	0.009
38	3.17	0.17	0.086	(0.216)	0.077	0.009
39	3.25	0.17	0.086	(0.215)	0.077	0.009
40	3.33	0.17	0.086	(0.214)	0.077	0.009
41	3.42	0.17	0.086	(0.213)	0.077	0.009
42	3.50	0.17	0.086	(0.212)	0.077	0.009
43	3.58	0.17	0.086	(0.212)	0.077	0.009
44	3.67	0.17	0.086	(0.211)	0.077	0.009
45	3.75	0.17	0.086	(0.210)	0.077	0.009
46	3.83	0.20	0.103	(0.209)	0.093	0.010
47	3.92	0.20	0.103	(0.208)	0.093	0.010
48	4.00	0.20	0.103	(0.207)	0.093	0.010
49	4.08	0.20	0.103	(0.206)	0.093	0.010
50	4.17	0.20	0.103	(0.205)	0.093	0.010
51	4.25	0.20	0.103	(0.205)	0.093	0.010
52	4.33	0.23	0.120	(0.204)	0.108	0.012
53	4.42	0.23	0.120	(0.203)	0.108	0.012

54	4.50	0.23	0.120	(0.202)	0.108	0.012
55	4.58	0.23	0.120	(0.201)	0.108	0.012
56	4.67	0.23	0.120	(0.200)	0.108	0.012
57	4.75	0.23	0.120	(0.199)	0.108	0.012
58	4.83	0.27	0.138	(0.198)	0.124	0.014
59	4.92	0.27	0.138	(0.198)	0.124	0.014
60	5.00	0.27	0.138	(0.197)	0.124	0.014
61	5.08	0.20	0.103	(0.196)	0.093	0.010
62	5.17	0.20	0.103	(0.195)	0.093	0.010
63	5.25	0.20	0.103	(0.194)	0.093	0.010
64	5.33	0.23	0.120	(0.193)	0.108	0.012
65	5.42	0.23	0.120	(0.193)	0.108	0.012
66	5.50	0.23	0.120	(0.192)	0.108	0.012
67	5.58	0.27	0.138	(0.191)	0.124	0.014
68	5.67	0.27	0.138	(0.190)	0.124	0.014
69	5.75	0.27	0.138	(0.189)	0.124	0.014
70	5.83	0.27	0.138	(0.188)	0.124	0.014
71	5.92	0.27	0.138	(0.187)	0.124	0.014
72	6.00	0.27	0.138	(0.187)	0.124	0.014
73	6.08	0.30	0.155	(0.186)	0.139	0.015
74	6.17	0.30	0.155	(0.185)	0.139	0.015
75	6.25	0.30	0.155	(0.184)	0.139	0.015
76	6.33	0.30	0.155	(0.183)	0.139	0.015
77	6.42	0.30	0.155	(0.183)	0.139	0.015
78	6.50	0.30	0.155	(0.182)	0.139	0.015
79	6.58	0.33	0.172	(0.181)	0.155	0.017
80	6.67	0.33	0.172	(0.180)	0.155	0.017
81	6.75	0.33	0.172	(0.179)	0.155	0.017
82	6.83	0.33	0.172	(0.178)	0.155	0.017
83	6.92	0.33	0.172	(0.178)	0.155	0.017
84	7.00	0.33	0.172	(0.177)	0.155	0.017
85	7.08	0.33	0.172	(0.176)	0.155	0.017
86	7.17	0.33	0.172	(0.175)	0.155	0.017
87	7.25	0.33	0.172	(0.174)	0.155	0.017
88	7.33	0.37	0.189	(0.174)	0.170	0.019
89	7.42	0.37	0.189	(0.173)	0.170	0.019
90	7.50	0.37	0.189	(0.172)	0.170	0.019
91	7.58	0.40	0.206	0.171	(0.186)	0.035
92	7.67	0.40	0.206	0.170	(0.186)	0.036
93	7.75	0.40	0.206	0.170	(0.186)	0.037
94	7.83	0.43	0.224	0.169	(0.201)	0.055
95	7.92	0.43	0.224	0.168	(0.201)	0.055
96	8.00	0.43	0.224	0.167	(0.201)	0.056
97	8.08	0.50	0.258	0.167	(0.232)	0.091
98	8.17	0.50	0.258	0.166	(0.232)	0.092
99	8.25	0.50	0.258	0.165	(0.232)	0.093
100	8.33	0.50	0.258	0.164	(0.232)	0.094
101	8.42	0.50	0.258	0.163	(0.232)	0.095
102	8.50	0.50	0.258	0.163	(0.232)	0.095
103	8.58	0.53	0.275	0.162	(0.248)	0.113
104	8.67	0.53	0.275	0.161	(0.248)	0.114
105	8.75	0.53	0.275	0.160	(0.248)	0.115
106	8.83	0.57	0.292	0.160	(0.263)	0.133
107	8.92	0.57	0.292	0.159	(0.263)	0.133
108	9.00	0.57	0.292	0.158	(0.263)	0.134
109	9.08	0.63	0.327	0.157	(0.294)	0.169
110	9.17	0.63	0.327	0.157	(0.294)	0.170
111	9.25	0.63	0.327	0.156	(0.294)	0.171
112	9.33	0.67	0.344	0.155	(0.310)	0.189
113	9.42	0.67	0.344	0.154	(0.310)	0.190
114	9.50	0.67	0.344	0.154	(0.310)	0.190
115	9.58	0.70	0.361	0.153	(0.325)	0.208
116	9.67	0.70	0.361	0.152	(0.325)	0.209
117	9.75	0.70	0.361	0.151	(0.325)	0.210
118	9.83	0.73	0.378	0.151	(0.341)	0.228
119	9.92	0.73	0.378	0.150	(0.341)	0.228
120	10.00	0.73	0.378	0.149	(0.341)	0.229
121	10.08	0.50	0.258	0.149	(0.232)	0.109
122	10.17	0.50	0.258	0.148	(0.232)	0.110
123	10.25	0.50	0.258	0.147	(0.232)	0.111
124	10.33	0.50	0.258	0.146	(0.232)	0.112
125	10.42	0.50	0.258	0.146	(0.232)	0.112
126	10.50	0.50	0.258	0.145	(0.232)	0.113
127	10.58	0.67	0.344	0.144	(0.310)	0.200
128	10.67	0.67	0.344	0.144	(0.310)	0.200
129	10.75	0.67	0.344	0.143	(0.310)	0.201
130	10.83	0.67	0.344	0.142	(0.310)	0.202
131	10.92	0.67	0.344	0.142	(0.310)	0.202
132	11.00	0.67	0.344	0.141	(0.310)	0.203

133	11.08	0.63	0.327	0.140	(0.294)	0.187
134	11.17	0.63	0.327	0.139	(0.294)	0.187
135	11.25	0.63	0.327	0.139	(0.294)	0.188
136	11.33	0.63	0.327	0.138	(0.294)	0.189
137	11.42	0.63	0.327	0.137	(0.294)	0.189
138	11.50	0.63	0.327	0.137	(0.294)	0.190
139	11.58	0.57	0.292	0.136	(0.263)	0.156
140	11.67	0.57	0.292	0.135	(0.263)	0.157
141	11.75	0.57	0.292	0.135	(0.263)	0.158
142	11.83	0.60	0.310	0.134	(0.279)	0.176
143	11.92	0.60	0.310	0.133	(0.279)	0.176
144	12.00	0.60	0.310	0.133	(0.279)	0.177
145	12.08	0.83	0.430	0.132	(0.387)	0.298
146	12.17	0.83	0.430	0.131	(0.387)	0.299
147	12.25	0.83	0.430	0.131	(0.387)	0.299
148	12.33	0.87	0.447	0.130	(0.402)	0.317
149	12.42	0.87	0.447	0.129	(0.402)	0.318
150	12.50	0.87	0.447	0.129	(0.402)	0.318
151	12.58	0.93	0.482	0.128	(0.433)	0.354
152	12.67	0.93	0.482	0.127	(0.433)	0.354
153	12.75	0.93	0.482	0.127	(0.433)	0.355
154	12.83	0.97	0.499	0.126	(0.449)	0.373
155	12.92	0.97	0.499	0.126	(0.449)	0.373
156	13.00	0.97	0.499	0.125	(0.449)	0.374
157	13.08	1.13	0.585	0.124	(0.526)	0.461
158	13.17	1.13	0.585	0.124	(0.526)	0.461
159	13.25	1.13	0.585	0.123	(0.526)	0.462
160	13.33	1.13	0.585	0.122	(0.526)	0.462
161	13.42	1.13	0.585	0.122	(0.526)	0.463
162	13.50	1.13	0.585	0.121	(0.526)	0.464
163	13.58	0.77	0.396	0.120	(0.356)	0.275
164	13.67	0.77	0.396	0.120	(0.356)	0.276
165	13.75	0.77	0.396	0.119	(0.356)	0.276
166	13.83	0.77	0.396	0.119	(0.356)	0.277
167	13.92	0.77	0.396	0.118	(0.356)	0.278
168	14.00	0.77	0.396	0.117	(0.356)	0.278
169	14.08	0.90	0.464	0.117	(0.418)	0.348
170	14.17	0.90	0.464	0.116	(0.418)	0.348
171	14.25	0.90	0.464	0.116	(0.418)	0.349
172	14.33	0.87	0.447	0.115	(0.402)	0.332
173	14.42	0.87	0.447	0.114	(0.402)	0.333
174	14.50	0.87	0.447	0.114	(0.402)	0.333
175	14.58	0.87	0.447	0.113	(0.402)	0.334
176	14.67	0.87	0.447	0.113	(0.402)	0.334
177	14.75	0.87	0.447	0.112	(0.402)	0.335
178	14.83	0.83	0.430	0.112	(0.387)	0.318
179	14.92	0.83	0.430	0.111	(0.387)	0.319
180	15.00	0.83	0.430	0.110	(0.387)	0.320
181	15.08	0.80	0.413	0.110	(0.372)	0.303
182	15.17	0.80	0.413	0.109	(0.372)	0.303
183	15.25	0.80	0.413	0.109	(0.372)	0.304
184	15.33	0.77	0.396	0.108	(0.356)	0.287
185	15.42	0.77	0.396	0.108	(0.356)	0.288
186	15.50	0.77	0.396	0.107	(0.356)	0.289
187	15.58	0.63	0.327	0.107	(0.294)	0.220
188	15.67	0.63	0.327	0.106	(0.294)	0.221
189	15.75	0.63	0.327	0.105	(0.294)	0.221
190	15.83	0.63	0.327	0.105	(0.294)	0.222
191	15.92	0.63	0.327	0.104	(0.294)	0.222
192	16.00	0.63	0.327	0.104	(0.294)	0.223
193	16.08	0.13	0.069	(0.103)	0.062	0.007
194	16.17	0.13	0.069	(0.103)	0.062	0.007
195	16.25	0.13	0.069	(0.102)	0.062	0.007
196	16.33	0.13	0.069	(0.102)	0.062	0.007
197	16.42	0.13	0.069	(0.101)	0.062	0.007
198	16.50	0.13	0.069	(0.101)	0.062	0.007
199	16.58	0.10	0.052	(0.100)	0.046	0.005
200	16.67	0.10	0.052	(0.100)	0.046	0.005
201	16.75	0.10	0.052	(0.099)	0.046	0.005
202	16.83	0.10	0.052	(0.099)	0.046	0.005
203	16.92	0.10	0.052	(0.098)	0.046	0.005
204	17.00	0.10	0.052	(0.098)	0.046	0.005
205	17.08	0.17	0.086	(0.097)	0.077	0.009
206	17.17	0.17	0.086	(0.097)	0.077	0.009
207	17.25	0.17	0.086	(0.096)	0.077	0.009
208	17.33	0.17	0.086	(0.096)	0.077	0.009
209	17.42	0.17	0.086	(0.095)	0.077	0.009
210	17.50	0.17	0.086	(0.095)	0.077	0.009
211	17.58	0.17	0.086	(0.094)	0.077	0.009

212	17.67	0.17	0.086	(0.094)	0.077	0.009
213	17.75	0.17	0.086	(0.093)	0.077	0.009
214	17.83	0.13	0.069	(0.093)	0.062	0.007
215	17.92	0.13	0.069	(0.092)	0.062	0.007
216	18.00	0.13	0.069	(0.092)	0.062	0.007
217	18.08	0.13	0.069	(0.092)	0.062	0.007
218	18.17	0.13	0.069	(0.091)	0.062	0.007
219	18.25	0.13	0.069	(0.091)	0.062	0.007
220	18.33	0.13	0.069	(0.090)	0.062	0.007
221	18.42	0.13	0.069	(0.090)	0.062	0.007
222	18.50	0.13	0.069	(0.089)	0.062	0.007
223	18.58	0.10	0.052	(0.089)	0.046	0.005
224	18.67	0.10	0.052	(0.088)	0.046	0.005
225	18.75	0.10	0.052	(0.088)	0.046	0.005
226	18.83	0.07	0.034	(0.088)	0.031	0.003
227	18.92	0.07	0.034	(0.087)	0.031	0.003
228	19.00	0.07	0.034	(0.087)	0.031	0.003
229	19.08	0.10	0.052	(0.086)	0.046	0.005
230	19.17	0.10	0.052	(0.086)	0.046	0.005
231	19.25	0.10	0.052	(0.086)	0.046	0.005
232	19.33	0.13	0.069	(0.085)	0.062	0.007
233	19.42	0.13	0.069	(0.085)	0.062	0.007
234	19.50	0.13	0.069	(0.084)	0.062	0.007
235	19.58	0.10	0.052	(0.084)	0.046	0.005
236	19.67	0.10	0.052	(0.084)	0.046	0.005
237	19.75	0.10	0.052	(0.083)	0.046	0.005
238	19.83	0.07	0.034	(0.083)	0.031	0.003
239	19.92	0.07	0.034	(0.082)	0.031	0.003
240	20.00	0.07	0.034	(0.082)	0.031	0.003
241	20.08	0.10	0.052	(0.082)	0.046	0.005
242	20.17	0.10	0.052	(0.081)	0.046	0.005
243	20.25	0.10	0.052	(0.081)	0.046	0.005
244	20.33	0.10	0.052	(0.081)	0.046	0.005
245	20.42	0.10	0.052	(0.080)	0.046	0.005
246	20.50	0.10	0.052	(0.080)	0.046	0.005
247	20.58	0.10	0.052	(0.080)	0.046	0.005
248	20.67	0.10	0.052	(0.079)	0.046	0.005
249	20.75	0.10	0.052	(0.079)	0.046	0.005
250	20.83	0.07	0.034	(0.079)	0.031	0.003
251	20.92	0.07	0.034	(0.078)	0.031	0.003
252	21.00	0.07	0.034	(0.078)	0.031	0.003
253	21.08	0.10	0.052	(0.078)	0.046	0.005
254	21.17	0.10	0.052	(0.077)	0.046	0.005
255	21.25	0.10	0.052	(0.077)	0.046	0.005
256	21.33	0.07	0.034	(0.077)	0.031	0.003
257	21.42	0.07	0.034	(0.077)	0.031	0.003
258	21.50	0.07	0.034	(0.076)	0.031	0.003
259	21.58	0.10	0.052	(0.076)	0.046	0.005
260	21.67	0.10	0.052	(0.076)	0.046	0.005
261	21.75	0.10	0.052	(0.075)	0.046	0.005
262	21.83	0.07	0.034	(0.075)	0.031	0.003
263	21.92	0.07	0.034	(0.075)	0.031	0.003
264	22.00	0.07	0.034	(0.075)	0.031	0.003
265	22.08	0.10	0.052	(0.074)	0.046	0.005
266	22.17	0.10	0.052	(0.074)	0.046	0.005
267	22.25	0.10	0.052	(0.074)	0.046	0.005
268	22.33	0.07	0.034	(0.074)	0.031	0.003
269	22.42	0.07	0.034	(0.073)	0.031	0.003
270	22.50	0.07	0.034	(0.073)	0.031	0.003
271	22.58	0.07	0.034	(0.073)	0.031	0.003
272	22.67	0.07	0.034	(0.073)	0.031	0.003
273	22.75	0.07	0.034	(0.073)	0.031	0.003
274	22.83	0.07	0.034	(0.072)	0.031	0.003
275	22.92	0.07	0.034	(0.072)	0.031	0.003
276	23.00	0.07	0.034	(0.072)	0.031	0.003
277	23.08	0.07	0.034	(0.072)	0.031	0.003
278	23.17	0.07	0.034	(0.072)	0.031	0.003
279	23.25	0.07	0.034	(0.072)	0.031	0.003
280	23.33	0.07	0.034	(0.071)	0.031	0.003
281	23.42	0.07	0.034	(0.071)	0.031	0.003
282	23.50	0.07	0.034	(0.071)	0.031	0.003
283	23.58	0.07	0.034	(0.071)	0.031	0.003
284	23.67	0.07	0.034	(0.071)	0.031	0.003
285	23.75	0.07	0.034	(0.071)	0.031	0.003
286	23.83	0.07	0.034	(0.071)	0.031	0.003
287	23.92	0.07	0.034	(0.071)	0.031	0.003
288	24.00	0.07	0.034	(0.071)	0.031	0.003

(Loss Rate Not Used)

Sum = 100.0 Sum = 25.0

```
                                   EX24HR100YR
      Flood volume = Effective rainfall     2.08(In)
       times area     11.2(Ac.)/[(In)/(Ft.)] =      1.9(Ac.Ft)
      Total soil loss =      2.22(In)
      Total soil loss =     2.071(Ac.Ft)
      Total rainfall =      4.30(In)
      Flood volume =      84572.3 Cubic Feet
      Total soil loss =      90197.8 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      5.191(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R   S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5      0.0000      0.01  Q         |         |         |         |
  0+10      0.0002      0.03  Q         |         |         |         |
  0+15      0.0004      0.03  Q         |         |         |         |
  0+20      0.0007      0.04  Q         |         |         |         |
  0+25      0.0011      0.05  Q         |         |         |         |
  0+30      0.0014      0.05  Q         |         |         |         |
  0+35      0.0018      0.06  Q         |         |         |         |
  0+40      0.0022      0.06  Q         |         |         |         |
  0+45      0.0026      0.06  Q         |         |         |         |
  0+50      0.0030      0.06  Q         |         |         |         |
  0+55      0.0035      0.07  Q         |         |         |         |
  1+ 0      0.0040      0.07  Q         |         |         |         |
  1+ 5      0.0045      0.07  Q         |         |         |         |
  1+10      0.0050      0.06  Q         |         |         |         |
  1+15      0.0054      0.06  Q         |         |         |         |
  1+20      0.0058      0.06  Q         |         |         |         |
  1+25      0.0062      0.06  Q         |         |         |         |
  1+30      0.0066      0.06  Q         |         |         |         |
  1+35      0.0070      0.06  Q         |         |         |         |
  1+40      0.0074      0.06  Q         |         |         |         |
  1+45      0.0078      0.06  Q         |         |         |         |
  1+50      0.0082      0.06  Q         |         |         |         |
  1+55      0.0087      0.07  Q         |         |         |         |
  2+ 0      0.0092      0.07  Q         |         |         |         |
  2+ 5      0.0098      0.08  Q         |         |         |         |
  2+10      0.0103      0.08  Q         |         |         |         |
  2+15      0.0108      0.08  Q         |         |         |         |
  2+20      0.0113      0.08  Q         |         |         |         |
  2+25      0.0119      0.08  Q         |         |         |         |
  2+30      0.0124      0.08  Q         |         |         |         |
  2+35      0.0130      0.08  Q         |         |         |         |
  2+40      0.0136      0.09  Q         |         |         |         |
  2+45      0.0142      0.09  Q         |         |         |         |
  2+50      0.0149      0.10  Q         |         |         |         |
  2+55      0.0156      0.10  Q         |         |         |         |
  3+ 0      0.0162      0.10  Q         |         |         |         |
  3+ 5      0.0169      0.10  Q         |         |         |         |
  3+10      0.0176      0.10  Q         |         |         |         |
  3+15      0.0182      0.10  Q         |         |         |         |
  3+20      0.0189      0.10  Q         |         |         |         |
  3+25      0.0196      0.10  Q         |         |         |         |
  3+30      0.0202      0.10  Q         |         |         |         |
  3+35      0.0209      0.10  Q         |         |         |         |
  3+40      0.0216      0.10  Q         |         |         |         |
  3+45      0.0222      0.10  Q         |         |         |         |
  3+50      0.0229      0.10  Q         |         |         |         |
  3+55      0.0237      0.11  Q         |         |         |         |
  4+ 0      0.0245      0.11  Q         |         |         |         |
  4+ 5      0.0253      0.11  Q         |         |         |         |
  4+10      0.0261      0.12  Q         |         |         |         |
  4+15      0.0269      0.12  Q         |         |         |         |
  4+20      0.0277      0.12  Q         |         |         |         |
  4+25      0.0286      0.13  Q         |         |         |         |
  4+30      0.0295      0.13  Q         |         |         |         |
  4+35      0.0304      0.13  Q         |         |         |         |
  4+40      0.0313      0.13  Q         |         |         |         |
  4+45      0.0323      0.14  Q         |         |         |         |
  4+50      0.0332      0.14  Q         |         |         |         |
  4+55      0.0342      0.15  Q         |         |         |         |
  5+ 0      0.0353      0.15  Q         |         |         |         |
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                                            EX24HR100YR
 5+ 5       0.0363      0.15  Q         |         |         |         |
 5+10       0.0372      0.13  Q         |         |         |         |
 5+15       0.0380      0.12  Q         |         |         |         |
 5+20       0.0389      0.12  Q         |         |         |         |
 5+25       0.0398      0.13  Q         |         |         |         |
 5+30       0.0407      0.13  Q         |         |         |         |
 5+35       0.0417      0.14  Q         |         |         |         |
 5+40       0.0427      0.15  Q         |         |         |         |
 5+45       0.0437      0.15  Q         |         |         |         |
 5+50       0.0448      0.15  Q         |         |         |         |
 5+55       0.0458      0.15  Q         |         |         |         |
 6+ 0       0.0469      0.15  Q         |         |         |         |
 6+ 5       0.0480      0.16  Q         |         |         |         |
 6+10       0.0492      0.17  QV        |         |         |         |
 6+15       0.0503      0.17  QV        |         |         |         |
 6+20       0.0515      0.17  QV        |         |         |         |
 6+25       0.0527      0.17  QV        |         |         |         |
 6+30       0.0539      0.17  QV        |         |         |         |
 6+35       0.0551      0.18  QV        |         |         |         |
 6+40       0.0564      0.19  QV        |         |         |         |
 6+45       0.0578      0.19  QV        |         |         |         |
 6+50       0.0591      0.19  QV        |         |         |         |
 6+55       0.0604      0.19  QV        |         |         |         |
 7+ 0       0.0617      0.19  QV        |         |         |         |
 7+ 5       0.0631      0.19  QV        |         |         |         |
 7+10       0.0644      0.19  QV        |         |         |         |
 7+15       0.0657      0.19  QV        |         |         |         |
 7+20       0.0671      0.20  QV        |         |         |         |
 7+25       0.0685      0.21  QV        |         |         |         |
 7+30       0.0700      0.21  QV        |         |         |         |
 7+35       0.0717      0.25  QV        |         |         |         |
 7+40       0.0740      0.34  |Q        |         |         |         |
 7+45       0.0766      0.37  |Q        |         |         |         |
 7+50       0.0795      0.43  |Q        |         |         |         |
 7+55       0.0832      0.54  |VQ       |         |         |         |
 8+ 0       0.0872      0.58  |VQ       |         |         |         |
 8+ 5       0.0919      0.68  |VQ       |         |         |         |
 8+10       0.0980      0.89  | VQ      |         |         |         |
 8+15       0.1046      0.96  | VQ      |         |         |         |
 8+20       0.1115      1.00  | V Q     |         |         |         |
 8+25       0.1186      1.03  | V Q     |         |         |         |
 8+30       0.1258      1.05  | V Q     |         |         |         |
 8+35       0.1334      1.10  | V Q     |         |         |         |
 8+40       0.1417      1.21  | V Q     |         |         |         |
 8+45       0.1503      1.25  |  VQ     |         |         |         |
 8+50       0.1593      1.31  |  V Q    |         |         |         |
 8+55       0.1691      1.42  |  V Q    |         |         |         |
 9+ 0       0.1792      1.46  |  V Q    |         |         |         |
 9+ 5       0.1899      1.56  |  V  Q   |         |         |         |
 9+10       0.2021      1.77  |   V  Q  |         |         |         |
 9+15       0.2148      1.84  |   V  Q  |         |         |         |
 9+20       0.2280      1.92  |   V  Q  |         |         |         |
 9+25       0.2420      2.04  |   V   Q |         |         |         |
 9+30       0.2564      2.09  |    V  Q |         |         |         |
 9+35       0.2712      2.15  |    V  Q |         |         |         |
 9+40       0.2868      2.27  |    V   Q|         |         |         |
 9+45       0.3028      2.31  |     V  Q|         |         |         |
 9+50       0.3191      2.38  |     V  Q|         |         |         |
 9+55       0.3363      2.49  |     V  Q|         |         |         |
10+ 0       0.3537      2.53  |      V  Q         |         |         |
10+ 5       0.3696      2.31  |      V Q|         |         |         |
10+10       0.3811      1.67  |     QV  |         |         |         |
10+15       0.3912      1.47  |    Q  V |         |         |         |
10+20       0.4007      1.38  |    Q  V |         |         |         |
10+25       0.4099      1.34  |    Q  V |         |         |         |
10+30       0.4189      1.31  |    Q  V |         |         |         |
10+35       0.4291      1.47  |    Q  V |         |         |         |
10+40       0.4424      1.94  |      Q V|         |         |         |
10+45       0.4568      2.09  |       QV|         |         |         |
10+50       0.4718      2.17  |       QV|         |         |         |
10+55       0.4870      2.22  |       Q V         |         |         |
11+ 0       0.5025      2.25  |       Q V         |         |         |
11+ 5       0.5179      2.24  |       Q V         |         |         |
11+10       0.5328      2.16  |       Q V         |         |         |
11+15       0.5476      2.14  |       Q |V        |         |         |
11+20       0.5623      2.14  |       Q |V        |         |         |
11+25       0.5770      2.14  |       Q |V        |         |         |
11+30       0.5918      2.14  |       Q | V       |         |         |
11+35       0.6061      2.07  |       Q | V       |         |         |
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                                            EX24HR100YR
11+40       0.6191      1.89  |      Q  | V       |         |         |
11+45       0.6317      1.84  |      Q  |  V      |         |         |
11+50       0.6445      1.85  |      Q  |  V      |         |         |
11+55       0.6578      1.94  |      Q  |  V      |         |         |
12+ 0       0.6714      1.97  |      Q  |  V      |         |         |
12+ 5       0.6867      2.23  |       Q |   V     |         |         |
12+10       0.7067      2.90  |         |Q  V     |         |         |
12+15       0.7282      3.13  |         | Q  V    |         |         |
12+20       0.7508      3.27  |         |  Q V    |         |         |
12+25       0.7744      3.43  |         |  Q V    |         |         |
12+30       0.7985      3.50  |         |   Q V   |         |         |
12+35       0.8234      3.62  |         |   Q V   |         |         |
12+40       0.8499      3.84  |         |    Q V  |         |         |
12+45       0.8769      3.92  |         |    Q  V |         |         |
12+50       0.9044      4.00  |         |    Q  V |         |         |
12+55       0.9327      4.11  |         |     Q  V|         |         |
13+ 0       0.9614      4.16  |         |     Q  V|         |         |
13+ 5       0.9915      4.37  |         |      Q  V         |         |
13+10       1.0250      4.86  |         |        Q|V        |         |
13+15       1.0596      5.03  |         |         QV        |         |
13+20       1.0948      5.11  |         |         Q V       |         |
13+25       1.1303      5.16  |         |         Q  V      |         |
13+30       1.1661      5.19  |         |         Q   V     |         |
13+35       1.1992      4.82  |         |        Q|   V     |         |
13+40       1.2255      3.81  |         |    Q    |    V    |         |
13+45       1.2494      3.48  |         |  Q      |    V    |         |
13+50       1.2724      3.33  |         |  Q      |     V   |         |
13+55       1.2948      3.25  |         |  Q      |     V   |         |
14+ 0       1.3168      3.20  |         | Q       |      V  |         |
14+ 5       1.3397      3.32  |         |  Q      |      V  |         |
14+10       1.3650      3.68  |         |   Q     |       V |         |
14+15       1.3911      3.79  |         |    Q    |       V |         |
14+20       1.4174      3.82  |         |    Q    |        V|         |
14+25       1.4433      3.76  |         |    Q    |        V|         |
14+30       1.4692      3.76  |         |    Q    |         V         |
14+35       1.4951      3.77  |         |    Q    |         V         |
14+40       1.5211      3.77  |         |    Q    |         |V        |
14+45       1.5472      3.78  |         |    Q    |         |V        |
14+50       1.5730      3.75  |         |   Q     |         | V       |
14+55       1.5981      3.66  |         |   Q     |         | V       |
15+ 0       1.6232      3.63  |         |   Q     |         |  V      |
15+ 5       1.6479      3.59  |         |   Q     |         |  V      |
15+10       1.6719      3.49  |         |  Q      |         |   V     |
15+15       1.6958      3.46  |         |  Q      |         |   V     |
15+20       1.7193      3.42  |         |  Q      |         |    V    |
15+25       1.7422      3.32  |         |  Q      |         |    V    |
15+30       1.7648      3.29  |         |  Q      |         |     V   |
15+35       1.7864      3.13  |         | Q       |         |     V   |
15+40       1.8054      2.75  |         |Q        |         |      V  |
15+45       1.8235      2.63  |         Q         |         |      V  |
15+50       1.8412      2.58  |         Q         |         |      V  |
15+55       1.8588      2.55  |         Q         |         |       V |
16+ 0       1.8762      2.53  |         Q         |         |       V |
16+ 5       1.8905      2.07  |       Q |         |         |       V |
16+10       1.8967      0.89  |  Q      |         |         |        V|
16+15       1.9001      0.50  |Q        |         |         |        V|
16+20       1.9023      0.32  |Q        |         |         |        V|
16+25       1.9039      0.22  Q         |         |         |        V|
16+30       1.9050      0.16  Q         |         |         |        V|
16+35       1.9058      0.12  Q         |         |         |        V|
16+40       1.9063      0.08  Q         |         |         |        V|
16+45       1.9068      0.06  Q         |         |         |        V|
16+50       1.9072      0.06  Q         |         |         |        V|
16+55       1.9076      0.06  Q         |         |         |        V|
17+ 0       1.9080      0.06  Q         |         |         |        V|
17+ 5       1.9084      0.07  Q         |         |         |        V|
17+10       1.9090      0.08  Q         |         |         |        V|
17+15       1.9096      0.09  Q         |         |         |        V|
17+20       1.9103      0.09  Q         |         |         |        V|
17+25       1.9109      0.09  Q         |         |         |        V|
17+30       1.9116      0.10  Q         |         |         |        V|
17+35       1.9123      0.10  Q         |         |         |        V|
17+40       1.9129      0.10  Q         |         |         |        V|
17+45       1.9136      0.10  Q         |         |         |        V|
17+50       1.9142      0.09  Q         |         |         |        V|
17+55       1.9148      0.08  Q         |         |         |        V|
18+ 0       1.9154      0.08  Q         |         |         |        V|
18+ 5       1.9159      0.08  Q         |         |         |        V|
18+10       1.9165      0.08  Q         |         |         |        V|
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     18+15        1.9170      0.08  Q          |          |          |        V|
     18+20        1.9176      0.08  Q          |          |          |        V|
     18+25        1.9181      0.08  Q          |          |          |        V|
     18+30        1.9186      0.08  Q          |          |          |        V|
     18+35        1.9191      0.07  Q          |          |          |        V|
     18+40        1.9196      0.06  Q          |          |          |        V|
     18+45        1.9200      0.06  Q          |          |          |        V|
     18+50        1.9204      0.06  Q          |          |          |        V|
     18+55        1.9207      0.05  Q          |          |          |        V|
     19+ 0        1.9210      0.04  Q          |          |          |        V|
     19+ 5        1.9213      0.04  Q          |          |          |        V|
     19+10        1.9217      0.05  Q          |          |          |        V|
     19+15        1.9221      0.06  Q          |          |          |        V|
     19+20        1.9225      0.06  Q          |          |          |        V|
     19+25        1.9230      0.07  Q          |          |          |        V|
     19+30        1.9235      0.07  Q          |          |          |        V|
     19+35        1.9240      0.07  Q          |          |          |        V|
     19+40        1.9244      0.06  Q          |          |          |        V|
     19+45        1.9248      0.06  Q          |          |          |        V|
     19+50        1.9252      0.06  Q          |          |          |        V|
     19+55        1.9255      0.05  Q          |          |          |        V|
     20+ 0        1.9258      0.04  Q          |          |          |        V|
     20+ 5        1.9261      0.04  Q          |          |          |        V|
     20+10        1.9265      0.05  Q          |          |          |        V|
     20+15        1.9269      0.06  Q          |          |          |        V|
     20+20        1.9273      0.06  Q          |          |          |        V|
     20+25        1.9277      0.06  Q          |          |          |        V|
     20+30        1.9281      0.06  Q          |          |          |        V|
     20+35        1.9285      0.06  Q          |          |          |        V|
     20+40        1.9289      0.06  Q          |          |          |        V|
     20+45        1.9293      0.06  Q          |          |          |        V|
     20+50        1.9296      0.05  Q          |          |          |        V|
     20+55        1.9299      0.05  Q          |          |          |        V|
     21+ 0        1.9302      0.04  Q          |          |          |        V|
     21+ 5        1.9305      0.04  Q          |          |          |        V|
     21+10        1.9309      0.05  Q          |          |          |        V|
     21+15        1.9313      0.06  Q          |          |          |        V|
     21+20        1.9317      0.05  Q          |          |          |        V|
     21+25        1.9320      0.04  Q          |          |          |        V|
     21+30        1.9322      0.04  Q          |          |          |        V|
     21+35        1.9326      0.04  Q          |          |          |        V|
     21+40        1.9329      0.05  Q          |          |          |        V|
     21+45        1.9333      0.06  Q          |          |          |        V|
     21+50        1.9337      0.05  Q          |          |          |        V|
     21+55        1.9340      0.04  Q          |          |          |        V|
     22+ 0        1.9343      0.04  Q          |          |          |        V|
     22+ 5        1.9346      0.04  Q          |          |          |        V|
     22+10        1.9349      0.05  Q          |          |          |        V|
     22+15        1.9353      0.06  Q          |          |          |        V|
     22+20        1.9357      0.05  Q          |          |          |        V|
     22+25        1.9360      0.04  Q          |          |          |        V|
     22+30        1.9363      0.04  Q          |          |          |        V|
     22+35        1.9365      0.04  Q          |          |          |        V|
     22+40        1.9368      0.04  Q          |          |          |        V|
     22+45        1.9371      0.04  Q          |          |          |        V|
     22+50        1.9374      0.04  Q          |          |          |        V|
     22+55        1.9376      0.04  Q          |          |          |        V|
     23+ 0        1.9379      0.04  Q          |          |          |        V|
     23+ 5        1.9382      0.04  Q          |          |          |        V|
     23+10        1.9384      0.04  Q          |          |          |        V|
     23+15        1.9387      0.04  Q          |          |          |        V|
     23+20        1.9390      0.04  Q          |          |          |        V|
     23+25        1.9392      0.04  Q          |          |          |        V|
     23+30        1.9395      0.04  Q          |          |          |        V|
     23+35        1.9398      0.04  Q          |          |          |        V|
     23+40        1.9400      0.04  Q          |          |          |        V|
     23+45        1.9403      0.04  Q          |          |          |        V|
     23+50        1.9406      0.04  Q          |          |          |        V|
     23+55        1.9408      0.04  Q          |          |          |        V|
     24+ 0        1.9411      0.04  Q          |          |          |        V|
     24+ 5        1.9413      0.03  Q          |          |          |        V|
     24+10        1.9414      0.01  Q          |          |          |        V|
     24+15        1.9415      0.01  Q          |          |          |        V|
     24+20        1.9415      0.00  Q          |          |          |        V|
     24+25        1.9415      0.00  Q          |          |          |        V|
     24+30        1.9415      0.00  Q          |          |          |        V|
     24+35        1.9415      0.00  Q          |          |          |        V|
     24+40        1.9415      0.00  Q          |          |          |         V
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EX24HR100YR

BASIN B

100 YEAR

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                         EX24HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  06/28/16 File: EX24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     848.00(Ft.)
Length along longest watercourse measured to centroid =     591.00(Ft.)
Length along longest watercourse =      0.161 Mi.
Length along longest watercourse measured to centroid =      0.112 Mi.
Difference in elevation =       6.60(Ft.)
Slope along watercourse =     41.0943 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.077 Hr.
Lag time =     4.63 Min.
25% of lag time =     1.16 Min.
40% of lag time =     1.85 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.72                  14.90

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            4.30                  37.26

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    4.300(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           85.00         0.000
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
85.0  85.0      0.187     0.000        0.187       1.000      0.187
                                                  Sum (F) =   0.187
Area averaged mean soil loss (F) (In/Hr) =  0.187
Minimum soil loss rate ((In/Hr)) =  0.094
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
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EX24HR100YR
U n i t   H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	107.972	21.629	1.889
2	0.167	215.945	48.795	4.261
3	0.250	323.917	14.549	1.271
4	0.333	431.890	6.648	0.581
5	0.417	539.862	3.694	0.323
6	0.500	647.835	2.331	0.204
7	0.583	755.807	1.373	0.120
8	0.667	863.780	0.982	0.086
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.034	(0.331)	0.031	0.003
2	0.17	0.07	0.034	(0.330)	0.031	0.003
3	0.25	0.07	0.034	(0.329)	0.031	0.003
4	0.33	0.10	0.052	(0.328)	0.046	0.005
5	0.42	0.10	0.052	(0.326)	0.046	0.005
6	0.50	0.10	0.052	(0.325)	0.046	0.005
7	0.58	0.10	0.052	(0.324)	0.046	0.005
8	0.67	0.10	0.052	(0.323)	0.046	0.005
9	0.75	0.10	0.052	(0.321)	0.046	0.005
10	0.83	0.13	0.069	(0.320)	0.062	0.007
11	0.92	0.13	0.069	(0.319)	0.062	0.007
12	1.00	0.13	0.069	(0.318)	0.062	0.007
13	1.08	0.10	0.052	(0.316)	0.046	0.005
14	1.17	0.10	0.052	(0.315)	0.046	0.005
15	1.25	0.10	0.052	(0.314)	0.046	0.005
16	1.33	0.10	0.052	(0.313)	0.046	0.005
17	1.42	0.10	0.052	(0.311)	0.046	0.005
18	1.50	0.10	0.052	(0.310)	0.046	0.005
19	1.58	0.10	0.052	(0.309)	0.046	0.005
20	1.67	0.10	0.052	(0.308)	0.046	0.005
21	1.75	0.10	0.052	(0.306)	0.046	0.005
22	1.83	0.13	0.069	(0.305)	0.062	0.007
23	1.92	0.13	0.069	(0.304)	0.062	0.007
24	2.00	0.13	0.069	(0.303)	0.062	0.007
25	2.08	0.13	0.069	(0.301)	0.062	0.007
26	2.17	0.13	0.069	(0.300)	0.062	0.007
27	2.25	0.13	0.069	(0.299)	0.062	0.007
28	2.33	0.13	0.069	(0.298)	0.062	0.007
29	2.42	0.13	0.069	(0.297)	0.062	0.007
30	2.50	0.13	0.069	(0.295)	0.062	0.007
31	2.58	0.17	0.086	(0.294)	0.077	0.009
32	2.67	0.17	0.086	(0.293)	0.077	0.009
33	2.75	0.17	0.086	(0.292)	0.077	0.009
34	2.83	0.17	0.086	(0.291)	0.077	0.009
35	2.92	0.17	0.086	(0.289)	0.077	0.009
36	3.00	0.17	0.086	(0.288)	0.077	0.009
37	3.08	0.17	0.086	(0.287)	0.077	0.009
38	3.17	0.17	0.086	(0.286)	0.077	0.009
39	3.25	0.17	0.086	(0.285)	0.077	0.009
40	3.33	0.17	0.086	(0.283)	0.077	0.009
41	3.42	0.17	0.086	(0.282)	0.077	0.009
42	3.50	0.17	0.086	(0.281)	0.077	0.009
43	3.58	0.17	0.086	(0.280)	0.077	0.009
44	3.67	0.17	0.086	(0.279)	0.077	0.009
45	3.75	0.17	0.086	(0.277)	0.077	0.009
46	3.83	0.20	0.103	(0.276)	0.093	0.010
47	3.92	0.20	0.103	(0.275)	0.093	0.010
48	4.00	0.20	0.103	(0.274)	0.093	0.010
49	4.08	0.20	0.103	(0.273)	0.093	0.010
50	4.17	0.20	0.103	(0.272)	0.093	0.010
51	4.25	0.20	0.103	(0.270)	0.093	0.010
52	4.33	0.23	0.120	(0.269)	0.108	0.012
53	4.42	0.23	0.120	(0.268)	0.108	0.012
54	4.50	0.23	0.120	(0.267)	0.108	0.012

55	4.58	0.23	0.120	(0.266)	0.108	0.012
56	4.67	0.23	0.120	(0.265)	0.108	0.012
57	4.75	0.23	0.120	(0.264)	0.108	0.012
58	4.83	0.27	0.138	(0.262)	0.124	0.014
59	4.92	0.27	0.138	(0.261)	0.124	0.014
60	5.00	0.27	0.138	(0.260)	0.124	0.014
61	5.08	0.20	0.103	(0.259)	0.093	0.010
62	5.17	0.20	0.103	(0.258)	0.093	0.010
63	5.25	0.20	0.103	(0.257)	0.093	0.010
64	5.33	0.23	0.120	(0.256)	0.108	0.012
65	5.42	0.23	0.120	(0.255)	0.108	0.012
66	5.50	0.23	0.120	(0.253)	0.108	0.012
67	5.58	0.27	0.138	(0.252)	0.124	0.014
68	5.67	0.27	0.138	(0.251)	0.124	0.014
69	5.75	0.27	0.138	(0.250)	0.124	0.014
70	5.83	0.27	0.138	(0.249)	0.124	0.014
71	5.92	0.27	0.138	(0.248)	0.124	0.014
72	6.00	0.27	0.138	(0.247)	0.124	0.014
73	6.08	0.30	0.155	(0.246)	0.139	0.015
74	6.17	0.30	0.155	(0.245)	0.139	0.015
75	6.25	0.30	0.155	(0.244)	0.139	0.015
76	6.33	0.30	0.155	(0.242)	0.139	0.015
77	6.42	0.30	0.155	(0.241)	0.139	0.015
78	6.50	0.30	0.155	(0.240)	0.139	0.015
79	6.58	0.33	0.172	(0.239)	0.155	0.017
80	6.67	0.33	0.172	(0.238)	0.155	0.017
81	6.75	0.33	0.172	(0.237)	0.155	0.017
82	6.83	0.33	0.172	(0.236)	0.155	0.017
83	6.92	0.33	0.172	(0.235)	0.155	0.017
84	7.00	0.33	0.172	(0.234)	0.155	0.017
85	7.08	0.33	0.172	(0.233)	0.155	0.017
86	7.17	0.33	0.172	(0.232)	0.155	0.017
87	7.25	0.33	0.172	(0.231)	0.155	0.017
88	7.33	0.37	0.189	(0.230)	0.170	0.019
89	7.42	0.37	0.189	(0.229)	0.170	0.019
90	7.50	0.37	0.189	(0.228)	0.170	0.019
91	7.58	0.40	0.206	(0.226)	0.186	0.021
92	7.67	0.40	0.206	(0.225)	0.186	0.021
93	7.75	0.40	0.206	(0.224)	0.186	0.021
94	7.83	0.43	0.224	(0.223)	0.201	0.022
95	7.92	0.43	0.224	(0.222)	0.201	0.022
96	8.00	0.43	0.224	(0.221)	0.201	0.022
97	8.08	0.50	0.258	0.220	(0.232)	0.038
98	8.17	0.50	0.258	0.219	(0.232)	0.039
99	8.25	0.50	0.258	0.218	(0.232)	0.040
100	8.33	0.50	0.258	0.217	(0.232)	0.041
101	8.42	0.50	0.258	0.216	(0.232)	0.042
102	8.50	0.50	0.258	0.215	(0.232)	0.043
103	8.58	0.53	0.275	0.214	(0.248)	0.061
104	8.67	0.53	0.275	0.213	(0.248)	0.062
105	8.75	0.53	0.275	0.212	(0.248)	0.063
106	8.83	0.57	0.292	0.211	(0.263)	0.081
107	8.92	0.57	0.292	0.210	(0.263)	0.082
108	9.00	0.57	0.292	0.209	(0.263)	0.083
109	9.08	0.63	0.327	0.208	(0.294)	0.119
110	9.17	0.63	0.327	0.207	(0.294)	0.120
111	9.25	0.63	0.327	0.206	(0.294)	0.121
112	9.33	0.67	0.344	0.205	(0.310)	0.139
113	9.42	0.67	0.344	0.204	(0.310)	0.140
114	9.50	0.67	0.344	0.203	(0.310)	0.141
115	9.58	0.70	0.361	0.202	(0.325)	0.159
116	9.67	0.70	0.361	0.201	(0.325)	0.160
117	9.75	0.70	0.361	0.200	(0.325)	0.161
118	9.83	0.73	0.378	0.199	(0.341)	0.179
119	9.92	0.73	0.378	0.198	(0.341)	0.180
120	10.00	0.73	0.378	0.197	(0.341)	0.181
121	10.08	0.50	0.258	0.197	(0.232)	0.061
122	10.17	0.50	0.258	0.196	(0.232)	0.062
123	10.25	0.50	0.258	0.195	(0.232)	0.063
124	10.33	0.50	0.258	0.194	(0.232)	0.064
125	10.42	0.50	0.258	0.193	(0.232)	0.065
126	10.50	0.50	0.258	0.192	(0.232)	0.066
127	10.58	0.67	0.344	0.191	(0.310)	0.153
128	10.67	0.67	0.344	0.190	(0.310)	0.154
129	10.75	0.67	0.344	0.189	(0.310)	0.155
130	10.83	0.67	0.344	0.188	(0.310)	0.156
131	10.92	0.67	0.344	0.187	(0.310)	0.157
132	11.00	0.67	0.344	0.186	(0.310)	0.158
133	11.08	0.63	0.327	0.185	(0.294)	0.141

134	11.17	0.63	0.327	0.184	(0.294)	0.142
135	11.25	0.63	0.327	0.183	(0.294)	0.143
136	11.33	0.63	0.327	0.183	(0.294)	0.144
137	11.42	0.63	0.327	0.182	(0.294)	0.145
138	11.50	0.63	0.327	0.181	(0.294)	0.146
139	11.58	0.57	0.292	0.180	(0.263)	0.113
140	11.67	0.57	0.292	0.179	(0.263)	0.113
141	11.75	0.57	0.292	0.178	(0.263)	0.114
142	11.83	0.60	0.310	0.177	(0.279)	0.132
143	11.92	0.60	0.310	0.176	(0.279)	0.133
144	12.00	0.60	0.310	0.175	(0.279)	0.134
145	12.08	0.83	0.430	0.175	(0.387)	0.255
146	12.17	0.83	0.430	0.174	(0.387)	0.256
147	12.25	0.83	0.430	0.173	(0.387)	0.257
148	12.33	0.87	0.447	0.172	(0.402)	0.275
149	12.42	0.87	0.447	0.171	(0.402)	0.276
150	12.50	0.87	0.447	0.170	(0.402)	0.277
151	12.58	0.93	0.482	0.169	(0.433)	0.312
152	12.67	0.93	0.482	0.169	(0.433)	0.313
153	12.75	0.93	0.482	0.168	(0.433)	0.314
154	12.83	0.97	0.499	0.167	(0.449)	0.332
155	12.92	0.97	0.499	0.166	(0.449)	0.333
156	13.00	0.97	0.499	0.165	(0.449)	0.334
157	13.08	1.13	0.585	0.164	(0.526)	0.420
158	13.17	1.13	0.585	0.163	(0.526)	0.421
159	13.25	1.13	0.585	0.163	(0.526)	0.422
160	13.33	1.13	0.585	0.162	(0.526)	0.423
161	13.42	1.13	0.585	0.161	(0.526)	0.424
162	13.50	1.13	0.585	0.160	(0.526)	0.425
163	13.58	0.77	0.396	0.159	(0.356)	0.236
164	13.67	0.77	0.396	0.159	(0.356)	0.237
165	13.75	0.77	0.396	0.158	(0.356)	0.238
166	13.83	0.77	0.396	0.157	(0.356)	0.239
167	13.92	0.77	0.396	0.156	(0.356)	0.239
168	14.00	0.77	0.396	0.155	(0.356)	0.240
169	14.08	0.90	0.464	0.155	(0.418)	0.310
170	14.17	0.90	0.464	0.154	(0.418)	0.311
171	14.25	0.90	0.464	0.153	(0.418)	0.311
172	14.33	0.87	0.447	0.152	(0.402)	0.295
173	14.42	0.87	0.447	0.151	(0.402)	0.296
174	14.50	0.87	0.447	0.151	(0.402)	0.297
175	14.58	0.87	0.447	0.150	(0.402)	0.297
176	14.67	0.87	0.447	0.149	(0.402)	0.298
177	14.75	0.87	0.447	0.148	(0.402)	0.299
178	14.83	0.83	0.430	0.148	(0.387)	0.282
179	14.92	0.83	0.430	0.147	(0.387)	0.283
180	15.00	0.83	0.430	0.146	(0.387)	0.284
181	15.08	0.80	0.413	0.145	(0.372)	0.267
182	15.17	0.80	0.413	0.145	(0.372)	0.268
183	15.25	0.80	0.413	0.144	(0.372)	0.269
184	15.33	0.77	0.396	0.143	(0.356)	0.253
185	15.42	0.77	0.396	0.142	(0.356)	0.253
186	15.50	0.77	0.396	0.142	(0.356)	0.254
187	15.58	0.63	0.327	0.141	(0.294)	0.186
188	15.67	0.63	0.327	0.140	(0.294)	0.187
189	15.75	0.63	0.327	0.139	(0.294)	0.187
190	15.83	0.63	0.327	0.139	(0.294)	0.188
191	15.92	0.63	0.327	0.138	(0.294)	0.189
192	16.00	0.63	0.327	0.137	(0.294)	0.189
193	16.08	0.13	0.069	(0.137)	0.062	0.007
194	16.17	0.13	0.069	(0.136)	0.062	0.007
195	16.25	0.13	0.069	(0.135)	0.062	0.007
196	16.33	0.13	0.069	(0.135)	0.062	0.007
197	16.42	0.13	0.069	(0.134)	0.062	0.007
198	16.50	0.13	0.069	(0.133)	0.062	0.007
199	16.58	0.10	0.052	(0.132)	0.046	0.005
200	16.67	0.10	0.052	(0.132)	0.046	0.005
201	16.75	0.10	0.052	(0.131)	0.046	0.005
202	16.83	0.10	0.052	(0.130)	0.046	0.005
203	16.92	0.10	0.052	(0.130)	0.046	0.005
204	17.00	0.10	0.052	(0.129)	0.046	0.005
205	17.08	0.17	0.086	(0.129)	0.077	0.009
206	17.17	0.17	0.086	(0.128)	0.077	0.009
207	17.25	0.17	0.086	(0.127)	0.077	0.009
208	17.33	0.17	0.086	(0.127)	0.077	0.009
209	17.42	0.17	0.086	(0.126)	0.077	0.009
210	17.50	0.17	0.086	(0.125)	0.077	0.009
211	17.58	0.17	0.086	(0.125)	0.077	0.009
212	17.67	0.17	0.086	(0.124)	0.077	0.009

213	17.75	0.17	0.086	(0.123)	0.077	0.009
214	17.83	0.13	0.069	(0.123)	0.062	0.007
215	17.92	0.13	0.069	(0.122)	0.062	0.007
216	18.00	0.13	0.069	(0.122)	0.062	0.007
217	18.08	0.13	0.069	(0.121)	0.062	0.007
218	18.17	0.13	0.069	(0.120)	0.062	0.007
219	18.25	0.13	0.069	(0.120)	0.062	0.007
220	18.33	0.13	0.069	(0.119)	0.062	0.007
221	18.42	0.13	0.069	(0.119)	0.062	0.007
222	18.50	0.13	0.069	(0.118)	0.062	0.007
223	18.58	0.10	0.052	(0.118)	0.046	0.005
224	18.67	0.10	0.052	(0.117)	0.046	0.005
225	18.75	0.10	0.052	(0.116)	0.046	0.005
226	18.83	0.07	0.034	(0.116)	0.031	0.003
227	18.92	0.07	0.034	(0.115)	0.031	0.003
228	19.00	0.07	0.034	(0.115)	0.031	0.003
229	19.08	0.10	0.052	(0.114)	0.046	0.005
230	19.17	0.10	0.052	(0.114)	0.046	0.005
231	19.25	0.10	0.052	(0.113)	0.046	0.005
232	19.33	0.13	0.069	(0.113)	0.062	0.007
233	19.42	0.13	0.069	(0.112)	0.062	0.007
234	19.50	0.13	0.069	(0.112)	0.062	0.007
235	19.58	0.10	0.052	(0.111)	0.046	0.005
236	19.67	0.10	0.052	(0.111)	0.046	0.005
237	19.75	0.10	0.052	(0.110)	0.046	0.005
238	19.83	0.07	0.034	(0.110)	0.031	0.003
239	19.92	0.07	0.034	(0.109)	0.031	0.003
240	20.00	0.07	0.034	(0.109)	0.031	0.003
241	20.08	0.10	0.052	(0.108)	0.046	0.005
242	20.17	0.10	0.052	(0.108)	0.046	0.005
243	20.25	0.10	0.052	(0.107)	0.046	0.005
244	20.33	0.10	0.052	(0.107)	0.046	0.005
245	20.42	0.10	0.052	(0.106)	0.046	0.005
246	20.50	0.10	0.052	(0.106)	0.046	0.005
247	20.58	0.10	0.052	(0.105)	0.046	0.005
248	20.67	0.10	0.052	(0.105)	0.046	0.005
249	20.75	0.10	0.052	(0.104)	0.046	0.005
250	20.83	0.07	0.034	(0.104)	0.031	0.003
251	20.92	0.07	0.034	(0.104)	0.031	0.003
252	21.00	0.07	0.034	(0.103)	0.031	0.003
253	21.08	0.10	0.052	(0.103)	0.046	0.005
254	21.17	0.10	0.052	(0.102)	0.046	0.005
255	21.25	0.10	0.052	(0.102)	0.046	0.005
256	21.33	0.07	0.034	(0.102)	0.031	0.003
257	21.42	0.07	0.034	(0.101)	0.031	0.003
258	21.50	0.07	0.034	(0.101)	0.031	0.003
259	21.58	0.10	0.052	(0.100)	0.046	0.005
260	21.67	0.10	0.052	(0.100)	0.046	0.005
261	21.75	0.10	0.052	(0.100)	0.046	0.005
262	21.83	0.07	0.034	(0.099)	0.031	0.003
263	21.92	0.07	0.034	(0.099)	0.031	0.003
264	22.00	0.07	0.034	(0.099)	0.031	0.003
265	22.08	0.10	0.052	(0.098)	0.046	0.005
266	22.17	0.10	0.052	(0.098)	0.046	0.005
267	22.25	0.10	0.052	(0.098)	0.046	0.005
268	22.33	0.07	0.034	(0.097)	0.031	0.003
269	22.42	0.07	0.034	(0.097)	0.031	0.003
270	22.50	0.07	0.034	(0.097)	0.031	0.003
271	22.58	0.07	0.034	(0.097)	0.031	0.003
272	22.67	0.07	0.034	(0.096)	0.031	0.003
273	22.75	0.07	0.034	(0.096)	0.031	0.003
274	22.83	0.07	0.034	(0.096)	0.031	0.003
275	22.92	0.07	0.034	(0.096)	0.031	0.003
276	23.00	0.07	0.034	(0.095)	0.031	0.003
277	23.08	0.07	0.034	(0.095)	0.031	0.003
278	23.17	0.07	0.034	(0.095)	0.031	0.003
279	23.25	0.07	0.034	(0.095)	0.031	0.003
280	23.33	0.07	0.034	(0.095)	0.031	0.003
281	23.42	0.07	0.034	(0.094)	0.031	0.003
282	23.50	0.07	0.034	(0.094)	0.031	0.003
283	23.58	0.07	0.034	(0.094)	0.031	0.003
284	23.67	0.07	0.034	(0.094)	0.031	0.003
285	23.75	0.07	0.034	(0.094)	0.031	0.003
286	23.83	0.07	0.034	(0.094)	0.031	0.003
287	23.92	0.07	0.034	(0.094)	0.031	0.003
288	24.00	0.07	0.034	(0.094)	0.031	0.003

(Loss Rate Not Used)

Sum = 100.0 Sum = 20.7

Flood volume = Effective rainfall 1.72(In)

```
                              EX24HR100YR
 times area       8.7(Ac.)/[(In)/(Ft.)] =       1.2(Ac.Ft)
Total soil loss =      2.58(In)
Total soil loss =     1.859(Ac.Ft)
Total rainfall =      4.30(In)
Flood volume =       54250.5 Cubic Feet
Total soil loss =       80999.2 Cubic Feet
--------------------------------------------------------------------
 Peak flow rate of this hydrograph =      3.682(CFS)
--------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    24 - H O U R    S T O R M
               R u n o f f      H y d r o g r a p h
--------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

--------------------------------------------------------------------
Time(h+m) Volume Ac.Ft    Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0000      0.01  Q         |         |         |         |
  0+10       0.0002      0.02  Q         |         |         |         |
  0+15       0.0004      0.03  Q         |         |         |         |
  0+20       0.0006      0.03  Q         |         |         |         |
  0+25       0.0008      0.04  Q         |         |         |         |
  0+30       0.0011      0.04  Q         |         |         |         |
  0+35       0.0014      0.04  Q         |         |         |         |
  0+40       0.0017      0.04  Q         |         |         |         |
  0+45       0.0021      0.04  Q         |         |         |         |
  0+50       0.0024      0.05  Q         |         |         |         |
  0+55       0.0028      0.06  Q         |         |         |         |
  1+ 0       0.0032      0.06  Q         |         |         |         |
  1+ 5       0.0035      0.06  Q         |         |         |         |
  1+10       0.0039      0.05  Q         |         |         |         |
  1+15       0.0042      0.05  Q         |         |         |         |
  1+20       0.0045      0.05  Q         |         |         |         |
  1+25       0.0048      0.05  Q         |         |         |         |
  1+30       0.0052      0.05  Q         |         |         |         |
  1+35       0.0055      0.05  Q         |         |         |         |
  1+40       0.0058      0.05  Q         |         |         |         |
  1+45       0.0061      0.05  Q         |         |         |         |
  1+50       0.0064      0.05  Q         |         |         |         |
  1+55       0.0068      0.06  Q         |         |         |         |
  2+ 0       0.0072      0.06  Q         |         |         |         |
  2+ 5       0.0076      0.06  Q         |         |         |         |
  2+10       0.0080      0.06  Q         |         |         |         |
  2+15       0.0084      0.06  Q         |         |         |         |
  2+20       0.0088      0.06  Q         |         |         |         |
  2+25       0.0093      0.06  Q         |         |         |         |
  2+30       0.0097      0.06  Q         |         |         |         |
  2+35       0.0101      0.06  Q         |         |         |         |
  2+40       0.0106      0.07  Q         |         |         |         |
  2+45       0.0111      0.07  Q         |         |         |         |
  2+50       0.0116      0.07  Q         |         |         |         |
  2+55       0.0121      0.07  Q         |         |         |         |
  3+ 0       0.0126      0.07  Q         |         |         |         |
  3+ 5       0.0131      0.07  Q         |         |         |         |
  3+10       0.0137      0.08  Q         |         |         |         |
  3+15       0.0142      0.08  Q         |         |         |         |
  3+20       0.0147      0.08  Q         |         |         |         |
  3+25       0.0152      0.08  Q         |         |         |         |
  3+30       0.0157      0.08  Q         |         |         |         |
  3+35       0.0163      0.08  Q         |         |         |         |
  3+40       0.0168      0.08  Q         |         |         |         |
  3+45       0.0173      0.08  Q         |         |         |         |
  3+50       0.0178      0.08  Q         |         |         |         |
  3+55       0.0184      0.09  Q         |         |         |         |
  4+ 0       0.0190      0.09  Q         |         |         |         |
  4+ 5       0.0196      0.09  Q         |         |         |         |
  4+10       0.0203      0.09  Q         |         |         |         |
  4+15       0.0209      0.09  Q         |         |         |         |
  4+20       0.0215      0.09  Q         |         |         |         |
  4+25       0.0222      0.10  Q         |         |         |         |
  4+30       0.0229      0.10  Q         |         |         |         |
  4+35       0.0236      0.10  Q         |         |         |         |
  4+40       0.0244      0.10  Q         |         |         |         |
  4+45       0.0251      0.10  Q         |         |         |         |
  4+50       0.0258      0.11  Q         |         |         |         |
  4+55       0.0266      0.12  Q         |         |         |         |
  5+ 0       0.0274      0.12  Q         |         |         |         |
  5+ 5       0.0282      0.11  Q         |         |         |         |
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EX24HR100YR

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  5+10       0.0289     0.10  Q         |         |         |         |
  5+15       0.0295     0.09  Q         |         |         |         |
  5+20       0.0302     0.10  Q         |         |         |         |
  5+25       0.0309     0.10  Q         |         |         |         |
  5+30       0.0316     0.10  QV        |         |         |         |
  5+35       0.0323     0.11  QV        |         |         |         |
  5+40       0.0331     0.12  QV        |         |         |         |
  5+45       0.0339     0.12  QV        |         |         |         |
  5+50       0.0348     0.12  QV        |         |         |         |
  5+55       0.0356     0.12  QV        |         |         |         |
  6+ 0       0.0364     0.12  QV        |         |         |         |
  6+ 5       0.0373     0.12  QV        |         |         |         |
  6+10       0.0382     0.13  QV        |         |         |         |
  6+15       0.0391     0.13  QV        |         |         |         |
  6+20       0.0400     0.13  QV        |         |         |         |
  6+25       0.0409     0.13  QV        |         |         |         |
  6+30       0.0419     0.13  QV        |         |         |         |
  6+35       0.0428     0.14  QV        |         |         |         |
  6+40       0.0438     0.15  QV        |         |         |         |
  6+45       0.0448     0.15  QV        |         |         |         |
  6+50       0.0459     0.15  QV        |         |         |         |
  6+55       0.0469     0.15  QV        |         |         |         |
  7+ 0       0.0479     0.15  QV        |         |         |         |
  7+ 5       0.0490     0.15  QV        |         |         |         |
  7+10       0.0500     0.15  QV        |         |         |         |
  7+15       0.0510     0.15  QV        |         |         |         |
  7+20       0.0521     0.15  QV        |         |         |         |
  7+25       0.0532     0.16  QV        |         |         |         |
  7+30       0.0543     0.16  QV        |         |         |         |
  7+35       0.0555     0.17  QV        |         |         |         |
  7+40       0.0567     0.18  QV        |         |         |         |
  7+45       0.0579     0.18  QV        |         |         |         |
  7+50       0.0592     0.18  QV        |         |         |         |
  7+55       0.0605     0.19  QV        |         |         |         |
  8+ 0       0.0618     0.19  QV        |         |         |         |
  8+ 5       0.0633     0.22  Q V       |         |         |         |
  8+10       0.0653     0.29  |QV       |         |         |         |
  8+15       0.0675     0.32  |QV       |         |         |         |
  8+20       0.0698     0.33  |QV       |         |         |         |
  8+25       0.0722     0.35  |QV       |         |         |         |
  8+30       0.0747     0.36  |QV       |         |         |         |
  8+35       0.0774     0.40  |QV       |         |         |         |
  8+40       0.0808     0.49  |QV       |         |         |         |
  8+45       0.0843     0.52  | Q       |         |         |         |
  8+50       0.0882     0.57  | Q       |         |         |         |
  8+55       0.0928     0.65  | Q       |         |         |         |
  9+ 0       0.0975     0.69  | QV      |         |         |         |
  9+ 5       0.1028     0.77  |  Q      |         |         |         |
  9+10       0.1093     0.94  |  Q      |         |         |         |
  9+15       0.1161     0.99  |  Q      |         |         |         |
  9+20       0.1234     1.06  |  VQ     |         |         |         |
  9+25       0.1313     1.15  |   Q     |         |         |         |
  9+30       0.1395     1.19  |   Q     |         |         |         |
  9+35       0.1481     1.24  |   Q     |         |         |         |
  9+40       0.1573     1.33  |    Q    |         |         |         |
  9+45       0.1667     1.37  |    Q    |         |         |         |
  9+50       0.1765     1.42  |    Q    |         |         |         |
  9+55       0.1868     1.51  |     Q   |         |         |         |
 10+ 0       0.1975     1.54  |     Q   |         |         |         |
 10+ 5       0.2067     1.34  |    QV   |         |         |         |
 10+10       0.2124     0.84  |  Q  V   |         |         |         |
 10+15       0.2172     0.70  | Q   V   |         |         |         |
 10+20       0.2216     0.64  | Q    V  |         |         |         |
 10+25       0.2258     0.61  | Q    V  |         |         |         |
 10+30       0.2299     0.59  | Q    V  |         |         |         |
 10+35       0.2350     0.75  | Q    V  |         |         |         |
 10+40       0.2427     1.11  |   Q  V  |         |         |         |
 10+45       0.2512     1.23  |   Q   V |         |         |         |
 10+50       0.2600     1.29  |    Q  V |         |         |         |
 10+55       0.2692     1.32  |    Q  V |         |         |         |
 11+ 0       0.2785     1.35  |    Q  V |         |         |         |
 11+ 5       0.2877     1.34  |    Q   V|         |         |         |
 11+10       0.2965     1.28  |    Q   V|         |         |         |
 11+15       0.3052     1.26  |    Q   V|         |         |         |
 11+20       0.3138     1.26  |    Q    V         |         |         |
 11+25       0.3226     1.26  |    Q    V         |         |         |
 11+30       0.3313     1.27  |    Q    V         |         |         |
 11+35       0.3396     1.21  |   Q     V         |         |         |
 11+40       0.3470     1.07  |   Q     |V        |         |         |
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                                           EX24HR100YR
11+45       0.3541    1.03  |   Q     |V        |         |         |
11+50       0.3613    1.05  |   Q     |V        |         |         |
11+55       0.3691    1.12  |   Q     |V        |         |         |
12+ 0       0.3770    1.15  |   Q     | V       |         |         |
12+ 5       0.3865    1.39  |    Q    | V       |         |         |
12+10       0.3997    1.91  |      Q  | V       |         |         |
12+15       0.4140    2.07  |       Q |  V      |         |         |
12+20       0.4290    2.19  |       Q |  V      |         |         |
12+25       0.4449    2.31  |        Q|   V     |         |         |
12+30       0.4612    2.36  |        Q|   V     |         |         |
12+35       0.4781    2.46  |        Q|    V    |         |         |
12+40       0.4962    2.63  |         Q    V    |         |         |
12+45       0.5147    2.68  |         Q     V   |         |         |
12+50       0.5336    2.75  |         Q      V  |         |         |
12+55       0.5532    2.84  |         |Q     V  |         |         |
13+ 0       0.5730    2.88  |         |Q      V |         |         |
13+ 5       0.5941    3.06  |         | Q      V|         |         |
13+10       0.6178    3.44  |         |  Q     V|         |         |
13+15       0.6423    3.56  |         |   Q     V         |         |
13+20       0.6672    3.62  |         |   Q     |V        |         |
13+25       0.6924    3.66  |         |   Q     | V       |         |
13+30       0.7178    3.68  |         |   Q     |  V      |         |
13+35       0.7408    3.34  |         |  Q      |  V      |         |
13+40       0.7584    2.55  |         Q         |   V     |         |
13+45       0.7743    2.32  |        Q|         |   V     |         |
13+50       0.7896    2.21  |       Q |         |    V    |         |
13+55       0.8044    2.16  |       Q |         |    V    |         |
14+ 0       0.8191    2.13  |       Q |         |     V   |         |
14+ 5       0.8345    2.24  |       Q |         |     V   |         |
14+10       0.8519    2.53  |         Q         |      V  |         |
14+15       0.8700    2.62  |         Q         |      V  |         |
14+20       0.8881    2.64  |         Q         |       V |         |
14+25       0.9060    2.59  |         Q         |        V|         |
14+30       0.9238    2.59  |         Q         |        V|         |
14+35       0.9417    2.60  |         Q         |         V         |
14+40       0.9596    2.60  |         Q         |         V         |
14+45       0.9776    2.61  |         Q         |         |V        |
14+50       0.9953    2.58  |         Q         |         |V        |
14+55       1.0126    2.51  |         Q         |         | V       |
15+ 0       1.0298    2.49  |        Q|         |         |  V      |
15+ 5       1.0467    2.46  |        Q|         |         |  V      |
15+10       1.0631    2.39  |        Q|         |         |   V     |
15+15       1.0794    2.37  |        Q|         |         |   V     |
15+20       1.0955    2.33  |        Q|         |         |    V    |
15+25       1.1110    2.26  |        Q|         |         |    V    |
15+30       1.1264    2.24  |       Q |         |         |     V   |
15+35       1.1409    2.10  |       Q |         |         |     V   |
15+40       1.1533    1.81  |      Q  |         |         |      V  |
15+45       1.1652    1.72  |     Q   |         |         |      V  |
15+50       1.1768    1.69  |     Q   |         |         |      V  |
15+55       1.1883    1.67  |     Q   |         |         |       V |
16+ 0       1.1997    1.66  |     Q   |         |         |       V |
16+ 5       1.2088    1.31  |    Q    |         |         |       V |
16+10       1.2124    0.53  | Q       |         |         |       V |
16+15       1.2145    0.30  |Q        |         |         |        V|
16+20       1.2158    0.19  Q         |         |         |        V|
16+25       1.2167    0.13  Q         |         |         |        V|
16+30       1.2174    0.10  Q         |         |         |        V|
16+35       1.2179    0.07  Q         |         |         |        V|
16+40       1.2183    0.05  Q         |         |         |        V|
16+45       1.2186    0.05  Q         |         |         |        V|
16+50       1.2189    0.05  Q         |         |         |        V|
16+55       1.2192    0.05  Q         |         |         |        V|
17+ 0       1.2195    0.05  Q         |         |         |        V|
17+ 5       1.2199    0.05  Q         |         |         |        V|
17+10       1.2203    0.07  Q         |         |         |        V|
17+15       1.2208    0.07  Q         |         |         |        V|
17+20       1.2213    0.07  Q         |         |         |        V|
17+25       1.2218    0.07  Q         |         |         |        V|
17+30       1.2223    0.07  Q         |         |         |        V|
17+35       1.2229    0.07  Q         |         |         |        V|
17+40       1.2234    0.08  Q         |         |         |        V|
17+45       1.2239    0.08  Q         |         |         |        V|
17+50       1.2244    0.07  Q         |         |         |        V|
17+55       1.2248    0.06  Q         |         |         |        V|
18+ 0       1.2253    0.06  Q         |         |         |        V|
18+ 5       1.2257    0.06  Q         |         |         |        V|
18+10       1.2261    0.06  Q         |         |         |        V|
18+15       1.2265    0.06  Q         |         |         |        V|
```

EX24HR100YR

18+20	1.2269	0.06	Q	|	|	|	V|
18+25	1.2274	0.06	Q	|	|	|	V|
18+30	1.2278	0.06	Q	|	|	|	V|
18+35	1.2282	0.06	Q	|	|	|	V|
18+40	1.2285	0.05	Q	|	|	|	V|
18+45	1.2288	0.05	Q	|	|	|	V|
18+50	1.2291	0.04	Q	|	|	|	V|
18+55	1.2294	0.04	Q	|	|	|	V|
19+ 0	1.2296	0.03	Q	|	|	|	V|
19+ 5	1.2298	0.03	Q	|	|	|	V|
19+10	1.2301	0.04	Q	|	|	|	V|
19+15	1.2304	0.04	Q	|	|	|	V|
19+20	1.2307	0.05	Q	|	|	|	V|
19+25	1.2311	0.05	Q	|	|	|	V|
19+30	1.2315	0.06	Q	|	|	|	V|
19+35	1.2319	0.06	Q	|	|	|	V|
19+40	1.2322	0.05	Q	|	|	|	V|
19+45	1.2326	0.05	Q	|	|	|	V|
19+50	1.2328	0.04	Q	|	|	|	V|
19+55	1.2331	0.04	Q	|	|	|	V|
20+ 0	1.2333	0.03	Q	|	|	|	V|
20+ 5	1.2336	0.03	Q	|	|	|	V|
20+10	1.2338	0.04	Q	|	|	|	V|
20+15	1.2341	0.04	Q	|	|	|	V|
20+20	1.2344	0.04	Q	|	|	|	V|
20+25	1.2347	0.04	Q	|	|	|	V|
20+30	1.2351	0.04	Q	|	|	|	V|
20+35	1.2354	0.04	Q	|	|	|	V|
20+40	1.2357	0.05	Q	|	|	|	V|
20+45	1.2360	0.05	Q	|	|	|	V|
20+50	1.2363	0.04	Q	|	|	|	V|
20+55	1.2365	0.03	Q	|	|	|	V|
21+ 0	1.2367	0.03	Q	|	|	|	V|
21+ 5	1.2370	0.03	Q	|	|	|	V|
21+10	1.2373	0.04	Q	|	|	|	V|
21+15	1.2376	0.04	Q	|	|	|	V|
21+20	1.2378	0.04	Q	|	|	|	V|
21+25	1.2381	0.03	Q	|	|	|	V|
21+30	1.2383	0.03	Q	|	|	|	V|
21+35	1.2385	0.03	Q	|	|	|	V|
21+40	1.2388	0.04	Q	|	|	|	V|
21+45	1.2391	0.04	Q	|	|	|	V|
21+50	1.2394	0.04	Q	|	|	|	V|
21+55	1.2396	0.03	Q	|	|	|	V|
22+ 0	1.2398	0.03	Q	|	|	|	V|
22+ 5	1.2401	0.03	Q	|	|	|	V|
22+10	1.2404	0.04	Q	|	|	|	V|
22+15	1.2407	0.04	Q	|	|	|	V|
22+20	1.2409	0.04	Q	|	|	|	V|
22+25	1.2412	0.03	Q	|	|	|	V|
22+30	1.2414	0.03	Q	|	|	|	V|
22+35	1.2416	0.03	Q	|	|	|	V|
22+40	1.2418	0.03	Q	|	|	|	V|
22+45	1.2420	0.03	Q	|	|	|	V|
22+50	1.2422	0.03	Q	|	|	|	V|
22+55	1.2424	0.03	Q	|	|	|	V|
23+ 0	1.2426	0.03	Q	|	|	|	V|
23+ 5	1.2429	0.03	Q	|	|	|	V|
23+10	1.2431	0.03	Q	|	|	|	V|
23+15	1.2433	0.03	Q	|	|	|	V|
23+20	1.2435	0.03	Q	|	|	|	V|
23+25	1.2437	0.03	Q	|	|	|	V|
23+30	1.2439	0.03	Q	|	|	|	V|
23+35	1.2441	0.03	Q	|	|	|	V|
23+40	1.2443	0.03	Q	|	|	|	V|
23+45	1.2445	0.03	Q	|	|	|	V|
23+50	1.2447	0.03	Q	|	|	|	V|
23+55	1.2449	0.03	Q	|	|	|	V|
24+ 0	1.2451	0.03	Q	|	|	|	V|
24+ 5	1.2453	0.02	Q	|	|	|	V|
24+10	1.2454	0.01	Q	|	|	|	V|
24+15	1.2454	0.00	Q	|	|	|	V|
24+20	1.2454	0.00	Q	|	|	|	V|
24+25	1.2454	0.00	Q	|	|	|	V|
24+30	1.2454	0.00	Q	|	|	|	V|
24+35	1.2454	0.00	Q	|	|	|	V

ATTACHMENT 4

PROPOSED HYDROLOGY CALCULATIONS WITHOUT DETENTION – HYDROGRAPH METHOD

Proposed Area Calculations

Basin No.	Pervious areas A Soil 32 SF	Pervious areas C Soil 69 SF	Total Area Pervious only SF	Total Area Pervious only Acres	Impervious Bldg & roads SF	Impervious Bldg & roads Acres	Total Area ALL SF	Total Area ALL Acres	Percent Impervious	Runoff Index Composite
A-1	38,263	162,609	200,872	4.611	286,885	6.586	487,757	11.197	59%	62
B-1	72,974	92,789	165,763	3.805	211,699	4.860	377,462	8.665	56%	53

BASIN A

100 YEAR

```
                              PR24HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  09/07/16 File: PR24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =      11.20(Ac.)  =      0.017 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      11.20(Ac.)  =      0.017 Sq. Mi.
Length along longest watercourse =     916.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.173 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      10.60(Ft.)
Slope along watercourse =     61.1004 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.034 Hr.
Lag time =     2.07 Min.
25% of lag time =     0.52 Min.
40% of lag time =     0.83 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            1.72                  19.26

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       11.20            4.30                  48.15

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    4.300(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    11.197           62.00          0.590
 Total Area Entered =     11.20(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
62.0  62.0      0.448     0.590        0.210       1.000      0.210
                                                  Sum (F) =   0.210
Area averaged mean soil loss (F) (In/Hr) =  0.210
Minimum soil loss rate ((In/Hr)) =  0.105
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.428
---------------------------------------------------------------------
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Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

PR24HR100YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	241.878	49.815	5.621
2	0.167	483.756	40.562	4.577
3	0.250	725.634	7.289	0.823
4	0.333	967.512	2.334	0.263
			Sum = 100.000	Sum= 11.284

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Loss rate(In./Hr) Low	Effective (In/Hr)
1	0.08	0.07	0.034	(0.373)	0.015	0.020
2	0.17	0.07	0.034	(0.371)	0.015	0.020
3	0.25	0.07	0.034	(0.370)	0.015	0.020
4	0.33	0.10	0.052	(0.368)	0.022	0.030
5	0.42	0.10	0.052	(0.367)	0.022	0.030
6	0.50	0.10	0.052	(0.366)	0.022	0.030
7	0.58	0.10	0.052	(0.364)	0.022	0.030
8	0.67	0.10	0.052	(0.363)	0.022	0.030
9	0.75	0.10	0.052	(0.361)	0.022	0.030
10	0.83	0.13	0.069	(0.360)	0.029	0.039
11	0.92	0.13	0.069	(0.359)	0.029	0.039
12	1.00	0.13	0.069	(0.357)	0.029	0.039
13	1.08	0.10	0.052	(0.356)	0.022	0.030
14	1.17	0.10	0.052	(0.354)	0.022	0.030
15	1.25	0.10	0.052	(0.353)	0.022	0.030
16	1.33	0.10	0.052	(0.351)	0.022	0.030
17	1.42	0.10	0.052	(0.350)	0.022	0.030
18	1.50	0.10	0.052	(0.349)	0.022	0.030
19	1.58	0.10	0.052	(0.347)	0.022	0.030
20	1.67	0.10	0.052	(0.346)	0.022	0.030
21	1.75	0.10	0.052	(0.345)	0.022	0.030
22	1.83	0.13	0.069	(0.343)	0.029	0.039
23	1.92	0.13	0.069	(0.342)	0.029	0.039
24	2.00	0.13	0.069	(0.340)	0.029	0.039
25	2.08	0.13	0.069	(0.339)	0.029	0.039
26	2.17	0.13	0.069	(0.338)	0.029	0.039
27	2.25	0.13	0.069	(0.336)	0.029	0.039
28	2.33	0.13	0.069	(0.335)	0.029	0.039
29	2.42	0.13	0.069	(0.333)	0.029	0.039
30	2.50	0.13	0.069	(0.332)	0.029	0.039
31	2.58	0.17	0.086	(0.331)	0.037	0.049
32	2.67	0.17	0.086	(0.329)	0.037	0.049
33	2.75	0.17	0.086	(0.328)	0.037	0.049
34	2.83	0.17	0.086	(0.327)	0.037	0.049
35	2.92	0.17	0.086	(0.325)	0.037	0.049
36	3.00	0.17	0.086	(0.324)	0.037	0.049
37	3.08	0.17	0.086	(0.323)	0.037	0.049
38	3.17	0.17	0.086	(0.321)	0.037	0.049
39	3.25	0.17	0.086	(0.320)	0.037	0.049
40	3.33	0.17	0.086	(0.319)	0.037	0.049
41	3.42	0.17	0.086	(0.317)	0.037	0.049
42	3.50	0.17	0.086	(0.316)	0.037	0.049
43	3.58	0.17	0.086	(0.315)	0.037	0.049
44	3.67	0.17	0.086	(0.313)	0.037	0.049
45	3.75	0.17	0.086	(0.312)	0.037	0.049
46	3.83	0.20	0.103	(0.311)	0.044	0.059
47	3.92	0.20	0.103	(0.309)	0.044	0.059
48	4.00	0.20	0.103	(0.308)	0.044	0.059
49	4.08	0.20	0.103	(0.307)	0.044	0.059
50	4.17	0.20	0.103	(0.306)	0.044	0.059
51	4.25	0.20	0.103	(0.304)	0.044	0.059
52	4.33	0.23	0.120	(0.303)	0.052	0.069
53	4.42	0.23	0.120	(0.302)	0.052	0.069
54	4.50	0.23	0.120	(0.300)	0.052	0.069
55	4.58	0.23	0.120	(0.299)	0.052	0.069
56	4.67	0.23	0.120	(0.298)	0.052	0.069
57	4.75	0.23	0.120	(0.296)	0.052	0.069
58	4.83	0.27	0.138	(0.295)	0.059	0.079

PR24HR100YR

59	4.92	0.27	0.138	(0.294)	0.059	0.079
60	5.00	0.27	0.138	(0.293)	0.059	0.079
61	5.08	0.20	0.103	(0.291)	0.044	0.059
62	5.17	0.20	0.103	(0.290)	0.044	0.059
63	5.25	0.20	0.103	(0.289)	0.044	0.059
64	5.33	0.23	0.120	(0.288)	0.052	0.069
65	5.42	0.23	0.120	(0.286)	0.052	0.069
66	5.50	0.23	0.120	(0.285)	0.052	0.069
67	5.58	0.27	0.138	(0.284)	0.059	0.079
68	5.67	0.27	0.138	(0.283)	0.059	0.079
69	5.75	0.27	0.138	(0.281)	0.059	0.079
70	5.83	0.27	0.138	(0.280)	0.059	0.079
71	5.92	0.27	0.138	(0.279)	0.059	0.079
72	6.00	0.27	0.138	(0.278)	0.059	0.079
73	6.08	0.30	0.155	(0.276)	0.066	0.089
74	6.17	0.30	0.155	(0.275)	0.066	0.089
75	6.25	0.30	0.155	(0.274)	0.066	0.089
76	6.33	0.30	0.155	(0.273)	0.066	0.089
77	6.42	0.30	0.155	(0.271)	0.066	0.089
78	6.50	0.30	0.155	(0.270)	0.066	0.089
79	6.58	0.33	0.172	(0.269)	0.074	0.098
80	6.67	0.33	0.172	(0.268)	0.074	0.098
81	6.75	0.33	0.172	(0.267)	0.074	0.098
82	6.83	0.33	0.172	(0.265)	0.074	0.098
83	6.92	0.33	0.172	(0.264)	0.074	0.098
84	7.00	0.33	0.172	(0.263)	0.074	0.098
85	7.08	0.33	0.172	(0.262)	0.074	0.098
86	7.17	0.33	0.172	(0.261)	0.074	0.098
87	7.25	0.33	0.172	(0.259)	0.074	0.098
88	7.33	0.37	0.189	(0.258)	0.081	0.108
89	7.42	0.37	0.189	(0.257)	0.081	0.108
90	7.50	0.37	0.189	(0.256)	0.081	0.108
91	7.58	0.40	0.206	(0.255)	0.088	0.118
92	7.67	0.40	0.206	(0.254)	0.088	0.118
93	7.75	0.40	0.206	(0.252)	0.088	0.118
94	7.83	0.43	0.224	(0.251)	0.096	0.128
95	7.92	0.43	0.224	(0.250)	0.096	0.128
96	8.00	0.43	0.224	(0.249)	0.096	0.128
97	8.08	0.50	0.258	(0.248)	0.110	0.148
98	8.17	0.50	0.258	(0.247)	0.110	0.148
99	8.25	0.50	0.258	(0.245)	0.110	0.148
100	8.33	0.50	0.258	(0.244)	0.110	0.148
101	8.42	0.50	0.258	(0.243)	0.110	0.148
102	8.50	0.50	0.258	(0.242)	0.110	0.148
103	8.58	0.53	0.275	(0.241)	0.118	0.157
104	8.67	0.53	0.275	(0.240)	0.118	0.157
105	8.75	0.53	0.275	(0.239)	0.118	0.157
106	8.83	0.57	0.292	(0.237)	0.125	0.167
107	8.92	0.57	0.292	(0.236)	0.125	0.167
108	9.00	0.57	0.292	(0.235)	0.125	0.167
109	9.08	0.63	0.327	(0.234)	0.140	0.187
110	9.17	0.63	0.327	(0.233)	0.140	0.187
111	9.25	0.63	0.327	(0.232)	0.140	0.187
112	9.33	0.67	0.344	(0.231)	0.147	0.197
113	9.42	0.67	0.344	(0.230)	0.147	0.197
114	9.50	0.67	0.344	(0.229)	0.147	0.197
115	9.58	0.70	0.361	(0.227)	0.155	0.207
116	9.67	0.70	0.361	(0.226)	0.155	0.207
117	9.75	0.70	0.361	(0.225)	0.155	0.207
118	9.83	0.73	0.378	(0.224)	0.162	0.216
119	9.92	0.73	0.378	(0.223)	0.162	0.216
120	10.00	0.73	0.378	(0.222)	0.162	0.216
121	10.08	0.50	0.258	(0.221)	0.110	0.148
122	10.17	0.50	0.258	(0.220)	0.110	0.148
123	10.25	0.50	0.258	(0.219)	0.110	0.148
124	10.33	0.50	0.258	(0.218)	0.110	0.148
125	10.42	0.50	0.258	(0.217)	0.110	0.148
126	10.50	0.50	0.258	(0.216)	0.110	0.148
127	10.58	0.67	0.344	(0.215)	0.147	0.197
128	10.67	0.67	0.344	(0.214)	0.147	0.197
129	10.75	0.67	0.344	(0.213)	0.147	0.197
130	10.83	0.67	0.344	(0.211)	0.147	0.197
131	10.92	0.67	0.344	(0.210)	0.147	0.197
132	11.00	0.67	0.344	(0.209)	0.147	0.197
133	11.08	0.63	0.327	(0.208)	0.140	0.187
134	11.17	0.63	0.327	(0.207)	0.140	0.187
135	11.25	0.63	0.327	(0.206)	0.140	0.187
136	11.33	0.63	0.327	(0.205)	0.140	0.187
137	11.42	0.63	0.327	(0.204)	0.140	0.187

138	11.50	0.63	0.327	(0.203)	0.140	0.187
139	11.58	0.57	0.292	(0.202)	0.125	0.167
140	11.67	0.57	0.292	(0.201)	0.125	0.167
141	11.75	0.57	0.292	(0.200)	0.125	0.167
142	11.83	0.60	0.310	(0.199)	0.133	0.177
143	11.92	0.60	0.310	(0.198)	0.133	0.177
144	12.00	0.60	0.310	(0.197)	0.133	0.177
145	12.08	0.83	0.430	(0.196)	0.184	0.246
146	12.17	0.83	0.430	(0.195)	0.184	0.246
147	12.25	0.83	0.430	(0.194)	0.184	0.246
148	12.33	0.87	0.447	(0.193)	0.191	0.256
149	12.42	0.87	0.447	(0.192)	0.191	0.256
150	12.50	0.87	0.447	(0.191)	0.191	0.256
151	12.58	0.93	0.482	0.190	(0.206)	0.291
152	12.67	0.93	0.482	0.190	(0.206)	0.292
153	12.75	0.93	0.482	0.189	(0.206)	0.293
154	12.83	0.97	0.499	0.188	(0.213)	0.311
155	12.92	0.97	0.499	0.187	(0.213)	0.312
156	13.00	0.97	0.499	0.186	(0.213)	0.313
157	13.08	1.13	0.585	0.185	(0.250)	0.400
158	13.17	1.13	0.585	0.184	(0.250)	0.401
159	13.25	1.13	0.585	0.183	(0.250)	0.402
160	13.33	1.13	0.585	0.182	(0.250)	0.403
161	13.42	1.13	0.585	0.181	(0.250)	0.404
162	13.50	1.13	0.585	0.180	(0.250)	0.405
163	13.58	0.77	0.396	(0.179)	0.169	0.226
164	13.67	0.77	0.396	(0.178)	0.169	0.226
165	13.75	0.77	0.396	(0.177)	0.169	0.226
166	13.83	0.77	0.396	(0.176)	0.169	0.226
167	13.92	0.77	0.396	(0.176)	0.169	0.226
168	14.00	0.77	0.396	(0.175)	0.169	0.226
169	14.08	0.90	0.464	0.174	(0.199)	0.291
170	14.17	0.90	0.464	0.173	(0.199)	0.291
171	14.25	0.90	0.464	0.172	(0.199)	0.292
172	14.33	0.87	0.447	0.171	(0.191)	0.276
173	14.42	0.87	0.447	0.170	(0.191)	0.277
174	14.50	0.87	0.447	0.169	(0.191)	0.278
175	14.58	0.87	0.447	0.169	(0.191)	0.279
176	14.67	0.87	0.447	0.168	(0.191)	0.280
177	14.75	0.87	0.447	0.167	(0.191)	0.280
178	14.83	0.83	0.430	0.166	(0.184)	0.264
179	14.92	0.83	0.430	0.165	(0.184)	0.265
180	15.00	0.83	0.430	0.164	(0.184)	0.266
181	15.08	0.80	0.413	0.163	(0.177)	0.249
182	15.17	0.80	0.413	0.163	(0.177)	0.250
183	15.25	0.80	0.413	0.162	(0.177)	0.251
184	15.33	0.77	0.396	0.161	(0.169)	0.235
185	15.42	0.77	0.396	0.160	(0.169)	0.236
186	15.50	0.77	0.396	0.159	(0.169)	0.236
187	15.58	0.63	0.327	(0.158)	0.140	0.187
188	15.67	0.63	0.327	(0.158)	0.140	0.187
189	15.75	0.63	0.327	(0.157)	0.140	0.187
190	15.83	0.63	0.327	(0.156)	0.140	0.187
191	15.92	0.63	0.327	(0.155)	0.140	0.187
192	16.00	0.63	0.327	(0.154)	0.140	0.187
193	16.08	0.13	0.069	(0.154)	0.029	0.039
194	16.17	0.13	0.069	(0.153)	0.029	0.039
195	16.25	0.13	0.069	(0.152)	0.029	0.039
196	16.33	0.13	0.069	(0.151)	0.029	0.039
197	16.42	0.13	0.069	(0.151)	0.029	0.039
198	16.50	0.13	0.069	(0.150)	0.029	0.039
199	16.58	0.10	0.052	(0.149)	0.022	0.030
200	16.67	0.10	0.052	(0.148)	0.022	0.030
201	16.75	0.10	0.052	(0.147)	0.022	0.030
202	16.83	0.10	0.052	(0.147)	0.022	0.030
203	16.92	0.10	0.052	(0.146)	0.022	0.030
204	17.00	0.10	0.052	(0.145)	0.022	0.030
205	17.08	0.17	0.086	(0.145)	0.037	0.049
206	17.17	0.17	0.086	(0.144)	0.037	0.049
207	17.25	0.17	0.086	(0.143)	0.037	0.049
208	17.33	0.17	0.086	(0.142)	0.037	0.049
209	17.42	0.17	0.086	(0.142)	0.037	0.049
210	17.50	0.17	0.086	(0.141)	0.037	0.049
211	17.58	0.17	0.086	(0.140)	0.037	0.049
212	17.67	0.17	0.086	(0.140)	0.037	0.049
213	17.75	0.17	0.086	(0.139)	0.037	0.049
214	17.83	0.13	0.069	(0.138)	0.029	0.039
215	17.92	0.13	0.069	(0.137)	0.029	0.039
216	18.00	0.13	0.069	(0.137)	0.029	0.039

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217	18.08	0.13	0.069	(0.136)	0.029	0.039
218	18.17	0.13	0.069	(0.135)	0.029	0.039
219	18.25	0.13	0.069	(0.135)	0.029	0.039
220	18.33	0.13	0.069	(0.134)	0.029	0.039
221	18.42	0.13	0.069	(0.133)	0.029	0.039
222	18.50	0.13	0.069	(0.133)	0.029	0.039
223	18.58	0.10	0.052	(0.132)	0.022	0.030
224	18.67	0.10	0.052	(0.132)	0.022	0.030
225	18.75	0.10	0.052	(0.131)	0.022	0.030
226	18.83	0.07	0.034	(0.130)	0.015	0.020
227	18.92	0.07	0.034	(0.130)	0.015	0.020
228	19.00	0.07	0.034	(0.129)	0.015	0.020
229	19.08	0.10	0.052	(0.128)	0.022	0.030
230	19.17	0.10	0.052	(0.128)	0.022	0.030
231	19.25	0.10	0.052	(0.127)	0.022	0.030
232	19.33	0.13	0.069	(0.127)	0.029	0.039
233	19.42	0.13	0.069	(0.126)	0.029	0.039
234	19.50	0.13	0.069	(0.125)	0.029	0.039
235	19.58	0.10	0.052	(0.125)	0.022	0.030
236	19.67	0.10	0.052	(0.124)	0.022	0.030
237	19.75	0.10	0.052	(0.124)	0.022	0.030
238	19.83	0.07	0.034	(0.123)	0.015	0.020
239	19.92	0.07	0.034	(0.123)	0.015	0.020
240	20.00	0.07	0.034	(0.122)	0.015	0.020
241	20.08	0.10	0.052	(0.122)	0.022	0.030
242	20.17	0.10	0.052	(0.121)	0.022	0.030
243	20.25	0.10	0.052	(0.121)	0.022	0.030
244	20.33	0.10	0.052	(0.120)	0.022	0.030
245	20.42	0.10	0.052	(0.119)	0.022	0.030
246	20.50	0.10	0.052	(0.119)	0.022	0.030
247	20.58	0.10	0.052	(0.118)	0.022	0.030
248	20.67	0.10	0.052	(0.118)	0.022	0.030
249	20.75	0.10	0.052	(0.117)	0.022	0.030
250	20.83	0.07	0.034	(0.117)	0.015	0.020
251	20.92	0.07	0.034	(0.117)	0.015	0.020
252	21.00	0.07	0.034	(0.116)	0.015	0.020
253	21.08	0.10	0.052	(0.116)	0.022	0.030
254	21.17	0.10	0.052	(0.115)	0.022	0.030
255	21.25	0.10	0.052	(0.115)	0.022	0.030
256	21.33	0.07	0.034	(0.114)	0.015	0.020
257	21.42	0.07	0.034	(0.114)	0.015	0.020
258	21.50	0.07	0.034	(0.113)	0.015	0.020
259	21.58	0.10	0.052	(0.113)	0.022	0.030
260	21.67	0.10	0.052	(0.113)	0.022	0.030
261	21.75	0.10	0.052	(0.112)	0.022	0.030
262	21.83	0.07	0.034	(0.112)	0.015	0.020
263	21.92	0.07	0.034	(0.111)	0.015	0.020
264	22.00	0.07	0.034	(0.111)	0.015	0.020
265	22.08	0.10	0.052	(0.111)	0.022	0.030
266	22.17	0.10	0.052	(0.110)	0.022	0.030
267	22.25	0.10	0.052	(0.110)	0.022	0.030
268	22.33	0.07	0.034	(0.110)	0.015	0.020
269	22.42	0.07	0.034	(0.109)	0.015	0.020
270	22.50	0.07	0.034	(0.109)	0.015	0.020
271	22.58	0.07	0.034	(0.109)	0.015	0.020
272	22.67	0.07	0.034	(0.108)	0.015	0.020
273	22.75	0.07	0.034	(0.108)	0.015	0.020
274	22.83	0.07	0.034	(0.108)	0.015	0.020
275	22.92	0.07	0.034	(0.107)	0.015	0.020
276	23.00	0.07	0.034	(0.107)	0.015	0.020
277	23.08	0.07	0.034	(0.107)	0.015	0.020
278	23.17	0.07	0.034	(0.107)	0.015	0.020
279	23.25	0.07	0.034	(0.107)	0.015	0.020
280	23.33	0.07	0.034	(0.106)	0.015	0.020
281	23.42	0.07	0.034	(0.106)	0.015	0.020
282	23.50	0.07	0.034	(0.106)	0.015	0.020
283	23.58	0.07	0.034	(0.106)	0.015	0.020
284	23.67	0.07	0.034	(0.106)	0.015	0.020
285	23.75	0.07	0.034	(0.105)	0.015	0.020
286	23.83	0.07	0.034	(0.105)	0.015	0.020
287	23.92	0.07	0.034	(0.105)	0.015	0.020
288	24.00	0.07	0.034	(0.105)	0.015	0.020

(Loss Rate Not Used)

Sum = 100.0 Sum = 30.4

Flood volume = Effective rainfall 2.53(In)
times area 11.2(Ac.)/[(In)/(Ft.)] = 2.4(Ac.Ft)
Total soil loss = 1.77(In)
Total soil loss = 1.649(Ac.Ft)
Total rainfall = 4.30(In)

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                                       PR24HR100YR
      Flood volume =      102936.8 Cubic Feet
      Total soil loss =       71833.4 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      4.562(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5      0.0008      0.11  Q         |         |         |         |
  0+10      0.0021      0.20  Q         |         |         |         |
  0+15      0.0036      0.22  Q         |         |         |         |
  0+20      0.0056      0.28  VQ        |         |         |         |
  0+25      0.0078      0.32  VQ        |         |         |         |
  0+30      0.0100      0.33  VQ        |         |         |         |
  0+35      0.0123      0.33  VQ        |         |         |         |
  0+40      0.0146      0.33  VQ        |         |         |         |
  0+45      0.0169      0.33  VQ        |         |         |         |
  0+50      0.0196      0.39  VQ        |         |         |         |
  0+55      0.0226      0.43  VQ        |         |         |         |
  1+ 0      0.0256      0.44  VQ        |         |         |         |
  1+ 5      0.0283      0.39  VQ        |         |         |         |
  1+10      0.0307      0.34  VQ        |         |         |         |
  1+15      0.0330      0.34  VQ        |         |         |         |
  1+20      0.0353      0.33  VQ        |         |         |         |
  1+25      0.0376      0.33  VQ        |         |         |         |
  1+30      0.0399      0.33  VQ        |         |         |         |
  1+35      0.0422      0.33  VQ        |         |         |         |
  1+40      0.0445      0.33  VQ        |         |         |         |
  1+45      0.0468      0.33  VQ        |         |         |         |
  1+50      0.0494      0.39  VQ        |         |         |         |
  1+55      0.0524      0.43  VQ        |         |         |         |
  2+ 0      0.0555      0.44  VQ        |         |         |         |
  2+ 5      0.0585      0.44  VQ        |         |         |         |
  2+10      0.0616      0.44  |Q        |         |         |         |
  2+15      0.0647      0.44  |Q        |         |         |         |
  2+20      0.0677      0.44  |Q        |         |         |         |
  2+25      0.0708      0.44  |Q        |         |         |         |
  2+30      0.0738      0.44  |Q        |         |         |         |
  2+35      0.0773      0.50  |Q        |         |         |         |
  2+40      0.0810      0.54  |VQ       |         |         |         |
  2+45      0.0848      0.55  |VQ       |         |         |         |
  2+50      0.0887      0.56  |VQ       |         |         |         |
  2+55      0.0925      0.56  |VQ       |         |         |         |
  3+ 0      0.0963      0.56  |VQ       |         |         |         |
  3+ 5      0.1001      0.56  |VQ       |         |         |         |
  3+10      0.1040      0.56  |VQ       |         |         |         |
  3+15      0.1078      0.56  |VQ       |         |         |         |
  3+20      0.1116      0.56  |VQ       |         |         |         |
  3+25      0.1154      0.56  |VQ       |         |         |         |
  3+30      0.1193      0.56  | Q       |         |         |         |
  3+35      0.1231      0.56  | Q       |         |         |         |
  3+40      0.1269      0.56  | Q       |         |         |         |
  3+45      0.1307      0.56  | Q       |         |         |         |
  3+50      0.1349      0.61  | Q       |         |         |         |
  3+55      0.1395      0.66  | Q       |         |         |         |
  4+ 0      0.1440      0.66  | Q       |         |         |         |
  4+ 5      0.1486      0.67  | Q       |         |         |         |
  4+10      0.1532      0.67  | Q       |         |         |         |
  4+15      0.1578      0.67  | Q       |         |         |         |
  4+20      0.1628      0.72  | Q       |         |         |         |
  4+25      0.1680      0.77  | VQ      |         |         |         |
  4+30      0.1734      0.77  | VQ      |         |         |         |
  4+35      0.1787      0.78  |  Q      |         |         |         |
  4+40      0.1841      0.78  |  Q      |         |         |         |
  4+45      0.1894      0.78  |  Q      |         |         |         |
  4+50      0.1952      0.83  |  Q      |         |         |         |
  4+55      0.2012      0.88  |  Q      |         |         |         |
  5+ 0      0.2073      0.89  |  Q      |         |         |         |
  5+ 5      0.2127      0.78  |  Q      |         |         |         |
  5+10      0.2174      0.69  | QV      |         |         |         |
  5+15      0.2221      0.67  | QV      |         |         |         |
  5+20      0.2270      0.72  | QV      |         |         |         |
  5+25      0.2323      0.77  |  Q      |         |         |         |
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 5+30       0.2376      0.77  |  QV     |         |         |         |
 5+35       0.2434      0.83  |  QV     |         |         |         |
 5+40       0.2494      0.88  |  QV     |         |         |         |
 5+45       0.2555      0.89  |  QV     |         |         |         |
 5+50       0.2616      0.89  |  QV     |         |         |         |
 5+55       0.2678      0.89  |  QV     |         |         |         |
 6+ 0       0.2739      0.89  |  QV     |         |         |         |
 6+ 5       0.2804      0.94  |  QV     |         |         |         |
 6+10       0.2872      0.99  |  QV     |         |         |         |
 6+15       0.2941      1.00  |  QV     |         |         |         |
 6+20       0.3010      1.00  |  Q V    |         |         |         |
 6+25       0.3078      1.00  |  Q V    |         |         |         |
 6+30       0.3147      1.00  |  Q V    |         |         |         |
 6+35       0.3220      1.06  |   QV    |         |         |         |
 6+40       0.3296      1.10  |   QV    |         |         |         |
 6+45       0.3372      1.11  |   QV    |         |         |         |
 6+50       0.3448      1.11  |   QV    |         |         |         |
 6+55       0.3525      1.11  |   QV    |         |         |         |
 7+ 0       0.3601      1.11  |   Q V   |         |         |         |
 7+ 5       0.3678      1.11  |   Q V   |         |         |         |
 7+10       0.3754      1.11  |   Q V   |         |         |         |
 7+15       0.3831      1.11  |   Q V   |         |         |         |
 7+20       0.3911      1.17  |   Q V   |         |         |         |
 7+25       0.3995      1.21  |   Q V   |         |         |         |
 7+30       0.4079      1.22  |   Q V   |         |         |         |
 7+35       0.4167      1.28  |    Q V  |         |         |         |
 7+40       0.4258      1.32  |    Q V  |         |         |         |
 7+45       0.4349      1.33  |    Q V  |         |         |         |
 7+50       0.4445      1.39  |    Q V  |         |         |         |
 7+55       0.4544      1.43  |    Q V  |         |         |         |
 8+ 0       0.4643      1.44  |    Q V  |         |         |         |
 8+ 5       0.4750      1.55  |     Q V |         |         |         |
 8+10       0.4863      1.64  |     Q V |         |         |         |
 8+15       0.4978      1.66  |     Q V |         |         |         |
 8+20       0.5092      1.67  |     Q V |         |         |         |
 8+25       0.5207      1.67  |     Q V |         |         |         |
 8+30       0.5322      1.67  |     Q  V|         |         |         |
 8+35       0.5440      1.72  |     Q  V|         |         |         |
 8+40       0.5562      1.77  |      Q V|         |         |         |
 8+45       0.5684      1.77  |      Q V|         |         |         |
 8+50       0.5811      1.83  |      Q V|         |         |         |
 8+55       0.5940      1.88  |      Q  V         |         |         |
 9+ 0       0.6070      1.89  |      Q  V         |         |         |
 9+ 5       0.6207      2.00  |      Q  V         |         |         |
 9+10       0.6351      2.09  |       Q V         |         |         |
 9+15       0.6496      2.11  |       Q V         |         |         |
 9+20       0.6645      2.17  |       Q |V        |         |         |
 9+25       0.6798      2.21  |       Q |V        |         |         |
 9+30       0.6950      2.22  |       Q |V        |         |         |
 9+35       0.7107      2.28  |        Q| V       |         |         |
 9+40       0.7267      2.32  |        Q| V       |         |         |
 9+45       0.7428      2.33  |        Q| V       |         |         |
 9+50       0.7592      2.39  |        Q| V       |         |         |
 9+55       0.7760      2.43  |        Q|  V      |         |         |
10+ 0       0.7928      2.44  |        Q|  V      |         |         |
10+ 5       0.8069      2.06  |       Q |  V      |         |         |
10+10       0.8189      1.74  |     Q   |  V      |         |         |
10+15       0.8305      1.68  |     Q   |   V     |         |         |
10+20       0.8420      1.67  |     Q   |   V     |         |         |
10+25       0.8535      1.67  |     Q   |   V     |         |         |
10+30       0.8650      1.67  |     Q   |   V     |         |         |
10+35       0.8783      1.94  |      Q  |   V     |         |         |
10+40       0.8933      2.17  |       Q |    V    |         |         |
10+45       0.9085      2.21  |       Q |    V    |         |         |
10+50       0.9238      2.22  |       Q |    V    |         |         |
10+55       0.9391      2.22  |       Q |    V    |         |         |
11+ 0       0.9544      2.22  |       Q |     V   |         |         |
11+ 5       0.9693      2.17  |       Q |     V   |         |         |
11+10       0.9839      2.12  |       Q |     V   |         |         |
11+15       0.9985      2.11  |       Q |     V   |         |         |
11+20       1.0130      2.11  |       Q |      V  |         |         |
11+25       1.0275      2.11  |       Q |      V  |         |         |
11+30       1.0421      2.11  |       Q |      V  |         |         |
11+35       1.0558      2.00  |      Q  |      V  |         |         |
11+40       1.0690      1.91  |      Q  |       V |         |         |
11+45       1.0820      1.89  |      Q  |       V |         |         |
11+50       1.0954      1.94  |      Q  |       V |         |         |
11+55       1.1091      1.99  |      Q  |       V |         |         |
12+ 0       1.1229      2.00  |      Q  |        V|         |         |
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                                           PR24HR100YR
12+ 5       1.1393      2.39  |        Q|        V|         |         |
12+10       1.1579      2.70  |         Q        V|         |         |
12+15       1.1769      2.76  |         |Q       V|         |         |
12+20       1.1964      2.83  |         |Q        V         |         |
12+25       1.2162      2.88  |         |Q        V         |         |
12+30       1.2361      2.89  |         |Q        V         |         |
12+35       1.2574      3.09  |         | Q       |V        |         |
12+40       1.2798      3.25  |         |  Q      |V        |         |
12+45       1.3024      3.29  |         |  Q      | V       |         |
12+50       1.3259      3.41  |         |  Q      | V       |         |
12+55       1.3500      3.50  |         |  Q      | V       |         |
13+ 0       1.3743      3.52  |         |   Q     |  V      |         |
13+ 5       1.4020      4.02  |         |     Q   |  V      |         |
13+10       1.4325      4.43  |         |      Q  |   V     |         |
13+15       1.4635      4.51  |         |       Q |   V     |         |
13+20       1.4948      4.54  |         |       Q |    V    |         |
13+25       1.5262      4.55  |         |       Q |    V    |         |
13+30       1.5576      4.56  |         |       Q |     V   |         |
13+35       1.5821      3.56  |         |   Q     |     V   |         |
13+40       1.6010      2.75  |         Q         |      V  |         |
13+45       1.6190      2.60  |         Q         |      V  |         |
13+50       1.6366      2.55  |         Q         |      V  |         |
13+55       1.6542      2.55  |         Q         |      V  |         |
14+ 0       1.6717      2.55  |         Q         |       V |         |
14+ 5       1.6918      2.92  |         |Q        |       V |         |
14+10       1.7140      3.22  |         | Q       |        V|         |
14+15       1.7366      3.28  |         |  Q      |        V|         |
14+20       1.7587      3.21  |         | Q       |        V|         |
14+25       1.7803      3.14  |         | Q       |         V         |
14+30       1.8019      3.13  |         | Q       |         V         |
14+35       1.8235      3.14  |         | Q       |         V         |
14+40       1.8452      3.15  |         | Q       |         |V        |
14+45       1.8669      3.16  |         | Q       |         |V        |
14+50       1.8881      3.07  |         | Q       |         |V        |
14+55       1.9088      3.00  |         | Q       |         | V       |
15+ 0       1.9294      3.00  |         |Q        |         | V       |
15+ 5       1.9495      2.91  |         |Q        |         | V       |
15+10       1.9690      2.84  |         |Q        |         |  V      |
15+15       1.9885      2.83  |         |Q        |         |  V      |
15+20       2.0074      2.74  |         Q         |         |  V      |
15+25       2.0258      2.67  |         Q         |         |   V     |
15+30       2.0442      2.67  |         Q         |         |   V     |
15+35       2.0606      2.39  |        Q|         |         |   V     |
15+40       2.0755      2.16  |       Q |         |         |    V    |
15+45       2.0902      2.12  |       Q |         |         |    V    |
15+50       2.1047      2.11  |       Q |         |         |    V    |
15+55       2.1192      2.11  |       Q |         |         |    V    |
16+ 0       2.1338      2.11  |       Q |         |         |     V   |
16+ 5       2.1426      1.28  |    Q    |         |         |     V   |
16+10       2.1467      0.60  | Q       |         |         |     V   |
16+15       2.1501      0.48  |Q        |         |         |     V   |
16+20       2.1531      0.44  |Q        |         |         |     V   |
16+25       2.1562      0.44  |Q        |         |         |     V   |
16+30       2.1592      0.44  |Q        |         |         |     V   |
16+35       2.1619      0.39  |Q        |         |         |     V   |
16+40       2.1643      0.34  |Q        |         |         |     V   |
16+45       2.1666      0.34  |Q        |         |         |     V   |
16+50       2.1689      0.33  |Q        |         |         |     V   |
16+55       2.1712      0.33  |Q        |         |         |     V   |
17+ 0       2.1735      0.33  |Q        |         |         |     V   |
17+ 5       2.1765      0.44  |Q        |         |         |     V   |
17+10       2.1802      0.53  | Q       |         |         |     V   |
17+15       2.1840      0.55  | Q       |         |         |     V   |
17+20       2.1878      0.56  | Q       |         |         |      V  |
17+25       2.1917      0.56  | Q       |         |         |      V  |
17+30       2.1955      0.56  | Q       |         |         |      V  |
17+35       2.1993      0.56  | Q       |         |         |      V  |
17+40       2.2031      0.56  | Q       |         |         |      V  |
17+45       2.2070      0.56  | Q       |         |         |      V  |
17+50       2.2104      0.50  | Q       |         |         |      V  |
17+55       2.2135      0.45  |Q        |         |         |      V  |
18+ 0       2.2166      0.45  |Q        |         |         |      V  |
18+ 5       2.2197      0.44  |Q        |         |         |      V  |
18+10       2.2227      0.44  |Q        |         |         |      V  |
18+15       2.2258      0.44  |Q        |         |         |      V  |
18+20       2.2289      0.44  |Q        |         |         |      V  |
18+25       2.2319      0.44  |Q        |         |         |      V  |
18+30       2.2350      0.44  |Q        |         |         |      V  |
18+35       2.2377      0.39  |Q        |         |         |      V  |
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PR24HR100YR

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18+40       2.2400      0.34  |Q        |         |         |      V  |
18+45       2.2423      0.34  |Q        |         |         |      V  |
18+50       2.2443      0.28  |Q        |         |         |      V  |
18+55       2.2459      0.23  Q         |         |         |       V |
19+ 0       2.2474      0.22  Q         |         |         |       V |
19+ 5       2.2493      0.28  |Q        |         |         |       V |
19+10       2.2515      0.32  |Q        |         |         |       V |
19+15       2.2538      0.33  |Q        |         |         |       V |
19+20       2.2565      0.39  |Q        |         |         |       V |
19+25       2.2595      0.43  |Q        |         |         |       V |
19+30       2.2625      0.44  |Q        |         |         |       V |
19+35       2.2652      0.39  |Q        |         |         |       V |
19+40       2.2676      0.34  |Q        |         |         |       V |
19+45       2.2699      0.34  |Q        |         |         |       V |
19+50       2.2718      0.28  |Q        |         |         |       V |
19+55       2.2734      0.23  Q         |         |         |       V |
20+ 0       2.2749      0.22  Q         |         |         |       V |
20+ 5       2.2769      0.28  |Q        |         |         |       V |
20+10       2.2791      0.32  |Q        |         |         |       V |
20+15       2.2814      0.33  |Q        |         |         |       V |
20+20       2.2836      0.33  |Q        |         |         |       V |
20+25       2.2859      0.33  |Q        |         |         |       V |
20+30       2.2882      0.33  |Q        |         |         |       V |
20+35       2.2905      0.33  |Q        |         |         |       V |
20+40       2.2928      0.33  |Q        |         |         |       V |
20+45       2.2951      0.33  |Q        |         |         |       V |
20+50       2.2970      0.28  |Q        |         |         |       V |
20+55       2.2986      0.23  Q         |         |         |       V |
21+ 0       2.3002      0.22  Q         |         |         |       V |
21+ 5       2.3021      0.28  |Q        |         |         |       V |
21+10       2.3043      0.32  |Q        |         |         |        V|
21+15       2.3066      0.33  |Q        |         |         |        V|
21+20       2.3085      0.28  |Q        |         |         |        V|
21+25       2.3101      0.23  Q         |         |         |        V|
21+30       2.3117      0.22  Q         |         |         |        V|
21+35       2.3136      0.28  |Q        |         |         |        V|
21+40       2.3158      0.32  |Q        |         |         |        V|
21+45       2.3181      0.33  |Q        |         |         |        V|
21+50       2.3200      0.28  |Q        |         |         |        V|
21+55       2.3216      0.23  Q         |         |         |        V|
22+ 0       2.3231      0.22  Q         |         |         |        V|
22+ 5       2.3250      0.28  |Q        |         |         |        V|
22+10       2.3273      0.32  |Q        |         |         |        V|
22+15       2.3295      0.33  |Q        |         |         |        V|
22+20       2.3315      0.28  |Q        |         |         |        V|
22+25       2.3331      0.23  Q         |         |         |        V|
22+30       2.3346      0.22  Q         |         |         |        V|
22+35       2.3361      0.22  Q         |         |         |        V|
22+40       2.3377      0.22  Q         |         |         |        V|
22+45       2.3392      0.22  Q         |         |         |        V|
22+50       2.3407      0.22  Q         |         |         |        V|
22+55       2.3423      0.22  Q         |         |         |        V|
23+ 0       2.3438      0.22  Q         |         |         |        V|
23+ 5       2.3453      0.22  Q         |         |         |        V|
23+10       2.3469      0.22  Q         |         |         |        V|
23+15       2.3484      0.22  Q         |         |         |        V|
23+20       2.3499      0.22  Q         |         |         |        V|
23+25       2.3514      0.22  Q         |         |         |        V|
23+30       2.3530      0.22  Q         |         |         |        V|
23+35       2.3545      0.22  Q         |         |         |        V|
23+40       2.3560      0.22  Q         |         |         |        V|
23+45       2.3576      0.22  Q         |         |         |        V|
23+50       2.3591      0.22  Q         |         |         |        V|
23+55       2.3606      0.22  Q         |         |         |        V|
24+ 0       2.3622      0.22  Q         |         |         |        V|
24+ 5       2.3629      0.11  Q         |         |         |        V|
24+10       2.3631      0.02  Q         |         |         |        V|
24+15       2.3631      0.01  Q         |         |         |         V
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A100DET

FLOOD HYDROGRAPH ROUTING PROGRAM

Study date: 10/19/16

Program License Serial Number 6313

```
********************* HYDROGRAPH INFORMATION **********************

                From study/file name: PR24HR100YR.rte
*****************************HYDROGRAPH DATA****************************
                Number of intervals =   291
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        4.562 (CFS)
                Total volume =       2.363 (Ac.Ft)
        Status of hydrographs being held in storage
                   Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
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Process from Point/Station      101.000 to Point/Station      102.000
**** RETARDING BASIN ROUTING ****
```

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 291
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)

Initial basin depth =   0.00 (Ft.)
Initial basin storage =   0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.500	0.110	0.464	0.108	0.112
1.000	0.240	0.464	0.238	0.242
1.500	0.390	0.464	0.388	0.392
2.000	0.550	0.464	0.548	0.552
2.500	0.720	4.742	0.704	0.736
3.000	0.880	12.515	0.837	0.923

Hydrograph Detention Basin Routing

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                                     A100DET
       Graph values: 'I'= unit inflow; 'O'=outflow at time shown
       ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                     Depth
(Hours) (CFS)   (CFS)     (Ac.Ft) .0        1.1    2.28    3.42    4.56 (Ft.)
 0.083    0.11    0.00      0.000  O       |       |       |       |     0.00
 0.167    0.20    0.01      0.001  OI      |       |       |       |     0.01
 0.250    0.22    0.01      0.003  OI      |       |       |       |     0.01
 0.333    0.28    0.02      0.004  OI      |       |       |       |     0.02
 0.417    0.32    0.03      0.006  O I     |       |       |       |     0.03
 0.500    0.33    0.04      0.008  O I     |       |       |       |     0.04
 0.583    0.33    0.04      0.010  O I     |       |       |       |     0.05
 0.667    0.33    0.05      0.012  O I     |       |       |       |     0.06
 0.750    0.33    0.06      0.014  O I     |       |       |       |     0.06
 0.833    0.39    0.07      0.016  O I     |       |       |       |     0.07
 0.917    0.43    0.08      0.019  O  I    |       |       |       |     0.08
 1.000    0.44    0.09      0.021  O  I    |       |       |       |     0.10
 1.083    0.39    0.10      0.023  O I     |       |       |       |     0.11
 1.167    0.34    0.11      0.025  O I     |       |       |       |     0.11
 1.250    0.34    0.11      0.027  O I     |       |       |       |     0.12
 1.333    0.33    0.12      0.028  O I     |       |       |       |     0.13
 1.417    0.33    0.12      0.030  O I     |       |       |       |     0.13
 1.500    0.33    0.13      0.031  O I     |       |       |       |     0.14
 1.583    0.33    0.14      0.032  O I     |       |       |       |     0.15
 1.667    0.33    0.14      0.034  O I     |       |       |       |     0.15
 1.750    0.33    0.15      0.035  |OI     |       |       |       |     0.16
 1.833    0.39    0.15      0.036  |OI     |       |       |       |     0.17
 1.917    0.43    0.16      0.038  |O I    |       |       |       |     0.17
 2.000    0.44    0.17      0.040  |O I    |       |       |       |     0.18
 2.083    0.44    0.18      0.042  |O I    |       |       |       |     0.19
 2.167    0.44    0.18      0.044  |O I    |       |       |       |     0.20
 2.250    0.44    0.19      0.046  |O I    |       |       |       |     0.21
 2.333    0.44    0.20      0.047  |O I    |       |       |       |     0.21
 2.417    0.44    0.21      0.049  |O I    |       |       |       |     0.22
 2.500    0.44    0.21      0.051  |O I    |       |       |       |     0.23
 2.583    0.50    0.22      0.052  |O I    |       |       |       |     0.24
 2.667    0.54    0.23      0.054  |O I    |       |       |       |     0.25
 2.750    0.55    0.24      0.057  |O I    |       |       |       |     0.26
 2.833    0.56    0.25      0.059  |O I    |       |       |       |     0.27
 2.917    0.56    0.26      0.061  |O I    |       |       |       |     0.28
 3.000    0.56    0.26      0.063  |O I    |       |       |       |     0.29
 3.083    0.56    0.27      0.065  |O I    |       |       |       |     0.29
 3.167    0.56    0.28      0.067  |O I    |       |       |       |     0.30
 3.250    0.56    0.29      0.069  | OI    |       |       |       |     0.31
 3.333    0.56    0.30      0.070  | OI    |       |       |       |     0.32
 3.417    0.56    0.30      0.072  | OI    |       |       |       |     0.33
 3.500    0.56    0.31      0.074  | OI    |       |       |       |     0.34
 3.583    0.56    0.32      0.075  | OI    |       |       |       |     0.34
 3.667    0.56    0.33      0.077  | OI    |       |       |       |     0.35
 3.750    0.56    0.33      0.079  | OI    |       |       |       |     0.36
 3.833    0.61    0.34      0.080  | O I   |       |       |       |     0.37
 3.917    0.66    0.35      0.082  | O I   |       |       |       |     0.37
 4.000    0.66    0.36      0.084  | O I   |       |       |       |     0.38
 4.083    0.67    0.37      0.087  | O I   |       |       |       |     0.39
 4.167    0.67    0.37      0.089  | O I   |       |       |       |     0.40
 4.250    0.67    0.38      0.091  | O I   |       |       |       |     0.41
 4.333    0.72    0.39      0.093  | O  I  |       |       |       |     0.42
 4.417    0.77    0.40      0.095  | O  I  |       |       |       |     0.43
 4.500    0.77    0.41      0.098  | O  I  |       |       |       |     0.44
 4.583    0.78    0.42      0.100  | O  I  |       |       |       |     0.45
 4.667    0.78    0.43      0.102  |  O I  |       |       |       |     0.47
 4.750    0.78    0.44      0.105  |  O I  |       |       |       |     0.48
 4.833    0.83    0.45      0.107  |  O I  |       |       |       |     0.49
 4.917    0.88    0.46      0.110  |  O  I |       |       |       |     0.50
                                      Page 2
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                                               A100DET
           5.000    0.89    0.46      0.113  |  O  I |       |       |       |     0.51
           5.083    0.78    0.46      0.115  |  O I  |       |       |       |     0.52
           5.167    0.69    0.46      0.117  |  OI   |       |       |       |     0.53
           5.250    0.67    0.46      0.119  |  OI   |       |       |       |     0.53
           5.333    0.72    0.46      0.120  |  O I  |       |       |       |     0.54
           5.417    0.77    0.46      0.122  |  O I  |       |       |       |     0.55
           5.500    0.77    0.46      0.124  |  O I  |       |       |       |     0.56
           5.583    0.83    0.46      0.127  |  O I  |       |       |       |     0.56
           5.667    0.88    0.46      0.129  |  O  I |       |       |       |     0.57
           5.750    0.89    0.46      0.132  |  O  I |       |       |       |     0.59
           5.833    0.89    0.46      0.135  |  O  I |       |       |       |     0.60
           5.917    0.89    0.46      0.138  |  O  I |       |       |       |     0.61
           6.000    0.89    0.46      0.141  |  O  I |       |       |       |     0.62
           6.083    0.94    0.46      0.144  |  O  I |       |       |       |     0.63
           6.167    0.99    0.46      0.148  |  O  I |       |       |       |     0.64
           6.250    1.00    0.46      0.151  |  O  I |       |       |       |     0.66
           6.333    1.00    0.46      0.155  |  O   I|       |       |       |     0.67
           6.417    1.00    0.46      0.159  |  O   I|       |       |       |     0.69
           6.500    1.00    0.46      0.162  |  O   I|       |       |       |     0.70
           6.583    1.06    0.46      0.166  |  O   I|       |       |       |     0.72
           6.667    1.10    0.46      0.170  |  O   I|       |       |       |     0.73
           6.750    1.11    0.46      0.175  |  O   I|       |       |       |     0.75
           6.833    1.11    0.46      0.179  |  O   I|       |       |       |     0.77
           6.917    1.11    0.46      0.184  |  O   I|       |       |       |     0.78
           7.000    1.11    0.46      0.188  |  O   I|       |       |       |     0.80
           7.083    1.11    0.46      0.193  |  O   I|       |       |       |     0.82
           7.167    1.11    0.46      0.197  |  O   I|       |       |       |     0.84
           7.250    1.11    0.46      0.202  |  O   I|       |       |       |     0.85
           7.333    1.17    0.46      0.206  |  O    I       |       |       |     0.87
           7.417    1.21    0.46      0.211  |  O    I       |       |       |     0.89
           7.500    1.22    0.46      0.216  |  O    I       |       |       |     0.91
           7.583    1.28    0.46      0.222  |  O    I       |       |       |     0.93
           7.667    1.32    0.46      0.228  |  O    |I      |       |       |     0.95
           7.750    1.33    0.46      0.234  |  O    |I      |       |       |     0.98
           7.833    1.39    0.46      0.240  |  O    |I      |       |       |     1.00
           7.917    1.43    0.46      0.246  |  O    | I     |       |       |     1.02
           8.000    1.44    0.46      0.253  |  O    | I     |       |       |     1.04
           8.083    1.55    0.46      0.260  |  O    | I     |       |       |     1.07
           8.167    1.64    0.46      0.268  |  O    |  I    |       |       |     1.09
           8.250    1.66    0.46      0.276  |  O    |  I    |       |       |     1.12
           8.333    1.67    0.46      0.284  |  O    |  I    |       |       |     1.15
           8.417    1.67    0.46      0.293  |  O    |  I    |       |       |     1.18
           8.500    1.67    0.46      0.301  |  O    |  I    |       |       |     1.20
           8.583    1.72    0.46      0.309  |  O    |   I   |       |       |     1.23
           8.667    1.77    0.46      0.318  |  O    |   I   |       |       |     1.26
           8.750    1.77    0.46      0.327  |  O    |   I   |       |       |     1.29
           8.833    1.83    0.46      0.336  |  O    |   I   |       |       |     1.32
           8.917    1.88    0.46      0.346  |  O    |    I  |       |       |     1.35
           9.000    1.89    0.46      0.356  |  O    |    I  |       |       |     1.39
           9.083    2.00    0.46      0.366  |  O    |     I |       |       |     1.42
           9.167    2.09    0.46      0.377  |  O    |     I |       |       |     1.46
           9.250    2.11    0.46      0.388  |  O    |     I |       |       |     1.49
           9.333    2.17    0.46      0.400  |  O    |      I|       |       |     1.53
           9.417    2.21    0.46      0.411  |  O    |      I|       |       |     1.57
           9.500    2.22    0.46      0.423  |  O    |      I|       |       |     1.60
           9.583    2.28    0.46      0.436  |  O    |      I|       |       |     1.64
           9.667    2.32    0.46      0.448  |  O    |       I       |       |     1.68
           9.750    2.33    0.46      0.461  |  O    |       I       |       |     1.72
           9.833    2.39    0.46      0.474  |  O    |       I       |       |     1.76
           9.917    2.43    0.46      0.488  |  O    |       |I      |       |     1.81
          10.000    2.44    0.46      0.501  |  O    |       |I      |       |     1.85
          10.083    2.06    0.46      0.514  |  O    |     I |       |       |     1.89
          10.167    1.74    0.46      0.523  |  O    |   I   |       |       |     1.92
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                                     A100DET
10.250    1.68    0.46      0.532  |  O    |  I    |       |       |     1.94
10.333    1.67    0.46      0.540  |  O    |  I    |       |       |     1.97
10.417    1.67    0.46      0.549  |  O    |  I    |       |       |     2.00
10.500    1.67    0.62      0.556  |   O   |  I    |       |       |     2.02
10.583    1.94    0.81      0.564  |    O  |    I  |       |       |     2.04
10.667    2.17    1.01      0.572  |      O|      I|       |       |     2.06
10.750    2.21    1.20      0.579  |       O      I|       |       |     2.09
10.833    2.22    1.36      0.586  |       |O     I|       |       |     2.10
10.917    2.22    1.50      0.591  |       | O    I|       |       |     2.12
11.000    2.22    1.61      0.596  |       |  O   I|       |       |     2.13
11.083    2.17    1.71      0.599  |       |  O   I|       |       |     2.15
11.167    2.12    1.78      0.602  |       |   O I |       |       |     2.15
11.250    2.11    1.83      0.604  |       |   O I |       |       |     2.16
11.333    2.11    1.88      0.606  |       |    OI |       |       |     2.16
11.417    2.11    1.91      0.608  |       |    OI |       |       |     2.17
11.500    2.11    1.94      0.609  |       |    OI |       |       |     2.17
11.583    2.00    1.96      0.610  |       |    OI |       |       |     2.18
11.667    1.91    1.96      0.609  |       |    O  |       |       |     2.17
11.750    1.89    1.95      0.609  |       |    O  |       |       |     2.17
11.833    1.94    1.95      0.609  |       |    O  |       |       |     2.17
11.917    1.99    1.95      0.609  |       |    O  |       |       |     2.17
12.000    2.00    1.96      0.609  |       |    OI |       |       |     2.17
12.083    2.39    1.99      0.611  |       |    O  I       |       |     2.18
12.167    2.70    2.08      0.614  |       |     O | I     |       |     2.19
12.250    2.76    2.19      0.618  |       |      O|  I    |       |     2.20
12.333    2.83    2.28      0.622  |       |       O  I    |       |     2.21
12.417    2.88    2.37      0.626  |       |       O   I   |       |     2.22
12.500    2.89    2.45      0.629  |       |       |O  I   |       |     2.23
12.583    3.09    2.54      0.632  |       |       |O   I  |       |     2.24
12.667    3.25    2.64      0.636  |       |       | O   I |       |     2.25
12.750    3.29    2.74      0.640  |       |       |  O   I|       |     2.27
12.833    3.41    2.84      0.644  |       |       |  O   I|       |     2.28
12.917    3.50    2.94      0.648  |       |       |   O   I       |     2.29
13.000    3.52    3.03      0.652  |       |       |    O  I       |     2.30
13.083    4.02    3.15      0.657  |       |       |     O |   I   |     2.31
13.167    4.43    3.32      0.663  |       |       |      O|      I|     2.33
13.250    4.51    3.50      0.671  |       |       |       O      I|     2.36
13.333    4.54    3.67      0.677  |       |       |       |O     I|     2.37
13.417    4.55    3.81      0.683  |       |       |       | O    I|     2.39
13.500    4.56    3.93      0.688  |       |       |       |  O    I     2.40
13.583    3.56    3.95      0.688  |       |       |       I  O    |     2.41
13.667    2.75    3.82      0.683  |       |       |  I    | O     |     2.39
13.750    2.60    3.64      0.676  |       |       | I     |O      |     2.37
13.833    2.55    3.47      0.669  |       |       |I      O       |     2.35
13.917    2.55    3.32      0.664  |       |       |I     O|       |     2.33
14.000    2.55    3.20      0.659  |       |       |I    O |       |     2.32
14.083    2.92    3.13      0.656  |       |       |   IO  |       |     2.31
14.167    3.22    3.12      0.655  |       |       |    OI |       |     2.31
14.250    3.28    3.14      0.656  |       |       |     O |       |     2.31
14.333    3.21    3.15      0.657  |       |       |     O |       |     2.31
14.417    3.14    3.16      0.657  |       |       |     O |       |     2.31
14.500    3.13    3.15      0.657  |       |       |    IO |       |     2.31
14.583    3.14    3.15      0.657  |       |       |     O |       |     2.31
14.667    3.15    3.15      0.657  |       |       |     O |       |     2.31
14.750    3.16    3.15      0.657  |       |       |     O |       |     2.31
14.833    3.07    3.15      0.657  |       |       |    IO |       |     2.31
14.917    3.00    3.13      0.656  |       |       |    O  |       |     2.31
15.000    3.00    3.11      0.655  |       |       |    O  |       |     2.31
15.083    2.91    3.08      0.654  |       |       |   IO  |       |     2.31
15.167    2.84    3.05      0.653  |       |       |  I O  |       |     2.30
15.250    2.83    3.02      0.651  |       |       |  I O  |       |     2.30
15.333    2.74    2.98      0.650  |       |       |  IO   |       |     2.29
15.417    2.67    2.94      0.648  |       |       | I O   |       |     2.29
                                      Page 4
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Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

A100DET

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15.500    2.67    2.89      0.647  |       |       | I O   |       |     2.28
15.583    2.39    2.83      0.644  |       |       I  O    |       |     2.28
15.667    2.16    2.75      0.641  |       |      I|  O    |       |     2.27
15.750    2.12    2.65      0.637  |       |     I | O     |       |     2.26
15.833    2.11    2.56      0.633  |       |     I |O      |       |     2.25
15.917    2.11    2.49      0.631  |       |     I |O      |       |     2.24
16.000    2.11    2.43      0.628  |       |     I |O      |       |     2.23
16.083    1.28    2.31      0.624  |       I       O       |       |     2.22
16.167    0.60    2.10      0.615  |   I   |     O |       |       |     2.19
16.250    0.48    1.85      0.605  |  I    |   O   |       |       |     2.16
16.333    0.44    1.63      0.596  |  I    |  O    |       |       |     2.14
16.417    0.44    1.44      0.589  |  I    | O     |       |       |     2.11
16.500    0.44    1.28      0.582  |  I    O       |       |       |     2.10
16.583    0.39    1.14      0.577  | I     O       |       |       |     2.08
16.667    0.34    1.02      0.572  | I    O|       |       |       |     2.06
16.750    0.34    0.91      0.568  | I   O |       |       |       |     2.05
16.833    0.33    0.82      0.564  | I  O  |       |       |       |     2.04
16.917    0.33    0.74      0.561  | I  O  |       |       |       |     2.03
17.000    0.33    0.68      0.558  | I O   |       |       |       |     2.02
17.083    0.44    0.63      0.557  |  IO   |       |       |       |     2.02
17.167    0.53    0.61      0.556  |  IO   |       |       |       |     2.02
17.250    0.55    0.60      0.555  |  IO   |       |       |       |     2.02
17.333    0.56    0.59      0.555  |  IO   |       |       |       |     2.01
17.417    0.56    0.58      0.555  |  IO   |       |       |       |     2.01
17.500    0.56    0.58      0.555  |  IO   |       |       |       |     2.01
17.583    0.56    0.58      0.554  |  IO   |       |       |       |     2.01
17.667    0.56    0.57      0.554  |  IO   |       |       |       |     2.01
17.750    0.56    0.57      0.554  |  O    |       |       |       |     2.01
17.833    0.50    0.56      0.554  |  O    |       |       |       |     2.01
17.917    0.45    0.55      0.553  |  O    |       |       |       |     2.01
18.000    0.45    0.53      0.553  |  O    |       |       |       |     2.01
18.083    0.44    0.52      0.552  |  O    |       |       |       |     2.01
18.167    0.44    0.51      0.552  |  O    |       |       |       |     2.01
18.250    0.44    0.50      0.551  |  O    |       |       |       |     2.00
18.333    0.44    0.49      0.551  |  O    |       |       |       |     2.00
18.417    0.44    0.48      0.551  |  O    |       |       |       |     2.00
18.500    0.44    0.48      0.550  |  O    |       |       |       |     2.00
18.583    0.39    0.47      0.550  | IO    |       |       |       |     2.00
18.667    0.34    0.46      0.549  | IO    |       |       |       |     2.00
18.750    0.34    0.46      0.549  | IO    |       |       |       |     2.00
18.833    0.28    0.46      0.547  |I O    |       |       |       |     1.99
18.917    0.23    0.46      0.546  |I O    |       |       |       |     1.99
19.000    0.22    0.46      0.544  |I O    |       |       |       |     1.98
19.083    0.28    0.46      0.543  |I O    |       |       |       |     1.98
19.167    0.32    0.46      0.542  | IO    |       |       |       |     1.97
19.250    0.33    0.46      0.541  | IO    |       |       |       |     1.97
19.333    0.39    0.46      0.540  | IO    |       |       |       |     1.97
19.417    0.43    0.46      0.540  |  O    |       |       |       |     1.97
19.500    0.44    0.46      0.540  |  O    |       |       |       |     1.97
19.583    0.39    0.46      0.539  | IO    |       |       |       |     1.97
19.667    0.34    0.46      0.539  | IO    |       |       |       |     1.96
19.750    0.34    0.46      0.538  | IO    |       |       |       |     1.96
19.833    0.28    0.46      0.537  |I O    |       |       |       |     1.96
19.917    0.23    0.46      0.535  |I O    |       |       |       |     1.95
20.000    0.22    0.46      0.534  |I O    |       |       |       |     1.95
20.083    0.28    0.46      0.532  |I O    |       |       |       |     1.94
20.167    0.32    0.46      0.531  | IO    |       |       |       |     1.94
20.250    0.33    0.46      0.530  | IO    |       |       |       |     1.94
20.333    0.33    0.46      0.529  | IO    |       |       |       |     1.93
20.417    0.33    0.46      0.528  | IO    |       |       |       |     1.93
20.500    0.33    0.46      0.527  | IO    |       |       |       |     1.93
20.583    0.33    0.46      0.526  | IO    |       |       |       |     1.93
20.667    0.33    0.46      0.526  | IO    |       |       |       |     1.92
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 20.750    0.33    0.46      0.525  | IO     |       |       |       |      1.92
 20.833    0.28    0.46      0.524  |I O     |       |       |       |      1.92
 20.917    0.23    0.46      0.522  |I O     |       |       |       |      1.91
 21.000    0.22    0.46      0.521  |I O     |       |       |       |      1.91
 21.083    0.28    0.46      0.519  |I O     |       |       |       |      1.90
 21.167    0.32    0.46      0.518  | IO     |       |       |       |      1.90
 21.250    0.33    0.46      0.517  | IO     |       |       |       |      1.90
 21.333    0.28    0.46      0.516  |I O     |       |       |       |      1.89
 21.417    0.23    0.46      0.514  |I O     |       |       |       |      1.89
 21.500    0.22    0.46      0.513  |I O     |       |       |       |      1.88
 21.583    0.28    0.46      0.511  |I O     |       |       |       |      1.88
 21.667    0.32    0.46      0.510  | IO     |       |       |       |      1.88
 21.750    0.33    0.46      0.509  | IO     |       |       |       |      1.87
 21.833    0.28    0.46      0.508  |I O     |       |       |       |      1.87
 21.917    0.23    0.46      0.507  |I O     |       |       |       |      1.86
 22.000    0.22    0.46      0.505  |I O     |       |       |       |      1.86
 22.083    0.28    0.46      0.504  |I O     |       |       |       |      1.86
 22.167    0.32    0.46      0.503  | IO     |       |       |       |      1.85
 22.250    0.33    0.46      0.502  | IO     |       |       |       |      1.85
 22.333    0.28    0.46      0.500  |I O     |       |       |       |      1.85
 22.417    0.23    0.46      0.499  |I O     |       |       |       |      1.84
 22.500    0.22    0.46      0.497  |I O     |       |       |       |      1.84
 22.583    0.22    0.46      0.496  |I O     |       |       |       |      1.83
 22.667    0.22    0.46      0.494  |I O     |       |       |       |      1.83
 22.750    0.22    0.46      0.492  |I O     |       |       |       |      1.82
 22.833    0.22    0.46      0.491  |I O     |       |       |       |      1.81
 22.917    0.22    0.46      0.489  |I O     |       |       |       |      1.81
 23.000    0.22    0.46      0.487  |I O     |       |       |       |      1.80
 23.083    0.22    0.46      0.486  |I O     |       |       |       |      1.80
 23.167    0.22    0.46      0.484  |I O     |       |       |       |      1.79
 23.250    0.22    0.46      0.482  |I O     |       |       |       |      1.79
 23.333    0.22    0.46      0.481  |I O     |       |       |       |      1.78
 23.417    0.22    0.46      0.479  |I O     |       |       |       |      1.78
 23.500    0.22    0.46      0.477  |I O     |       |       |       |      1.77
 23.583    0.22    0.46      0.476  |I O     |       |       |       |      1.77
 23.667    0.22    0.46      0.474  |I O     |       |       |       |      1.76
 23.750    0.22    0.46      0.472  |I O     |       |       |       |      1.76
 23.833    0.22    0.46      0.471  |I O     |       |       |       |      1.75
 23.917    0.22    0.46      0.469  |I O     |       |       |       |      1.75
 24.000    0.22    0.46      0.467  |I O     |       |       |       |      1.74
 24.083    0.11    0.46      0.465  I   O    |       |       |       |      1.74
 24.167    0.02    0.46      0.463  I   O    |       |       |       |      1.73
 24.250    0.01    0.46      0.460  I   O    |       |       |       |      1.72
 24.333    0.00    0.46      0.456  I   O    |       |       |       |      1.71
 24.417    0.00    0.46      0.453  I   O    |       |       |       |      1.70
 24.500    0.00    0.46      0.450  I   O    |       |       |       |      1.69
 24.583    0.00    0.46      0.447  I   O    |       |       |       |      1.68
 24.667    0.00    0.46      0.444  I   O    |       |       |       |      1.67
 24.750    0.00    0.46      0.440  I   O    |       |       |       |      1.66
 24.833    0.00    0.46      0.437  I   O    |       |       |       |      1.65
 24.917    0.00    0.46      0.434  I   O    |       |       |       |      1.64
 25.000    0.00    0.46      0.431  I   O    |       |       |       |      1.63
 25.083    0.00    0.46      0.428  I   O    |       |       |       |      1.62
 25.167    0.00    0.46      0.424  I   O    |       |       |       |      1.61
 25.250    0.00    0.46      0.421  I   O    |       |       |       |      1.60
 25.333    0.00    0.46      0.418  I   O    |       |       |       |      1.59
 25.417    0.00    0.46      0.415  I   O    |       |       |       |      1.58
 25.500    0.00    0.46      0.412  I   O    |       |       |       |      1.57
 25.583    0.00    0.46      0.408  I   O    |       |       |       |      1.56
 25.667    0.00    0.46      0.405  I   O    |       |       |       |      1.55
 25.750    0.00    0.46      0.402  I   O    |       |       |       |      1.54
 25.833    0.00    0.46      0.399  I   O    |       |       |       |      1.53
 25.917    0.00    0.46      0.396  I   O    |       |       |       |      1.52
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26.000	0.00	0.46	0.392	I	O	|	|	|	|	1.51
26.083	0.00	0.46	0.389	I	O	|	|	|	|	1.50
26.167	0.00	0.46	0.386	I	O	|	|	|	|	1.49
26.250	0.00	0.46	0.383	I	O	|	|	|	|	1.48
26.333	0.00	0.46	0.380	I	O	|	|	|	|	1.47
26.417	0.00	0.46	0.376	I	O	|	|	|	|	1.45
26.500	0.00	0.46	0.373	I	O	|	|	|	|	1.44
26.583	0.00	0.46	0.370	I	O	|	|	|	|	1.43
26.667	0.00	0.46	0.367	I	O	|	|	|	|	1.42
26.750	0.00	0.46	0.364	I	O	|	|	|	|	1.41
26.833	0.00	0.46	0.361	I	O	|	|	|	|	1.40
26.917	0.00	0.46	0.357	I	O	|	|	|	|	1.39
27.000	0.00	0.46	0.354	I	O	|	|	|	|	1.38
27.083	0.00	0.46	0.351	I	O	|	|	|	|	1.37
27.167	0.00	0.46	0.348	I	O	|	|	|	|	1.36
27.250	0.00	0.46	0.345	I	O	|	|	|	|	1.35
27.333	0.00	0.46	0.341	I	O	|	|	|	|	1.34
27.417	0.00	0.46	0.338	I	O	|	|	|	|	1.33
27.500	0.00	0.46	0.335	I	O	|	|	|	|	1.32
27.583	0.00	0.46	0.332	I	O	|	|	|	|	1.31
27.667	0.00	0.46	0.329	I	O	|	|	|	|	1.30
27.750	0.00	0.46	0.325	I	O	|	|	|	|	1.28
27.833	0.00	0.46	0.322	I	O	|	|	|	|	1.27
27.917	0.00	0.46	0.319	I	O	|	|	|	|	1.26
28.000	0.00	0.46	0.316	I	O	|	|	|	|	1.25
28.083	0.00	0.46	0.313	I	O	|	|	|	|	1.24
28.167	0.00	0.46	0.309	I	O	|	|	|	|	1.23
28.250	0.00	0.46	0.306	I	O	|	|	|	|	1.22
28.333	0.00	0.46	0.303	I	O	|	|	|	|	1.21
28.417	0.00	0.46	0.300	I	O	|	|	|	|	1.20
28.500	0.00	0.46	0.297	I	O	|	|	|	|	1.19
28.583	0.00	0.46	0.293	I	O	|	|	|	|	1.18
28.667	0.00	0.46	0.290	I	O	|	|	|	|	1.17
28.750	0.00	0.46	0.287	I	O	|	|	|	|	1.16
28.833	0.00	0.46	0.284	I	O	|	|	|	|	1.15
28.917	0.00	0.46	0.281	I	O	|	|	|	|	1.14
29.000	0.00	0.46	0.277	I	O	|	|	|	|	1.12
29.083	0.00	0.46	0.274	I	O	|	|	|	|	1.11
29.167	0.00	0.46	0.271	I	O	|	|	|	|	1.10
29.250	0.00	0.46	0.268	I	O	|	|	|	|	1.09
29.333	0.00	0.46	0.265	I	O	|	|	|	|	1.08
29.417	0.00	0.46	0.261	I	O	|	|	|	|	1.07
29.500	0.00	0.46	0.258	I	O	|	|	|	|	1.06
29.583	0.00	0.46	0.255	I	O	|	|	|	|	1.05
29.667	0.00	0.46	0.252	I	O	|	|	|	|	1.04
29.750	0.00	0.46	0.249	I	O	|	|	|	|	1.03
29.833	0.00	0.46	0.245	I	O	|	|	|	|	1.02
29.917	0.00	0.46	0.242	I	O	|	|	|	|	1.01
30.000	0.00	0.46	0.239	I	O	|	|	|	|	1.00
30.083	0.00	0.46	0.236	I	O	|	|	|	|	0.98
30.167	0.00	0.46	0.233	I	O	|	|	|	|	0.97
30.250	0.00	0.46	0.229	I	O	|	|	|	|	0.96
30.333	0.00	0.46	0.226	I	O	|	|	|	|	0.95
30.417	0.00	0.46	0.223	I	O	|	|	|	|	0.94
30.500	0.00	0.46	0.220	I	O	|	|	|	|	0.92
30.583	0.00	0.46	0.217	I	O	|	|	|	|	0.91
30.667	0.00	0.46	0.214	I	O	|	|	|	|	0.90
30.750	0.00	0.46	0.210	I	O	|	|	|	|	0.89
30.833	0.00	0.46	0.207	I	O	|	|	|	|	0.87
30.917	0.00	0.46	0.204	I	O	|	|	|	|	0.86
31.000	0.00	0.46	0.201	I	O	|	|	|	|	0.85
31.083	0.00	0.46	0.198	I	O	|	|	|	|	0.84
31.167	0.00	0.46	0.194	I	O	|	|	|	|	0.82

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31.250   0.00   0.46   0.191  I  O    |      |      |      |     0.81
31.333   0.00   0.46   0.188  I  O    |      |      |      |     0.80
31.417   0.00   0.46   0.185  I  O    |      |      |      |     0.79
31.500   0.00   0.46   0.182  I  O    |      |      |      |     0.78
31.583   0.00   0.46   0.178  I  O    |      |      |      |     0.76
31.667   0.00   0.46   0.175  I  O    |      |      |      |     0.75
31.750   0.00   0.46   0.172  I  O    |      |      |      |     0.74
31.833   0.00   0.46   0.169  I  O    |      |      |      |     0.73
31.917   0.00   0.46   0.166  I  O    |      |      |      |     0.71
32.000   0.00   0.46   0.162  I  O    |      |      |      |     0.70
32.083   0.00   0.46   0.159  I  O    |      |      |      |     0.69
32.167   0.00   0.46   0.156  I  O    |      |      |      |     0.68
32.250   0.00   0.46   0.153  I  O    |      |      |      |     0.66
32.333   0.00   0.46   0.150  I  O    |      |      |      |     0.65
32.417   0.00   0.46   0.146  I  O    |      |      |      |     0.64
32.500   0.00   0.46   0.143  I  O    |      |      |      |     0.63
32.583   0.00   0.46   0.140  I  O    |      |      |      |     0.62
32.667   0.00   0.46   0.137  I  O    |      |      |      |     0.60
32.750   0.00   0.46   0.134  I  O    |      |      |      |     0.59
32.833   0.00   0.46   0.130  I  O    |      |      |      |     0.58
32.917   0.00   0.46   0.127  I  O    |      |      |      |     0.57
33.000   0.00   0.46   0.124  I  O    |      |      |      |     0.55
33.083   0.00   0.46   0.121  I  O    |      |      |      |     0.54
33.167   0.00   0.46   0.118  I  O    |      |      |      |     0.53
33.250   0.00   0.46   0.114  I  O    |      |      |      |     0.52
33.333   0.00   0.46   0.111  I  O    |      |      |      |     0.50
33.417   0.00   0.46   0.108  I  O    |      |      |      |     0.49
33.500   0.00   0.44   0.105  I  O    |      |      |      |     0.48
33.583   0.00   0.43   0.102  I  O    |      |      |      |     0.46
33.667   0.00   0.42   0.099  I O     |      |      |      |     0.45
33.750   0.00   0.41   0.096  I O     |      |      |      |     0.44
33.833   0.00   0.39   0.093  I O     |      |      |      |     0.42
33.917   0.00   0.38   0.091  I O     |      |      |      |     0.41
34.000   0.00   0.37   0.088  I O     |      |      |      |     0.40
34.083   0.00   0.36   0.086  I O     |      |      |      |     0.39
34.167   0.00   0.35   0.083  I O     |      |      |      |     0.38
34.250   0.00   0.34   0.081  I O     |      |      |      |     0.37
34.333   0.00   0.33   0.079  I O     |      |      |      |     0.36
34.417   0.00   0.32   0.076  I O     |      |      |      |     0.35
34.500   0.00   0.31   0.074  I O     |      |      |      |     0.34
34.583   0.00   0.30   0.072  I O     |      |      |      |     0.33
34.667   0.00   0.29   0.070  I O     |      |      |      |     0.32
34.750   0.00   0.29   0.068  I O     |      |      |      |     0.31
34.833   0.00   0.28   0.066  IO      |      |      |      |     0.30
34.917   0.00   0.27   0.064  IO      |      |      |      |     0.29
35.000   0.00   0.26   0.062  IO      |      |      |      |     0.28
35.083   0.00   0.26   0.060  IO      |      |      |      |     0.27
35.167   0.00   0.25   0.059  IO      |      |      |      |     0.27
35.250   0.00   0.24   0.057  IO      |      |      |      |     0.26
35.333   0.00   0.23   0.055  IO      |      |      |      |     0.25
35.417   0.00   0.23   0.054  IO      |      |      |      |     0.24
35.500   0.00   0.22   0.052  IO      |      |      |      |     0.24
35.583   0.00   0.21   0.051  IO      |      |      |      |     0.23
35.667   0.00   0.21   0.049  IO      |      |      |      |     0.22
35.750   0.00   0.20   0.048  IO      |      |      |      |     0.22
35.833   0.00   0.20   0.047  IO      |      |      |      |     0.21
35.917   0.00   0.19   0.045  IO      |      |      |      |     0.21
36.000   0.00   0.19   0.044  IO      |      |      |      |     0.20
36.083   0.00   0.18   0.043  IO      |      |      |      |     0.19
36.167   0.00   0.17   0.041  IO      |      |      |      |     0.19
36.250   0.00   0.17   0.040  IO      |      |      |      |     0.18
36.333   0.00   0.16   0.039  IO      |      |      |      |     0.18
36.417   0.00   0.16   0.038  IO      |      |      |      |     0.17
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36.500	0.00	0.16	0.037	IO	0.17
36.583	0.00	0.15	0.036	IO	0.16
36.667	0.00	0.15	0.035	IO	0.16
36.750	0.00	0.14	0.034	IO	0.15
36.833	0.00	0.14	0.033	O	0.15
36.917	0.00	0.13	0.032	O	0.15
37.000	0.00	0.13	0.031	O	0.14
37.083	0.00	0.13	0.030	O	0.14
37.167	0.00	0.12	0.029	O	0.13
37.250	0.00	0.12	0.028	O	0.13
37.333	0.00	0.12	0.028	O	0.13
37.417	0.00	0.11	0.027	O	0.12
37.500	0.00	0.11	0.026	O	0.12
37.583	0.00	0.11	0.025	O	0.11
37.667	0.00	0.10	0.025	O	0.11
37.750	0.00	0.10	0.024	O	0.11
37.833	0.00	0.10	0.023	O	0.11
37.917	0.00	0.09	0.023	O	0.10
38.000	0.00	0.09	0.022	O	0.10
38.083	0.00	0.09	0.021	O	0.10
38.167	0.00	0.09	0.021	O	0.09
38.250	0.00	0.08	0.020	O	0.09
38.333	0.00	0.08	0.019	O	0.09
38.417	0.00	0.08	0.019	O	0.09
38.500	0.00	0.08	0.018	O	0.08
38.583	0.00	0.08	0.018	O	0.08
38.667	0.00	0.07	0.017	O	0.08
38.750	0.00	0.07	0.017	O	0.08
38.833	0.00	0.07	0.016	O	0.07
38.917	0.00	0.07	0.016	O	0.07
39.000	0.00	0.07	0.015	O	0.07
39.083	0.00	0.06	0.015	O	0.07
39.167	0.00	0.06	0.015	O	0.07
39.250	0.00	0.06	0.014	O	0.06
39.333	0.00	0.06	0.014	O	0.06
39.417	0.00	0.06	0.013	O	0.06
39.500	0.00	0.05	0.013	O	0.06
39.583	0.00	0.05	0.013	O	0.06
39.667	0.00	0.05	0.012	O	0.06
39.750	0.00	0.05	0.012	O	0.05
39.833	0.00	0.05	0.012	O	0.05
39.917	0.00	0.05	0.011	O	0.05
40.000	0.00	0.05	0.011	O	0.05
40.083	0.00	0.04	0.011	O	0.05
40.167	0.00	0.04	0.010	O	0.05
40.250	0.00	0.04	0.010	O	0.05
40.333	0.00	0.04	0.010	O	0.04
40.417	0.00	0.04	0.009	O	0.04
40.500	0.00	0.04	0.009	O	0.04
40.583	0.00	0.04	0.009	O	0.04
40.667	0.00	0.04	0.009	O	0.04
40.750	0.00	0.04	0.008	O	0.04
40.833	0.00	0.03	0.008	O	0.04
40.917	0.00	0.03	0.008	O	0.04
41.000	0.00	0.03	0.008	O	0.03
41.083	0.00	0.03	0.007	O	0.03
41.167	0.00	0.03	0.007	O	0.03
41.250	0.00	0.03	0.007	O	0.03
41.333	0.00	0.03	0.007	O	0.03
41.417	0.00	0.03	0.007	O	0.03
41.500	0.00	0.03	0.006	O	0.03
41.583	0.00	0.03	0.006	O	0.03
41.667	0.00	0.03	0.006	O	0.03

41.750	0.00	0.02	0.006	O	|	|	|	|	0.03
41.833	0.00	0.02	0.006	O	|	|	|	|	0.03
41.917	0.00	0.02	0.006	O	|	|	|	|	0.03
42.000	0.00	0.02	0.005	O	|	|	|	|	0.02
42.083	0.00	0.02	0.005	O	|	|	|	|	0.02
42.167	0.00	0.02	0.005	O	|	|	|	|	0.02
42.250	0.00	0.02	0.005	O	|	|	|	|	0.02
42.333	0.00	0.02	0.005	O	|	|	|	|	0.02
42.417	0.00	0.02	0.005	O	|	|	|	|	0.02
42.500	0.00	0.02	0.005	O	|	|	|	|	0.02
42.583	0.00	0.02	0.004	O	|	|	|	|	0.02
42.667	0.00	0.02	0.004	O	|	|	|	|	0.02
42.750	0.00	0.02	0.004	O	|	|	|	|	0.02
42.833	0.00	0.02	0.004	O	|	|	|	|	0.02
42.917	0.00	0.02	0.004	O	|	|	|	|	0.02
43.000	0.00	0.02	0.004	O	|	|	|	|	0.02
43.083	0.00	0.02	0.004	O	|	|	|	|	0.02
43.167	0.00	0.02	0.004	O	|	|	|	|	0.02
43.250	0.00	0.01	0.004	O	|	|	|	|	0.02
43.333	0.00	0.01	0.003	O	|	|	|	|	0.02
43.417	0.00	0.01	0.003	O	|	|	|	|	0.02
43.500	0.00	0.01	0.003	O	|	|	|	|	0.01
43.583	0.00	0.01	0.003	O	|	|	|	|	0.01
43.667	0.00	0.01	0.003	O	|	|	|	|	0.01
43.750	0.00	0.01	0.003	O	|	|	|	|	0.01
43.833	0.00	0.01	0.003	O	|	|	|	|	0.01
43.917	0.00	0.01	0.003	O	|	|	|	|	0.01
44.000	0.00	0.01	0.003	O	|	|	|	|	0.01
44.083	0.00	0.01	0.003	O	|	|	|	|	0.01
44.167	0.00	0.01	0.003	O	|	|	|	|	0.01
44.250	0.00	0.01	0.002	O	|	|	|	|	0.01
44.333	0.00	0.01	0.002	O	|	|	|	|	0.01
44.417	0.00	0.01	0.002	O	|	|	|	|	0.01
44.500	0.00	0.01	0.002	O	|	|	|	|	0.01
44.583	0.00	0.01	0.002	O	|	|	|	|	0.01
44.667	0.00	0.01	0.002	O	|	|	|	|	0.01
44.750	0.00	0.01	0.002	O	|	|	|	|	0.01
44.833	0.00	0.01	0.002	O	|	|	|	|	0.01
44.917	0.00	0.01	0.002	O	|	|	|	|	0.01
45.000	0.00	0.01	0.002	O	|	|	|	|	0.01
45.083	0.00	0.01	0.002	O	|	|	|	|	0.01
45.167	0.00	0.01	0.002	O	|	|	|	|	0.01
45.250	0.00	0.01	0.002	O	|	|	|	|	0.01
45.333	0.00	0.01	0.002	O	|	|	|	|	0.01
45.417	0.00	0.01	0.002	O	|	|	|	|	0.01
45.500	0.00	0.01	0.002	O	|	|	|	|	0.01
45.583	0.00	0.01	0.002	O	|	|	|	|	0.01
45.667	0.00	0.01	0.002	O	|	|	|	|	0.01
45.750	0.00	0.01	0.001	O	|	|	|	|	0.01
45.833	0.00	0.01	0.001	O	|	|	|	|	0.01
45.917	0.00	0.01	0.001	O	|	|	|	|	0.01
46.000	0.00	0.01	0.001	O	|	|	|	|	0.01
46.083	0.00	0.01	0.001	O	|	|	|	|	0.01
46.167	0.00	0.01	0.001	O	|	|	|	|	0.01
46.250	0.00	0.01	0.001	O	|	|	|	|	0.01
46.333	0.00	0.01	0.001	O	|	|	|	|	0.01
46.417	0.00	0.00	0.001	O	|	|	|	|	0.01
46.500	0.00	0.00	0.001	O	|	|	|	|	0.01
46.583	0.00	0.00	0.001	O	|	|	|	|	0.00
46.667	0.00	0.00	0.001	O	|	|	|	|	0.00
46.750	0.00	0.00	0.001	O	|	|	|	|	0.00
46.833	0.00	0.00	0.001	O	|	|	|	|	0.00
46.917	0.00	0.00	0.001	O	|	|	|	|	0.00

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47.000    0.00    0.00      0.001  O       |       |       |       |     0.00
47.083    0.00    0.00      0.001  O       |       |       |       |     0.00
47.167    0.00    0.00      0.001  O       |       |       |       |     0.00
47.250    0.00    0.00      0.001  O       |       |       |       |     0.00
47.333    0.00    0.00      0.001  O       |       |       |       |     0.00
47.417    0.00    0.00      0.001  O       |       |       |       |     0.00
47.500    0.00    0.00      0.001  O       |       |       |       |     0.00
47.583    0.00    0.00      0.001  O       |       |       |       |     0.00
47.667    0.00    0.00      0.001  O       |       |       |       |     0.00
47.750    0.00    0.00      0.001  O       |       |       |       |     0.00
47.833    0.00    0.00      0.001  O       |       |       |       |     0.00
47.917    0.00    0.00      0.001  O       |       |       |       |     0.00
48.000    0.00    0.00      0.001  O       |       |       |       |     0.00
48.083    0.00    0.00      0.001  O       |       |       |       |     0.00
48.167    0.00    0.00      0.001  O       |       |       |       |     0.00
48.250    0.00    0.00      0.001  O       |       |       |       |     0.00
48.333    0.00    0.00      0.001  O       |       |       |       |     0.00
48.417    0.00    0.00      0.001  O       |       |       |       |     0.00
48.500    0.00    0.00      0.001  O       |       |       |       |     0.00
48.583    0.00    0.00      0.001  O       |       |       |       |     0.00
48.667    0.00    0.00      0.001  O       |       |       |       |     0.00
48.750    0.00    0.00      0.001  O       |       |       |       |     0.00
48.833    0.00    0.00      0.001  O       |       |       |       |     0.00
48.917    0.00    0.00      0.000  O       |       |       |       |     0.00
49.000    0.00    0.00      0.000  O       |       |       |       |     0.00
49.083    0.00    0.00      0.000  O       |       |       |       |     0.00
49.167    0.00    0.00      0.000  O       |       |       |       |     0.00
49.250    0.00    0.00      0.000  O       |       |       |       |     0.00
49.333    0.00    0.00      0.000  O       |       |       |       |     0.00
49.417    0.00    0.00      0.000  O       |       |       |       |     0.00
49.500    0.00    0.00      0.000  O       |       |       |       |     0.00
49.583    0.00    0.00      0.000  O       |       |       |       |     0.00
49.667    0.00    0.00      0.000  O       |       |       |       |     0.00
49.750    0.00    0.00      0.000  O       |       |       |       |     0.00
49.833    0.00    0.00      0.000  O       |       |       |       |     0.00
49.917    0.00    0.00      0.000  O       |       |       |       |     0.00
50.000    0.00    0.00      0.000  O       |       |       |       |     0.00
50.083    0.00    0.00      0.000  O       |       |       |       |     0.00
50.167    0.00    0.00      0.000  O       |       |       |       |     0.00
50.250    0.00    0.00      0.000  O       |       |       |       |     0.00
50.333    0.00    0.00      0.000  O       |       |       |       |     0.00
50.417    0.00    0.00      0.000  O       |       |       |       |     0.00
50.500    0.00    0.00      0.000  O       |       |       |       |     0.00
50.583    0.00    0.00      0.000  O       |       |       |       |     0.00
50.667    0.00    0.00      0.000  O       |       |       |       |     0.00
50.750    0.00    0.00      0.000  O       |       |       |       |     0.00
50.833    0.00    0.00      0.000  O       |       |       |       |     0.00
50.917    0.00    0.00      0.000  O       |       |       |       |     0.00
51.000    0.00    0.00      0.000  O       |       |       |       |     0.00

       ****************************HYDROGRAPH DATA****************************
                       Number of intervals =   612
                       Time interval =    5.0 (Min.)
                       Maximum/Peak flow rate =        3.948 (CFS)
                       Total volume =       2.363 (Ac.Ft)
               Status of hydrographs being held in storage
                          Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
               Peak (CFS)      0.000     0.000     0.000     0.000     0.000
               Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
       ***********************************************************************

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BASIN B

100 YEAR

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                              PR24HR100YR

        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version 8.2
                Study date  09/07/16 File: PR24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6313

---------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



---------------------------------------------------------------------
--------------------------------------------------------------------
Drainage Area =       8.66(Ac.)  =      0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       8.66(Ac.)  =      0.014 Sq. Mi.
Length along longest watercourse =     951.00(Ft.)
Length along longest watercourse measured to centroid =     606.00(Ft.)
Length along longest watercourse =      0.180 Mi.
Length along longest watercourse measured to centroid =      0.115 Mi.
Difference in elevation =       9.50(Ft.)
Slope along watercourse =     52.7445 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.039 Hr.
Lag time =     2.33 Min.
25% of lag time =     0.58 Min.
40% of lag time =     0.93 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            1.72                  14.90

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        8.66            4.30                  37.26

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.720(In)
Area Averaged 100-Year Rainfall =    4.300(In)

Point rain (area averaged) =    4.300(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     8.665           53.00         0.560
 Total Area Entered =      8.66(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
53.0  53.0      0.541     0.560        0.269       1.000      0.269
                                                  Sum (F) =   0.269
Area averaged mean soil loss (F) (In/Hr) =  0.269
Minimum soil loss rate ((In/Hr)) =  0.134
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.452
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PR24HR100YR

Unit Hydrograph

VALLEY S-Curve

Unit Hydrograph Data

Unit time period	(hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	214.725	45.835	4.003
2	0.167	429.451	42.353	3.699
3	0.250	644.176	8.227	0.718
4	0.333	858.902	3.586	0.313
			Sum = 100.000	Sum= 8.733

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.034	(0.476)	0.016	0.019
2	0.17	0.07	0.034	(0.474)	0.016	0.019
3	0.25	0.07	0.034	(0.472)	0.016	0.019
4	0.33	0.10	0.052	(0.471)	0.023	0.028
5	0.42	0.10	0.052	(0.469)	0.023	0.028
6	0.50	0.10	0.052	(0.467)	0.023	0.028
7	0.58	0.10	0.052	(0.465)	0.023	0.028
8	0.67	0.10	0.052	(0.463)	0.023	0.028
9	0.75	0.10	0.052	(0.461)	0.023	0.028
10	0.83	0.13	0.069	(0.460)	0.031	0.038
11	0.92	0.13	0.069	(0.458)	0.031	0.038
12	1.00	0.13	0.069	(0.456)	0.031	0.038
13	1.08	0.10	0.052	(0.454)	0.023	0.028
14	1.17	0.10	0.052	(0.452)	0.023	0.028
15	1.25	0.10	0.052	(0.451)	0.023	0.028
16	1.33	0.10	0.052	(0.449)	0.023	0.028
17	1.42	0.10	0.052	(0.447)	0.023	0.028
18	1.50	0.10	0.052	(0.445)	0.023	0.028
19	1.58	0.10	0.052	(0.443)	0.023	0.028
20	1.67	0.10	0.052	(0.442)	0.023	0.028
21	1.75	0.10	0.052	(0.440)	0.023	0.028
22	1.83	0.13	0.069	(0.438)	0.031	0.038
23	1.92	0.13	0.069	(0.436)	0.031	0.038
24	2.00	0.13	0.069	(0.435)	0.031	0.038
25	2.08	0.13	0.069	(0.433)	0.031	0.038
26	2.17	0.13	0.069	(0.431)	0.031	0.038
27	2.25	0.13	0.069	(0.429)	0.031	0.038
28	2.33	0.13	0.069	(0.428)	0.031	0.038
29	2.42	0.13	0.069	(0.426)	0.031	0.038
30	2.50	0.13	0.069	(0.424)	0.031	0.038
31	2.58	0.17	0.086	(0.422)	0.039	0.047
32	2.67	0.17	0.086	(0.421)	0.039	0.047
33	2.75	0.17	0.086	(0.419)	0.039	0.047
34	2.83	0.17	0.086	(0.417)	0.039	0.047
35	2.92	0.17	0.086	(0.415)	0.039	0.047
36	3.00	0.17	0.086	(0.414)	0.039	0.047
37	3.08	0.17	0.086	(0.412)	0.039	0.047
38	3.17	0.17	0.086	(0.410)	0.039	0.047
39	3.25	0.17	0.086	(0.409)	0.039	0.047
40	3.33	0.17	0.086	(0.407)	0.039	0.047
41	3.42	0.17	0.086	(0.405)	0.039	0.047
42	3.50	0.17	0.086	(0.404)	0.039	0.047
43	3.58	0.17	0.086	(0.402)	0.039	0.047
44	3.67	0.17	0.086	(0.400)	0.039	0.047
45	3.75	0.17	0.086	(0.398)	0.039	0.047
46	3.83	0.20	0.103	(0.397)	0.047	0.057
47	3.92	0.20	0.103	(0.395)	0.047	0.057
48	4.00	0.20	0.103	(0.393)	0.047	0.057
49	4.08	0.20	0.103	(0.392)	0.047	0.057
50	4.17	0.20	0.103	(0.390)	0.047	0.057
51	4.25	0.20	0.103	(0.388)	0.047	0.057
52	4.33	0.23	0.120	(0.387)	0.054	0.066
53	4.42	0.23	0.120	(0.385)	0.054	0.066
54	4.50	0.23	0.120	(0.383)	0.054	0.066
55	4.58	0.23	0.120	(0.382)	0.054	0.066
56	4.67	0.23	0.120	(0.380)	0.054	0.066
57	4.75	0.23	0.120	(0.379)	0.054	0.066
58	4.83	0.27	0.138	(0.377)	0.062	0.075

59	4.92	0.27	0.138	(0.375)	0.062	0.075
60	5.00	0.27	0.138	(0.374)	0.062	0.075
61	5.08	0.20	0.103	(0.372)	0.047	0.057
62	5.17	0.20	0.103	(0.370)	0.047	0.057
63	5.25	0.20	0.103	(0.369)	0.047	0.057
64	5.33	0.23	0.120	(0.367)	0.054	0.066
65	5.42	0.23	0.120	(0.366)	0.054	0.066
66	5.50	0.23	0.120	(0.364)	0.054	0.066
67	5.58	0.27	0.138	(0.362)	0.062	0.075
68	5.67	0.27	0.138	(0.361)	0.062	0.075
69	5.75	0.27	0.138	(0.359)	0.062	0.075
70	5.83	0.27	0.138	(0.358)	0.062	0.075
71	5.92	0.27	0.138	(0.356)	0.062	0.075
72	6.00	0.27	0.138	(0.354)	0.062	0.075
73	6.08	0.30	0.155	(0.353)	0.070	0.085
74	6.17	0.30	0.155	(0.351)	0.070	0.085
75	6.25	0.30	0.155	(0.350)	0.070	0.085
76	6.33	0.30	0.155	(0.348)	0.070	0.085
77	6.42	0.30	0.155	(0.347)	0.070	0.085
78	6.50	0.30	0.155	(0.345)	0.070	0.085
79	6.58	0.33	0.172	(0.344)	0.078	0.094
80	6.67	0.33	0.172	(0.342)	0.078	0.094
81	6.75	0.33	0.172	(0.340)	0.078	0.094
82	6.83	0.33	0.172	(0.339)	0.078	0.094
83	6.92	0.33	0.172	(0.337)	0.078	0.094
84	7.00	0.33	0.172	(0.336)	0.078	0.094
85	7.08	0.33	0.172	(0.334)	0.078	0.094
86	7.17	0.33	0.172	(0.333)	0.078	0.094
87	7.25	0.33	0.172	(0.331)	0.078	0.094
88	7.33	0.37	0.189	(0.330)	0.086	0.104
89	7.42	0.37	0.189	(0.328)	0.086	0.104
90	7.50	0.37	0.189	(0.327)	0.086	0.104
91	7.58	0.40	0.206	(0.325)	0.093	0.113
92	7.67	0.40	0.206	(0.324)	0.093	0.113
93	7.75	0.40	0.206	(0.322)	0.093	0.113
94	7.83	0.43	0.224	(0.321)	0.101	0.123
95	7.92	0.43	0.224	(0.319)	0.101	0.123
96	8.00	0.43	0.224	(0.318)	0.101	0.123
97	8.08	0.50	0.258	(0.316)	0.117	0.141
98	8.17	0.50	0.258	(0.315)	0.117	0.141
99	8.25	0.50	0.258	(0.313)	0.117	0.141
100	8.33	0.50	0.258	(0.312)	0.117	0.141
101	8.42	0.50	0.258	(0.310)	0.117	0.141
102	8.50	0.50	0.258	(0.309)	0.117	0.141
103	8.58	0.53	0.275	(0.308)	0.124	0.151
104	8.67	0.53	0.275	(0.306)	0.124	0.151
105	8.75	0.53	0.275	(0.305)	0.124	0.151
106	8.83	0.57	0.292	(0.303)	0.132	0.160
107	8.92	0.57	0.292	(0.302)	0.132	0.160
108	9.00	0.57	0.292	(0.300)	0.132	0.160
109	9.08	0.63	0.327	(0.299)	0.148	0.179
110	9.17	0.63	0.327	(0.298)	0.148	0.179
111	9.25	0.63	0.327	(0.296)	0.148	0.179
112	9.33	0.67	0.344	(0.295)	0.155	0.189
113	9.42	0.67	0.344	(0.293)	0.155	0.189
114	9.50	0.67	0.344	(0.292)	0.155	0.189
115	9.58	0.70	0.361	(0.290)	0.163	0.198
116	9.67	0.70	0.361	(0.289)	0.163	0.198
117	9.75	0.70	0.361	(0.288)	0.163	0.198
118	9.83	0.73	0.378	(0.286)	0.171	0.207
119	9.92	0.73	0.378	(0.285)	0.171	0.207
120	10.00	0.73	0.378	(0.284)	0.171	0.207
121	10.08	0.50	0.258	(0.282)	0.117	0.141
122	10.17	0.50	0.258	(0.281)	0.117	0.141
123	10.25	0.50	0.258	(0.279)	0.117	0.141
124	10.33	0.50	0.258	(0.278)	0.117	0.141
125	10.42	0.50	0.258	(0.277)	0.117	0.141
126	10.50	0.50	0.258	(0.275)	0.117	0.141
127	10.58	0.67	0.344	(0.274)	0.155	0.189
128	10.67	0.67	0.344	(0.273)	0.155	0.189
129	10.75	0.67	0.344	(0.271)	0.155	0.189
130	10.83	0.67	0.344	(0.270)	0.155	0.189
131	10.92	0.67	0.344	(0.269)	0.155	0.189
132	11.00	0.67	0.344	(0.267)	0.155	0.189
133	11.08	0.63	0.327	(0.266)	0.148	0.179
134	11.17	0.63	0.327	(0.265)	0.148	0.179
135	11.25	0.63	0.327	(0.263)	0.148	0.179
136	11.33	0.63	0.327	(0.262)	0.148	0.179
137	11.42	0.63	0.327	(0.261)	0.148	0.179

138	11.50	0.63	0.327	(0.260)	0.148	0.179
139	11.58	0.57	0.292	(0.258)	0.132	0.160
140	11.67	0.57	0.292	(0.257)	0.132	0.160
141	11.75	0.57	0.292	(0.256)	0.132	0.160
142	11.83	0.60	0.310	(0.254)	0.140	0.170
143	11.92	0.60	0.310	(0.253)	0.140	0.170
144	12.00	0.60	0.310	(0.252)	0.140	0.170
145	12.08	0.83	0.430	(0.251)	0.194	0.236
146	12.17	0.83	0.430	(0.249)	0.194	0.236
147	12.25	0.83	0.430	(0.248)	0.194	0.236
148	12.33	0.87	0.447	(0.247)	0.202	0.245
149	12.42	0.87	0.447	(0.246)	0.202	0.245
150	12.50	0.87	0.447	(0.244)	0.202	0.245
151	12.58	0.93	0.482	(0.243)	0.218	0.264
152	12.67	0.93	0.482	(0.242)	0.218	0.264
153	12.75	0.93	0.482	(0.241)	0.218	0.264
154	12.83	0.97	0.499	(0.240)	0.225	0.273
155	12.92	0.97	0.499	(0.238)	0.225	0.273
156	13.00	0.97	0.499	(0.237)	0.225	0.273
157	13.08	1.13	0.585	0.236	(0.264)	0.349
158	13.17	1.13	0.585	0.235	(0.264)	0.350
159	13.25	1.13	0.585	0.234	(0.264)	0.351
160	13.33	1.13	0.585	0.232	(0.264)	0.352
161	13.42	1.13	0.585	0.231	(0.264)	0.354
162	13.50	1.13	0.585	0.230	(0.264)	0.355
163	13.58	0.77	0.396	(0.229)	0.179	0.217
164	13.67	0.77	0.396	(0.228)	0.179	0.217
165	13.75	0.77	0.396	(0.227)	0.179	0.217
166	13.83	0.77	0.396	(0.225)	0.179	0.217
167	13.92	0.77	0.396	(0.224)	0.179	0.217
168	14.00	0.77	0.396	(0.223)	0.179	0.217
169	14.08	0.90	0.464	(0.222)	0.210	0.254
170	14.17	0.90	0.464	(0.221)	0.210	0.254
171	14.25	0.90	0.464	(0.220)	0.210	0.254
172	14.33	0.87	0.447	(0.219)	0.202	0.245
173	14.42	0.87	0.447	(0.217)	0.202	0.245
174	14.50	0.87	0.447	(0.216)	0.202	0.245
175	14.58	0.87	0.447	(0.215)	0.202	0.245
176	14.67	0.87	0.447	(0.214)	0.202	0.245
177	14.75	0.87	0.447	(0.213)	0.202	0.245
178	14.83	0.83	0.430	(0.212)	0.194	0.236
179	14.92	0.83	0.430	(0.211)	0.194	0.236
180	15.00	0.83	0.430	(0.210)	0.194	0.236
181	15.08	0.80	0.413	(0.209)	0.187	0.226
182	15.17	0.80	0.413	(0.208)	0.187	0.226
183	15.25	0.80	0.413	(0.207)	0.187	0.226
184	15.33	0.77	0.396	(0.205)	0.179	0.217
185	15.42	0.77	0.396	(0.204)	0.179	0.217
186	15.50	0.77	0.396	(0.203)	0.179	0.217
187	15.58	0.63	0.327	(0.202)	0.148	0.179
188	15.67	0.63	0.327	(0.201)	0.148	0.179
189	15.75	0.63	0.327	(0.200)	0.148	0.179
190	15.83	0.63	0.327	(0.199)	0.148	0.179
191	15.92	0.63	0.327	(0.198)	0.148	0.179
192	16.00	0.63	0.327	(0.197)	0.148	0.179
193	16.08	0.13	0.069	(0.196)	0.031	0.038
194	16.17	0.13	0.069	(0.195)	0.031	0.038
195	16.25	0.13	0.069	(0.194)	0.031	0.038
196	16.33	0.13	0.069	(0.193)	0.031	0.038
197	16.42	0.13	0.069	(0.192)	0.031	0.038
198	16.50	0.13	0.069	(0.191)	0.031	0.038
199	16.58	0.10	0.052	(0.190)	0.023	0.028
200	16.67	0.10	0.052	(0.189)	0.023	0.028
201	16.75	0.10	0.052	(0.188)	0.023	0.028
202	16.83	0.10	0.052	(0.187)	0.023	0.028
203	16.92	0.10	0.052	(0.186)	0.023	0.028
204	17.00	0.10	0.052	(0.185)	0.023	0.028
205	17.08	0.17	0.086	(0.185)	0.039	0.047
206	17.17	0.17	0.086	(0.184)	0.039	0.047
207	17.25	0.17	0.086	(0.183)	0.039	0.047
208	17.33	0.17	0.086	(0.182)	0.039	0.047
209	17.42	0.17	0.086	(0.181)	0.039	0.047
210	17.50	0.17	0.086	(0.180)	0.039	0.047
211	17.58	0.17	0.086	(0.179)	0.039	0.047
212	17.67	0.17	0.086	(0.178)	0.039	0.047
213	17.75	0.17	0.086	(0.177)	0.039	0.047
214	17.83	0.13	0.069	(0.176)	0.031	0.038
215	17.92	0.13	0.069	(0.176)	0.031	0.038
216	18.00	0.13	0.069	(0.175)	0.031	0.038

217	18.08	0.13	0.069	(0.174)	0.031	0.038
218	18.17	0.13	0.069	(0.173)	0.031	0.038
219	18.25	0.13	0.069	(0.172)	0.031	0.038
220	18.33	0.13	0.069	(0.171)	0.031	0.038
221	18.42	0.13	0.069	(0.170)	0.031	0.038
222	18.50	0.13	0.069	(0.170)	0.031	0.038
223	18.58	0.10	0.052	(0.169)	0.023	0.028
224	18.67	0.10	0.052	(0.168)	0.023	0.028
225	18.75	0.10	0.052	(0.167)	0.023	0.028
226	18.83	0.07	0.034	(0.166)	0.016	0.019
227	18.92	0.07	0.034	(0.166)	0.016	0.019
228	19.00	0.07	0.034	(0.165)	0.016	0.019
229	19.08	0.10	0.052	(0.164)	0.023	0.028
230	19.17	0.10	0.052	(0.163)	0.023	0.028
231	19.25	0.10	0.052	(0.162)	0.023	0.028
232	19.33	0.13	0.069	(0.162)	0.031	0.038
233	19.42	0.13	0.069	(0.161)	0.031	0.038
234	19.50	0.13	0.069	(0.160)	0.031	0.038
235	19.58	0.10	0.052	(0.159)	0.023	0.028
236	19.67	0.10	0.052	(0.159)	0.023	0.028
237	19.75	0.10	0.052	(0.158)	0.023	0.028
238	19.83	0.07	0.034	(0.157)	0.016	0.019
239	19.92	0.07	0.034	(0.157)	0.016	0.019
240	20.00	0.07	0.034	(0.156)	0.016	0.019
241	20.08	0.10	0.052	(0.155)	0.023	0.028
242	20.17	0.10	0.052	(0.155)	0.023	0.028
243	20.25	0.10	0.052	(0.154)	0.023	0.028
244	20.33	0.10	0.052	(0.153)	0.023	0.028
245	20.42	0.10	0.052	(0.153)	0.023	0.028
246	20.50	0.10	0.052	(0.152)	0.023	0.028
247	20.58	0.10	0.052	(0.151)	0.023	0.028
248	20.67	0.10	0.052	(0.151)	0.023	0.028
249	20.75	0.10	0.052	(0.150)	0.023	0.028
250	20.83	0.07	0.034	(0.149)	0.016	0.019
251	20.92	0.07	0.034	(0.149)	0.016	0.019
252	21.00	0.07	0.034	(0.148)	0.016	0.019
253	21.08	0.10	0.052	(0.148)	0.023	0.028
254	21.17	0.10	0.052	(0.147)	0.023	0.028
255	21.25	0.10	0.052	(0.146)	0.023	0.028
256	21.33	0.07	0.034	(0.146)	0.016	0.019
257	21.42	0.07	0.034	(0.145)	0.016	0.019
258	21.50	0.07	0.034	(0.145)	0.016	0.019
259	21.58	0.10	0.052	(0.144)	0.023	0.028
260	21.67	0.10	0.052	(0.144)	0.023	0.028
261	21.75	0.10	0.052	(0.143)	0.023	0.028
262	21.83	0.07	0.034	(0.143)	0.016	0.019
263	21.92	0.07	0.034	(0.142)	0.016	0.019
264	22.00	0.07	0.034	(0.142)	0.016	0.019
265	22.08	0.10	0.052	(0.141)	0.023	0.028
266	22.17	0.10	0.052	(0.141)	0.023	0.028
267	22.25	0.10	0.052	(0.140)	0.023	0.028
268	22.33	0.07	0.034	(0.140)	0.016	0.019
269	22.42	0.07	0.034	(0.140)	0.016	0.019
270	22.50	0.07	0.034	(0.139)	0.016	0.019
271	22.58	0.07	0.034	(0.139)	0.016	0.019
272	22.67	0.07	0.034	(0.138)	0.016	0.019
273	22.75	0.07	0.034	(0.138)	0.016	0.019
274	22.83	0.07	0.034	(0.138)	0.016	0.019
275	22.92	0.07	0.034	(0.137)	0.016	0.019
276	23.00	0.07	0.034	(0.137)	0.016	0.019
277	23.08	0.07	0.034	(0.137)	0.016	0.019
278	23.17	0.07	0.034	(0.136)	0.016	0.019
279	23.25	0.07	0.034	(0.136)	0.016	0.019
280	23.33	0.07	0.034	(0.136)	0.016	0.019
281	23.42	0.07	0.034	(0.135)	0.016	0.019
282	23.50	0.07	0.034	(0.135)	0.016	0.019
283	23.58	0.07	0.034	(0.135)	0.016	0.019
284	23.67	0.07	0.034	(0.135)	0.016	0.019
285	23.75	0.07	0.034	(0.135)	0.016	0.019
286	23.83	0.07	0.034	(0.134)	0.016	0.019
287	23.92	0.07	0.034	(0.134)	0.016	0.019
288	24.00	0.07	0.034	(0.134)	0.016	0.019

(Loss Rate Not Used)

Sum = 100.0 Sum = 28.5

Flood volume = Effective rainfall 2.37(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 1.7(Ac.Ft)
Total soil loss = 1.93(In)
Total soil loss = 1.392(Ac.Ft)
Total rainfall = 4.30(In)

```
                                          PR24HR100YR
      Flood volume =       74610.1 Cubic Feet
      Total soil loss =       60639.6 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =      3.093(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0         2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0005      0.08  Q         |         |         |         |
  0+10       0.0015      0.15  Q         |         |         |         |
  0+15       0.0026      0.16  Q         |         |         |         |
  0+20       0.0040      0.20  Q         |         |         |         |
  0+25       0.0056      0.24  Q         |         |         |         |
  0+30       0.0073      0.24  Q         |         |         |         |
  0+35       0.0090      0.25  Q         |         |         |         |
  0+40       0.0107      0.25  Q         |         |         |         |
  0+45       0.0124      0.25  Q         |         |         |         |
  0+50       0.0144      0.28  VQ        |         |         |         |
  0+55       0.0166      0.32  VQ        |         |         |         |
  1+ 0       0.0188      0.33  VQ        |         |         |         |
  1+ 5       0.0208      0.29  VQ        |         |         |         |
  1+10       0.0226      0.26  VQ        |         |         |         |
  1+15       0.0243      0.25  VQ        |         |         |         |
  1+20       0.0260      0.25  Q         |         |         |         |
  1+25       0.0277      0.25  Q         |         |         |         |
  1+30       0.0294      0.25  Q         |         |         |         |
  1+35       0.0311      0.25  Q         |         |         |         |
  1+40       0.0328      0.25  Q         |         |         |         |
  1+45       0.0345      0.25  Q         |         |         |         |
  1+50       0.0365      0.28  VQ        |         |         |         |
  1+55       0.0387      0.32  VQ        |         |         |         |
  2+ 0       0.0410      0.33  VQ        |         |         |         |
  2+ 5       0.0432      0.33  |Q        |         |         |         |
  2+10       0.0455      0.33  |Q        |         |         |         |
  2+15       0.0478      0.33  |Q        |         |         |         |
  2+20       0.0500      0.33  |Q        |         |         |         |
  2+25       0.0523      0.33  |Q        |         |         |         |
  2+30       0.0546      0.33  |Q        |         |         |         |
  2+35       0.0571      0.37  |Q        |         |         |         |
  2+40       0.0599      0.40  |Q        |         |         |         |
  2+45       0.0627      0.41  |Q        |         |         |         |
  2+50       0.0655      0.41  |Q        |         |         |         |
  2+55       0.0684      0.41  |Q        |         |         |         |
  3+ 0       0.0712      0.41  |Q        |         |         |         |
  3+ 5       0.0740      0.41  |Q        |         |         |         |
  3+10       0.0769      0.41  |Q        |         |         |         |
  3+15       0.0797      0.41  |Q        |         |         |         |
  3+20       0.0825      0.41  |Q        |         |         |         |
  3+25       0.0854      0.41  |Q        |         |         |         |
  3+30       0.0882      0.41  |QV       |         |         |         |
  3+35       0.0910      0.41  |QV       |         |         |         |
  3+40       0.0939      0.41  |QV       |         |         |         |
  3+45       0.0967      0.41  |QV       |         |         |         |
  3+50       0.0998      0.45  |QV       |         |         |         |
  3+55       0.1031      0.48  |QV       |         |         |         |
  4+ 0       0.1065      0.49  |QV       |         |         |         |
  4+ 5       0.1099      0.49  |QV       |         |         |         |
  4+10       0.1133      0.49  |QV       |         |         |         |
  4+15       0.1167      0.49  |QV       |         |         |         |
  4+20       0.1204      0.53  | Q       |         |         |         |
  4+25       0.1243      0.57  | Q       |         |         |         |
  4+30       0.1283      0.57  | Q       |         |         |         |
  4+35       0.1322      0.58  | QV      |         |         |         |
  4+40       0.1362      0.58  | QV      |         |         |         |
  4+45       0.1402      0.58  | QV      |         |         |         |
  4+50       0.1444      0.61  | QV      |         |         |         |
  4+55       0.1489      0.65  | QV      |         |         |         |
  5+ 0       0.1534      0.66  | QV      |         |         |         |
  5+ 5       0.1574      0.58  | QV      |         |         |         |
  5+10       0.1609      0.51  | QV      |         |         |         |
  5+15       0.1644      0.50  | QV      |         |         |         |
  5+20       0.1680      0.53  | QV      |         |         |         |
  5+25       0.1719      0.57  | Q V     |         |         |         |
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PR24HR100YR

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 5+30       0.1759      0.57  | Q V     |         |         |         |
 5+35       0.1801      0.61  | Q V     |         |         |         |
 5+40       0.1846      0.65  | Q V     |         |         |         |
 5+45       0.1891      0.66  | Q V     |         |         |         |
 5+50       0.1936      0.66  | Q V     |         |         |         |
 5+55       0.1982      0.66  | Q V     |         |         |         |
 6+ 0       0.2027      0.66  | Q V     |         |         |         |
 6+ 5       0.2075      0.70  | Q V     |         |         |         |
 6+10       0.2126      0.73  | Q V     |         |         |         |
 6+15       0.2176      0.74  | Q  V    |         |         |         |
 6+20       0.2227      0.74  | Q  V    |         |         |         |
 6+25       0.2279      0.74  | Q  V    |         |         |         |
 6+30       0.2330      0.74  | Q  V    |         |         |         |
 6+35       0.2383      0.78  |  Q V    |         |         |         |
 6+40       0.2439      0.81  |  Q V    |         |         |         |
 6+45       0.2496      0.82  |  Q V    |         |         |         |
 6+50       0.2552      0.82  |  Q V    |         |         |         |
 6+55       0.2609      0.82  |  Q  V   |         |         |         |
 7+ 0       0.2666      0.82  |  Q  V   |         |         |         |
 7+ 5       0.2723      0.82  |  Q  V   |         |         |         |
 7+10       0.2779      0.82  |  Q  V   |         |         |         |
 7+15       0.2836      0.82  |  Q  V   |         |         |         |
 7+20       0.2895      0.86  |  Q  V   |         |         |         |
 7+25       0.2957      0.90  |  Q  V   |         |         |         |
 7+30       0.3019      0.90  |  Q   V  |         |         |         |
 7+35       0.3084      0.94  |  Q   V  |         |         |         |
 7+40       0.3152      0.98  |  Q   V  |         |         |         |
 7+45       0.3220      0.99  |  Q   V  |         |         |         |
 7+50       0.3290      1.03  |   Q  V  |         |         |         |
 7+55       0.3363      1.06  |   Q  V  |         |         |         |
 8+ 0       0.3437      1.07  |   Q   V |         |         |         |
 8+ 5       0.3516      1.15  |   Q   V |         |         |         |
 8+10       0.3599      1.22  |   Q   V |         |         |         |
 8+15       0.3684      1.23  |   Q   V |         |         |         |
 8+20       0.3769      1.24  |   Q   V |         |         |         |
 8+25       0.3854      1.24  |   Q    V|         |         |         |
 8+30       0.3939      1.24  |   Q    V|         |         |         |
 8+35       0.4027      1.27  |    Q   V|         |         |         |
 8+40       0.4117      1.31  |    Q   V|         |         |         |
 8+45       0.4208      1.31  |    Q   V|         |         |         |
 8+50       0.4301      1.36  |    Q    V         |         |         |
 8+55       0.4397      1.39  |    Q    V         |         |         |
 9+ 0       0.4493      1.40  |    Q    V         |         |         |
 9+ 5       0.4595      1.48  |    Q    V         |         |         |
 9+10       0.4701      1.55  |     Q   V         |         |         |
 9+15       0.4808      1.56  |     Q   |V        |         |         |
 9+20       0.4919      1.60  |     Q   |V        |         |         |
 9+25       0.5031      1.64  |     Q   |V        |         |         |
 9+30       0.5145      1.64  |     Q   | V       |         |         |
 9+35       0.5261      1.68  |     Q   | V       |         |         |
 9+40       0.5379      1.72  |     Q   | V       |         |         |
 9+45       0.5498      1.73  |     Q   | V       |         |         |
 9+50       0.5620      1.77  |      Q  |  V      |         |         |
 9+55       0.5744      1.80  |      Q  |  V      |         |         |
10+ 0       0.5868      1.81  |      Q  |  V      |         |         |
10+ 5       0.5975      1.55  |     Q   |  V      |         |         |
10+10       0.6065      1.30  |    Q    |   V     |         |         |
10+15       0.6151      1.26  |    Q    |   V     |         |         |
10+20       0.6236      1.24  |   Q     |   V     |         |         |
10+25       0.6321      1.24  |   Q     |   V     |         |         |
10+30       0.6406      1.24  |   Q     |   V     |         |         |
10+35       0.6505      1.42  |    Q    |    V    |         |         |
10+40       0.6615      1.60  |     Q   |    V    |         |         |
10+45       0.6727      1.63  |     Q   |    V    |         |         |
10+50       0.6840      1.65  |     Q   |    V    |         |         |
10+55       0.6954      1.65  |     Q   |     V   |         |         |
11+ 0       0.7067      1.65  |     Q   |     V   |         |         |
11+ 5       0.7178      1.61  |     Q   |     V   |         |         |
11+10       0.7287      1.57  |     Q   |      V  |         |         |
11+15       0.7395      1.57  |     Q   |      V  |         |         |
11+20       0.7502      1.56  |     Q   |      V  |         |         |
11+25       0.7610      1.56  |     Q   |      V  |         |         |
11+30       0.7718      1.56  |     Q   |       V |         |         |
11+35       0.7820      1.49  |    Q    |       V |         |         |
11+40       0.7918      1.42  |    Q    |       V |         |         |
11+45       0.8015      1.41  |    Q    |       V |         |         |
11+50       0.8114      1.44  |    Q    |       V |         |         |
11+55       0.8215      1.47  |    Q    |        V|         |         |
12+ 0       0.8317      1.48  |    Q    |        V|         |         |
```

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                                          PR24HR100YR
12+ 5       0.8438      1.75   |     Q   |        V|         |         |
12+10       0.8575      1.99   |      Q  |         V         |         |
12+15       0.8715      2.04   |       Q |         V         |         |
12+20       0.8859      2.10   |       Q |         V         |         |
12+25       0.9006      2.13   |       Q |         |V        |         |
12+30       0.9154      2.14   |       Q |         |V        |         |
12+35       0.9306      2.22   |       Q |         |V        |         |
12+40       0.9464      2.29   |        Q|         | V       |         |
12+45       0.9622      2.30   |        Q|         | V       |         |
12+50       0.9783      2.34   |        Q|         | V       |         |
12+55       0.9947      2.38   |        Q|         |  V      |         |
13+ 0       1.0112      2.39   |        Q|         |  V      |         |
13+ 5       1.0297      2.69   |         Q         |   V     |         |
13+10       1.0502      2.97   |         |Q        |   V     |         |
13+15       1.0711      3.04   |         | Q       |    V    |         |
13+20       1.0923      3.07   |         | Q       |    V    |         |
13+25       1.1135      3.08   |         | Q       |     V   |         |
13+30       1.1348      3.09   |         | Q       |     V   |         |
13+35       1.1523      2.55   |         Q         |     V   |         |
13+40       1.1663      2.04   |       Q |         |      V  |         |
13+45       1.1797      1.94   |      Q  |         |      V  |         |
13+50       1.1927      1.89   |      Q  |         |      V  |         |
13+55       1.2058      1.89   |      Q  |         |       V |         |
14+ 0       1.2188      1.89   |      Q  |         |       V |         |
14+ 5       1.2329      2.05   |       Q |         |       V |         |
14+10       1.2479      2.18   |       Q |         |        V|         |
14+15       1.2632      2.21   |       Q |         |        V|         |
14+20       1.2782      2.19   |       Q |         |        V|         |
14+25       1.2930      2.15   |       Q |         |         V         |
14+30       1.3078      2.14   |       Q |         |         V         |
14+35       1.3226      2.14   |       Q |         |         V         |
14+40       1.3373      2.14   |       Q |         |         |V        |
14+45       1.3520      2.14   |       Q |         |         |V        |
14+50       1.3665      2.10   |       Q |         |         |V        |
14+55       1.3808      2.07   |       Q |         |         | V       |
15+ 0       1.3950      2.06   |       Q |         |         | V       |
15+ 5       1.4089      2.02   |       Q |         |         | V       |
15+10       1.4226      1.99   |      Q  |         |         |  V      |
15+15       1.4362      1.98   |      Q  |         |         |  V      |
15+20       1.4496      1.94   |      Q  |         |         |  V      |
15+25       1.4627      1.90   |      Q  |         |         |   V     |
15+30       1.4757      1.90   |      Q  |         |         |   V     |
15+35       1.4877      1.74   |     Q   |         |         |   V     |
15+40       1.4988      1.60   |     Q   |         |         |    V    |
15+45       1.5096      1.58   |     Q   |         |         |    V    |
15+50       1.5204      1.56   |     Q   |         |         |    V    |
15+55       1.5312      1.56   |     Q   |         |         |    V    |
16+ 0       1.5420      1.56   |     Q   |         |         |     V   |
16+ 5       1.5488      1.00   |  Q      |         |         |     V   |
16+10       1.5521      0.48   |Q        |         |         |     V   |
16+15       1.5547      0.37   |Q        |         |         |     V   |
16+20       1.5570      0.33   |Q        |         |         |     V   |
16+25       1.5592      0.33   |Q        |         |         |     V   |
16+30       1.5615      0.33   |Q        |         |         |     V   |
16+35       1.5635      0.29   |Q        |         |         |     V   |
16+40       1.5653      0.26   |Q        |         |         |     V   |
16+45       1.5670      0.25   |Q        |         |         |     V   |
16+50       1.5687      0.25   Q         |         |         |     V   |
16+55       1.5704      0.25   Q         |         |         |     V   |
17+ 0       1.5721      0.25   Q         |         |         |     V   |
17+ 5       1.5743      0.32   |Q        |         |         |     V   |
17+10       1.5770      0.39   |Q        |         |         |     V   |
17+15       1.5798      0.41   |Q        |         |         |     V   |
17+20       1.5827      0.41   |Q        |         |         |     V   |
17+25       1.5855      0.41   |Q        |         |         |      V  |
17+30       1.5883      0.41   |Q        |         |         |      V  |
17+35       1.5912      0.41   |Q        |         |         |      V  |
17+40       1.5940      0.41   |Q        |         |         |      V  |
17+45       1.5968      0.41   |Q        |         |         |      V  |
17+50       1.5994      0.37   |Q        |         |         |      V  |
17+55       1.6018      0.34   |Q        |         |         |      V  |
18+ 0       1.6040      0.33   |Q        |         |         |      V  |
18+ 5       1.6063      0.33   |Q        |         |         |      V  |
18+10       1.6086      0.33   |Q        |         |         |      V  |
18+15       1.6108      0.33   |Q        |         |         |      V  |
18+20       1.6131      0.33   |Q        |         |         |      V  |
18+25       1.6154      0.33   |Q        |         |         |      V  |
18+30       1.6177      0.33   |Q        |         |         |      V  |
18+35       1.6197      0.29   |Q        |         |         |      V  |
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 18+40      1.6214    0.26  |Q         |         |         |      V  |
 18+45      1.6232    0.25  |Q         |         |         |      V  |
 18+50      1.6246    0.21  Q          |         |         |      V  |
 18+55      1.6258    0.17  Q          |         |         |      V  |
 19+ 0      1.6269    0.17  Q          |         |         |      V  |
 19+ 5      1.6283    0.20  Q          |         |         |       V |
 19+10      1.6300    0.24  Q          |         |         |       V |
 19+15      1.6317    0.24  Q          |         |         |       V |
 19+20      1.6336    0.28  |Q         |         |         |       V |
 19+25      1.6358    0.32  |Q         |         |         |       V |
 19+30      1.6381    0.33  |Q         |         |         |       V |
 19+35      1.6401    0.29  |Q         |         |         |       V |
 19+40      1.6418    0.26  |Q         |         |         |       V |
 19+45      1.6436    0.25  |Q         |         |         |       V |
 19+50      1.6450    0.21  Q          |         |         |       V |
 19+55      1.6462    0.17  Q          |         |         |       V |
 20+ 0      1.6474    0.17  Q          |         |         |       V |
 20+ 5      1.6488    0.20  Q          |         |         |       V |
 20+10      1.6504    0.24  Q          |         |         |       V |
 20+15      1.6521    0.24  Q          |         |         |       V |
 20+20      1.6538    0.25  Q          |         |         |       V |
 20+25      1.6555    0.25  Q          |         |         |       V |
 20+30      1.6572    0.25  Q          |         |         |       V |
 20+35      1.6589    0.25  Q          |         |         |       V |
 20+40      1.6606    0.25  Q          |         |         |       V |
 20+45      1.6623    0.25  Q          |         |         |       V |
 20+50      1.6637    0.21  Q          |         |         |       V |
 20+55      1.6649    0.17  Q          |         |         |       V |
 21+ 0      1.6661    0.17  Q          |         |         |       V |
 21+ 5      1.6675    0.20  Q          |         |         |       V |
 21+10      1.6691    0.24  Q          |         |         |       V |
 21+15      1.6708    0.24  Q          |         |         |        V|
 21+20      1.6722    0.21  Q          |         |         |        V|
 21+25      1.6734    0.17  Q          |         |         |        V|
 21+30      1.6746    0.17  Q          |         |         |        V|
 21+35      1.6760    0.20  Q          |         |         |        V|
 21+40      1.6776    0.24  Q          |         |         |        V|
 21+45      1.6793    0.24  Q          |         |         |        V|
 21+50      1.6807    0.21  Q          |         |         |        V|
 21+55      1.6819    0.17  Q          |         |         |        V|
 22+ 0      1.6831    0.17  Q          |         |         |        V|
 22+ 5      1.6845    0.20  Q          |         |         |        V|
 22+10      1.6861    0.24  Q          |         |         |        V|
 22+15      1.6878    0.24  Q          |         |         |        V|
 22+20      1.6892    0.21  Q          |         |         |        V|
 22+25      1.6905    0.17  Q          |         |         |        V|
 22+30      1.6916    0.17  Q          |         |         |        V|
 22+35      1.6927    0.16  Q          |         |         |        V|
 22+40      1.6939    0.16  Q          |         |         |        V|
 22+45      1.6950    0.16  Q          |         |         |        V|
 22+50      1.6961    0.16  Q          |         |         |        V|
 22+55      1.6973    0.16  Q          |         |         |        V|
 23+ 0      1.6984    0.16  Q          |         |         |        V|
 23+ 5      1.6995    0.16  Q          |         |         |        V|
 23+10      1.7007    0.16  Q          |         |         |        V|
 23+15      1.7018    0.16  Q          |         |         |        V|
 23+20      1.7029    0.16  Q          |         |         |        V|
 23+25      1.7041    0.16  Q          |         |         |        V|
 23+30      1.7052    0.16  Q          |         |         |        V|
 23+35      1.7064    0.16  Q          |         |         |        V|
 23+40      1.7075    0.16  Q          |         |         |        V|
 23+45      1.7086    0.16  Q          |         |         |        V|
 23+50      1.7098    0.16  Q          |         |         |        V|
 23+55      1.7109    0.16  Q          |         |         |        V|
 24+ 0      1.7120    0.16  Q          |         |         |        V|
 24+ 5      1.7126    0.09  Q          |         |         |        V|
 24+10      1.7128    0.02  Q          |         |         |        V|
 24+15      1.7128    0.01  Q          |         |         |        V|
----------------------------------------------------------------------
```

B100DET

FLOOD HYDROGRAPH ROUTING PROGRAM

Study date: 10/19/16

Program License Serial Number 6313

```
--------------------------------------------------------------------
******************** HYDROGRAPH INFORMATION **********************

                From study/file name: PR24HR100YR.rte
****************************HYDROGRAPH DATA*****************************
                Number of intervals =   291
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        3.093 (CFS)
                Total volume =       1.713 (Ac.Ft)
        Status of hydrographs being held in storage
                   Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
***********************************************************************
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      101.000 to Point/Station      102.000
**** RETARDING BASIN ROUTING ****
```

```
User entry of depth-outflow-storage data
--------------------------------------------------------------------
Total number of inflow hydrograph intervals = 291
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
--------------------------------------------------------------------
--------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
---------------------------------------------------------------------
--------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
---------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.500      0.080      0.464      0.078        0.082
  1.000      0.170      0.464      0.168        0.172
  1.500      0.260      0.464      0.258        0.262
  2.000      0.370      0.464      0.368        0.372
  2.500      0.490      4.742      0.474        0.506
  3.000      0.580     12.515      0.537        0.623
--------------------------------------------------------------------
                Hydrograph Detention Basin Routing
---------------------------------------------------------------------
```

```
                                     B100DET
       Graph values: 'I'= unit inflow; 'O'=outflow at time shown
       ----------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                     Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       0.8    1.55    2.32    3.09 (Ft.)
 0.083    0.08    0.00      0.000  O       |       |       |       |     0.00
 0.167    0.15    0.01      0.001  OI      |       |       |       |     0.01
 0.250    0.16    0.01      0.002  OI      |       |       |       |     0.01
 0.333    0.20    0.02      0.003  O I     |       |       |       |     0.02
 0.417    0.24    0.03      0.004  O I     |       |       |       |     0.03
 0.500    0.24    0.03      0.006  O I     |       |       |       |     0.04
 0.583    0.25    0.04      0.007  O I     |       |       |       |     0.05
 0.667    0.25    0.05      0.009  O I     |       |       |       |     0.05
 0.750    0.25    0.06      0.010  O I     |       |       |       |     0.06
 0.833    0.28    0.07      0.011  O I     |       |       |       |     0.07
 0.917    0.32    0.08      0.013  O  I    |       |       |       |     0.08
 1.000    0.33    0.09      0.015  O  I    |       |       |       |     0.09
 1.083    0.29    0.09      0.016  O  I    |       |       |       |     0.10
 1.167    0.26    0.10      0.017  |OI     |       |       |       |     0.11
 1.250    0.25    0.11      0.018  |OI     |       |       |       |     0.12
 1.333    0.25    0.11      0.019  |OI     |       |       |       |     0.12
 1.417    0.25    0.12      0.020  |OI     |       |       |       |     0.13
 1.500    0.25    0.12      0.021  |OI     |       |       |       |     0.13
 1.583    0.25    0.13      0.022  |OI     |       |       |       |     0.14
 1.667    0.25    0.13      0.023  |OI     |       |       |       |     0.14
 1.750    0.25    0.14      0.024  |OI     |       |       |       |     0.15
 1.833    0.28    0.14      0.024  |OI     |       |       |       |     0.15
 1.917    0.32    0.15      0.026  |O I    |       |       |       |     0.16
 2.000    0.33    0.16      0.027  |O I    |       |       |       |     0.17
 2.083    0.33    0.16      0.028  |O I    |       |       |       |     0.17
 2.167    0.33    0.17      0.029  |O I    |       |       |       |     0.18
 2.250    0.33    0.17      0.030  |O I    |       |       |       |     0.19
 2.333    0.33    0.18      0.031  |O I    |       |       |       |     0.19
 2.417    0.33    0.19      0.032  |O I    |       |       |       |     0.20
 2.500    0.33    0.19      0.033  |O I    |       |       |       |     0.21
 2.583    0.37    0.20      0.034  | OI    |       |       |       |     0.21
 2.667    0.40    0.21      0.035  | O I   |       |       |       |     0.22
 2.750    0.41    0.21      0.037  | O I   |       |       |       |     0.23
 2.833    0.41    0.22      0.038  | O I   |       |       |       |     0.24
 2.917    0.41    0.23      0.039  | O I   |       |       |       |     0.25
 3.000    0.41    0.24      0.041  | O I   |       |       |       |     0.25
 3.083    0.41    0.24      0.042  | O I   |       |       |       |     0.26
 3.167    0.41    0.25      0.043  | O I   |       |       |       |     0.27
 3.250    0.41    0.26      0.044  | O I   |       |       |       |     0.28
 3.333    0.41    0.26      0.045  | O I   |       |       |       |     0.28
 3.417    0.41    0.27      0.046  | O I   |       |       |       |     0.29
 3.500    0.41    0.27      0.047  | O I   |       |       |       |     0.29
 3.583    0.41    0.28      0.048  | O I   |       |       |       |     0.30
 3.667    0.41    0.28      0.049  | O I   |       |       |       |     0.31
 3.750    0.41    0.29      0.050  | O I   |       |       |       |     0.31
 3.833    0.45    0.29      0.051  |  OI   |       |       |       |     0.32
 3.917    0.48    0.30      0.052  |  O I  |       |       |       |     0.32
 4.000    0.49    0.31      0.053  |  O I  |       |       |       |     0.33
 4.083    0.49    0.32      0.054  |  O I  |       |       |       |     0.34
 4.167    0.49    0.32      0.056  |  O I  |       |       |       |     0.35
 4.250    0.49    0.33      0.057  |  O I  |       |       |       |     0.36
 4.333    0.53    0.34      0.058  |  O I  |       |       |       |     0.36
 4.417    0.57    0.34      0.059  |  O I  |       |       |       |     0.37
 4.500    0.57    0.35      0.061  |  O I  |       |       |       |     0.38
 4.583    0.58    0.36      0.062  |  O I  |       |       |       |     0.39
 4.667    0.58    0.37      0.064  |  O I  |       |       |       |     0.40
 4.750    0.58    0.38      0.065  |  O I  |       |       |       |     0.41
 4.833    0.61    0.39      0.067  |   O I |       |       |       |     0.42
 4.917    0.65    0.40      0.068  |   O I |       |       |       |     0.43
                                      Page 2
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                                     B100DET
 5.000    0.66    0.41      0.070  |   O I |       |       |       |     0.44
 5.083    0.58    0.42      0.072  |   O I |       |       |       |     0.45
 5.167    0.51    0.42      0.072  |   OI  |       |       |       |     0.45
 5.250    0.50    0.42      0.073  |   OI  |       |       |       |     0.46
 5.333    0.53    0.43      0.074  |   OI  |       |       |       |     0.46
 5.417    0.57    0.43      0.075  |   OI  |       |       |       |     0.47
 5.500    0.57    0.44      0.075  |   OI  |       |       |       |     0.47
 5.583    0.61    0.44      0.077  |   O I |       |       |       |     0.48
 5.667    0.65    0.45      0.078  |   O I |       |       |       |     0.49
 5.750    0.66    0.46      0.079  |   O I |       |       |       |     0.49
 5.833    0.66    0.46      0.080  |   O I |       |       |       |     0.50
 5.917    0.66    0.46      0.082  |   O I |       |       |       |     0.51
 6.000    0.66    0.46      0.083  |   O I |       |       |       |     0.52
 6.083    0.70    0.46      0.085  |   O  I|       |       |       |     0.53
 6.167    0.73    0.46      0.086  |   O  I|       |       |       |     0.54
 6.250    0.74    0.46      0.088  |   O  I|       |       |       |     0.55
 6.333    0.74    0.46      0.090  |   O  I|       |       |       |     0.56
 6.417    0.74    0.46      0.092  |   O  I|       |       |       |     0.57
 6.500    0.74    0.46      0.094  |   O  I|       |       |       |     0.58
 6.583    0.78    0.46      0.096  |   O   I       |       |       |     0.59
 6.667    0.81    0.46      0.098  |   O   I       |       |       |     0.60
 6.750    0.82    0.46      0.101  |   O   I       |       |       |     0.62
 6.833    0.82    0.46      0.103  |   O   I       |       |       |     0.63
 6.917    0.82    0.46      0.106  |   O   I       |       |       |     0.64
 7.000    0.82    0.46      0.108  |   O   I       |       |       |     0.66
 7.083    0.82    0.46      0.111  |   O   I       |       |       |     0.67
 7.167    0.82    0.46      0.113  |   O   I       |       |       |     0.68
 7.250    0.82    0.46      0.116  |   O   I       |       |       |     0.70
 7.333    0.86    0.46      0.118  |   O   I       |       |       |     0.71
 7.417    0.90    0.46      0.121  |   O   |I      |       |       |     0.73
 7.500    0.90    0.46      0.124  |   O   |I      |       |       |     0.74
 7.583    0.94    0.46      0.127  |   O   |I      |       |       |     0.76
 7.667    0.98    0.46      0.131  |   O   | I     |       |       |     0.78
 7.750    0.99    0.46      0.134  |   O   | I     |       |       |     0.80
 7.833    1.03    0.46      0.138  |   O   | I     |       |       |     0.82
 7.917    1.06    0.46      0.142  |   O   | I     |       |       |     0.84
 8.000    1.07    0.46      0.146  |   O   |  I    |       |       |     0.87
 8.083    1.15    0.46      0.150  |   O   |  I    |       |       |     0.89
 8.167    1.22    0.46      0.155  |   O   |   I   |       |       |     0.92
 8.250    1.23    0.46      0.161  |   O   |   I   |       |       |     0.95
 8.333    1.24    0.46      0.166  |   O   |   I   |       |       |     0.98
 8.417    1.24    0.46      0.171  |   O   |   I   |       |       |     1.01
 8.500    1.24    0.46      0.177  |   O   |   I   |       |       |     1.04
 8.583    1.27    0.46      0.182  |   O   |    I  |       |       |     1.07
 8.667    1.31    0.46      0.188  |   O   |    I  |       |       |     1.10
 8.750    1.31    0.46      0.193  |   O   |    I  |       |       |     1.13
 8.833    1.36    0.46      0.199  |   O   |     I |       |       |     1.16
 8.917    1.39    0.46      0.206  |   O   |     I |       |       |     1.20
 9.000    1.40    0.46      0.212  |   O   |     I |       |       |     1.23
 9.083    1.48    0.46      0.219  |   O   |      I|       |       |     1.27
 9.167    1.55    0.46      0.226  |   O   |      I|       |       |     1.31
 9.250    1.56    0.46      0.234  |   O   |       I       |       |     1.35
 9.333    1.60    0.46      0.241  |   O   |       I       |       |     1.40
 9.417    1.64    0.46      0.249  |   O   |       I       |       |     1.44
 9.500    1.64    0.46      0.257  |   O   |       |I      |       |     1.49
 9.583    1.68    0.46      0.266  |   O   |       |I      |       |     1.53
 9.667    1.72    0.46      0.274  |   O   |       |I      |       |     1.56
 9.750    1.73    0.46      0.283  |   O   |       |I      |       |     1.60
 9.833    1.77    0.46      0.292  |   O   |       | I     |       |     1.64
 9.917    1.80    0.46      0.301  |   O   |       | I     |       |     1.69
10.000    1.81    0.46      0.310  |   O   |       | I     |       |     1.73
10.083    1.55    0.46      0.318  |   O   |       I       |       |     1.77
10.167    1.30    0.46      0.325  |   O   |    I  |       |       |     1.80
                                      Page 3
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Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

```
                                     B100DET
10.250    1.26    0.46      0.331  |   O   |   I   |       |       |     1.82
10.333    1.24    0.46      0.336  |   O   |   I   |       |       |     1.85
10.417    1.24    0.46      0.341  |   O   |   I   |       |       |     1.87
10.500    1.24    0.46      0.347  |   O   |   I   |       |       |     1.89
10.583    1.42    0.46      0.353  |   O   |     I |       |       |     1.92
10.667    1.60    0.46      0.360  |   O   |       I       |       |     1.95
10.750    1.63    0.46      0.368  |   O   |       I       |       |     1.99
10.833    1.65    0.65      0.375  |     O |       |I      |       |     2.02
10.917    1.65    0.87      0.381  |       O       |I      |       |     2.05
11.000    1.65    1.04      0.386  |       | O     |I      |       |     2.07
11.083    1.61    1.17      0.390  |       |   O   I       |       |     2.08
11.167    1.57    1.26      0.392  |       |    O  I       |       |     2.09
11.250    1.57    1.33      0.394  |       |    O  I       |       |     2.10
11.333    1.56    1.38      0.396  |       |     O I       |       |     2.11
11.417    1.56    1.42      0.397  |       |     O I       |       |     2.11
11.500    1.56    1.45      0.398  |       |      OI       |       |     2.12
11.583    1.49    1.47      0.398  |       |      O|       |       |     2.12
11.667    1.42    1.47      0.398  |       |     IO|       |       |     2.12
11.750    1.41    1.45      0.398  |       |     IO|       |       |     2.12
11.833    1.44    1.45      0.398  |       |     O |       |       |     2.11
11.917    1.47    1.45      0.398  |       |     OI|       |       |     2.12
12.000    1.48    1.45      0.398  |       |      O|       |       |     2.12
12.083    1.75    1.49      0.399  |       |      O| I     |       |     2.12
12.167    1.99    1.57      0.401  |       |       O   I   |       |     2.13
12.250    2.04    1.67      0.404  |       |       |O   I  |       |     2.14
12.333    2.10    1.76      0.406  |       |       | O  I  |       |     2.15
12.417    2.13    1.83      0.408  |       |       | O   I |       |     2.16
12.500    2.14    1.90      0.410  |       |       |  O  I |       |     2.17
12.583    2.22    1.96      0.412  |       |       |   O I |       |     2.17
12.667    2.29    2.02      0.414  |       |       |   O  I|       |     2.18
12.750    2.30    2.08      0.415  |       |       |    O I|       |     2.19
12.833    2.34    2.14      0.417  |       |       |     O I       |     2.20
12.917    2.38    2.18      0.418  |       |       |     O I       |     2.20
13.000    2.39    2.23      0.419  |       |       |      OI       |     2.21
13.083    2.69    2.30      0.421  |       |       |      O|  I    |     2.21
13.167    2.97    2.41      0.425  |       |       |       O     I |     2.23
13.250    3.04    2.54      0.428  |       |       |       | O    I|     2.24
13.333    3.07    2.65      0.431  |       |       |       |  O   I|     2.26
13.417    3.08    2.75      0.434  |       |       |       |   O  I|     2.27
13.500    3.09    2.82      0.436  |       |       |       |    O  I     2.28
13.583    2.55    2.82      0.436  |       |       |       | I  O  |     2.28
13.667    2.04    2.71      0.433  |       |       |    I  |  O    |     2.26
13.750    1.94    2.55      0.428  |       |       |   I   | O     |     2.24
13.833    1.89    2.41      0.425  |       |       |  I    O       |     2.23
13.917    1.89    2.30      0.421  |       |       |  I   O|       |     2.21
14.000    1.89    2.21      0.419  |       |       |  I  O |       |     2.20
14.083    2.05    2.16      0.417  |       |       |    IO |       |     2.20
14.167    2.18    2.15      0.417  |       |       |     O |       |     2.20
14.250    2.21    2.16      0.418  |       |       |     O |       |     2.20
14.333    2.19    2.17      0.418  |       |       |     O |       |     2.20
14.417    2.15    2.17      0.418  |       |       |     O |       |     2.20
14.500    2.14    2.16      0.418  |       |       |     O |       |     2.20
14.583    2.14    2.16      0.418  |       |       |     O |       |     2.20
14.667    2.14    2.15      0.417  |       |       |     O |       |     2.20
14.750    2.14    2.15      0.417  |       |       |     O |       |     2.20
14.833    2.10    2.15      0.417  |       |       |    IO |       |     2.20
14.917    2.07    2.13      0.417  |       |       |    IO |       |     2.19
15.000    2.06    2.12      0.416  |       |       |    O  |       |     2.19
15.083    2.02    2.10      0.416  |       |       |   IO  |       |     2.19
15.167    1.99    2.08      0.415  |       |       |   IO  |       |     2.19
15.250    1.98    2.06      0.415  |       |       |   IO  |       |     2.19
15.333    1.94    2.04      0.414  |       |       |   IO  |       |     2.18
15.417    1.90    2.01      0.413  |       |       |  IO   |       |     2.18
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15.500    1.90    1.99      0.413  |       |       |  IO   |       |     2.18
15.583    1.74    1.95      0.412  |       |       | I O   |       |     2.17
15.667    1.60    1.89      0.410  |       |       I  O    |       |     2.17
15.750    1.58    1.82      0.408  |       |       I O     |       |     2.16
15.833    1.56    1.77      0.407  |       |       I O     |       |     2.15
15.917    1.56    1.72      0.405  |       |       IO      |       |     2.15
16.000    1.56    1.69      0.404  |       |       IO      |       |     2.14
16.083    1.00    1.60      0.402  |       | I     O       |       |     2.13
16.167    0.48    1.41      0.397  |   I   |     O |       |       |     2.11
16.250    0.37    1.20      0.391  |  I    |   O   |       |       |     2.09
16.333    0.33    1.01      0.385  |  I    | O     |       |       |     2.06
16.417    0.33    0.86      0.381  |  I    O       |       |       |     2.05
16.500    0.33    0.75      0.378  |  I   O|       |       |       |     2.03
16.583    0.29    0.65      0.375  |  I  O |       |       |       |     2.02
16.667    0.26    0.57      0.373  | I  O  |       |       |       |     2.01
16.750    0.25    0.50      0.371  | I  O  |       |       |       |     2.00
16.833    0.25    0.46      0.369  | I O   |       |       |       |     2.00
16.917    0.25    0.46      0.368  | I O   |       |       |       |     1.99
17.000    0.25    0.46      0.366  | I O   |       |       |       |     1.98
17.083    0.32    0.46      0.365  |  IO   |       |       |       |     1.98
17.167    0.39    0.46      0.364  |   O   |       |       |       |     1.97
17.250    0.41    0.46      0.364  |   O   |       |       |       |     1.97
17.333    0.41    0.46      0.364  |   O   |       |       |       |     1.97
17.417    0.41    0.46      0.363  |   O   |       |       |       |     1.97
17.500    0.41    0.46      0.363  |   O   |       |       |       |     1.97
17.583    0.41    0.46      0.363  |   O   |       |       |       |     1.97
17.667    0.41    0.46      0.362  |   O   |       |       |       |     1.96
17.750    0.41    0.46      0.362  |   O   |       |       |       |     1.96
17.833    0.37    0.46      0.361  |  IO   |       |       |       |     1.96
17.917    0.34    0.46      0.361  |  IO   |       |       |       |     1.96
18.000    0.33    0.46      0.360  |  IO   |       |       |       |     1.95
18.083    0.33    0.46      0.359  |  IO   |       |       |       |     1.95
18.167    0.33    0.46      0.358  |  IO   |       |       |       |     1.94
18.250    0.33    0.46      0.357  |  IO   |       |       |       |     1.94
18.333    0.33    0.46      0.356  |  IO   |       |       |       |     1.94
18.417    0.33    0.46      0.355  |  IO   |       |       |       |     1.93
18.500    0.33    0.46      0.354  |  IO   |       |       |       |     1.93
18.583    0.29    0.46      0.353  |  IO   |       |       |       |     1.92
18.667    0.26    0.46      0.352  | I O   |       |       |       |     1.92
18.750    0.25    0.46      0.350  | I O   |       |       |       |     1.91
18.833    0.21    0.46      0.349  | I O   |       |       |       |     1.90
18.917    0.17    0.46      0.347  |I  O   |       |       |       |     1.89
19.000    0.17    0.46      0.345  |I  O   |       |       |       |     1.89
19.083    0.20    0.46      0.343  | I O   |       |       |       |     1.88
19.167    0.24    0.46      0.341  | I O   |       |       |       |     1.87
19.250    0.24    0.46      0.340  | I O   |       |       |       |     1.86
19.333    0.28    0.46      0.338  | I O   |       |       |       |     1.86
19.417    0.32    0.46      0.337  |  IO   |       |       |       |     1.85
19.500    0.33    0.46      0.336  |  IO   |       |       |       |     1.85
19.583    0.29    0.46      0.335  |  IO   |       |       |       |     1.84
19.667    0.26    0.46      0.334  | I O   |       |       |       |     1.84
19.750    0.25    0.46      0.332  | I O   |       |       |       |     1.83
19.833    0.21    0.46      0.331  | I O   |       |       |       |     1.82
19.917    0.17    0.46      0.329  |I  O   |       |       |       |     1.81
20.000    0.17    0.46      0.327  |I  O   |       |       |       |     1.80
20.083    0.20    0.46      0.325  | I O   |       |       |       |     1.80
20.167    0.24    0.46      0.323  | I O   |       |       |       |     1.79
20.250    0.24    0.46      0.322  | I O   |       |       |       |     1.78
20.333    0.25    0.46      0.320  | I O   |       |       |       |     1.77
20.417    0.25    0.46      0.319  | I O   |       |       |       |     1.77
20.500    0.25    0.46      0.317  | I O   |       |       |       |     1.76
20.583    0.25    0.46      0.316  | I O   |       |       |       |     1.75
20.667    0.25    0.46      0.314  | I O   |       |       |       |     1.75
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 20.750     0.25     0.46        0.313   | I O    |        |        |        |      1.74
 20.833     0.21     0.46        0.311   | I O    |        |        |        |      1.73
 20.917     0.17     0.46        0.309   |I   O   |        |        |        |      1.72
 21.000     0.17     0.46        0.307   |I   O   |        |        |        |      1.71
 21.083     0.20     0.46        0.305   | I O    |        |        |        |      1.71
 21.167     0.24     0.46        0.304   | I O    |        |        |        |      1.70
 21.250     0.24     0.46        0.302   | I O    |        |        |        |      1.69
 21.333     0.21     0.46        0.300   | I O    |        |        |        |      1.68
 21.417     0.17     0.46        0.299   |I   O   |        |        |        |      1.68
 21.500     0.17     0.46        0.297   |I   O   |        |        |        |      1.67
 21.583     0.20     0.46        0.295   | I O    |        |        |        |      1.66
 21.667     0.24     0.46        0.293   | I O    |        |        |        |      1.65
 21.750     0.24     0.46        0.291   | I O    |        |        |        |      1.64
 21.833     0.21     0.46        0.290   | I O    |        |        |        |      1.64
 21.917     0.17     0.46        0.288   |I   O   |        |        |        |      1.63
 22.000     0.17     0.46        0.286   |I   O   |        |        |        |      1.62
 22.083     0.20     0.46        0.284   | I O    |        |        |        |      1.61
 22.167     0.24     0.46        0.282   | I O    |        |        |        |      1.60
 22.250     0.24     0.46        0.281   | I O    |        |        |        |      1.59
 22.333     0.21     0.46        0.279   | I O    |        |        |        |      1.59
 22.417     0.17     0.46        0.277   |I   O   |        |        |        |      1.58
 22.500     0.17     0.46        0.275   |I   O   |        |        |        |      1.57
 22.583     0.16     0.46        0.273   |I   O   |        |        |        |      1.56
 22.667     0.16     0.46        0.271   |I   O   |        |        |        |      1.55
 22.750     0.16     0.46        0.269   |I   O   |        |        |        |      1.54
 22.833     0.16     0.46        0.267   |I   O   |        |        |        |      1.53
 22.917     0.16     0.46        0.265   |I   O   |        |        |        |      1.52
 23.000     0.16     0.46        0.263   |I   O   |        |        |        |      1.51
 23.083     0.16     0.46        0.261   |I   O   |        |        |        |      1.50
 23.167     0.16     0.46        0.259   |I   O   |        |        |        |      1.49
 23.250     0.16     0.46        0.257   |I   O   |        |        |        |      1.48
 23.333     0.16     0.46        0.255   |I   O   |        |        |        |      1.47
 23.417     0.16     0.46        0.253   |I   O   |        |        |        |      1.46
 23.500     0.16     0.46        0.251   |I   O   |        |        |        |      1.45
 23.583     0.16     0.46        0.248   |I   O   |        |        |        |      1.44
 23.667     0.16     0.46        0.246   |I   O   |        |        |        |      1.42
 23.750     0.16     0.46        0.244   |I   O   |        |        |        |      1.41
 23.833     0.16     0.46        0.242   |I   O   |        |        |        |      1.40
 23.917     0.16     0.46        0.240   |I   O   |        |        |        |      1.39
 24.000     0.16     0.46        0.238   |I   O   |        |        |        |      1.38
 24.083     0.09     0.46        0.236   I    O   |        |        |        |      1.37
 24.167     0.02     0.46        0.233   I    O   |        |        |        |      1.35
 24.250     0.01     0.46        0.230   I    O   |        |        |        |      1.33
 24.333     0.00     0.46        0.227   I    O   |        |        |        |      1.32
 24.417     0.00     0.46        0.224   I    O   |        |        |        |      1.30
 24.500     0.00     0.46        0.220   I    O   |        |        |        |      1.28
 24.583     0.00     0.46        0.217   I    O   |        |        |        |      1.26
 24.667     0.00     0.46        0.214   I    O   |        |        |        |      1.24
 24.750     0.00     0.46        0.211   I    O   |        |        |        |      1.23
 24.833     0.00     0.46        0.208   I    O   |        |        |        |      1.21
 24.917     0.00     0.46        0.204   I    O   |        |        |        |      1.19
 25.000     0.00     0.46        0.201   I    O   |        |        |        |      1.17
 25.083     0.00     0.46        0.198   I    O   |        |        |        |      1.16
 25.167     0.00     0.46        0.195   I    O   |        |        |        |      1.14
 25.250     0.00     0.46        0.192   I    O   |        |        |        |      1.12
 25.333     0.00     0.46        0.188   I    O   |        |        |        |      1.10
 25.417     0.00     0.46        0.185   I    O   |        |        |        |      1.08
 25.500     0.00     0.46        0.182   I    O   |        |        |        |      1.07
 25.583     0.00     0.46        0.179   I    O   |        |        |        |      1.05
 25.667     0.00     0.46        0.176   I    O   |        |        |        |      1.03
 25.750     0.00     0.46        0.172   I    O   |        |        |        |      1.01
 25.833     0.00     0.46        0.169   I    O   |        |        |        |      1.00
 25.917     0.00     0.46        0.166   I    O   |        |        |        |      0.98
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26.000	0.00	0.46	0.163	I O	0.96
26.083	0.00	0.46	0.160	I O	0.94
26.167	0.00	0.46	0.156	I O	0.92
26.250	0.00	0.46	0.153	I O	0.91
26.333	0.00	0.46	0.150	I O	0.89
26.417	0.00	0.46	0.147	I O	0.87
26.500	0.00	0.46	0.144	I O	0.85
26.583	0.00	0.46	0.140	I O	0.84
26.667	0.00	0.46	0.137	I O	0.82
26.750	0.00	0.46	0.134	I O	0.80
26.833	0.00	0.46	0.131	I O	0.78
26.917	0.00	0.46	0.128	I O	0.76
27.000	0.00	0.46	0.124	I O	0.75
27.083	0.00	0.46	0.121	I O	0.73
27.167	0.00	0.46	0.118	I O	0.71
27.250	0.00	0.46	0.115	I O	0.69
27.333	0.00	0.46	0.112	I O	0.68
27.417	0.00	0.46	0.109	I O	0.66
27.500	0.00	0.46	0.105	I O	0.64
27.583	0.00	0.46	0.102	I O	0.62
27.667	0.00	0.46	0.099	I O	0.61
27.750	0.00	0.46	0.096	I O	0.59
27.833	0.00	0.46	0.093	I O	0.57
27.917	0.00	0.46	0.089	I O	0.55
28.000	0.00	0.46	0.086	I O	0.53
28.083	0.00	0.46	0.083	I O	0.52
28.167	0.00	0.46	0.080	I O	0.50
28.250	0.00	0.44	0.077	I O	0.48
28.333	0.00	0.43	0.074	I O	0.46
28.417	0.00	0.41	0.071	I O	0.44
28.500	0.00	0.39	0.068	I O	0.42
28.583	0.00	0.38	0.065	I O	0.41
28.667	0.00	0.36	0.063	I O	0.39
28.750	0.00	0.35	0.060	I O	0.38
28.833	0.00	0.34	0.058	I O	0.36
28.917	0.00	0.32	0.056	I O	0.35
29.000	0.00	0.31	0.053	I O	0.33
29.083	0.00	0.30	0.051	I O	0.32
29.167	0.00	0.29	0.049	I O	0.31
29.250	0.00	0.28	0.047	I O	0.30
29.333	0.00	0.26	0.046	I O	0.28
29.417	0.00	0.25	0.044	I O	0.27
29.500	0.00	0.24	0.042	I O	0.26
29.583	0.00	0.23	0.040	I O	0.25
29.667	0.00	0.23	0.039	I O	0.24
29.750	0.00	0.22	0.037	I O	0.23
29.833	0.00	0.21	0.036	I O	0.22
29.917	0.00	0.20	0.034	I O	0.22
30.000	0.00	0.19	0.033	IO	0.21
30.083	0.00	0.18	0.032	IO	0.20
30.167	0.00	0.18	0.031	IO	0.19
30.250	0.00	0.17	0.029	IO	0.18
30.333	0.00	0.16	0.028	IO	0.18
30.417	0.00	0.16	0.027	IO	0.17
30.500	0.00	0.15	0.026	IO	0.16
30.583	0.00	0.15	0.025	IO	0.16
30.667	0.00	0.14	0.024	IO	0.15
30.750	0.00	0.13	0.023	IO	0.14
30.833	0.00	0.13	0.022	IO	0.14
30.917	0.00	0.12	0.021	IO	0.13
31.000	0.00	0.12	0.021	IO	0.13
31.083	0.00	0.11	0.020	IO	0.12
31.167	0.00	0.11	0.019	IO	0.12

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31.250	0.00	0.11	0.018	IO	|	|	|	|	0.11
31.333	0.00	0.10	0.017	IO	|	|	|	|	0.11
31.417	0.00	0.10	0.017	IO	|	|	|	|	0.10
31.500	0.00	0.09	0.016	O	|	|	|	|	0.10
31.583	0.00	0.09	0.016	O	|	|	|	|	0.10
31.667	0.00	0.09	0.015	O	|	|	|	|	0.09
31.750	0.00	0.08	0.014	O	|	|	|	|	0.09
31.833	0.00	0.08	0.014	O	|	|	|	|	0.09
31.917	0.00	0.08	0.013	O	|	|	|	|	0.08
32.000	0.00	0.07	0.013	O	|	|	|	|	0.08
32.083	0.00	0.07	0.012	O	|	|	|	|	0.08
32.167	0.00	0.07	0.012	O	|	|	|	|	0.07
32.250	0.00	0.07	0.011	O	|	|	|	|	0.07
32.333	0.00	0.06	0.011	O	|	|	|	|	0.07
32.417	0.00	0.06	0.010	O	|	|	|	|	0.06
32.500	0.00	0.06	0.010	O	|	|	|	|	0.06
32.583	0.00	0.06	0.010	O	|	|	|	|	0.06
32.667	0.00	0.05	0.009	O	|	|	|	|	0.06
32.750	0.00	0.05	0.009	O	|	|	|	|	0.06
32.833	0.00	0.05	0.009	O	|	|	|	|	0.05
32.917	0.00	0.05	0.008	O	|	|	|	|	0.05
33.000	0.00	0.05	0.008	O	|	|	|	|	0.05
33.083	0.00	0.04	0.008	O	|	|	|	|	0.05
33.167	0.00	0.04	0.007	O	|	|	|	|	0.05
33.250	0.00	0.04	0.007	O	|	|	|	|	0.04
33.333	0.00	0.04	0.007	O	|	|	|	|	0.04
33.417	0.00	0.04	0.006	O	|	|	|	|	0.04
33.500	0.00	0.04	0.006	O	|	|	|	|	0.04
33.583	0.00	0.03	0.006	O	|	|	|	|	0.04
33.667	0.00	0.03	0.006	O	|	|	|	|	0.04
33.750	0.00	0.03	0.005	O	|	|	|	|	0.03
33.833	0.00	0.03	0.005	O	|	|	|	|	0.03
33.917	0.00	0.03	0.005	O	|	|	|	|	0.03
34.000	0.00	0.03	0.005	O	|	|	|	|	0.03
34.083	0.00	0.03	0.005	O	|	|	|	|	0.03
34.167	0.00	0.03	0.004	O	|	|	|	|	0.03
34.250	0.00	0.03	0.004	O	|	|	|	|	0.03
34.333	0.00	0.02	0.004	O	|	|	|	|	0.03
34.417	0.00	0.02	0.004	O	|	|	|	|	0.02
34.500	0.00	0.02	0.004	O	|	|	|	|	0.02
34.583	0.00	0.02	0.004	O	|	|	|	|	0.02
34.667	0.00	0.02	0.004	O	|	|	|	|	0.02
34.750	0.00	0.02	0.003	O	|	|	|	|	0.02
34.833	0.00	0.02	0.003	O	|	|	|	|	0.02
34.917	0.00	0.02	0.003	O	|	|	|	|	0.02
35.000	0.00	0.02	0.003	O	|	|	|	|	0.02
35.083	0.00	0.02	0.003	O	|	|	|	|	0.02
35.167	0.00	0.02	0.003	O	|	|	|	|	0.02
35.250	0.00	0.02	0.003	O	|	|	|	|	0.02
35.333	0.00	0.01	0.003	O	|	|	|	|	0.02
35.417	0.00	0.01	0.002	O	|	|	|	|	0.02
35.500	0.00	0.01	0.002	O	|	|	|	|	0.01
35.583	0.00	0.01	0.002	O	|	|	|	|	0.01
35.667	0.00	0.01	0.002	O	|	|	|	|	0.01
35.750	0.00	0.01	0.002	O	|	|	|	|	0.01
35.833	0.00	0.01	0.002	O	|	|	|	|	0.01
35.917	0.00	0.01	0.002	O	|	|	|	|	0.01
36.000	0.00	0.01	0.002	O	|	|	|	|	0.01
36.083	0.00	0.01	0.002	O	|	|	|	|	0.01
36.167	0.00	0.01	0.002	O	|	|	|	|	0.01
36.250	0.00	0.01	0.002	O	|	|	|	|	0.01
36.333	0.00	0.01	0.002	O	|	|	|	|	0.01
36.417	0.00	0.01	0.002	O	|	|	|	|	0.01

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36.500    0.00    0.01      0.001  O       |       |       |       |      0.01
36.583    0.00    0.01      0.001  O       |       |       |       |      0.01
36.667    0.00    0.01      0.001  O       |       |       |       |      0.01
36.750    0.00    0.01      0.001  O       |       |       |       |      0.01
36.833    0.00    0.01      0.001  O       |       |       |       |      0.01
36.917    0.00    0.01      0.001  O       |       |       |       |      0.01
37.000    0.00    0.01      0.001  O       |       |       |       |      0.01
37.083    0.00    0.01      0.001  O       |       |       |       |      0.01
37.167    0.00    0.01      0.001  O       |       |       |       |      0.01
37.250    0.00    0.01      0.001  O       |       |       |       |      0.01
37.333    0.00    0.01      0.001  O       |       |       |       |      0.01
37.417    0.00    0.01      0.001  O       |       |       |       |      0.01
37.500    0.00    0.01      0.001  O       |       |       |       |      0.01
37.583    0.00    0.01      0.001  O       |       |       |       |      0.01
37.667    0.00    0.00      0.001  O       |       |       |       |      0.01
37.750    0.00    0.00      0.001  O       |       |       |       |      0.01
37.833    0.00    0.00      0.001  O       |       |       |       |      0.00
37.917    0.00    0.00      0.001  O       |       |       |       |      0.00
38.000    0.00    0.00      0.001  O       |       |       |       |      0.00
38.083    0.00    0.00      0.001  O       |       |       |       |      0.00
38.167    0.00    0.00      0.001  O       |       |       |       |      0.00
38.250    0.00    0.00      0.001  O       |       |       |       |      0.00
38.333    0.00    0.00      0.001  O       |       |       |       |      0.00
38.417    0.00    0.00      0.001  O       |       |       |       |      0.00
38.500    0.00    0.00      0.001  O       |       |       |       |      0.00
38.583    0.00    0.00      0.001  O       |       |       |       |      0.00
38.667    0.00    0.00      0.001  O       |       |       |       |      0.00
38.750    0.00    0.00      0.000  O       |       |       |       |      0.00
38.833    0.00    0.00      0.000  O       |       |       |       |      0.00
38.917    0.00    0.00      0.000  O       |       |       |       |      0.00
39.000    0.00    0.00      0.000  O       |       |       |       |      0.00
39.083    0.00    0.00      0.000  O       |       |       |       |      0.00
39.167    0.00    0.00      0.000  O       |       |       |       |      0.00
39.250    0.00    0.00      0.000  O       |       |       |       |      0.00
39.333    0.00    0.00      0.000  O       |       |       |       |      0.00
39.417    0.00    0.00      0.000  O       |       |       |       |      0.00
39.500    0.00    0.00      0.000  O       |       |       |       |      0.00
39.583    0.00    0.00      0.000  O       |       |       |       |      0.00
39.667    0.00    0.00      0.000  O       |       |       |       |      0.00
39.750    0.00    0.00      0.000  O       |       |       |       |      0.00
39.833    0.00    0.00      0.000  O       |       |       |       |      0.00
39.917    0.00    0.00      0.000  O       |       |       |       |      0.00
40.000    0.00    0.00      0.000  O       |       |       |       |      0.00
40.083    0.00    0.00      0.000  O       |       |       |       |      0.00
40.167    0.00    0.00      0.000  O       |       |       |       |      0.00
40.250    0.00    0.00      0.000  O       |       |       |       |      0.00
40.333    0.00    0.00      0.000  O       |       |       |       |      0.00
40.417    0.00    0.00      0.000  O       |       |       |       |      0.00
40.500    0.00    0.00      0.000  O       |       |       |       |      0.00
40.583    0.00    0.00      0.000  O       |       |       |       |      0.00
40.667    0.00    0.00      0.000  O       |       |       |       |      0.00
40.750    0.00    0.00      0.000  O       |       |       |       |      0.00
40.833    0.00    0.00      0.000  O       |       |       |       |      0.00
40.917    0.00    0.00      0.000  O       |       |       |       |      0.00
41.000    0.00    0.00      0.000  O       |       |       |       |      0.00

            ****************************HYDROGRAPH DATA****************************
                            Number of intervals =   492
                            Time interval =    5.0 (Min.)
                            Maximum/Peak flow rate =        2.822 (CFS)
                            Total volume =      1.713 (Ac.Ft)
                    Status of hydrographs being held in storage
                               Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
```

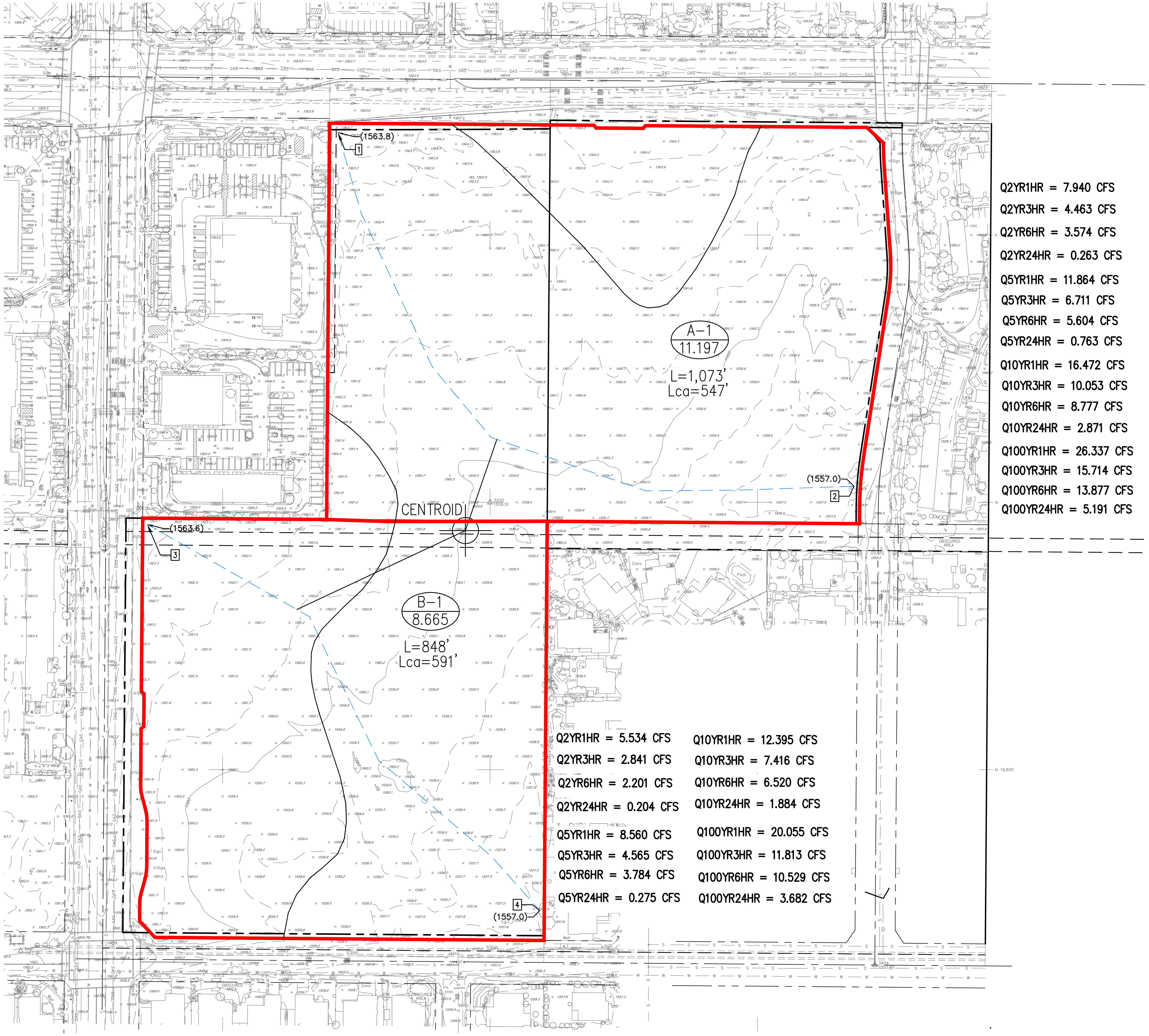
```
                B100DET
Peak (CFS)      0.000     0.000     0.000     0.000     0.000
Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
************************************************************************

----------------------------------------------------------------------
```

ATTACHMENT 6

HYDROLOGY MAP - EXISTING CONDITIONS

ATTACHMENT 6
EXISTING HYDROLOGIC CONDITIONS



LEGEND

1540	EXISTING CONTOUR (MAJOR)
	EXISTING CONTOUR (MINOR)
	HYDROLOGIC BASIN BOUNDARY
	HYDROLOGIC FLOW PATH
1	NODE NUMBER
(150.00)	ELEVATION (FEET)
L=715'	SURFACE FLOW LENGTH/ LENGTH OF LONGEST WATERCOURSE
Lca=336'	LENGTH OF CENTROID ALONG THE LONGEST WATERCOURSE
A-1	SUB-AREA
5.843	SUB-AREA (ACRES)

80 0 80 160

GRAPHIC SCALE
SCALE: 1"= 80'

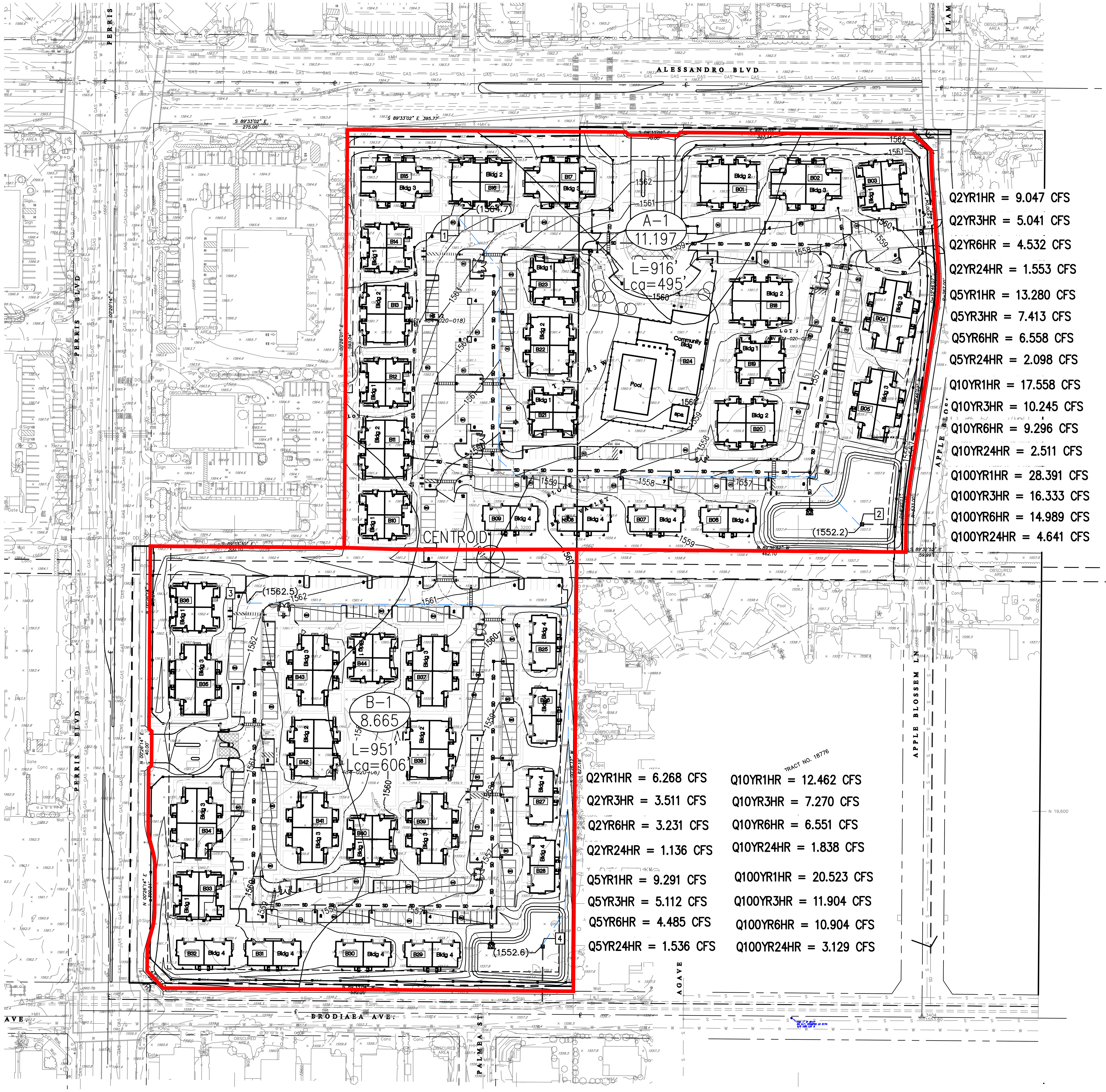
Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 ● info@civillandworks.com

6/28/16

ATTACHMENT 7

HYDROLOGY MAP - PROPOSED CONDITIONS

ATTACHMENT 7
PROPOSED HYDROLOGIC CENTROID CONDITIONS



LEGEND

- 1560 — EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- HYDROLOGIC BASIN BOUNDARY
- HYDROLOGIC FLOW PATH
- 1 — NODE NUMBER
- (1560.00) — ELEVATION (FEET)
- L=715' — SURFACE FLOW LENGTH/ LENGTH OF LONGEST WATERCOURSE
- Lca=336' — LENGTH OF CENTROID ALONG THE LONGEST WATERCOURSE
- A-1 — SUB-AREA
- 5.843 — SUB-AREA (ACRES)

80 0 80 160

GRAPHIC SCALE
SCALE: 1"= 80'

Civil Landworks

110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
PH: 760-908-8745 ● info@civillandworks.com

6/28/16

Attachment: Appendix H - WQMP Report (2340 : PA16-0039 Plot Plan)

Appendix I: Cultural Resources

CULTURAL RESOURCES ASSESSMENT

The Alessandro Apartments Project

City of Moreno Valley, Riverside County, California

Prepared for:

Robert B. Lattanzio
LATCO Enterprises
940 Calle Negocio, Suite 200
San Clemente, California 92673

Prepared by:

David Brunzell, M.A., RPA
BCR Consulting LLC
1420 Guadalajara Place
Claremont, California 91711

Project No. LAT1601

Data Base Information:
Type of Study: Reconnaissance Survey
Resources Recorded: None
Keywords: Moreno Valley
USGS Quadrangle: 7.5-minute *Sunnymead* (1980), *California*

BCRCONSULTING LLC

June 20, 2016

MANAGEMENT SUMMARY

BCR Consulting LLC (BCR Consulting) is under contract to LATCO Enterprises to complete a Cultural Resources Assessment of the Alessandro Project (the project) located in the City of Moreno Valley, Riverside County, California. A cultural resources records search, reconnaissance pedestrian field survey, tribal scoping, and paleontological overview were conducted for the project in partial fulfillment of the California Environmental Quality Act (CEQA).

The cultural resources records search revealed that five cultural resource studies have taken place resulting in one cultural resource (a historic building complex) recorded within one mile of the project site. Of the five previous studies, none have previously assessed the project site and no cultural resources have been previously recorded within its boundaries.

During the field survey, BCR Consulting archaeologists did not discover any cultural resources (including prehistoric or historic-period archaeological sites or historic-period buildings) or evidence for cultural resource sensitivity within the project site. As a result, BCR Consulting recommends a finding of no impacts to historical resources under CEQA for the current project. BCR Consulting also recommends that no additional cultural resources work or monitoring is necessary during proposed activities associated with the development of the project site. However, if previously undocumented cultural resources are identified during earthmoving activities, a qualified archaeologist should be contacted to assess the nature and significance of the find, diverting construction excavation if necessary.

If human remains are encountered during any proposed project activities, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

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INTRODUCTION

BCR Consulting LLC (BCR Consulting) is under contract to LATCO Enterprises to complete a Cultural Resources Assessment of the Alessandro Project (the project) located in the City of Moreno Valley, Riverside County, California. A cultural resources records search, reconnaissance-level pedestrian field survey, tribal scoping, and paleontological overview have been conducted for the project site in partial fulfillment of the California Environmental Quality Act (CEQA). The project site is located in the northwest quarter of Section 17, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. It is depicted on the United States Geological Survey (USGS) *Sunnymead* (1980), *California* 7.5-minute topographic quadrangle (Figure 1).

NATURAL SETTING

The elevation of the project site averages approximately 1560 feet above mean sea level (AMSL). It is relatively flat, although the general topography conveys water in a south and south-easterly direction via a channelized drainage approximately 1/8 mile to the east of the project site. Artificial disturbances consist of mechanical discing and modern trash dumping.

Biology

Although disturbances have severely impacted the native vegetation, remnants of coastal sage scrub habitat have been observed in the vicinity (see Williams et al. 2008: 117-123). For details on prehistoric use of these vegetation communities, see Lightfoot and Parrish 2009.

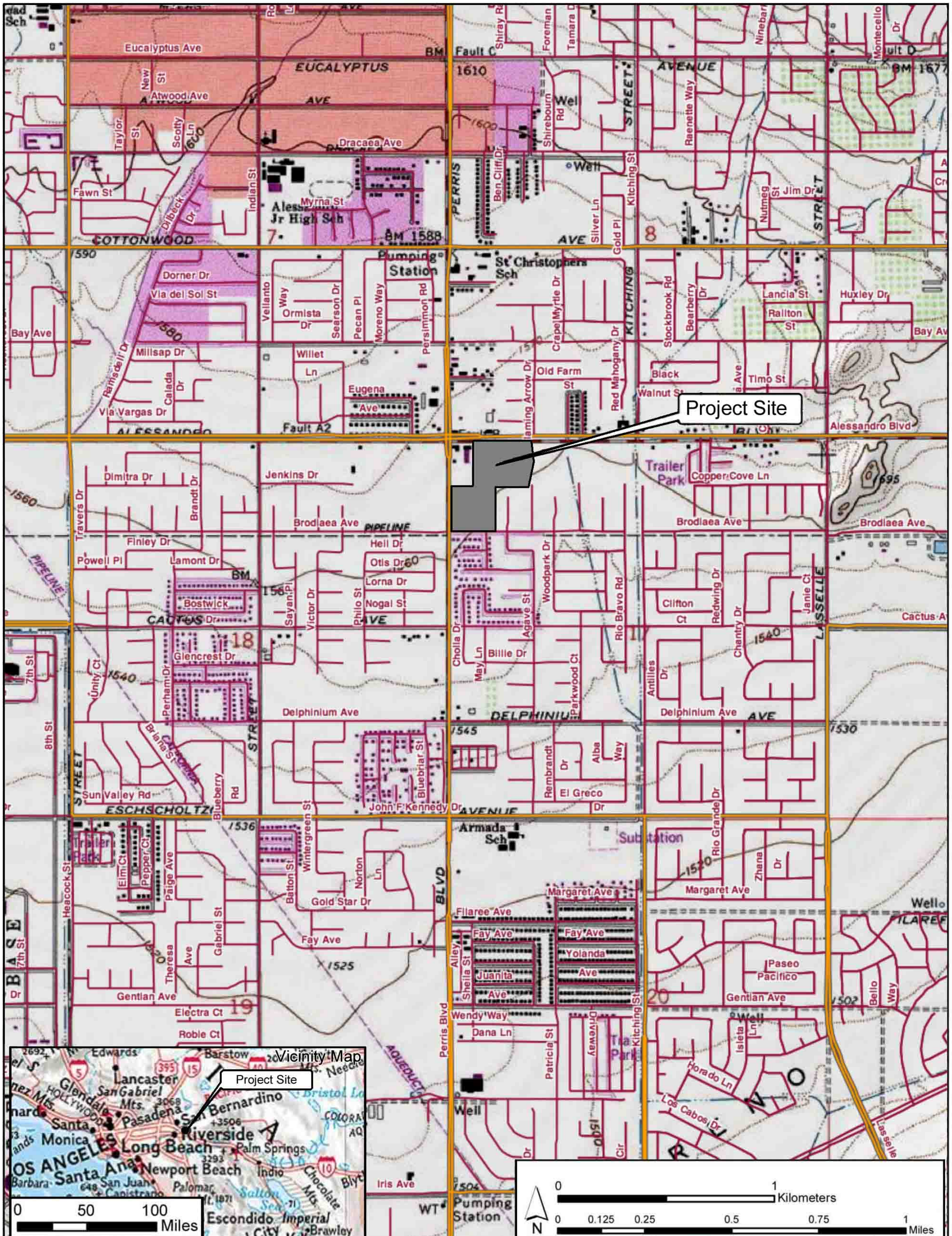
Geology

The project site is located in the Peninsular Range geologic province of California that encompasses western Riverside County. It occupies the eastern margin of the Perris Block (Kenney 1999), which is bounded on the east by the San Jacinto Fault (Reynolds 1988, Morton 1972, 1977). Crystalline rocks present in the region include late Jurassic and cretaceous granitics of the southern California batholith. These resistant rocks weather to form gray or tan colored, boulder-covered conical buttes and hills. Locally, a thin veneer of Holocene soils typically obscure late Pleistocene sediments that often erode away to reveal the base of local boulder outcrops (Rogers 1965). During prehistory in Western Riverside County the boulders that form such outcrops were widely utilized as milling slicks for seed processing. No such outcrops were observed within the project site boundaries. Granitic sandy silts dominates sediments observed within the project site.

CULTURAL SETTING

Prehistoric Context

The local prehistoric cultural setting has been organized into many chronological frameworks (see Warren and Crabtree 1986; Bettinger and Taylor 1974; Lanning 1963; Hunt 1960; Wallace 1958, 1962, 1977; Wallace and Taylor 1978; Campbell and Campbell 1935), although there is no definitive sequence for the region. The difficulties in establishing cultural chronologies for Riverside County are a function of its enormous size and the small amount of archaeological excavations conducted there. Moreover, throughout prehistory



BCRCONSULTING LLC
Claremont Napa Tehachapi
www.bcrconsulting.net
909-525-7078

Project Location
Alessandro Apartments Project

Figure 1

From USGS 7.5 Min Quads: *Sunnymead* (1980), California

Latco SC, Inc.
940 Calle Negocio, Suite 200
San Clemente, California 92673

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

many groups have occupied the area and their territories often overlap spatially and chronologically resulting in mixed artifact deposits. Due to dry climate and capricious geological processes, these artifacts rarely become integrated in-situ. Lacking a milieu hospitable to the preservation of cultural midden, local chronologies have relied upon temporally diagnostic artifacts, such as projectile points, or upon the presence/absence of other temporal indicators, such as groundstone. Such methods are instructive, but can be limited by prehistoric occupants' concurrent use of different artifact styles, or by artifact re-use or re-sharpening, as well as researchers' mistaken diagnosis, and other factors (see Flenniken 1985; Flenniken and Raymond 1986; Flenniken and Wilke 1989). Recognizing the shortcomings of comparative temporal indicators, this study recommends review of Warren and Crabtree (1986), who have drawn upon this method to produce a commonly cited and relatively comprehensive chronology.

Ethnography

The project site is located in the traditional territories of the Cahuilla, Luiseño, and Serrano people.

Cahuilla. The Cahuilla are a member of the Cupan group of the Takic subfamily of languages (Bean 1978:550). Like other Native American groups in southern California, the Cahuilla practiced semi-nomadic hunter-gatherer subsistence strategies and commonly exploited seasonably available plant and animal resources. Spanish missionaries were the first outsiders to encounter them during the late 18th century. The Cahuilla are generally divided into three groups: Desert Cahuilla, Mountain Cahuilla, and Western (or Pass) Cahuilla (Kroeber 1925). The term Western Cahuilla is preferred over Pass Cahuilla because this group is not confined to the San Gorgonio Pass area. The distinctions are believed to be primarily geographic, although linguistic and cultural differences may have existed to varying degrees (Strong 1929). Cahuilla territory lies within the geographic center of Southern California and the Cocopa-Maricopa Trail, a major prehistoric trade route, ran through it. The first written accounts of the Cahuilla are attributed to mission fathers; later documentation was by Strong (1929), Bright (1998), and others.

Luiseño. Typically, the native culture groups in southern California are named after nearby Spanish missions, and such is the case for this Takic-speaking population. For instance, the term "Luiseño" is applied to the natives inhabiting the region within the "ecclesiastical jurisdiction of Mission San Luis Rey…[and who shared] an ancestral relationship which is evident in their cosmogony, and oral tradition, common language, and reciprocal relationship in ceremonies" (Oxendine 1983:8). The first written accounts of the Luiseño are attributed to the mission fathers. Sparkman (1908), Oxendine (1983) and others produced later documentation. Prior to Spanish occupation of California, the territory of the Luiseño extended along the coast from Agua Hedionda Creek to the south, Aliso Creek to the northwest, and the Elsinore Valley and Palomar Mountain to the east. These territorial boundaries were somewhat fluid and changed through time. They encompassed an extremely diverse environment that included coastal beaches, lagoons and marshes, inland river valleys and foothills, and mountain groves of oaks and evergreens (Bean and Shipek 1978:551).

Serrano. The Uto-Aztecan "Serrano" people occupied the western Mojave Desert periphery.

Kroeber (1925) applied the generic term “Serrano” to four groups, each with distinct territories: the Kitanemuk, Tataviam, Vanyume, and Serrano. Only one group, in the San Bernardino Mountains and West-Central Mojave Desert, ethnically claims the term Serrano. Bean and Smith (1978) indicate that the Vanyume, an obscure Takic population, was found along the Mojave River at the time of Spanish contact. The Kitanemuk lived to the north and west, while the Tataviam lived to the west. The Serrano lived mainly to the south (Bean and Smith 1978). All may have used the western Mojave area seasonally. Historical records are unclear concerning precise territory and village locations.

History

Historic-era California is generally divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present).

Spanish Period. The first European to pass through the vicinity is thought to be a Spaniard called Father Francisco Garces. Having become familiar with the area, Garces acted as a guide to Juan Bautista de Anza, who had been commissioned to lead a group across the desert from a Spanish outpost in Arizona to set up quarters at the Mission San Gabriel in 1771 near what today is Pasadena (Beck and Haase 1974). Garces was followed by Alta California Governor Pedro Fages, who briefly explored the region in 1772. Searching for San Diego Presidio deserters, Fages had traveled through Riverside to San Bernardino, crossed over the mountains into the Mojave Desert, and then journeyed westward to the San Joaquin Valley (Beck and Haase 1974).

Mexican Period. In 1821, Mexico overthrew Spanish rule and the missions began to decline. By 1833, the Mexican government passed the Secularization Act, and the missions, reorganized as parish churches, lost their vast land holdings, and released their neophytes (Beattie and Beattie 1974).

American Period. The American Period, 1848–Present, began with the Treaty of Guadalupe Hidalgo. In 1850, California was accepted into the Union of the United States primarily due to the population increase created by the Gold Rush of 1849. The cattle industry reached its greatest prosperity during the first years of the American Period. Mexican Period land grants had created large pastoral estates in California, and demand for beef during the Gold Rush led to a cattle boom that lasted from 1849–1855. However, beginning about 1855, the demand for beef began to decline due to imports of sheep from New Mexico and cattle from the Mississippi and Missouri Valleys. When the beef market collapsed, many California ranchers lost their ranchos through foreclosure. A series of disastrous floods in 1861–1862, followed by a significant drought diminished the economic impact of local ranching. This decline combined with ubiquitous agricultural and real estate developments of the late 19th century, set the stage for diversified economic pursuits that have continued to proliferate to this day (Beattie and Beattie 1974; Cleland 1941).

PERSONNEL

David Brunzell, M.A., RPA acted as the Project Manager and Principal Investigator for the current study, compiled the technical report, and completed the Paleontological Overview

(Appendix C). BCR Consulting Staff Archaeologist Judy Bernal completed the cultural resources records search and performed the field survey. BCR Consulting Staff Archaeologist and Geographic Information Systems (GIS) Specialist Joseph Brunzell initiated the tribal scoping (Appendix B) and prepared the project maps.

METHODS

Research

Prior to fieldwork, a records search was conducted at the Eastern Information Center (EIC), the local clearinghouse for cultural resource records. This archival research reviewed the status of all recorded historic and prehistoric cultural resources, and survey and excavation reports completed within one mile of the project site. Additional resources reviewed included the National Register of Historic Places, the California Register of Historical Resources, and documents and inventories published by the California Office of Historic Preservation. These include the lists of California Historical Landmarks, California Points of Historical Interest, Listing of National Register Properties, and the Inventory of Historic Structures.

Field Survey

An archaeological field survey of the project site was conducted on May 25, 2016. The survey was conducted by walking parallel transects spaced approximately 15 meters apart across 100 percent of the project site. Soil exposures were carefully inspected for evidence of cultural resources.

RESULTS

Research

Research completed through the EIC revealed that five cultural resource studies have taken place resulting in one cultural resource (a historic building complex) recorded within one mile of the project site. Of the five previous studies, none have previously assessed the project site and no cultural resources have been previously recorded within its boundaries. The research results are summarized in Table A.

Table A. Cultural Resources and Studies within One Mile of the Project Site

USGS 7.5 Minute Quadrangle	Cultural Resources Within One Mile of Project Site	Reports Within One Mile of Project Site
Sunnymead, California (1980)	33-15454	RI-130, 182, 5795, 6269, 7645

Field Survey

During the field survey, BCR Consulting archaeologists did not record any cultural resources within the project site boundaries. The project site has been subject to mechanical discing for weed abatement. Sediments include silty sand with some gravel present. Discing has removed native vegetation, although some seasonal grasses and shrubs remain affording approximately 80 percent surface visibility.

RECOMMENDATIONS

The records search failed to indicate significant cultural resources in the vicinity of the project site. During the field survey, BCR Consulting archaeologists did not discover any cultural resources (including prehistoric or historic-period archaeological sites or historic-period buildings) within the project site. Furthermore, the sediments, rocks, and topography of the project site did not exhibit any potential for significant cultural utility or sensitivity. As a result, BCR Consulting recommends a finding of no impacts to historical resources under CEQA for the current project. BCR Consulting also recommends that no additional cultural resources work or monitoring is necessary during proposed activities associated with the development of the project site. However, if previously undocumented cultural resources are identified during earthmoving activities, a qualified archaeologist should be contacted to assess the nature and significance of the find, diverting construction excavation if necessary.

If human remains are encountered during any proposed project activities, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

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APPENDIX A

PROJECT PHOTOGRAPHS

Photo 1: Project Site Overview from SW Corner (View North)

Photo 2: Project Site Overview from SE Corner (View West)

Photo 3: Project Site Overview from SE Corner (View North)

Photo 4: Project Site Overview from SE Corner (View Northwest)

APPENDIX B

TRIBAL SCOPING COMMUNICATIONS

Subject:	BCR SLF/List of Tribes Request, Alessandro Apts Project, Moreno Valley, Riverside County
From:	David Brunzell (david.brunzell@yahoo.com)
To:	gayle.totton@nahc.ca.gov;
Date:	Monday, May 23, 2016 4:14 PM

Hi Gayle,

I'd like to request a Sacred Lands File Search and list of potentially interested tribes for the proposed Alessandro Apartments Project in the city of Moreno Valley, Riverside County. The Project will be located as follows (SBBM; see attached project location map):

Township 3 South
Range 3 West
Section 17
USGS 7.5 Minute Topographic Quad: Sunnymead*, California* (1980)

Please send the results and list to my email or the bellow fax number and please get in touch with any questions.

Thanks,

David Brunzell
Principal Investigator/Archaeologist

BCR Consulting LLC
Certified Small Business (SB)
1420 Guadalajara Place
Claremont, California 91711
TEL: 909-525-7078
FAX: 909-992-3065
www.bcrconsulting.net

Attachments

- Fig 1.pdf (422.09KB)

STATE OF CALIFORNIA Edmund G. Brown, Jr., *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

May 24, 2016

David Brunzell
BCR Consulting LLC

Sent by E-mail: david.brunzell@yahoo.com
Number of Pages: 6

RE: Proposed Alessandro Apartments Project, City of Moreno Valley, Sunnymead USGS Quadrangle, Riverside County, California

Dear Mr. Brunzell:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. A search of the SFL was completed for the USGS quadrangle information provided with negative results.

Our records indicate that the lead agency for this project has not requested a Native American Consultation List for the purposes of formal consultation. Please note that the intent of the referenced codes below is to mitigate impacts to tribal cultural resources, as defined, for California Environmental Quality Act (CEQA) projects under AB-52.

As of July 1, 2015, Public Resources Code Sections 21080.3.1 and 21080.3.2 **require public agencies** to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

> **Within 14 days** of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.3.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.3.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:
   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
   - If the probability is low, moderate, or high that cultural resources are located in the APE.

- Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measurers.
   - All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand well help to facilitate the consultation process.

The results of these searches and surveys should be included in the "Tribal Cultural Resources" subsection of the Cultural Resources section of the environmental document submitted for review.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

Native American Contact List
Riverside County
May 24, 2016

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
Indio, CA 92203
(760) 342-2593
(760) 347-7880 Fax

Los Coyotes Band of Mission Indians
Shane Chapparosa, Chairman
P.O. Box 189 — Cahuilla
Warner Springs, CA 92086
Chapparosa@msn.com
(760) 782-0711
(760) 782-0712 Fax

Pala Band of Mission Indians
Shasta Gaughen, PhD, THPO
PMB 50, 35008 Pala Temecula Rd. — Luiseno, Cupeno
Pala, CA 92059
sgaughen@palatribe.com
(760) 891-3515
(760) 742-3189 Fax

Pauma Band of Luiseno Indians - Pauma & Yuima
Temet Aguilar, Chairperson
P.O. Box 369, Ext. 303 — Luiseno
Pauma Valley, CA 92061
(760) 742-1289
(760) 742-3422 Fax

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Manager
P.O. Box 1477 — Luiseno
Temecula, CA 92593
pmacarro@pechanga-nsn.gov
(951) 770-8100
(951) 506-9491 Fax

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 — Cahuilla
Anza, CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

Rincon Band of Mission Indians
Jim McPherson, Tribal Historic Pres. Officer
1 West Tribal Road — Luiseno
Valley Center, CA 92082
vwhipple@rincontribe.org
(760) 749-1051
(760) 749-5144

San Manuel Band of Mission Indians
Lynn Valbuena, Chairwoman
26569 Community Center — Serrano
Highland, CA 92346
(909) 864-8933
(909) 864-3370 Fax

Soboba Band of Luiseno Indians
Carrie Garcia, Cultural Resources Manager
P.O. Box 487 — Luiseno, Cahuilla
San Jacinto, CA 92581
carrieg@soboba-nsn.gov
(951) 654-2765
(951) 654-4198 Fax

Torres-Martinez Desert Cahuilla Indians
Mary Resvaloso, Chairperson
P.O. Box 1160 — Cahuilla
Thermal, CA 92274
tmchair@torresmartinez.org
(760) 397-0300
(760) 397-8146 Fax

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This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Alessandro Apartments Project, City of Moreno Valley, Sunnymead USGS Quadrangle, Riverside County, California.

Native American Contact List
Riverside County
May 24, 2016

Santa Rosa Band of Mission Indians
Steven Estrada, Chairman
P.O. Box 391820 — Cahuilla
Anza, CA 92539
(951) 659-2700
(951) 659-2228 Fax

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road — Luiseno
Valley Center, CA 92082
bomazzetti@aol.com
(760) 749-1051
(760) 749-5144

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA 92236
(760) 398-4722
(760) 369-7161Fax

Cabazon Band of Mission Indians
Judy Stapp, Director of Cultural Affairs
84-245 Indio Springs Parkway — Cahuilla
Indio, CA 92203
jstapp@cabazonindians-nsn.gov
(760) 342-2593
(760) 347-7880 Fax

Morongo Band of Mission Indians
Denisa Torres, Cultural Resources Manager
12700 Pumarra Road — Cahuilla, Serrano
Banning, CA 92220
dtorres@morongo-nsn.gov
(951) 849-8807
(951) 572-6004 Fax
(951) 572-6004 Fax

Los Coyotes Band of Cahuilla and Cupeno Indians
Janice Elzendnga, Tribal Administrator
P.O. Box 189 — Cahuilla
Warner Springs, CA 92086
(760) 782-0711
(760) 782-2701 Fax

San Manuel Band of Mission Indians
Daniel McCarthy, M.S., Director-CRM Dept.
26569 Community Center Drive — Serrano
Highland, CA 92346
dmccarthy@sanmanuel-nsn.gov
(909) 864-8933 Ext 3248
(909) 862-5152 Fax

Los Coyotes Band of Cahuilla and Cupeno Indians
John, Perada, Environmental Director
P.O. Box 189 — Cahuilla
Warner Springs, CA 92086
(760) 782-0712
(760) 782-2730 Fax

Pauma Band of Luiseno Indians - Pauma & Yuima
Bennae Calac
P.O. Box 369 — Luiseno
Pauma Valley, CA 92061
bennaecalac@aol.com
(760) 617-2872
(760) 742-3422 Fax

Ramona Band of Cahuilla Indians
Manuel Hamilton, Vice Chairperson
P.O. Box 391670 — Cahuilla
Anza, CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

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Native American Contact List
Riverside County
May 24, 2016

Ramona Band of Mission Indians
John Gomez, Environmental Coordinator
P.O. Box 391670 Cahuilla
Anza , CA 92539
Jgomez@ramonatribe.com
(951) 763-4105

(951) 763-4325 Fax

San Luis Rey Band of Mission Indians
Tribal Council
1889 Sunset Drive Luiseno
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(760) 724-2172 Fax

San Luis Rey Band of Mission Indians
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1889 Sunset Drive Luiseno
Vista , CA 92081 Cupeno
cjmojado@slrmissionindians.org
(760) 724-8505

(760) 724-2172 Fax

Santa Rosa Band of Mission Indians
Terry Hughes, Tribal Administrator
P.O. Box 391820 Cahuilla
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thughes@santarosacahuilla-nsn.gov
(951) 659-2700

(951) 659-2228 Fax

Kupa Cultural Center (Pala Band)
Shasta Gaughen, Assistant Director
PMB 50, 35008 Pala Temecula Rd. Luiseno
Pala , CA 92059
sgaughen@palatribe.com
(760) 891-3515

(760) 742-4543 Fax

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive Cahuilla
Palm Springs , CA 92264
(760) 699-6800

(760) 699-6919 Fax

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Rroad Cahuilla
Banning , CA 92220 Serrano
(951) 849-8807
(951) 755-5200
(951) 922-8146 Fax

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 Luiseno
Temecula , CA 92593
striplett@pechanga-nsn.gov
(951) 770-6000

(951) 695-1778 Fax

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76 Luiseno
Pauma Valley , CA 92061
(760) 742-3771

(760) 742-3779 Fax

Serrano Nation of Mission Indians
Goldie Walker, Chairperson
P.O. Box 343 Serrano
Patton , CA 92369

(909) 528-9027
(909) 528-9032

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Native American Contact List
Riverside County
May 24, 2016

Agua Caliente Band of Cahuilla Indians THPO
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
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ACBCI-THPO@aguacaliente.net
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(760) 567-3761 Cell
(760) 699-6924 Fax

Augustine Band of Cahuilla Mission Indians
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Coachella , CA 92236
(760) 398-4722

Pauma Band of Luiseno Indians - Pauma & Yuima
Charles Devers, Cultural Committee
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Pauma Valley , CA 92061
(760) 742-1289

(760) 742-3422 Fax

Cahuilla Band of Indians
Luther Salgado, Chairperson
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(951) 763-2808

Pechanga Cultural Resources Department
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Soboba Band of Luiseno Indians
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(951) 654-5544, ext 4137
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Pala Band of Mission Indians
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12196 Pala Mission Road — Luiseno
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(760) 742-3189 Fax

Torres-Martinez Desert Cahuilla Indians
Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1160 — Cahuilla
Thermal , CA 92274
mmirelez@tmdci.org
(760) 399-0022, Ext. 1213

(760) 397-8146 Fax

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Native American Consultation Summary for the Alessandro Apartments Project, Moreno Valley, Riverside County, California Native American Heritage Commission replied to BCR Consulting Request on May 24, 2016. Results of Sacred Land File Search did not indicate presence of Native American cultural resources, and recommended that the below groups/individuals be contacted.

Groups Contacted	Letter/Email Date	Response from Tribes
Doug Welmas, Chairperson Cabazon Band of Mission Indians	Letter: 6/18/16 Email: N/A	None
Joseph Hamilton, Chairman Ramona Band of Cahuilla Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Shane Chapparosa, Chairman Los Coyotes Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Jim McPherson, Tribal Historic Preservation Officer Rincon Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Shasta Gaughen, Historic Preservation Office Pala Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Lynn Valbuena, Chairwoman San Manuel Band of Mission Indians	Letter: 6/18/16 Email: N/A	None
Temet Aguilar, Chairperson Pauma Band of Lusieno Indians Pauma & Yuima	Letter: 6/18/16 Email: N/A	None
Carrie Garcia, CRM Soboba Band of Luiseno Indians	Letter: 6/18/16 Email: 6/20/16	None
Paul Macarro, Cultural Resources Manager Pechanga Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Mary Resvaloso, Chairperson Torres-Martinez Desert Cahuilla Indians	Letter: 6/18/16 Email: 6/20/16	None
Steven Estrada, Chairman Santa Rosa Band of Mission Indians	Letter: 6/18/16 Email: N/A	None
Bo Mazzetti, Chairperson Rincon Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Amanda Vance, Chairperson Augustine Band of Cahuilla Mission Indians	Letter: 6/18/16 Email: N/A	None
Judy Stapp, Director of Cultural Affairs Cabazon Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Denisa Torres, Cultural Resources Manager Morongo Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Janice Elzendnga, Tribal Administrator Los Coyotes Band of Cahuilla and Cupeno Indians	Letter: 6/18/16 Email: N/A	None

Groups Contacted	Letter/Email Date	Response from Tribes
Daniel McCarthy, M.S., Director-CRM Department San Manuel Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
John Perada, Environmental Director Los Coyotes Band of Cahuilla and Cupeno Indians	Letter: 6/18/16 Email: N/A	None
Bennae Calac Pauma Valley Band of Luiseno Indians	Letter: 6/18/16 Email: 6/20/16	None
Manuel Hamilton, Vice Chairperson Ramona Band of Cahuilla Indians	Letter: 6/18/16 Email: 6/20/16	None
John Gomez, Environmental Coordinator Ramona Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Jeff Grubbe, Chairperson Agua Caliente Band of Cahuilla Indians	Letter: 6/18/16 Email: N/A	None
Tribal Council San Luis Rey Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Robert Martin, Chairperson Morongo Band of Mission Indians	Letter: 6/18/16 Email: N/A	None
Cultural Department San Luis Rey Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Mark Macarro, Chairperson Pechanga Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Terry Hughes, Tribal Administrator Santa Rosa Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Thomas Rodriguez, Chairperson La Jolla Band of Luiseno Indians	Letter: 6/18/16 Email: N/A	None
Goldie Walker, Chairwoman Serrano Nation of Mission Indians	Letter: 6/18/16 Email: N/A	None
Patricia Garcia-Plotkin, THPO Agua Caliente Band of Cahuilla Indians	Letter: 6/18/16 Email: 6/20/16	None
Joseph Ontiveros, Cultural Resources Department Soboba Band of Luiseno Indians	Letter: 6/18/16 Email: 6/20/16	None
Karen Kupcha Augustine Band of Mission Indians	Letter: 6/18/16 Email: N/A	None
Robert Smith, Chairperson Pala Band of Mission Indians	Letter: 6/18/16 Email: 6/20/16	None
Charles Devers, Cultural Committee	Letter: 6/18/16	None

Groups Contacted	Letter/Email Date	Response from Tribes
Pauma & Yuima Reservation	Email: N/A	
Michael Mirelez, Cultural Resources Director Torres-Martinez Desert Cahuilla Indians	Letter: 6/18/16 Email: 6/20/16	None
Luther Salgado, Chairperson Cahuilla Band of Indians	Letter: 6/18/16 Email: 6/20/16	None
Anna Hoover, Cultural Analyst Pechanga Cultural Resources Department	Letter: 6/18/16 Email: 6/20/16	None

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Doug Welmas
Chaiperson
Cabazon Band of Mission Indians
84245 Indio Springs Parkway
Indio, California 92203

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by July 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Joseph Hamilton
Chairman
Ramona Band of Cahuilla Indians
P.O. Box 391670
Anza, California 92539

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairman:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Shane Chapparosa
Chairman
Los Coyotes Band of Mission Indians
P.O. Box 189
Warner, California 92086

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairman:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Jim McPherson
Tribal Historic Preservation Officer
Rincon Band of Mission Indians
1 West Tribal Road
Valley Center, California 92082

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Jim:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by July 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Shasta Gaughen
Historic Preservation Office
Pala Band of Mission Indians
35008 Pala Temecula Road, PMB
Pala, California 92059

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Shasta:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Lynn Valbuena
Chairwoman
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, California 92346

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Ms. Chairwoman:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by July 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
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June 18, 2016

Temet Aguilar
Chairperson
Pauma & Yuima Reservation
P.O. Box 369
Pauma Valley, California 92061

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
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Tehach

June 18, 2016

Carrie Garcia
Soboba Band of Luiseno Indians
Cultural Resources Manager
P.O. Box 487
San Jacinto, California 92581

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Carrie:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by July 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Paul Macarro
Cultural Resources Manager
Pechanga Band of Mission Indians
P.O Box 1477
Temecula, California 92593

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Paul:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
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June 18, 2016

Mary Resvaloso
Chairperson
Torres-Martinez Desert Cahuilla Indians
P.O. Box 1160
Thermal, California 92274

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Ms. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
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June 18, 2016

Steven Estrada
Chairman
Santa Rosa Band of Mission Indians
P.O. Box 391820
Anza, California 92539

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairman:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Bo Mazzetti
Chairperson
Rincon Band of Mission Indians
1 West Tribal Road
Valley Center, California 92082

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Amanda Vance
Chairperson
Augustine Band of Cahuilla Mission Indians
P.O. Box 846
Coachella, California 92236

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Ms. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
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June 18, 2016

Judy Stapp
Director of Cultural Affairs
Cabazon Band of Mission Indians
84-245 Indio Springs
Indio, California 92203-3499

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Judy:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Denisa Torres
Cultural Resources Manager
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, California 92220

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Denisa:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
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June 18, 2016

Janice Elzendnga
Tribal Administrator
Los Coyotes Band of Cahuilla and Cupeno Indians
P.O. Box 189
Warner Springs, California 92086

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Janice:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Daniel McCarthy, M.S.
Director-CRM Department
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, California 92346

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Daniel:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

John Perada
Environmental Director
Los Coyotes Band of Cahuilla and Cupeno Indians
P.O. Box 189
Warner Springs, California 92086

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear John:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Bennae Calac
Pauma Valley Band of Luiseno Indians
P.O. Box 369
Pauma Valley, California 92061

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Bennae:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

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BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS

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Claremont Napa Tehachapi

June 18, 2016

Joseph Hamilton
Chairman
Ramona Band of Cahuilla Indians
P.O. Box 391670
Anza, California 92539

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairman:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

John Gomez
Environmental Coordinator
Ramona Band of Mission Indians
P.O. Box 391670
Anza, California 92539

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear John:

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BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

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June 18, 2016

Jeff Grubbe
Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, California 92264

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by July 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Tribal Council
San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, California 92081

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Tribal Council:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Robert Martin
Chairperson
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, California 92220

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Cultural Department
San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, California 92081

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Cultural Department:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
www.bcrconsulting.net | Clarem Napa Tehach
909.525.7078

June 18, 2016

Mark Macarro
Chairperson
Pechanga Band of Mission Indians
P.O. Box 1477
Temecula, California 92593

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
www.bcrconsulting.net 909.525.7078 | Clarem Napa Tehach

June 18, 2016

Terry Hughes
Tribal Administrator
Santa Rosa Band of Mission Indians
P.O. Box 391820
Anza, California 92539

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Terry:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
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909.525.7078
Clarem
Napa
Tehach

June 18, 2016

Thomas Rodriguez
Chairperson
La Jolla Band of Luiseno Indians
22000 Highway 76
Pauma Valley, California 92061

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Goldie Walker
Chairwoman
Serrano Nation of Mission Indians
P.O. Box 343
Patton, California 92369

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Ms. Chairwoman:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Patricia Garcia-Plotkin
Director
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, California 92264

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Patricia:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
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June 18, 2016

Joseph Ontiveros
Cultural Resources Department
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, California 92581

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Joseph:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Karen Kupcha
Augustine Band of Mission Indians
P.O. Box 849
Coachella, California 92236

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Karen:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Robert Smith
Chairperson
Pala Band of Mission Indians
12196 Pala Mission Road
Pala, California 92059

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS

www.bcrconsulting.net 909.525.7078 Claremont Napa Tehachapi

June 18, 2016

Charles Devers
Cultural Committee
Pauma & Yuima Reservation
P.O. Box 369
Pauma Valley, California 92061

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Charles:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Michael Mirelez
Cultural Resources Coordinator
Torres-Martinez Desert Cahuilla Indians
P.O. Box 1160
Thermal, California 92274

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Michael:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
www.bcrconsulting.net 909.525.7078 Clarem Napa Tehach

June 18, 2016

Luther Salgado
Chairperson
Cahuilla Band of Indians
P.O. Box 391760
Anza, California 92539

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

BCRCONSULTING LLC ARCHAEOLOGY HISTORIC PRESERVATION PALEONTOLOGY GIS
www.bcrconsulting.net 909.525.7078 | Clarem Napa Tehach

June 18, 2016

Anna Hoover
Cultural Analyst
Pechanga Cultural Resources Department
P.O. Box 2183
Temecula, California 92593

Subject: Tribal Scoping for the Alessandro Apartments Project, Moreno Valley, Riverside County, California

Dear Anna:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in Section 17 of Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The property is depicted on the *Sunnymead* (1980), *California* 7.5-minute USGS topographic quadrangle, (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

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☐ Adult Signature Restricted Delivery	$
Postage	$0.47
Total Postage and Fees	$3.77

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Sent To Doug Welmas
Street and Apt. No., or PO Box No. 84245 Indio Springs
City, State, ZIP+4® Indio, CA 92203-3499

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7015 1730 0002 2244 0969

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☐ Certified Mail Restricted Delivery	$0.00
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06/18/201

Sent To Joseph Hamilton
Street and Apt. No., or PO Box No. P.O. Box 391670
City, State, ZIP+4® Anza, CA. 92539

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☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.47
Total Postage and Fees	$3.77

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Sent To Shane Chapparosa
Street and Apt. No., or PO Box No. P.O. Box 189
City, State, ZIP+4® Warner, CA. 92086

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☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.47
Total Postage and Fees	$3.77

083
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RANCHO CUCAMONGA CA JUN 18 201 USPS 9998
06/18/201

Sent To Jim McPherson
Street and Apt. No., or PO Box No. 1 West Tribal Road
City, State, ZIP+4® Valley Center, CA. 9208

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Ins ons

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☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.47
Total Postage and Fees	$3.77

0830
13
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06/18/2016

Sent To Shasta Gaughen
Street and Apt. No., or PO Box No. 35008 Pala Temecula Rd.
City, State, ZIP+4® Pala, CA. 92059

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.47
Total Postage and Fees	$3.77

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RANCHO CUCA JUN 18 2016 USPS
06/18/201

Sent To Lynn Valbuena
Street and Apt. No., or PO Box No. 26569 Community Center D
City, State, ZIP+4® Highland, CA. 92346

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Ins ons

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

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☐ Return Receipt (hardcopy)	$0.00	
☐ Return Receipt (electronic)	$0.00	
☐ Certified Mail Restricted Delivery	$0.00	
☐ Adult Signature Required	$0.00	
☐ Adult Signature Restricted Delivery	$	
Postage	$0.47	
Total Postage and Fees	$3.77	

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06/18/2016

Sent To: Temet Aguilar

Street and Apt. No., or PO Box No.: P.O. Box 369

City, State, ZIP+4®: Pauma Valley, CA. 92061

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☐ Return Receipt (electronic)	$0.00	
☐ Certified Mail Restricted Delivery	$0.00	
☐ Adult Signature Required	$0.00	
☐ Adult Signature Restricted Delivery	$	
Postage	$0.47	
Total Postage and Fees	$3.77	

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Sent To: Carrie Garcia

Street and Apt. No., or PO Box No.: P.O. Box 487

City, State, ZIP+4®: San Jacinto, CA. 92581

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☐ Return Receipt (electronic)	$0.00	
☐ Certified Mail Restricted Delivery	$0.00	
☐ Adult Signature Required	$0.00	
☐ Adult Signature Restricted Delivery	$	
Postage	$0.47	
Total Postage and Fees	$3.77	

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Sent To: Paul Macarro

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☐ Return Receipt (electronic)	$0.00	
☐ Certified Mail Restricted Delivery	$0.00	
☐ Adult Signature Required	$0.00	
☐ Adult Signature Restricted Delivery	$	
Postage	$0.47	
Total Postage and Fees	$3.77	

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Sent To: Mary Resvaloso

Street and Apt. No., or PO Box No.: P.O. Box 1160

City, State, ZIP+4®: Thermal, CA. 92274

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Return Receipt (electronic)	$0.00	
☐ Certified Mail Restricted Delivery	$0.00	
☐ Adult Signature Required	$0.00	
☐ Adult Signature Restricted Delivery	$	
Postage	$0.47	
Total Postage and Fees	$3.77	

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06/18/2016

Sent To: Steven Estrada

Street and Apt. No., or PO Box No.: P.O. Box 391820

City, State, ZIP+4®: Anza, CA. 92539

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☐ Return Receipt (hardcopy)	$0.00	
☐ Return Receipt (electronic)	$0.00	
☐ Certified Mail Restricted Delivery	$0.00	
☐ Adult Signature Required	$0.00	
☐ Adult Signature Restricted Delivery	$	
Postage	$0.47	
Total Postage and Fees	$3.77	

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06/18/201

Sent To: Bo Mazzetti

Street and Apt. No., or PO Box No.: 1 West Tribal Road

City, State, ZIP+4®: Valley Center, CA. 920

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☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	
Postage	$0.47
Total Postage and Fees	$3.77

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Sent To: Amanda Vance

Street and Apt. No., or PO Box No.: P.O. Box 846

City, State, ZIP+4®: Coachella, CA. 92236

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INDIO, CA 92203

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☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	
Postage	$0.47
Total Postage and Fees	$3.77

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Sent To: Judy Stapp

Street and Apt. No., or PO Box No.: 84245 Indio Springs

City, State, ZIP+4®: Indio, CA. 92203-349

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☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
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Postage	$0.47
Total Postage and Fees	$3.77

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Sent To: Denisa Torres

Street and Apt. No., or PO Box No.: 12700 Pumarra Rd.

City, State, ZIP+4®: Banning, CA. 92220

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☐ Adult Signature Required	$0.00
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Postage	$0.47
Total Postage and Fees	$3.77

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Sent To: Janice Elzendaga

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Postage	$0.47
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Sent To: Daniel McCarthy

Street and Apt. No., or PO Box No.: 26569 Community Center Dr.

City, State, ZIP+4®: Highland, CA. 92346

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☐ Adult Signature Required	$0.00
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Sent To: John Perada

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Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

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☐ Certified Mail Restricted Delivery $ $0.00
☐ Adult Signature Required $ $0.00
☐ Adult Signature Restricted Delivery $ $0.00
Postage $0.47
$
Total Postage and Fees $3.77
$

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06/18/2016

Sent To Bernae Calac
Street and Apt. No., or PO Box No. P.O. Box 369
City, State, ZIP+4® Pauma Valley, CA. 92061

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☐ Certified Mail Restricted Delivery $ $0.00
☐ Adult Signature Required $ $0.00
☐ Adult Signature Restricted Delivery $ $0.00
Postage $0.47
$
Total Postage and Fees $3.77
$

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06/18/201

Sent To Manuel Hamilton
Street and Apt. No., or PO Box No. P.O. Box 391670
City, State, ZIP+4® Anza, CA. 92539

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☐ Return Receipt (electronic) $ $0.00
☐ Certified Mail Restricted Delivery $ $0.00
☐ Adult Signature Required $ $0.00
☐ Adult Signature Restricted Delivery $ $0.00
Postage $0.47
$
Total Postage and Fees $3.77
$

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RANCHO CUCAMONGA CA JUN 18 2016 USPS 91739-9998
06/18/2016

Sent To John Gomez
Street and Apt. No., or PO Box No. P.O. Box 391670
City, State, ZIP+4® Anza, CA. 92539

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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PALM SPRINGS, CA 92264

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$ $0.00
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☐ Return Receipt (hardcopy) $ $0.00
☐ Return Receipt (electronic) $ $0.00
☐ Certified Mail Restricted Delivery $ $0.00
☐ Adult Signature Required $ $0.00
☐ Adult Signature Restricted Delivery $ $0.00
Postage $0.47
$
Total Postage and Fees $3.77
$

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RANCHO CUCAMONGA JUN 18 2016 USPS 91739-9
06/18/201

Sent To Jeff Grubbe
Street and Apt. No., or PO Box No. 5401 Dinah Shore Drive
City, State, ZIP+4® Palm Springs, CA. 92264

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Ins

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VISTA, CA 92081

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$ $0.00
Extra Services & Fees (check box, add fee as appropriate)
☐ Return Receipt (hardcopy) $ $0.00
☐ Return Receipt (electronic) $ $0.00
☐ Certified Mail Restricted Delivery $ $0.00
☐ Adult Signature Required $ $0.00
☐ Adult Signature Restricted Delivery $ $0.00
Postage $0.47
$
Total Postage and Fees $3.77
$

Postmark Here
RANCHO CUCAMONGA CA JUN 18 2016 USPS 91739-9998
06/18/2016

Sent To Tribal Council
Street and Apt. No., or PO Box No. 1889 Sunset Drive
City, State, ZIP+4® Vista, CA. 92081

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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BANNING, CA 92220

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$ $0.00
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☐ Return Receipt (electronic) $ $0.00
☐ Certified Mail Restricted Delivery $ $0.00
☐ Adult Signature Required $ $0.00
☐ Adult Signature Restricted Delivery $ $0.00
Postage $0.47
$
Total Postage and Fees $3.77
$

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06/18/201

Sent To Robert Martin
Street and Apt. No., or PO Box No. 12700 Pumarra Rd.
City, State, ZIP+4® Banning, CA. 92220

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Ins

Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

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☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	
Postage	$0.47
Total Postage and Fees	$3.77

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RANCHO CUCAMONGA CA JUN 18 2016 USPS 91739-9998

06/18/2016

Sent To: Cultural Department

Street and Apt. No., or PO Box No.: 1889 Sunset Drive

City, State, ZIP+4®: Vista, CA. 92081

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TEMECULA, CA 92593

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☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	
Postage	$0.47
Total Postage and Fees	$3.77

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RANCHO CUCA JUN 18 2016 USPS 91739-9

06/18/201

Sent To: Mark Macarro

Street and Apt. No., or PO Box No.: P.O. Box 1477

City, State, ZIP+4®: Temecula, CA 92593

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	
Postage	$0.47
Total Postage and Fees	$3.77

0830 13

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RANCHO CUCAMONGA CA JUN 18 2016 USPS 91739-9998

06/18/2016

Sent To: Terry Hughes

Street and Apt. No., or PO Box No.: P.O. Box 391820

City, State, ZIP+4®: Anza, CA. 92539

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Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

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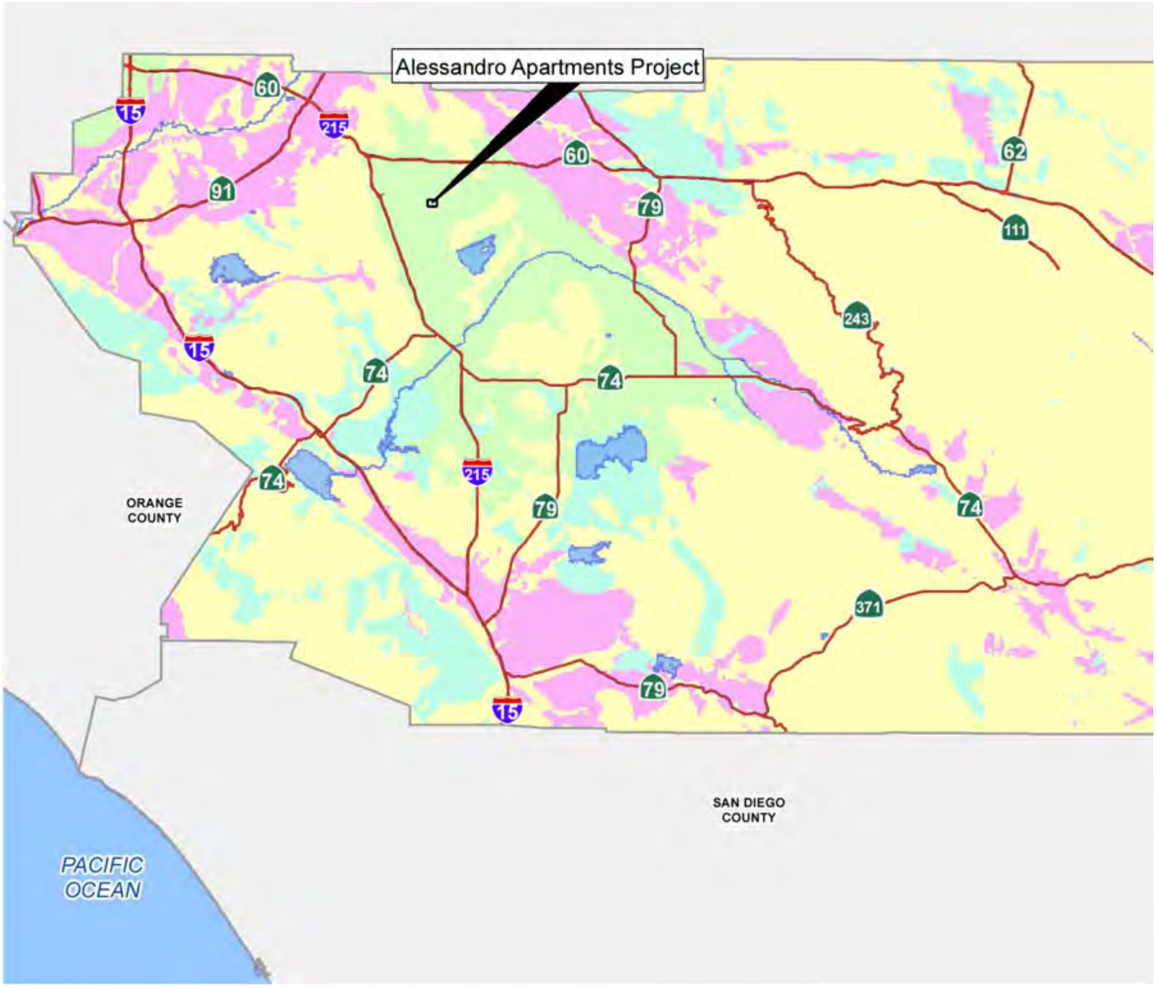
Attachment: Appendix I - Cultural Resources (2340 : PA16-0039 Plot Plan)

APPENDIX C

PALEONTOLOGICAL SENSITIVITY MAP



PALEONTOLOGICAL SENSITIVITY

- High A (Ha)
- High B (Hb)
- Low
- Undetermined
- Highways
- Waterbodies

Miles
0 10 20

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

HILLMANN
CONSULTING

PHASE I ENVIRONMENTAL SITE ASSESSMENT

19.47 ACRES - ALESSANDRO AND PERRIS BOULEVARD
APNS 484-020-25, 484-020-18 AND 484-020-006
MORENO VALLEY, CALIFORNIA 92553

Prepared For:

LATCO Enterprises
940 Calle Negocio, Suite 200
San Clemente, California 92673

June 15, 2016

Hillmann Project No: C3-6578

Your Property. Our Priority.
1745 W. Orangewood Avenue, Suite 110, Orange, CA 92868
Telephone (714) 634-9500 Fax: (714) 634-9507
www.HillmannConsulting.com

HILLMANN
CONSULTING

June 15, 2016

Mr. Robert Lattanzio
LATCO Enterprises
940 Calle Negocio, Suite 200
San Clemente, California 92673

RE: Phase I Environmental Site Assessment
19.47 Acres - Alessandro and Perris Boulevard
APNs 484-020-025, -018, -006
Moreno Valley, California 92553
Hillmann Project Number: C3-6578

Dear Mr. Lattanzio:

Hillmann Consulting, LLC, is pleased to provide the results of our Phase I Environmental Site Assessment of the above referenced property. This assessment was performed in accordance with the scope and limitations of ASTM Practice E 1527-13, which is the latest version of the E1527 standard published by the ASTM, and All Appropriate Inquiries (AAI) Final Rule 40 CFR Part 312.

This report is for the exclusive use of the entities named on the front cover, and no other party shall have any right to rely on any service provided by Hillmann Consulting, LLC, without prior written consent.

We appreciate the opportunity to provide environmental due diligence services. If you have any questions concerning this report, or if we can assist you in any other matter, please contact the Project Manager at (714) 634-9500.

Very Truly Yours,
Hillmann Consulting, LLC

Christine Beaver

Christine Beaver
Senior Project Manager

David Rutherford
Director, Due Diligence

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

TABLE OF CONTENTS

List of Abbreviations/Acronyms

Hillmann may use the following abbreviations and acronyms for common terminology described in our report. Not all abbreviations or acronyms may be applicable to this report:

ACM	– Asbestos Containing Material
AST	– Aboveground Storage Tank
ASTM	– American Standard for Testing Materials
CERCLA	– Comprehensive Environmental Response Compensation and Liability Act
CERCLIS	– Comprehensive Environmental Response Compensation and Liability Information System
CESQG	– Conditionally Exempt Small Quantity Generator
CORRACTS	– Corrective Action Sites
CREC	– Controlled Recognized Environmental Condition
DNPL	– Delisted National Priority List
DTSC	– Department of Toxic Substances Control
ENG	– Engineering
ERNS	– Emergency Response Notification System
FOI	– Freedom of Information
FOIA	– Freedom of Information Act
FOIL	– Freedom of Information Letter
HVAC	– Heating Ventilation & Air Conditioning
HREC	– Historic Recognized Environmental Condition
IAQ	– Indoor Air Quality
INST	– Institutional
LBP	– Lead-Based Paint
LQG	– Large Quantity Generator
LUST	– Leaking Underground Storage Tank
MSDS	– Material Safety Data Sheet
NFA	– No Further Action
NFRAP	– No Further Remedial Actions Planned
NPDES	– National Pollutant Discharge Elimination System
NPL	– National Priority List
RCRA	– Resource Conservation and Recovery Act
RCRIS	– Resource Conservation and Recovery Information System
REC	– Recognized Environmental Condition
RWQCB	– Regional Water Quality Control Board
SCAQMD	– South Coast Air Quality Management District
SQG	– Small Quantity Generator
TSDF	– Treatment Storage and/or Disposal Facility
USEPA	– United States Environmental Protection Agency
UST	– Underground Storage Tank

1.0 EXECUTIVE SUMMARY

Hillmann Consulting, LLC (Hillmann), performed a Phase I Environmental Site Assessment (ESA) of Parcels 484-20-006, 484-20-025, 484-20-018 in Moreno Valley, California (the "Property"). This assessment has been conducted in accordance with the ASTM Standard Practice E 1527-13 for Phase I Environmental Site Assessments and All Appropriate Inquiries (AAI) Final Rule 40 CFR Part 312.

1.1 Project Details Summary Table

A summary of the pertinent details of the project is provided below:

<table>
<tr><th colspan="6">PROJECT SUMMARY TABLE</th></tr>
<tr><td colspan="2">Name of Client</td><td colspan="4">Latco Enterprises</td></tr>
<tr><td colspan="2">Client Project No.:</td><td colspan="4">N/A</td></tr>
<tr><td colspan="2">Client Contact:</td><td colspan="4">Mr. Robert Lattanzio</td></tr>
<tr><td colspan="2">Description of Project</td><td colspan="4">Phase I Environmental Site Assessment</td></tr>
<tr><td colspan="2">Project Name:</td><td colspan="4">N/A</td></tr>
<tr><td colspan="2">Street Address:</td><td colspan="4">Alessandro and Perris Boulevard</td></tr>
<tr><td>City:</td><td>Moreno Valley</td><td>County:</td><td>Riverside</td><td>State:</td><td>California</td></tr>
<tr><td colspan="2">Tax ID/Parcel Number:</td><td colspan="4">484-20-006, 484-20-025, 484-20-018</td></tr>
<tr><td colspan="2">Zoning Designation:</td><td colspan="4">Vacant Commercial</td></tr>
<tr><td colspan="2">Approx. Property Area:</td><td colspan="4">19.47 Acres</td></tr>
<tr><td colspan="2">Approximate Building Area:</td><td colspan="4">N/A</td></tr>
<tr><td colspan="2">Year Built:</td><td colspan="4">N/A</td></tr>
<tr><td colspan="2">General Type of Usage:</td><td colspan="4">Vacant land</td></tr>
<tr><td colspan="2">Property Owner:</td><td colspan="4">Professors Fund I, IV</td></tr>
<tr><td colspan="2">Occupant(s):</td><td colspan="4">Vacant</td></tr>
<tr><td colspan="2">Assessment Personnel:</td><td colspan="4">Mr. Jonathan Mc Connell</td></tr>
<tr><td colspan="2">Property Contact:</td><td colspan="4">Mr. Robert B. Lattanzio</td></tr>
<tr><td colspan="2">Property Escort(s):</td><td colspan="4">NA</td></tr>
<tr><td colspan="2">Inspection Date:</td><td colspan="4">June 10, 2016</td></tr>
<tr><td colspan="2">Weather Conditions:</td><td colspan="4">Cloudy, 61 degrees F</td></tr>
</table>

1.2 Findings Summary Table

The following table summarizes the key findings of this assessment. This table, alone, does not constitute the complete assessment. The report must be reviewed in its entirety.

Assessment Section	No Sig. Concern	Potential Env Concern	REC	Recommended Follow-up	Rep. Ref.
User Provided Info	X				3.0
Data Gaps	X				2.5
Regulatory Review	X				4.1
Historical Review	X				4.4
Site Use	X				5.2
Adjoining Properties	X				4.1.2 5.2.8
Hazardous Materials	X				5.3
Bulk Petroleum Storage	X				5.3
PCBs	X				5.3
Waste / Discharges	X				5.3
Asbestos Containing Materials (ACM)	X				7.1
Lead Based Paint (LBP)	X				7.2
Radon	X				7.3
Mold	X				7.4
Wetlands	X				7.5

NA = Not Applicable, TBD = To Be Determined, UNK = Unknown

1.3 General Description, Current and Historic Property Use

The Property consists of three rectangular shaped parcels located on the southeast corner of the intersection of Alessandro and Perris Boulevard in Moreno Valley, California. The Property is currently vacant. The total Property area is approximately 19.47 acres. The Property is located in a suburban developed area characterized by a mix of commercial properties, single and multi-family homes, apartments, and warehouses. The terrain of the Property appeared to be relatively flat. No natural surface bodies of water were observed.

The Property appears to have never been developed.

1.4 Findings, Opinions, and Conclusions

1.4.1 Notable Findings

No notable environmental concerns were identified.

1.4.2 Non-ASTM Scope Considerations

Hillmann has also performed preliminary evaluations for ASTM "Non-Scope" items, such as asbestos-containing materials (ACM), lead-based paint, radon, mold and wetlands. Our observations and research did not identify any notable concerns.

1.4.3 Significant Data Gaps

No data gaps that significantly impacted Hillmann's ability to identify RECs in connection with the Property have been identified.

1.4.4 Recognized Environmental Conditions

Hillmann has performed a Phase I Environmental Site Assessment in accordance with the scope and limitations of ASTM Practice E 1527-13 of the Property as described in Section 2 of this report. Any additions to, exceptions to, or deletions from this practice are also described in Section 2 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the Property.

Recognized Environmental Conditions (CRECs):

- No evidence of any RECs in connection with the Property was identified

Controlled Recognized Environmental Conditions (CRECs):

- No evidence of any CRECs in connection with the Property was identified.

Historical Recognized Environmental Conditions (HRECs):

- No evidence of any HRECs in connection with the Property was identified.

1.5 Recommendations

1.5.1 Recognized Environmental Conditions

Based on the findings of the Phase I Environmental Site Assessment, no further investigation is recommended at this time to address identified or suspected RECs.

1.5.2 Non-ASTM Considerations

Additional investigation or management of Non-ASTM considerations is not warranted at this time.

2.0 INTRODUCTION

2.1 Purpose and Scope

This assessment was conducted utilizing generally accepted Phase I ESA industry standards in accordance with the ASTM Standard Practice E 1527-13. The ASTM describes these methodologies as representing good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner or bona fide prospective purchaser limitations on CERCLA liability (hereinafter, the "landowner liability protections," or "LLPs"): that is, the practice that constitutes all appropriate inquiries into the previous ownership and uses the property consistent with good commercial and customary practice as defined at 42 U.S.C. §9601(35) (B). The primary goal of the processes established by ASTM E1527-13 is to identify *recognized environmental conditions* in connection with the Property.

The term *recognized environmental condition (REC)* is defined by the ASTM as the presence or likely presence of any hazardous substances or petroleum products in, on or at a property: (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

The ASTM has also defined the terms *historical recognized environmental conditions* and *controlled recognized environmental conditions* as two additional types of RECs. The term *historical recognized environmental condition (HREC)* is defined as a past release of any hazardous substances or petroleum products that has occurred in connection with the Property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the Property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls or engineering controls).

The term *controlled recognized environmental condition (CREC)* is defined as a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

Conditions determined to be *"de minimis conditions"* are not considered to be RECs nor CRECs. *De minimis condition* is defined by the ASTM as a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

The chief components of this assessment are described as follows:

- A non-invasive visual reconnaissance of the Property and adjoining properties in accordance with ASTM guidelines for evidence of RECs.

- Interviews of past and present owners and occupants and state and local government officials, seeking information related to the potential presence of RECs at the Property.

- A review of standard physical record sources for available topographic, geologic and groundwater data.

- Review of standard historic record sources, such as fire insurance maps, city directories, aerial photographs, prior reports and interviews, etc., to determine prior uses of the Property from the present, back to the Property's first developed use, or back to 1940, whichever is earlier.

- Review of standard environmental record sources including federal and state environmental databases, and additional environmental record sources, to identify potential regulatory concerns with the Property, adjoining properties and properties located within the surrounding area.

These methodologies are described as representing good commercial and customary practice for conducting an Environmental Site Assessment of a property for the purpose of identifying recognized environmental conditions.

2.1.1 Non-ASTM Scope Considerations

In accordance with our contract agreement, Hillmann may have addressed the following potential environmental concerns that are outside of the requirements of the ASTM E1527-13 standard:

Asbestos-Containing Materials (ACM): A preliminary visual inspection for the presence of suspect ACM within the accessed areas of buildings on the Property.

Lead-Based Paint (LBP): A preliminary visual inspection of the condition of painted surfaces in the accessed areas of buildings on the Property.

USEPA Designated Radon Potential: Review of general non-site specific data published by the USEPA regarding the potential for elevated indoor levels of radon gas to occur in the area of the Property.

Mold: A preliminary visual inspection within the accessed areas of buildings on the Property for evidence of systemic microbial problems, including visible mold growth, water damaged building materials or musty odors.

Wetlands: A preliminary review of data published by the US Fish and Wildlife Service regarding the presence or absence of mapped wetlands on the Property. The US Fish and Wildlife Service wetlands data is typically provided to Hillmann by Environmental Data Resources, Inc. (EDR).

2.2 Property Location/Legal Description

The Property is located at the southeast corner of the intersection of Alessandro and Perris Boulevard in Moreno Valley, California. The legal designations of the Property are Assessor's Parcel Numbers (APNs) 484-20-006, 484-20-025 and 484-20-018. The latitude and longitude of the Property is approximately North 33.9154920 degrees, and West 117.2245710 degrees.

2.3 Significant Assumptions

The following significant assumptions are made:

- Hillmann can neither warrant nor guarantee the accuracy or completeness of the information obtained from EDR during the course of this assessment.

- Hillmann can neither warrant nor guarantee the accuracy or completeness of information that was obtained from ostensibly knowledgeable individuals, regulatory agency representatives or other secondary sources.

- Hillmann has assumed that the site operations at the time of the site visit reflect typical site conditions relative to potential environmental conditions and that no concealment of environmental conditions or releases by site owners or occupants has occurred. Likewise, Hillmann has also assumed that no areas of the Property with potential environmental concerns or RECs were concealed or otherwise not made known to us, intentionally or unknowingly, by the Property owners/occupants and/or site escort at the time of the site visit.

- For the purpose of estimating the approximate direction of groundwater flow in the absence of site specific groundwater data, unless indicated otherwise, Hillmann has assumed that the gradient of groundwater flow follows the surface topography of the Property and immediate surrounding area.

2.4 Limitations and Exceptions

2.4.1 Limiting Conditions

Hillmann was unaware of any significant limiting conditions at the time of the assessment.

2.4.2 Other Exceptions or Deletions:

No exceptions or deletions from the ASTM Standard E 1527-13 are reported.

2.5 Data Gaps

A *data gap* is defined by the ASTM as a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. A data gap is only significant if other information and/or professional experience raises reasonable concerns involving the data gap and the ability to determine the presence or absence of recognized environmental conditions.

Data Gap:	Significant (Yes/No)?	Discussion
Response to agency records requests not received as of date of report.	No	Any additional information indicative of a REC will be forwarded upon receipt.

2.6 Special Terms and Conditions

Hillmann has prepared this Phase I Environmental Site Assessment using reasonable efforts in each phase of its work to identify recognized environmental conditions associated with hazardous substances, wastes and petroleum products at the Property. The methodology of this Phase I Environmental Site Assessment was consistent with the ASTM Standard Practice for E 1527-13. Findings within this report are based on information collected from observations made on the day of the site visit and from reasonably ascertainable information obtained from governing public agencies and private sources.

This report is not definitive and should not be assumed to be a complete or specific definition of the conditions above or below grade. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation or other construction purposes. Hillmann makes no representation or warranty that the past or current operations at the Property are, or have been, in compliance with all applicable federal, state and local laws, regulations and codes.

Findings, conclusions and recommendations presented in this report are based on our visual observations of the Property, the research findings reasonably obtained, information provided by the Client, and/or a review of readily available and supplied drawings and documents. Hillmann relies completely on the information, whether written, graphic or verbal, provided by the subject Property contact(s) or as shown on any documents reviewed or received from the subject Property contact, owner or agent, or municipal source, and assumes that information to be true and correct. Although there may have been some degree of overlap in the information provided by these various sources, Hillmann did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this assessment.

Regardless of the findings stated in this report, Hillmann is not responsible for consequences or conditions arising from facts that were concealed, withheld or not fully disclosed at the time the assessment was conducted.

This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

The regulatory database report provided is based on an evaluation of the data collected and compiled by a contracted data research company. The report focuses on the Property and neighboring properties that could impact the Property. Neighboring properties listed in governmental environmental records are identified within specific search distances. The search distance varies depending upon the particular government record being checked. The regulatory research is designed to meet the requirements of ASTM Standard E 1527-13. The information provided in the regulatory database report is assumed to be correct and complete.

Subsurface conditions may differ from the conditions implied by the surface observations and can only be reliably evaluated through intrusive techniques.

Reasonable efforts have been made during this assessment to identify aboveground and underground storage tanks and ancillary equipment. "Reasonable efforts" are limited to information gained from visual observation of largely unobstructed areas, recorded database information held in public record and available information gathered from interviews. Such methods may not identify subsurface equipment that may have been hidden from view due to parked automobiles and other vehicles, snow cover, vegetative growth, pavement, construction or debris pile storage or incorrect information from sources.

Unless otherwise specified in Section 2.1 of this report, an ASTM Vapor Encroachment Screening of the Property utilizing the information collected during the course of this assessment is excluded from the scope of service for this assessment.

Hillmann is not a professional title insurance firm and makes no guarantee, explicit or implied, that the records which were reviewed represent a comprehensive or precise delineation of past Property ownership or tenancy for legal purposes.

In the event of any conflict between the terms and conditions of this report and the terms and conditions of the consulting services agreement between LATCO Enterprises and Hillman Consulting, the consulting services agreement shall control.

3.0 USER PROVIDED INFORMATION

3.1 Prior Environmental Reports/Documentation

No prior environmental reports or documentation were obtained.

3.2 Title Records/Environmental Liens/Activity and Use Limitations

Review of title records is not included in the scope of work for this assessment project. No information regarding environmental liens or activity and use limitations was provided to Hillmann by the Client.

3.3 Specialized Knowledge or Experience

No indication of any specialized knowledge or experience regarding the Property was reported to Hillmann by the Client.

3.4 Commonly Known or Reasonably Ascertainable Information

No commonly known or specialized knowledge of the Property was reported to Hillmann by the Client.

3.5 Property Value Reduction due to Environmental Conditions

No information was provided by the Client to Hillmann regarding a reduction of the Property value due to environmental problems or conditions.

3.6 Reason for Performing Phase I ESA

It is Hillmann's understanding that the Phase I ESA was being performed in consideration of a pending real estate transaction involving the Property.

4.0 RECORDS REVIEW

4.1 Standard Environmental Record Sources

An EDR Radius Map report was obtained from Environmental Data Resources of Shelton, CT. The EDR Radius Map Report provided a search of standard environmental record sources in general accordance with the requirements of the ASTM E1527-13. Hillmann has reviewed the EDR Radius Map report and a summary of findings is presented in the following tables and report sections. Hillmann also reviewed the list of unmapped sites (referred to by EDR as “Orphan List” sites). Unmapped sites identified as falling within an applicable specific search distance or warranting discussion in the report, if any, have been included in the information presented below. Detailed descriptions of the meaning and significance of the regulatory databases can be found in the EDR Radius Map Report in Appendix E.

Regulatory Database	Search Distance	Property Listed?	Adj. Properties Listed?	Total Listings Within Search Distance
Fed. NPL/Proposed NPL	1-mile	No	No	0
Fed. Delisted NPL	½-mile	No	No	0
Fed. CERCLIS	½-mile	No	No	0
Fed. CERC-NFRAP	½-mile	No	No	0
Fed. RCRA CORRACTS	1-mile	No	No	0
Fed. RCRA TSD	½-mile	No	No	0
Fed. RCRA LQG	Site & Adj.	No	Yes	
Fed. RCRA SQG	Site & Adj.	No	Yes	
Fed. RCRA CESQG	Site & Adj.	No	No	
Fed. ENG Control List	Site	No		
Fed. INST Control List	Site	No		
Fed. ERNS	Site	No		
State/Tribal Hazardous Waste Site	1-mile	No	No	4
State/Tribal Landfill/Solid Waste	½-mile	No	No	0
State/Tribal Leaking Storage Tanks	½-mile	No	No	4
State/Tribal Registered Storage Tanks	Site & Adj.	No	No	
State/Tribal Eng. Control List	Site	No		
State/Tribal Inst. Control List	Site	No		
State/Tribal Voluntary Cleanup Sites	½-mile	No	No	0
State/Tribal Brownfields	½-mile	No	No	0
Supplemental Databases	Site & Adj.	No	Yes	

4.1.1 Property Listings

No listings of the Property were identified.

4.1.2 Adjoining Property Listings

The following adjoining property listings were identified:

SWEEPS, UST, CA FID UST - UNOCAL #6962, 25025 Alessandro Boulevard. This site adjoins the property to the northwest and is at a slightly higher topographic elevation relative to the Property. The listings indicate that the site previously had a 500 gallon waste oil tank UST and two 12,000-gallon regular unleaded gasoline USTs. No associated listings of reported spills or releases were found. Considering the absence of any reported spills or releases, these listings are not considered to be a REC in connection with the Property.

EDR Historical Cleaners - 25100 Alessandro Boulevard: This site adjoins the Property to the north across Alessandro Boulevard and is at a slightly higher topographic elevation relative to the Property. The listing indicated that A1 Coin Laundromat occupied the address from 1999 to 2012. No associated listings of reported spills or releases were found. Considering the absence of any reported spills or releases, this listing is not considered to be a REC in connection with the Property.

EDR Historical Cleaners - 25030 Alessandro Boulevard: This site adjoins the Property to the north across Alessandro Boulevard and is at a slightly higher topographic elevation relative to the Property. The listing indicated that Bear Valley Cleaners occupied the address from 2001 to 2012. This site was also listed on the RCRA-SQG, FINDS and ECHO database. No RCRA violations were noted in the records reviewed. No associated listings of reported spills, releases or site contamination were found. Considering the absence of any reported spills or releases, this listing is not considered to be a REC in connection with the Property.

RCRA-LQG, FINDS, ECHO - CVS Pharmacy No. 922425030, 25070 Alessandro Boulevard: This site adjoins the Property to the north across Alessandro Boulevard and is at a slightly higher topographic elevation relative to the Property. The listing identifies a variety of hazardous wastes generated at the facility. No RCRA violations were noted in the records reviewed. No associated listings of reported spills, releases or site contamination were found. Considering the absence of any reported spills or releases, this listing is not considered to be a REC in connection with the Property.

4.1.3 ASTM Search Distance Findings

The following is a summary of the findings of the regulatory database review with regard to sites identified as located within the ASTM specified search distance surrounding the Property. In order to keep this report informative and yet concise, Hillmann has provided a brief discussion of the listed site(s) for each database category that appears most likely to impact the Property based on distance, topography and/or case status. A copy of the full EDR Radius Map Report, including available details of all listed sites, is included in Appendix E.

Note that listings for the following databases, if identified, would be discussed above in Sections 4.1.1 and 4.1.2: Registered Storage Tanks, Federal RCRA Generators, Federal and State INST and ENG Controls, ERNS.

Federal NPL: No NPL listings were identified within a one-mile radius of the Property.

Federal Delisted NPL: No DNPL listings were identified within a ½-mile radius of the Property.

Federal CERCLIS: No CERCLIS listings were identified within a ½-mile radius of the Property.

Federal CERCLIS-NFRAP: No CERC-NFRAP listings were identified within a ½-mile radius of the Property.

Federal RCRA-CORRACTS: No CORRACTS listings were identified within a one-mile radius of the Property.

Federal RCRA-TSD: No TSD listings were identified within a ½-mile radius of the Property.

State/Tribal Hazardous Waste Sites: Four (4) Envirostor listings were identified within a one-mile radius of the Property. The closest listing is described as the Moreno Valley Regional Learning Center, and is approximately 1529 feet north and at a higher elevation relative to the Property. The listing indicates a "No Further Action" status as of 05/21/2007. The site type is identified as a school and was investigated due to the historical use of the site for agricultural row crops. Due to status and/or distance, this listing is not considered to be a REC in connection with the Property.

State/Tribal Landfill/Solid Waste Disposal Sites: No SWF/LF listing was identified within a ½-mile radius of the Property.

State/Tribal leaking Storage Tanks: Four (4) LUST listings were identified within a ½-mile radius of the Property. The closest listing is described as TOSCO/76 Station #6962 and is located at 25020 Alessandro Blvd, approximately 230 feet north-northwest and at a higher elevation relative to the Property. The listing indicated that s a status of "Completed – Case Closed" as of 12/09/2010. Considering the status and historic site investigations identifying onsite soil impacts, this listing is not considered to be a REC in connection with the Property. Due to distance and status, none of the other three listed facilities represent a REC to the Property.

State/Tribal Voluntary Cleanup Sites: No VCP listing was identified within a ½-mile radius of the Property.

State/Tribal Brownfields: No BROWNFIELDS listings were identified within a ½-mile radius of the Property.

Review of the sites identified within the ASTM search parameters did not identify any nearby or surrounding area sites that are considered to be a REC in connection with the Property, unless as discussed otherwise previously in this section.

4.2 Additional Environmental Record Sources

4.2.1 Supplemental Database Listings

Hillmann reviewed the EDR Radius Map report for listings on supplemental databases that were searched in addition to the Standard Environmental Record Sources. Any property or adjoining property listings on such databases, if identified, would be discussed in Section 4.1.1 and 4.1.2. None of the other supplemental database listings identified by the EDR Radius Map report are considered to be a REC in connection with the Property.

4.2.2 Local Agency & Internet Research

Hillmann performed a search of available local and municipal agencies for pertinent information pertaining to the Property, particularly with regard to potential environmental concerns such as petroleum storage tanks, storage and usage of hazardous substances and petroleum products, and/or known or suspected environmental contamination. Hillmann also conducted a cursory internet search of the Property address for information indicative of a REC. The following table summarizes the findings of the research:

Source:	Inquiry Made?	Type:	Outcome:
Environmental Protection Agency (EPA)	Yes	FOIA Request	Response indicated no records found
Riverside County Department of Environmental Health	Yes	FOIA Request	Response not received prior to report completion.
Department of Toxic Substances Control (DTSC)	Yes	FOIA Request	Response indicated no records found.
Regional Water Quality Control Board (RWQCB) – Santa Ana Region (8)	Yes	FOIA Request	Response indicated no records found.
Moreno Valley Fire Department	Yes	FOIA Request	Response not received prior to report completion.
CA DTSC EnviroStor database http://www.envirostor.dtsc.ca.gov/public/	Yes	Internet	The Property address was searched. No results for the Property were found.
CA GeoTracker database http://geotracker.waterboards.ca.gov/	Yes	Internet	The Property address was searched. No results for the Property were found.
USEPA Envirofacts search http://www.epa.gov/enviro/index.html	Yes	Internet	The Property address was searched. No results for the Property were found.
www.google.com	Yes	On-line search	The Property address search returns results as an vacant parcel.
www.realquest.com	Yes	On-line search	Basic Property information such as parcel number, date of construction, and building square footages were collected. Pertinent information, where obtained, is referenced in the appropriate sections of this report.
Other:	NA		

4.3 Physical Setting Sources

4.3.1 USGS 7.5 Minute Topographic Map

The USGS 7.5 minute series topographic maps covering the Property (Sunnymead, CA 2012) were reviewed. The maps indicated an approximate elevation at the Property of 1564 feet above mean sea level. The topography indicated by the map appeared to be sloping downward to the south-southeast. The closest down gradient body of water appeared to be a borrow pit approximately 1.08 miles west of the Property.

4.3.2 Soils

Based on USDA Soil Conservation Service (SCS) data summarized by the EDR Geocheck-Physical Setting Source Addendum, the soil type at the Property is classified as "Exeter." The Exeter designation is described as a well-drained sandy loam with moderate infiltration rates.

4.3.3 Geology

Based on geologic data summarized by the EDR Geocheck - Physical Setting Source Addendum, the geologic formation in the vicinity of the Property is described as a rock stratigraphic unit, of the Mesozoic, Cretaceous System, Cretaceous granite rocks Series.

4.3.4 Hydrology

No site specific hydro-geologic data was available for the Property. However, groundwater monitoring wells installed on the nearby TOSCO/76 Station #6962, located at 25020 Alessandro Blvd, approximately 230 feet north-northwest, identified groundwater at approximately 40' below land surface.

4.4 Historical Use – Property and Adjoining Properties

Hillmann has conducted research in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with the Property. Standard historical sources have been sought in an attempt to document the past uses of the Property as far back as it can be shown that the Property contained structures; or from the time the Property was first used for residential, agricultural, commercial, industrial or governmental purposes.

4.4.1 Fire Insurance Maps

A search of Sanborn Fire Insurance Maps for the Property and surrounding area was conducted by Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut. EDR provided a Sanborn report that stated fire insurance maps covering the target property were not found.

4.4.2 City Directories

Hillman obtained an EDR City Directory Abstract report to obtain data of historic city directory listings for the Property. The following is a generalized summary of the findings of City Directory Research:

YEAR(S)	SUMMARY	
1975 – 2013	**Property:**	The Property is not listed.
	Adjacent Properties:	The adjoining properties to the north are listed as a variety of commercial/retail establishments with the Bear Valley Cleaners being the most notable listing. The adjoining properties to the west along Perris Boulevard were identified as not listed or more recently commercial/retail in usage.

4.4.3 Historical Topographic Map Review

Hillmann obtained and reviewed an "EDR Historical Topographic Map Report" from EDR containing historic aerial photography of the Property and adjoining properties. The following interpretation of land usage was made by review of the maps:

YEAR(S)	DESCRIPTION	
1901	**Property**	The scale of the map is too large to discern specific details about the Property. It appears that several trails or roadways bisect the Property.
	Adjacent Properties	The scale of the map is too large to discern specific details about the adjacent properties, however the area of the Property appears to be generally undeveloped.
1940, 1953	**Property**	The Property is depicted as undeveloped land.
	Adjacent Properties	The adjoining property to the north is depicted as an agricultural grove. The adjoining properties to the east, south, and west appear as undeveloped land.
1967	**Property**	The Property is depicted as undeveloped.
	Adjacent Properties	The adjoining properties to the north and east are depicted with various buildings of differing size. An agricultural grove is depicted to the east of the Property.
1973, 1980, 2012	**Property**	The Property is depicted as undeveloped.
	Adjacent Properties	The adjoining properties to the north and east are depicted with various buildings of differing size.

4.4.4 Aerial Photograph Review

Hillmann obtained and reviewed an "EDR Aerial Photo Decade Package Report" from EDR containing historic aerial photography of the Property and adjoining properties. In addition, Hillmann reviewed historic aerial photographs of the Property online at www.historicaerials.com. The following interpretation of land usage was made by review of the aerial photographs:

YEAR(S)	DESCRIPTION	
1938, 1949, 1953	**Property**	The Property appears to be undeveloped and may be used for agriculture, rangeland as it appears neatly manicured.
	Adjacent Properties	The adjoining properties to the north appear with as a grove and neatly manicured agricultural land. The adjoining property to the east, west and south appear as neatly manicured agricultural land.
1967	**Property**	The Property appears as previously described.
	Adjacent Properties	The adjoining properties to the north appear with several different structures including what appears to be a track, in addition to agricultural land. The adjoining properties to the east now contain a structure in addition to as previously described agricultural usage. The properties east and south appear as previously described.
1978	**Property**	The Property appears as previously described.
	Adjacent Properties	The adjoining properties appear as previously described, with the exception of a residential development along the southern property boundary.
1985, 1989, 1994	**Property**	The Property appears as undeveloped rangeland.
	Adjacent Properties	The adjoining properties appear as previously described, with the exception of a residential development along the southeastern and eastern property boundary and apparent commercial and residential development along the Alessandro Blvd in the north.

2002, 2005	**Property**	The Property appears as undeveloped rangeland.
	Adjacent Properties	The adjoining properties to the north appear as previously described. The property to the east has been redeveloped with a building consistent in shape with the current Walgreens Drugs facility. The remaining adjacent properties are as previously described.
2006	**Property**	The Property appears as undeveloped rangeland.
	Adjacent Properties	The adjoining properties to the north and south appear as previously described. The property to the west, along Perris Blvd, appear as developed with buildings consistent in shape with the current self-storage facility. The adjacent property to the east appears developed with buildings consistent with the current multi-family residential complex.
2009, 2010, 2012	**Property**	The Property appears as undeveloped rangeland.
	Adjacent Properties	The adjoining properties appear as previously described with the exception of the addition of two buildings now constructed on the parcel to the west adjacent to Walgreens and are similar in size and location with the buildings present today.

4.4.5 Petroleum/Natural Gas Well Review

Hillmann reviewed historical record sources for evidence of historic petroleum and/or natural gas wells at the Property. In addition, Hillmann conducted a search of the property location on the Division of Oil, Gas & Geothermal Resources Well Finder database (http://maps.conservation.ca.gov/doggr/index.html). No record of any historical petroleum/natural gas wells at the Property was identified.

4.4.6 Historical Records Data Failure

Historic land use data prior to 1901 was not readily available at the time of the assessment. The Property was determined by this assessment to have been first utilized as an agricultural rangeland dating back to 1938. It is Hillmann's opinion that no significant data gaps were encountered.

4.4.7 Summary of Historic Use Research

The Property appears to have first been utilized as agricultural rangeland prior to 1938 and was never formally developed with structures. The active agricultural usage appears to have continued through the 1970s. Subsequently the Property was not apparently used for any discernable purpose.

The adjoining properties appear to have been utilized as agricultural and residential land use types up until sometime after 1953, when the land use began to adopt more commercial and residential developments.

5.0 SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

The site reconnaissance consisted of visual and/or physical observations of the Property and improvements, adjoining properties as viewed from the Property boundaries and the surrounding area based on visual observations from adjacent public thoroughfares. Building exteriors were observed at ground level, unless otherwise indicated.

The site reconnaissance was conducted by Mr. Jonathan McConnell on June 10, 2016. Weather conditions at the time of the assessment included a temperature of approximately 61 degrees F and cloudy skies. Hillmann was unescorted.

5.1.1 Significant Inaccessible Areas

No significant areas were excluded from Hillmann's visual inspection.

5.2 General Site Setting

5.2.1 Site and Vicinity Characteristics

The Property consists of three parcels on the south side of Alessandro Boulevard, between Perris Boulevard and Apple Blossom Lane. The site is currently undeveloped land. The total Property area is approximately 19.47 acres. The Property is located in a suburban developed area characterized by a mix of commercial properties, single and multi-family homes, and warehouses.

5.2.2 Topographic Characteristics

The terrain of the Property appeared to be relatively flat. No natural surface bodies of water were observed.

5.2.3 General Description of Structures

The Property is currently undeveloped land with no structures.

5.2.4 Sources of Heating and Cooling

No heating or cooling systems were present at the Property at the time of the assessment.

5.2.5 Potable Water Source/Sewage Disposal System

The Property is currently not serviced by any water and sewer systems.

5.2.6 Current Use(s) of the Property

The Property is currently undeveloped land.

5.2.7 Past Use(s) of the Property

No obvious indication of past Property usage likely to have involved the use, treatment, storage, disposal or generation of hazardous substances or petroleum products was observed at the time of the site visit. Please refer to Section 4.4 for findings of historical site use research.

5.2.8 Current Use(s) of the Adjoining Properties

The following describes adjacent and abutting properties:

Dir	Street Address	Description
N, NW	25010, 25100, Alessandro Blvd	Speedy cash, A1 Coin Laundry, Lorenzo's Pizza, Matsuri Sushi
E	14243-14140 Agave St 14135Appleblossom Ln	Residential properties
NW	25025 Alessandro Blvd	Walgreens retail store and pharmacy
S	14255 Agave, 14260 Palmea, 25095-25015 Brodiaea	Residential properties
W	14175 Perris Blvd	Public storage center

No visual observations indicative of a potential environmental concern were noted on the adjoining properties.

5.2.9 Past Use(s) of the Adjoining Properties

No indication of past uses of the adjoining properties was noted at the time of the site visit. Please refer to Section 4.4 for the findings of historical site use research.

5.2.10 Current/Past Uses of Surrounding Area

The Property is located in suburban area of Moreno Valley, California. The vicinity of the Property consists of a mix of single and multi-family residential properties, warehouses, and commercial properties. No indications of past Property uses that differ substantially from current conditions were observed at the time of the site visit.

5.3 Interior & Exterior Observations

5.3.1 Storage/Usage of Hazardous Substances and Petroleum Products

No significant storage or usage of hazardous substances or petroleum products were observed at the Property.

5.3.2 Drums

No drums were observed at the Property.

5.3.3 Other Hazardous Substances/Petroleum Products

No other containers of hazardous substances or petroleum products were noted on the Property at the time of the site visit.

5.3.4 Unidentified Substance Containers

No other unidentified containers suspected of containing hazardous substances or petroleum products were noted on the Property at the time of the site visit.

5.3.5 Storage Tanks

No evidence of any past or present underground storage tanks (USTs) or aboveground storage tanks (ASTs) was identified on the subject Property.

5.3.6 Polychlorinated Biphenyls (PCBs)

No suspected PCB containing electrical or hydraulic equipment was identified.

5.3.7 Odors

No strong, unusual or pungent odors were noted on the Property.

5.3.8 Pools of Liquid

No pools of unknown liquid were noted at the Property.

5.3.9 Interior Stains or Corrosion

No interior stains or corrosion were noted at the Property.

5.3.10 Interior Drains/Sumps

No floor drains or sump pits were noted at the Property.

5.3.11 Exterior Pits/Ponds/Lagoons

No evidence of exterior pits, ponds or lagoons was identified on the Property in connection with waste treatment or disposal.

5.3.12 Stained Soil, Pavement/Stressed Vegetation

No evidence of stained soils or stressed vegetation was identified on the Property.

5.3.13 On-Site Solid Waste Dumping/Fill Material

No evidence of on-site solid waste dumping was noted at the Property.

5.3.14 Wastewater

No waste discharges were noted at the Property.

5.3.15 Septic Systems

No indication of septic systems was noted on the Property.

5.3.16 Wells

No evidence of wells was noted at the Property.

6.0 INTERVIEWS

6.1 Interviews with Past and Present Owners and Occupants

Type	Name; Affiliation/Title	Summary
Property Owner	Tom Bobowski; V.P, Professors Fund I and IV	Mr. Tom Bobowski was interviewed regarding the uses and conditions of the Property and provided a questionnaire to complete relative to this assessment and compliance with ASTM E1527-13. Pertinent information, where obtained, is referenced in the appropriate sections of the report.
Property Occupants	Not applicable	The Property was unoccupied at the time of the assessment.
Past Owners, Occupants, Operators	Not applicable	Past owners/occupants of the Property were not available for interview at the time of the assessment.
Owners/Occupants of Adjacent or Nearby Properties	Not applicable	The Property was not an abandoned property with evidence of unauthorized uses or uncontrolled access; therefore, interviews with adjacent or nearby property owners or occupants were not conducted.

6.2 Interviews with State and/or Local Government Officials

Written and on-line requests for environmental records of the Property from State and Local governmental agencies are detailed in Section 4.2.2.

7.0 NON-ASTM SCOPE CONCERNS

In accordance with our contract agreement, Hillmann has conducted preliminary evaluations of the following "Non-ASTM Scope Considerations" that are outside of the requirements of the ASTM E1527-13 standard:

7.1 Asbestos-Containing Material (ACM)

There are no permanent buildings on the Property. Therefore, a screening for asbestos is not applicable to this assessment.

7.2 Lead-Based Paint

There are no permanent buildings on the Property. Therefore, a screening for lead-based paint is not applicable to this assessment.

7.3 Radon

According to data compiled by the USEPA, as summarized by the EDR Radius Map Report with GeoCheck, the Property is located in an area with a moderate potential for radon concentrations that exceed current USEPA action guidelines. The County of Riverside is classified as a Zone 2 or 'moderate risk' area for radon. Accordingly, radon is unlikely to represent an environmental concern to the Property.

7.4 Mold

There are no permanent buildings on the Property. Therefore, a screening for mold is not applicable to this assessment.

7.5 Wetlands

Based on a review of the EDR Radius Map Report with GeoCheck, no NWI mapped wetlands were indicated at the Property.

It is emphasized that the absence of NWI mapped wetland areas indicated by the EDR report does not necessarily rule out the potential presence of regulated wetland areas on or immediately adjoining the Property. A wetland delineation should be sought from a qualified firm if a more comprehensive determination regarding the presence or absence of wetlands on or adjacent to the Property is warranted.

8.0 ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training and experience to assess a *property* of the nature, history and setting of the subject *property*. Hillmann has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Christine Beaver

____

Christine Beaver
Environmental Professional

9.0 REFERENCES

EDR Aerial Photo Decade Package, Environmental Data Resources, 2016

EDR City Directory Abstract Report, Environmental Data Resources, 2016

EDR Historical Topographic Map Report, Environmental Data Resources, 2016

EDR Radius Map Report with GeoCheck, Environmental Data Resources, 2016

EDR Sanborn Map Report, Environmental Data Resources, 2016

www.realquest.com

Riverside County's On-line Geographical Information System

10.0 APPENDICES

Appendix A	Site Diagram / Vicinity Map
Appendix B	Site Photographs
Appendix C	Questionnaires / User Provided Information
Appendix D	Historical Records Documentation
Appendix E	Regulatory Records Documentation
Appendix F	Other Documents
Appendix G	Project Personnel Qualifications

APPENDIX A

SITE DIAGRAM / VICINITY MAP

Figure 1: SITE VICINITY MAP	SCALE: (Not to Scale)	N

HILLMANN CONSULTING

Project Location: SW Corner of Alessandro Boulevard and Perris Boulevard
Moreno Valley, California 92553

Project No.: C3-6578

Figure 2: SITE DIAGRAM	SCALE: (Not to Scale)	N ↑

HILLMANN CONSULTING

Project Location:	SW Corner of Alessandro Boulevard and Perris Boulevard Moreno Valley, California 92553
Project No.:	C3-6578

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

APPENDIX B

SITE PHOTOGRAPHS

PHOTO LOG
APNs 484-020-025, -018, -006
Moreno Valley, CA 92553
C3-6578

View of the adjacent properties to the north

View of the adjoining property to the northwest

View of the adjoining properties to the west

View of the adjacent properties to the east

View of the adjacent properties to the south

View of the adjoining properties to the southeast

PHOTO LOG
APNs 484-020-025, -018, -006
Moreno Valley, CA 92553
C3-6578


View of the adjacent properties to the southeast


View of the adjacent properties to the southwest


View of the adjacent property to the west


View of a high pressure gas line on the Property

Detailed view of high pressure gas pipeline sign

View of the adjacent properties to the north

PHOTO LOG
APNs 484-020-025, -018, -006
Moreno Valley, CA 92553
C3-6578

View of the adjacent property to the northwest


View of slab mounted transformer on the adjoining property to the west


View of a pole mounted transformer on the adjacent property to the north


View of municipal water on the Property

View of a underground transformer on the Property on the south side


View of a pole mounted transformer on the adjacent property to the west

PHOTO LOG
APNs 484-020-025, -018, -006
Moreno Valley, CA 92553
C3-6578

View of a pole mounted transformer on the adjacent property to the west

View of a pole mounted transformer on the adjacent property to the west

APPENDIX C

QUESTIONNAIRES/USER PROVIDED INFORMATION

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Phase I ESA - Environmental Questionnaire

The following questionnaire should be completed by a representative of the Property that is most knowledgeable about its usage, condition and history. Please complete and either give to the Hillmann representative during the site inspection, or fax to 714-634-9507.

General:

Property Name: Professor Fund I+III Street Address: Vacant land E of Perris
Moreno Valley City, ST Zip: Blvd, S of Alessandro Blvd.
Completed by: Tom Bobowski (V.P.) (Name) Company: Professor's Capital, Inc
Signature: [signature] Date: 5/27/2016
Number of years at or familiar with the Property: 6

Site Description:

Block & Lot #(s): APN 484-020-006, 018, 020 Property Size: 19 acres
Number of building(s): N/A Building Size(s) N/A
Year(s) Built: N/A # of units: (if appl.) N/A
Type of Property: VACANT LAND

Utilities and Services: (please check "Yes", "No" or "NA-Not Applicable") and indicate provider if "Yes".

Utility	Yes	No	NA	Name of Provider	Service	Yes	No	NA	Name of Provider
Water			X		Fuel Oil			X	
Sewer			X		HVAC Maint.			X	
Power			X		Elev Maint.			X	
Nat Gas			X		Septic Maint.			X	
Telephone			X		Pool Maint.			X	

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Instructions: Please answer each question. Check "D/K" if you don't know, or otherwise lack sufficient knowledge of the Property to answer the question.

	PREVIOUS INVESTIGATIONS	
1.	Have any previous environmental investigations (e.g.- Phase I Environmental Site Assessment, soil/groundwater testing, radon testing, asbestos survey, tank closure/removal reports, etc.) been performed at the Property?	☐ Yes ☐ No ☐ D/K
2.	If yes, what concerns were indicated or recommendations made? *(please provide a copy of all previous environmental reports)*	
	PROPERTY USAGE	
3.	To the best of your knowledge, is the Property or any adjoining property currently occupied or formerly occupied for industrial purposes? If yes, please elaborate:	Property: ☐ Yes ☑ No ☐ D/K Adj. Property: ☐ Yes ☐ No ☑ D/K
4.	Is the property or any adjoining property currently used, or have they ever been used, as a gasoline filling station, dry cleaning facility, automotive service/repair shop, auto body repair shop, commercial printing facility, photo development laboratory shop, junkyard, landfill, or as a waste treatment, storage disposal, recycling or processing facility? If yes, please elaborate:	Property: ☐ Yes ☑ No ☐ D/K Adj. Property: ☐ Yes ☐ No ☑ D/K
5.	Have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries,, or any other waste materials been dumped above grade, buried and/or burned on the property?	☐ Yes ☐ No ☑ D/K
	BULK STORAGE TANKS	
6.	Are there currently, or have there been previously, any registered or unregistered above ground or underground storage tanks located at the Property? *If YES, please provide number, size, age of tanks, permits, closure reports, regulatory agency correspondence, and related information.*	Current Tanks: ☐ Yes ☑ No ☐ D/K Previous Tanks: ☐ Yes ☐ No ☑ D/K
7.	Are there currently, or have there been previously, any vent pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	Current: ☐ Yes ☐ No ☑ D/K Previous: ☐ Yes ☐ No ☑ D/K
8.	Are there currently, or have there been previously, any leakage of hazardous substances or petroleum products from above ground or underground storage tank systems at the Property?	Current: ☐ Yes ☐ No ☑ D/K Previous: ☐ Yes ☐ No ☑ D/K

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	SPILLS, RELEASES, WASTES	
9.	Are there currently, or have there been previously, any waste discharges on or adjacent to the property, other than storm water or into a municipal sanitary sewer system? If yes, please elaborate:	Current: ☐ Yes ☐ No ☑ D/K Previous: ☐ Yes ☐ No ☑ D/K
10.	Are there currently, or have there been previous, any septic systems, dry wells or leach fields on the property? If yes, please elaborate:	Current: ☐ Yes ☑ No ☐ D/K Previous: ☐ Yes ☐ No ☑ D/K
11.	Are there currently, or have there been previously, any flooring, drains or walls located within the facility that are, or have been, stained by substances (or, in the case of drains, used for) other than water or are emanating foul odors? If yes, please elaborate:	Current: ☐ Yes ☑ No ☐ D/K Previous: ☐ Yes ☐ No ☑ D/K
12.	Are there currently, or have there been previously, any spills or releases of hazardous substances or petroleum products within the building(s) or on the exterior of the Property?	Current: ☐ Yes ☐ No ☑ D/K Previous: ☐ Yes ☐ No ☑ D/K
13.	Has any non-native and/or contaminated fill material been deposited on the Property?	☐ Yes ☐ No ☑ D/K
14.	Have any current or former property occupants generated hazardous wastes or other wastes (such as waste oil, or medical wastes) that required non-conventional storage, handling and/or disposal methods? *If YES, please indicate type of waste and the name of the waste handling contractor:* ______	☐ Yes ☐ No ☑ D/K
	TRANSFORMERS/HYDRAULIC EQUIPMENT	
15.	Are any power transformers, capacitors or hydraulic equipment present at the Property? If yes, please elaborate:	☐ Yes ☑ No ☐ D/K
16.	If power transformers are present, who owns them? ______	☐ Yes ☐ No ☐ D/K
17.	If hydraulic equipment is present, indicate age of equipment and name/telephone # of service contactor:	☐ Yes ☐ No ☐ D/K
	REGULATORY DISCLOSURE	
18.	Have there been any environmental liens or governmental notification or involvement relating to past or current use or disposal of hazardous substances with respect to the property of any facility or structure located on the property?	☐ Yes ☐ No ☑ D/K

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19.	If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system, or has the well been designated as contaminated by any government environmental/health agency? *(if not applicable, please check* NO*)*	☐ Yes ☑ No ☐ D/K
20.	Is there any environmental litigation, administrative action or cleanup action involving the property related to a release or threatened release of any hazardous substance or petroleum product?	☐ Yes ☑ No ☐ D/K
21.	Are you aware of testing of any environmental media (soil, groundwater, surface water, etc.) at the property which identified levels of contaminants in excess of regulatory standards and/or cleanup guidelines?	☐ Yes ☐ No ☑ D/K
	ENVIRONMENTAL/BUILDING CONDITIONS	
22.	Has asbestos testing ever been conducted at the Property? *If YES, please forward a copy of test results and/or survey reports:*	☐ Yes ☐ No ☑ D/K
23.	Are any asbestos containing materials present at the Property? If yes, please elaborate:	☐ Yes ☐ No ☑ D/K
24.	Has lead paint testing ever been conducted at the Property? *If YES, please forward a copy of test results.*	☐ Yes ☐ No ☑ D/K
25.	Is lead-based paint present at the Property? If yes, please elaborate:	☐ Yes ☐ No ☑ D/K
26.	Has radon testing ever been conducted at the Property? *If YES, please forward a copy of test results.*	☐ Yes ☐ No ☑ D/K
27.	Are there any problems with water intrusion, water damaged surfaces or excessive mold growth within the buildings? If yes, please elaborate:	☐ Yes ☐ No ☑ D/K

COMMENTS:

For any questions answered "YES" that warrant further elaboration, please use the following space as necessary:

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CONSULTING

ENVIRONMENTAL DUE DILIGENCE – USER QUESTIONNAIRE

For Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the *report user* must provide the following information (if available) to the environmental professional. As per the Brownfields Amendments, failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Please complete the following questionnaire and provide any of the referenced information (if available) to Hillmann.

Respondent Name:	~~Latco SC Inc.~~ Robert Lattanzio
Company/Affiliation:	Latco SC Inc.
Address:	940 Calle Negocio Ste 200 San Clemente 926
Response Date:	5-27-16

1. Environmental Cleanup Liens
Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

Yes ☐ *No* ☒

2. Activity and Land Use Limitations
Are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

Yes ☐ *No* ☒

3. Specialized Knowledge or Experience
Do you have any specialized knowledge or experiences related to the property, nearby properties, or are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

Yes ☐ *No* ☒

4. Purchase Price vs. Fair Market Value
Does the purchase price being paid for this property reasonably reflect the fair market value of the property?

Yes ☒ *No* ☐

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5. Commonly Known or Reasonably Ascertainable Information
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases?

Yes ☐ *No* ☒

5a. Do you know the past uses of the property?

Yes ☐ *No* ☒

5b. Do you know of specific chemicals that are present or were once were present at the property?

Yes ☐ *No* ☒

5c. Do you know of spills or other chemical releases that have taken place at the property?

Yes ☐ *No* ☒

5d. Do you know of any environmental cleanups that have taken place at the property?

Yes ☐ *No* ☒

6. Obviousness of the Presence or Likely Presence of Contamination
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

Yes ☐ *No* ☒

APPENDIX D

HISTORICAL RECORDS DOCUMENTATION

Not Reported

Not Reported

Moreno Valley, CA 92553

Inquiry Number: 4629924.9

May 31, 2016

The EDR Aerial Photo Decade Package

EDR

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

05/31/16

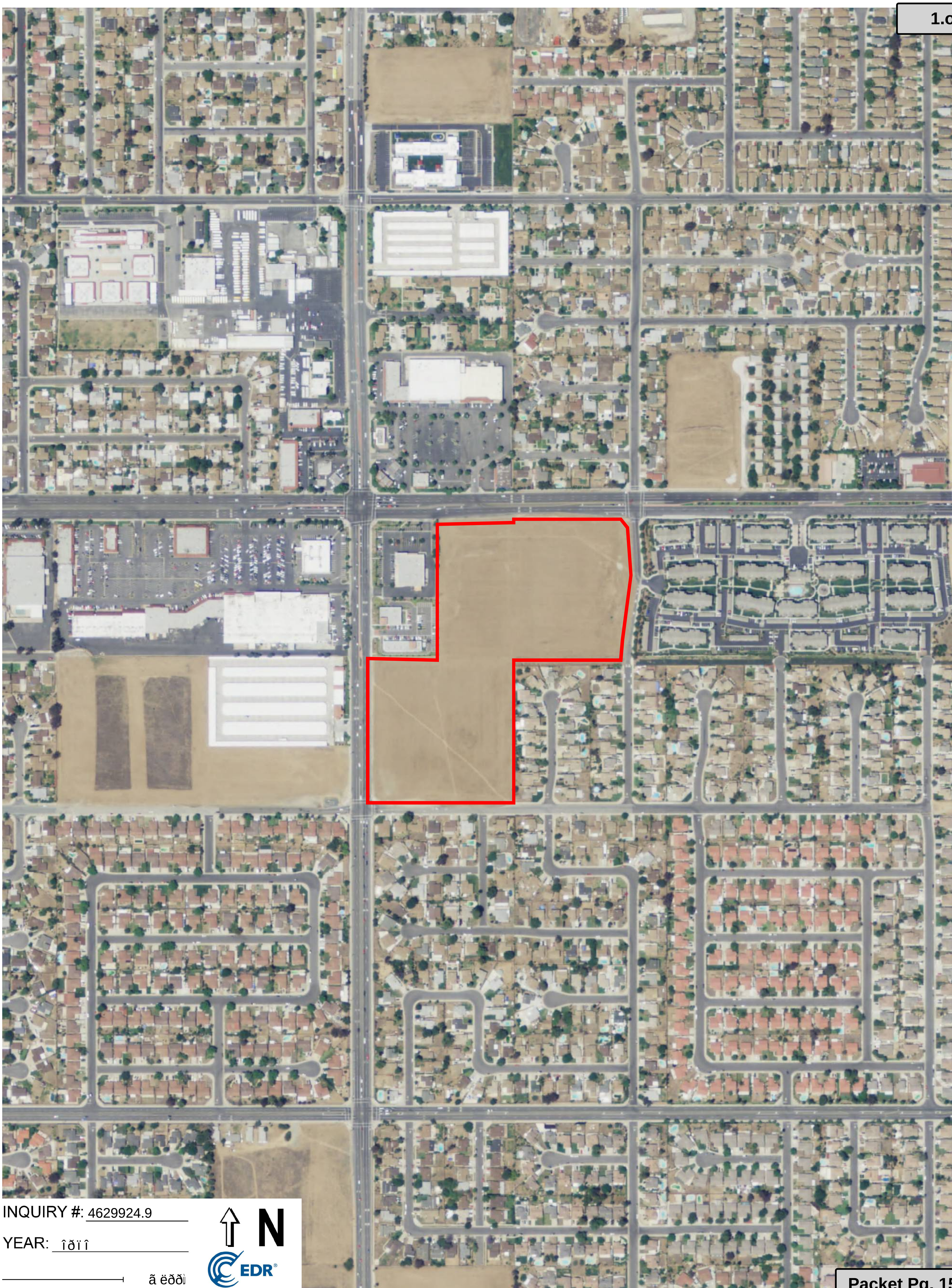
Site Name:	**Client Name:**
Not Reported	Hillmann Environmental Co.
Not Reported	1745 W Orangewood Avenue
Moreno Valley, CA 92553	Orange, CA 92868-0000
EDR Inquiry # 4629924.9	Contact: Kristine Savona

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	***Scale***	***Details***	***Source***
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2002	1"=500'	Acquisition Date: June, 06 2002	USGS/DOQQ
1994	1"=500'	Flight Date: January, 01 1994	USGS
1989	1"=500'	Flight Date: August, 15 1989	USGS
1985	1"=500'	Flight Date: July, 28 1985	USGS
1978	1"=500'	Flight Date: September, 20 1978	USGS
1967	1"=500'	Flight Date: May, 15 1967	USGS
1953	1"=500'	Flight Date: August, 28 1953	USGS
1949	1"=500'	Flight Date: May, 08 1949	USGS
1938	1"=500'	Flight Date: June, 14 1938	USGS

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.



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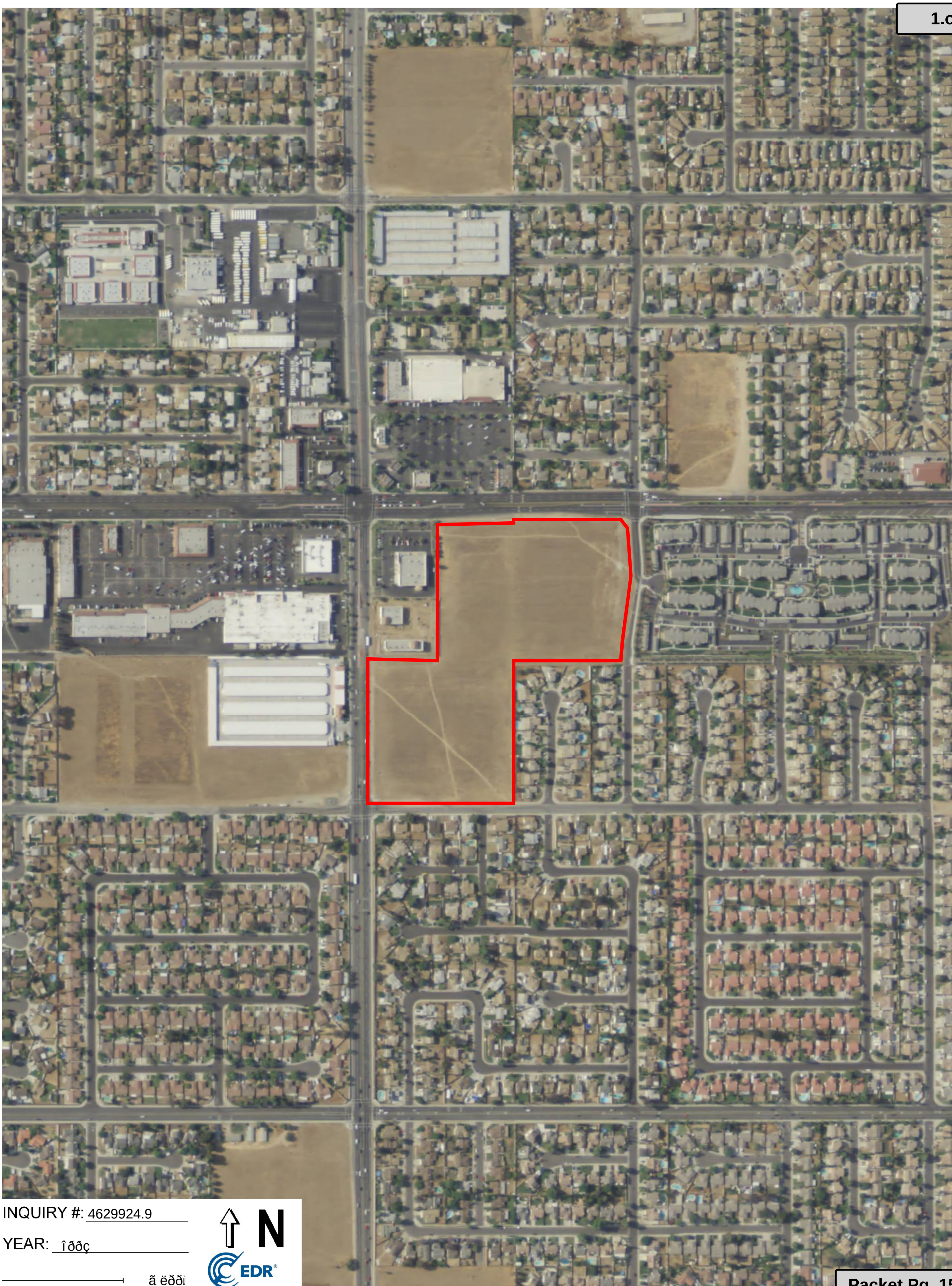

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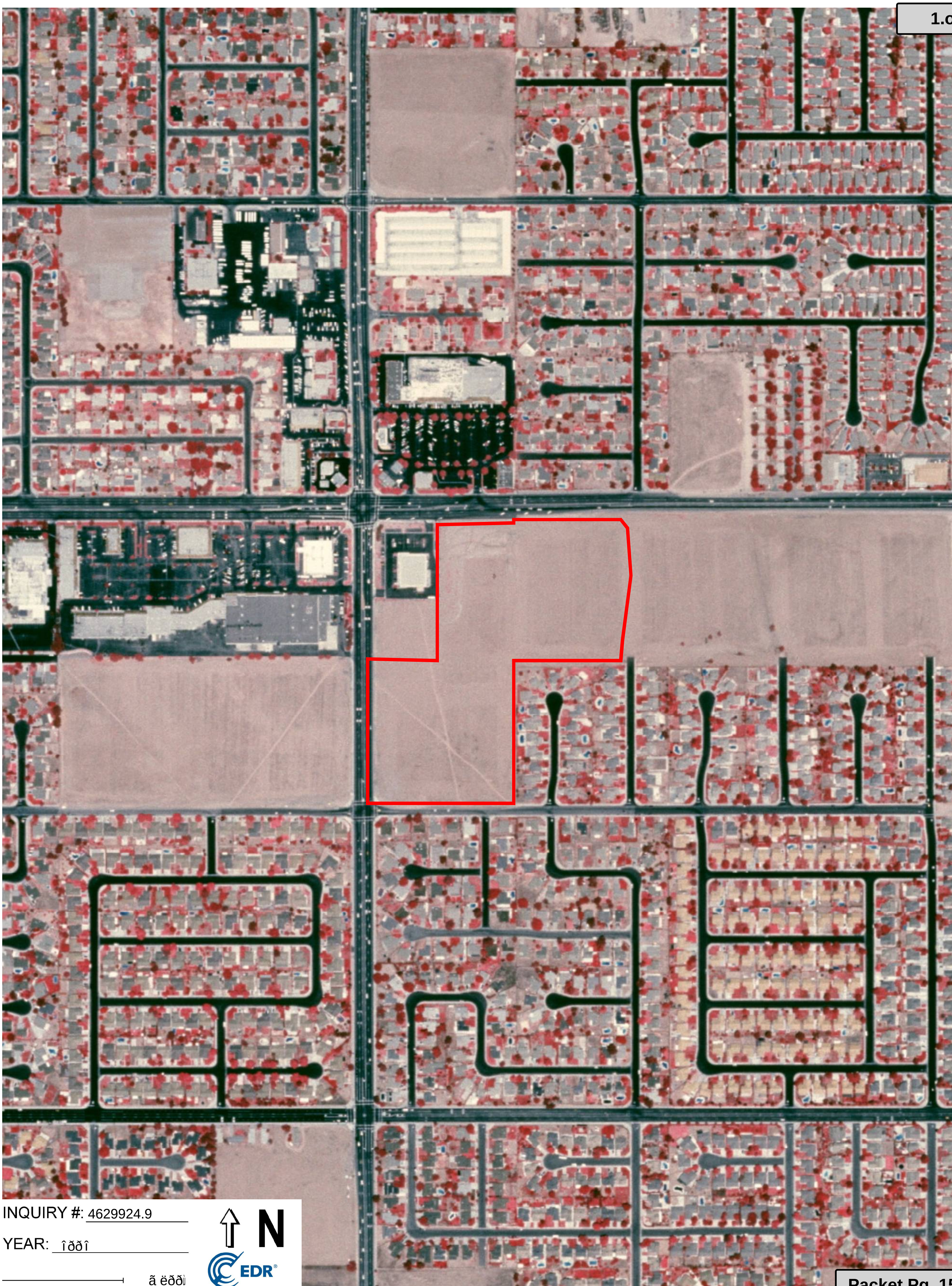
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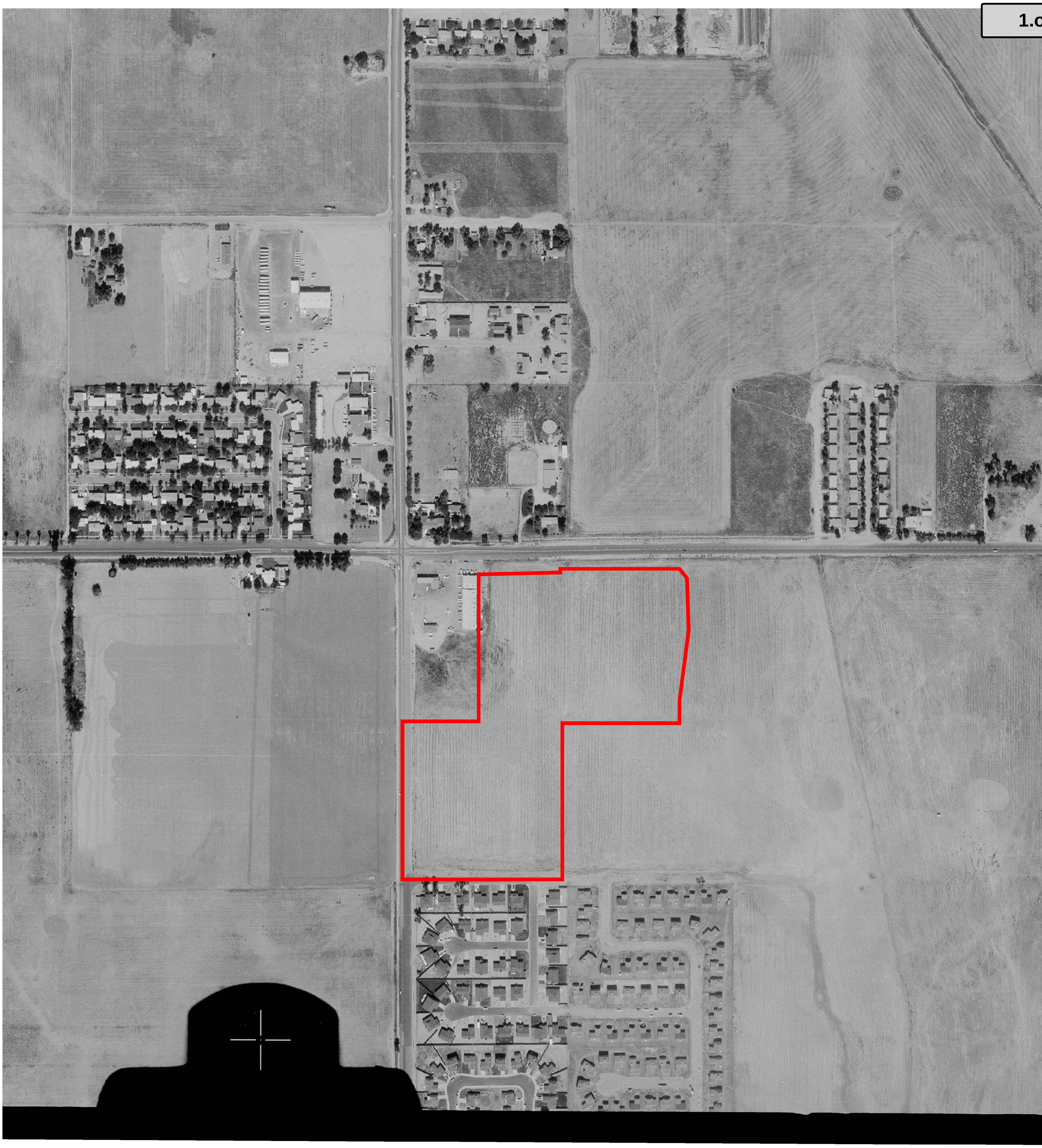

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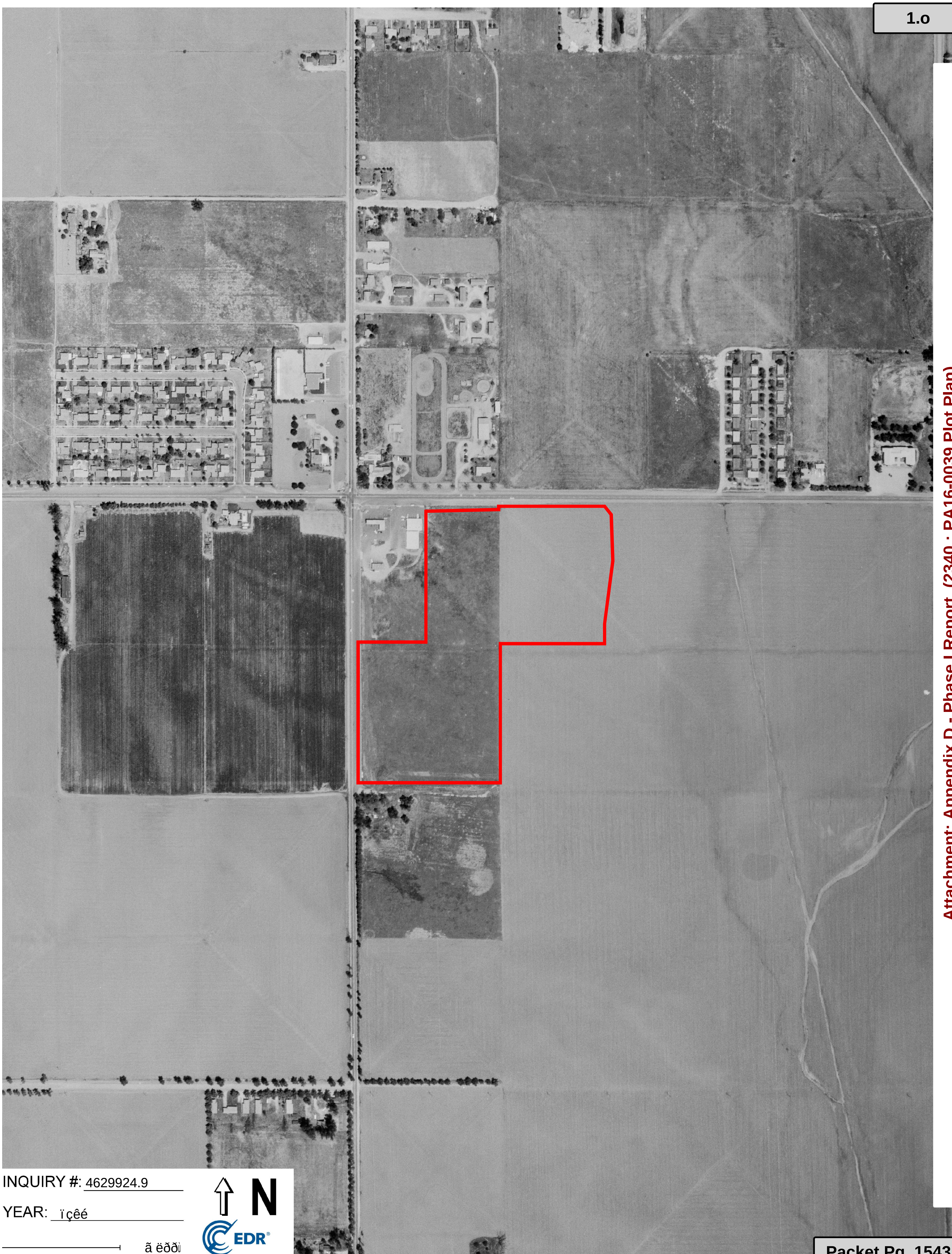

INQUIRY #: 4629924.9

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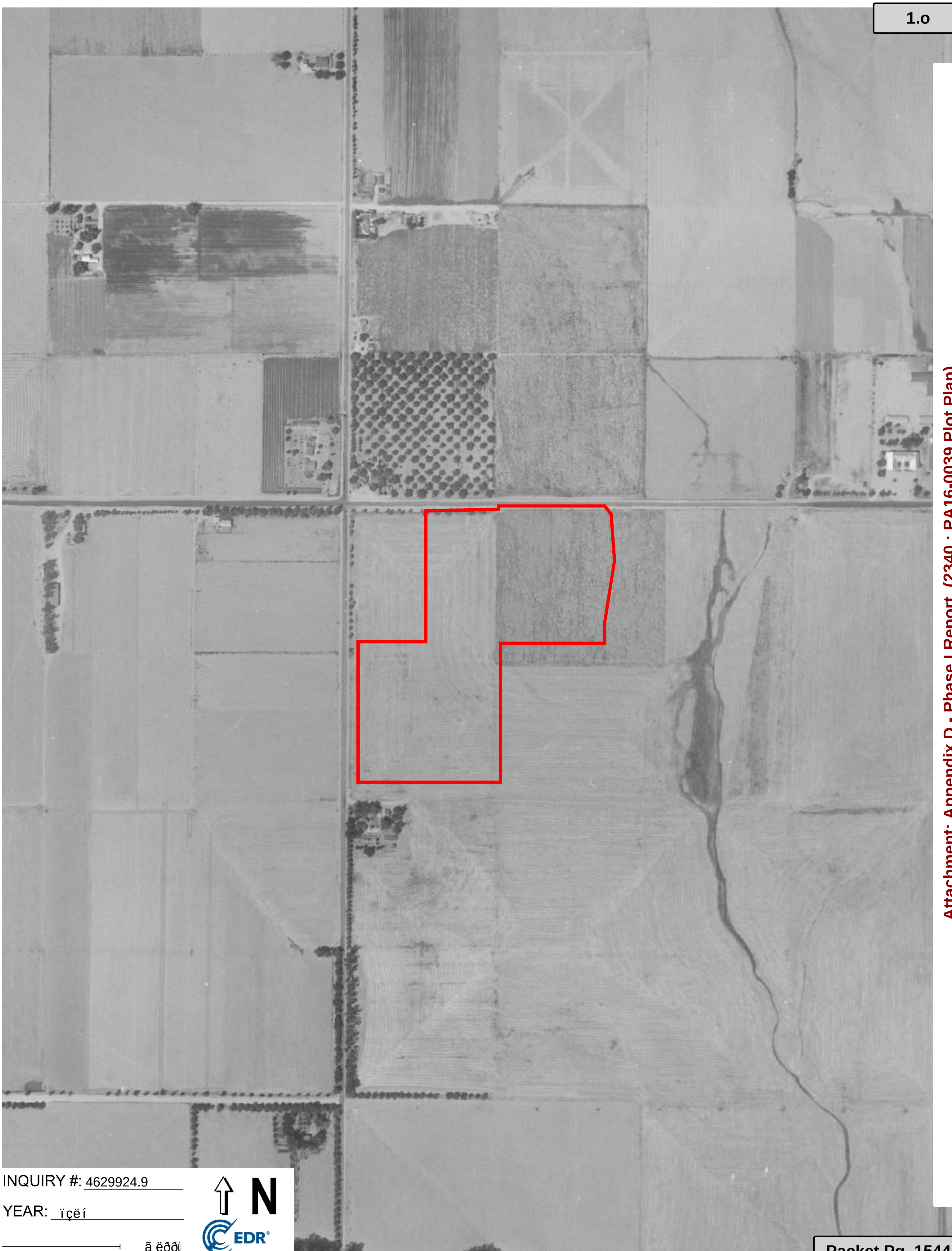
Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)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Not Reported

Not Reported

Moreno Valley, CA 92553

Inquiry Number: 4629924.4

May 25, 2016

EDR Historical Topo Map Repo

with QuadMatchT

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

05/23/16

Site Name:	Client Name:
Not Reported	Hillmann Environmental Co.
Not Reported	1745 W Orangewood Avenue
Moreno Valley, CA 92553	Orange, CA 92868-0000
EDR Inquiry # 4629924.4	Contact: Kristine Savona

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Hillmann Environmental Co. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		***Coordinates:***	
P.O.#	NA	**Latitude:**	33.915492 33° 54' 56" North
Project:	C3-6578	**Longitude:**	-117.224571 -117° 13' 28" West
		UTM Zone:	Zone 11 North
		UTM X Meters:	479240.82
		UTM Y Meters:	3752808.66
		Elevation:	1564.00' above sea level

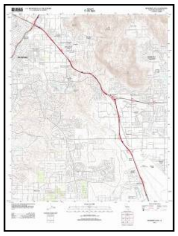
Maps Provided:

2012
1980
1973
1967
1953
1942
1901

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



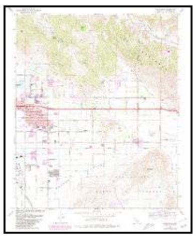
Riverside East

7.5-minute, 24000

Sunnymead

7.5-minute, 24000

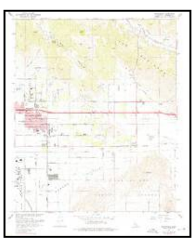
1980 Source Sheets



Sunnymead

7.5-minute, 24000
Photo Revised 1980
Aerial Photo Revised 1978

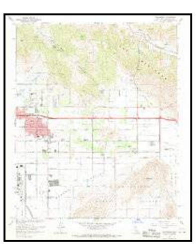
1973 Source Sheets



Sunnymead

7.5-minute, 24000
Photo Inspected 1973
Aerial Photo Revised 1973

1967 Source Sheets



Sunnymead

7.5-minute, 24000
Aerial Photo Revised 1966

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1953 Source Sheets

Sunnymead

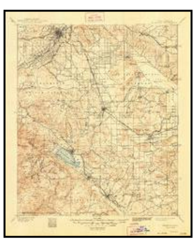
7.5-minute, 24000
Aerial Photo Revised 1951

1942 Source Sheets

Perris

15-minute, 62500
Aerial Photo Revised 1939

1901 Source Sheets

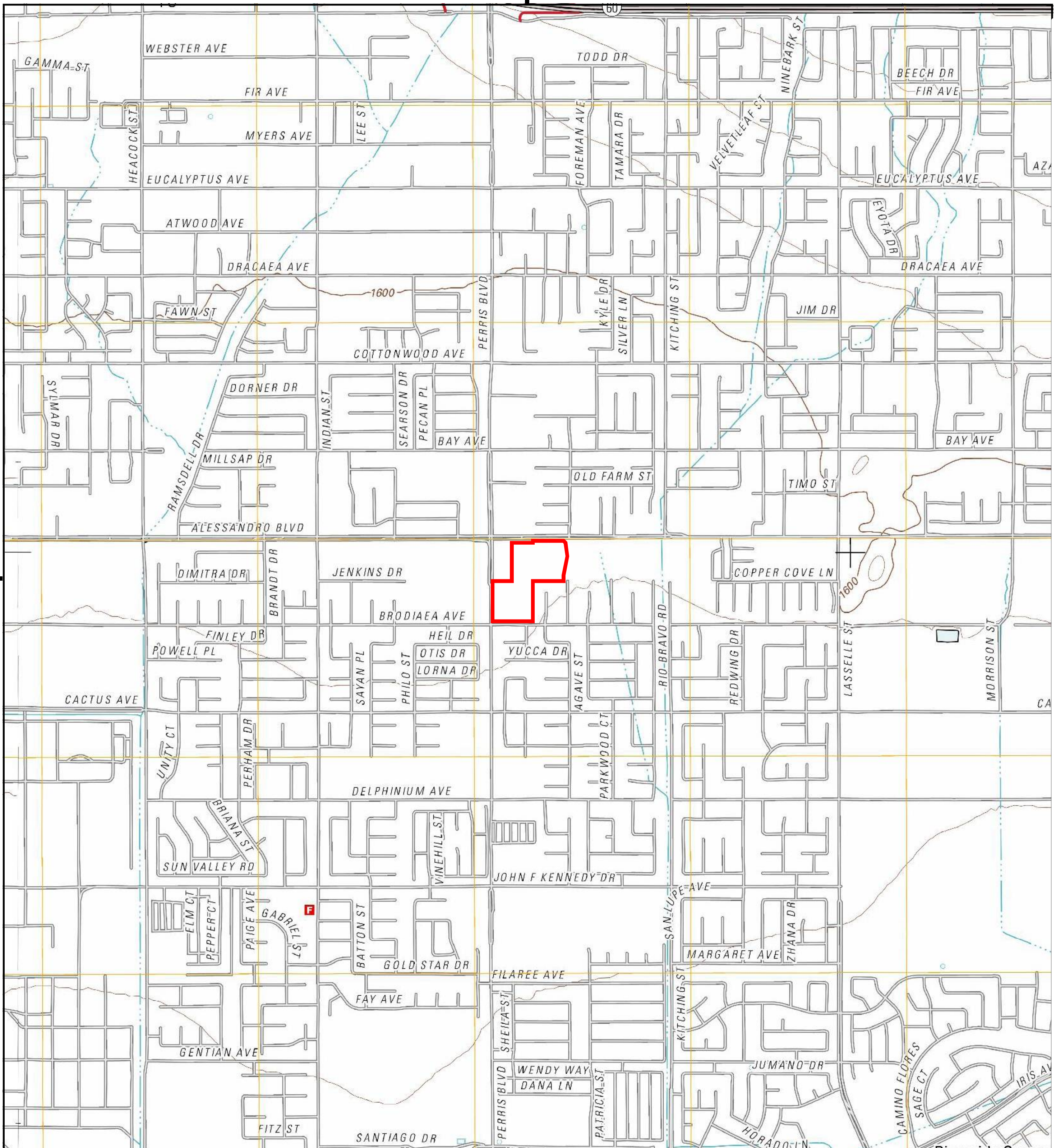


Elsinore

30-minute, 125000

Historical Topo Map

1.o



0 Miles 0.25 0.5 1 1.5

This report includes information from the following map sheet(s).

NW N NE W E SW S SE

TP, Sunnymead, 2012, 7.5-minute
W, Riverside East, 2012, 7.5-minute

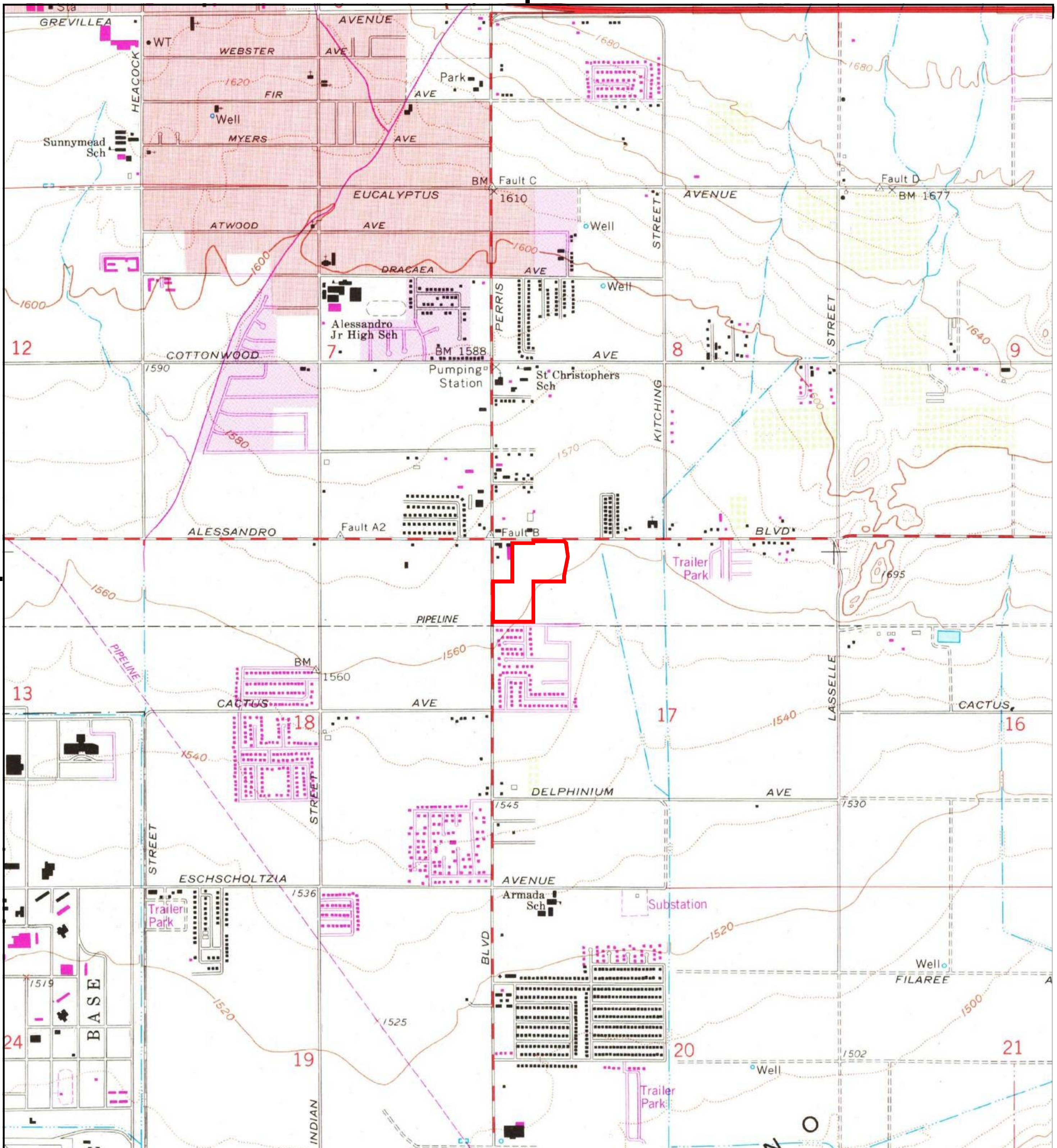
SITE NAME: Not Reported
ADDRESS: Not Reported
Moreno Valley, CA 92553
CLIENT: Hillmann Environmental Co.

EDR

Historical Topo Map

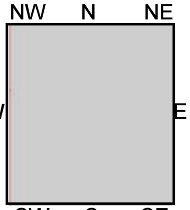
1.o

1980



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Sunnymead, 1980, 7.5-minute

SITE NAME: Not Reported

ADDRESS: Not Reported

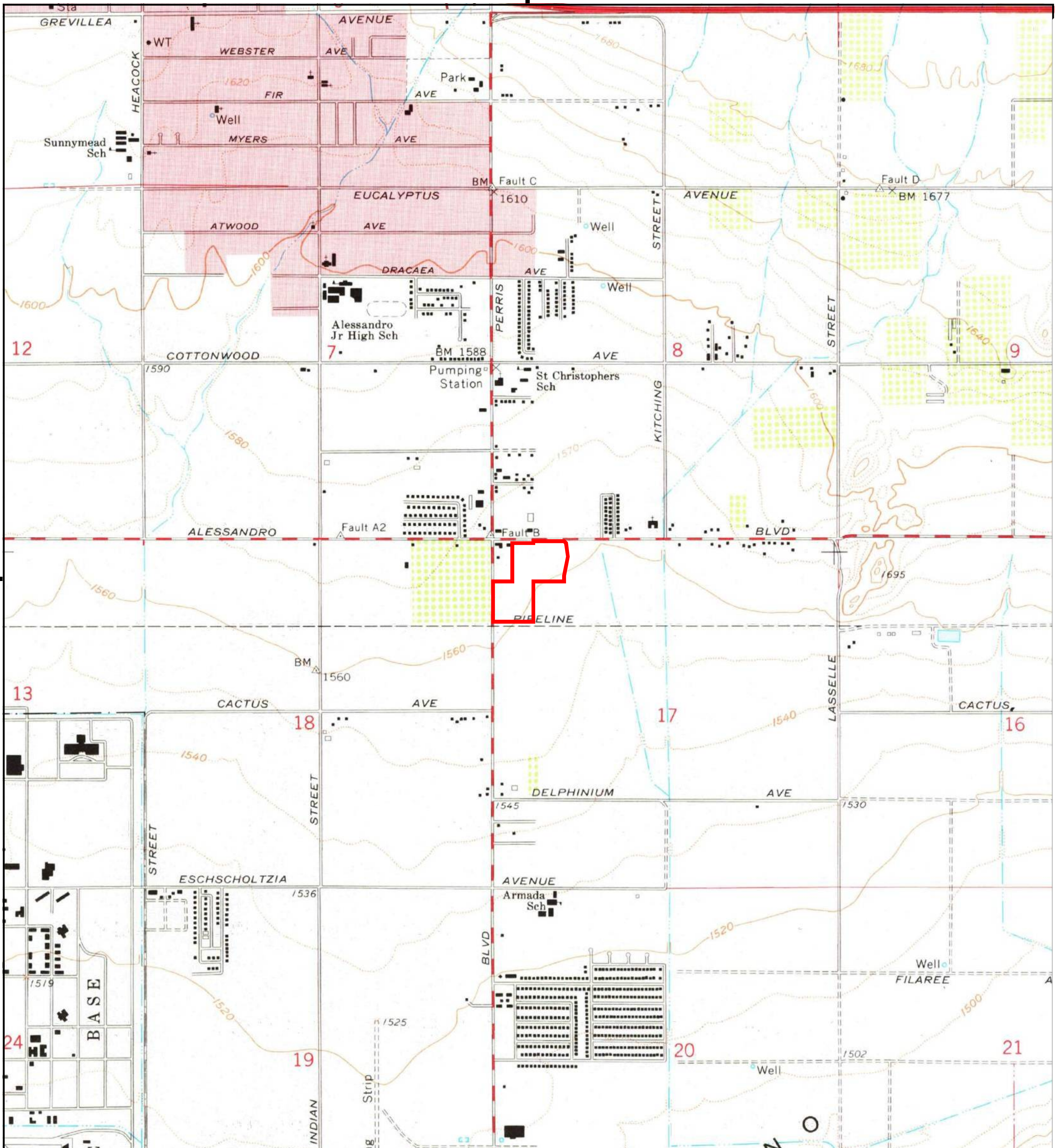
Moreno Valley, CA 92553

CLIENT: Hillmann Environmental Co.

N

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Historical Topo Map



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE

W E

SW S SE

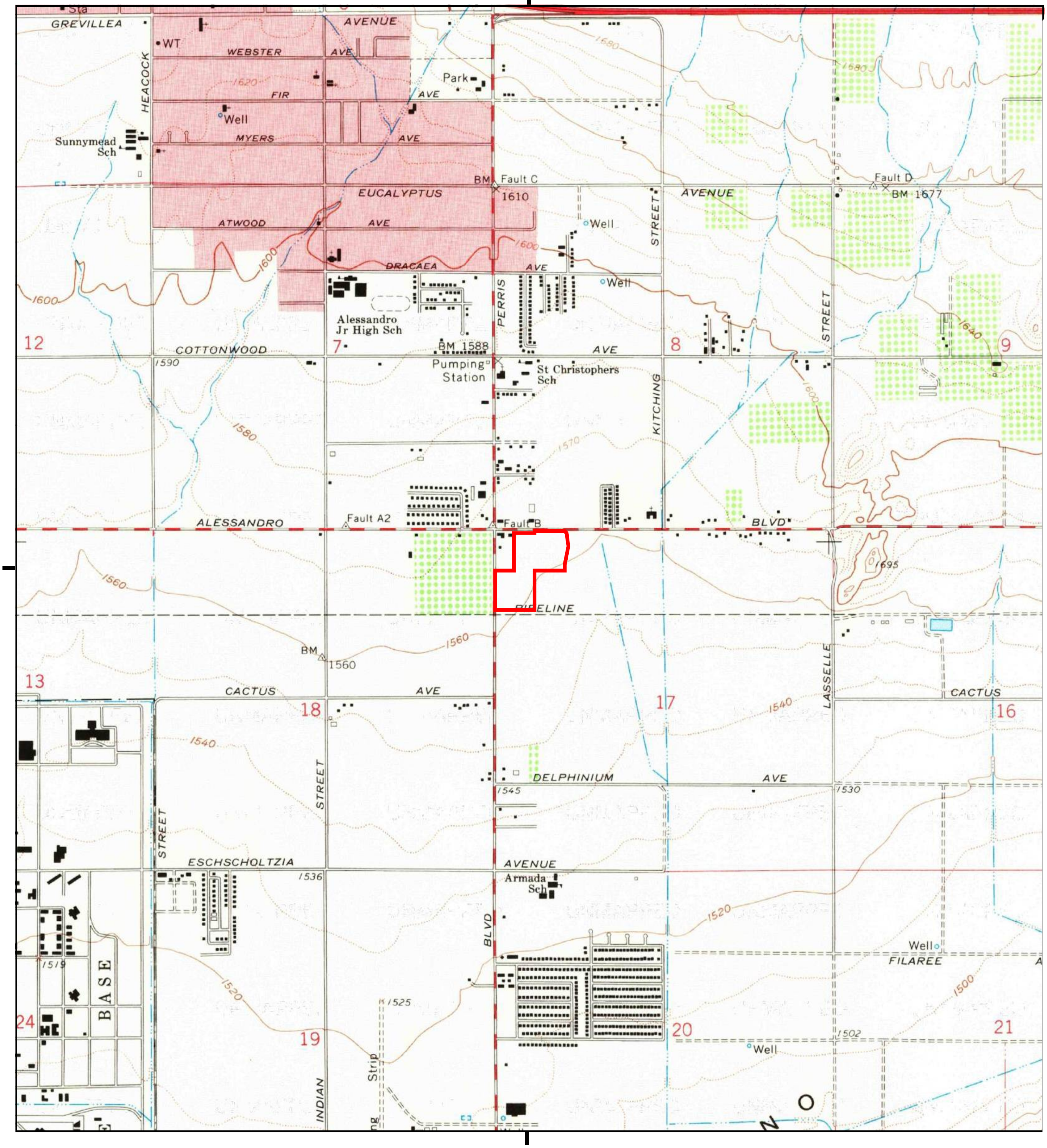
TP, Sunnymead, 1973, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Moreno Valley, CA 92553
CLIENT: Hillmann Environmental Co.

N

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Historical Topo Map



This report includes information from the following map sheet(s).

NW N NE

W E

SW S SE

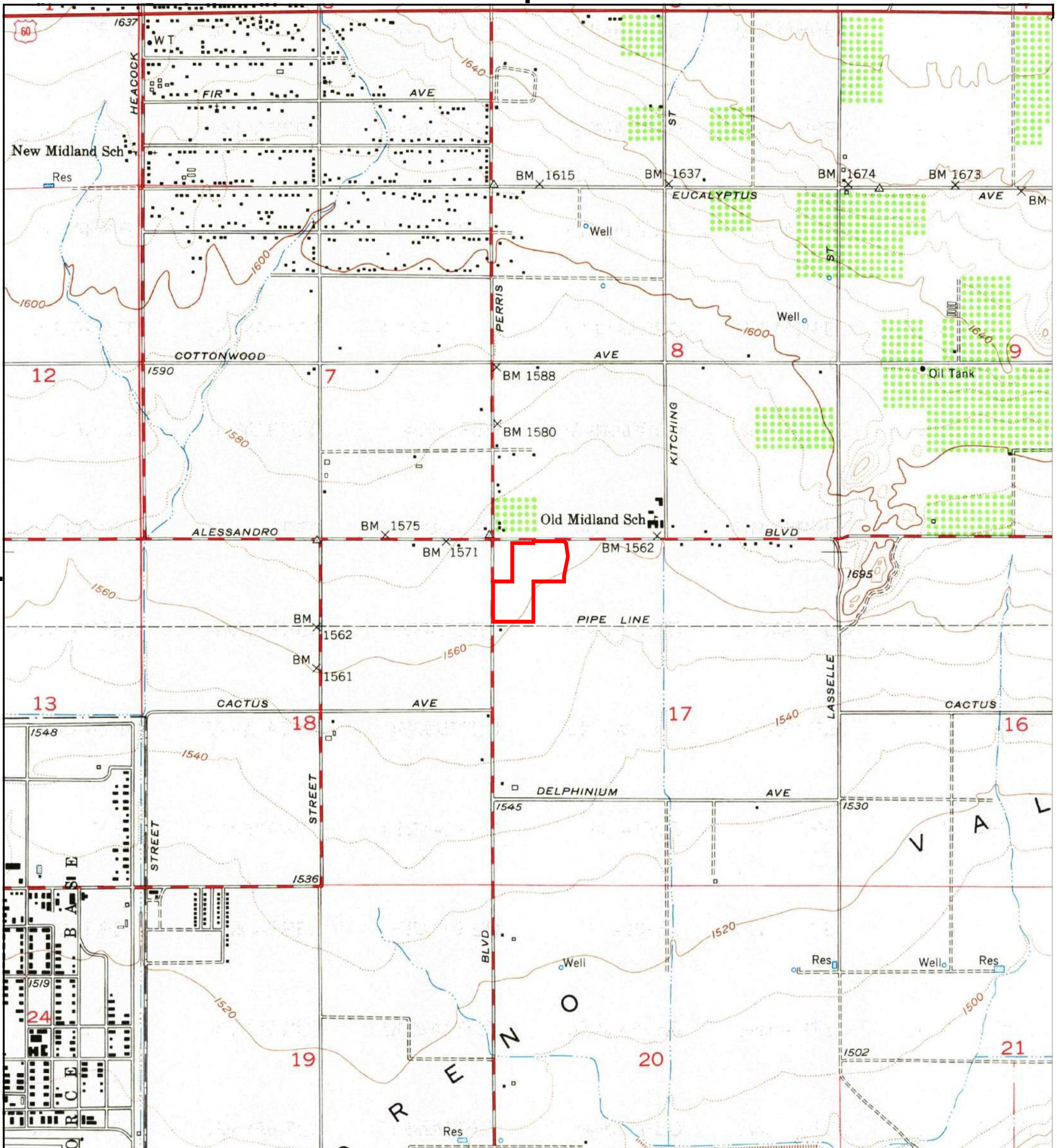
TP, Sunnymead, 1967, 7.5-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Moreno Valley, CA 92553
CLIENT: Hillmann Environmental Co.

N

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Historical Topo Map



This report includes information from the following map sheet(s).

0 Miles	0.25	0.5	1	1.5

NW	N	NE
W		E
SW	S	SE

TP, Sunnymead, 1953, 7.5-minute

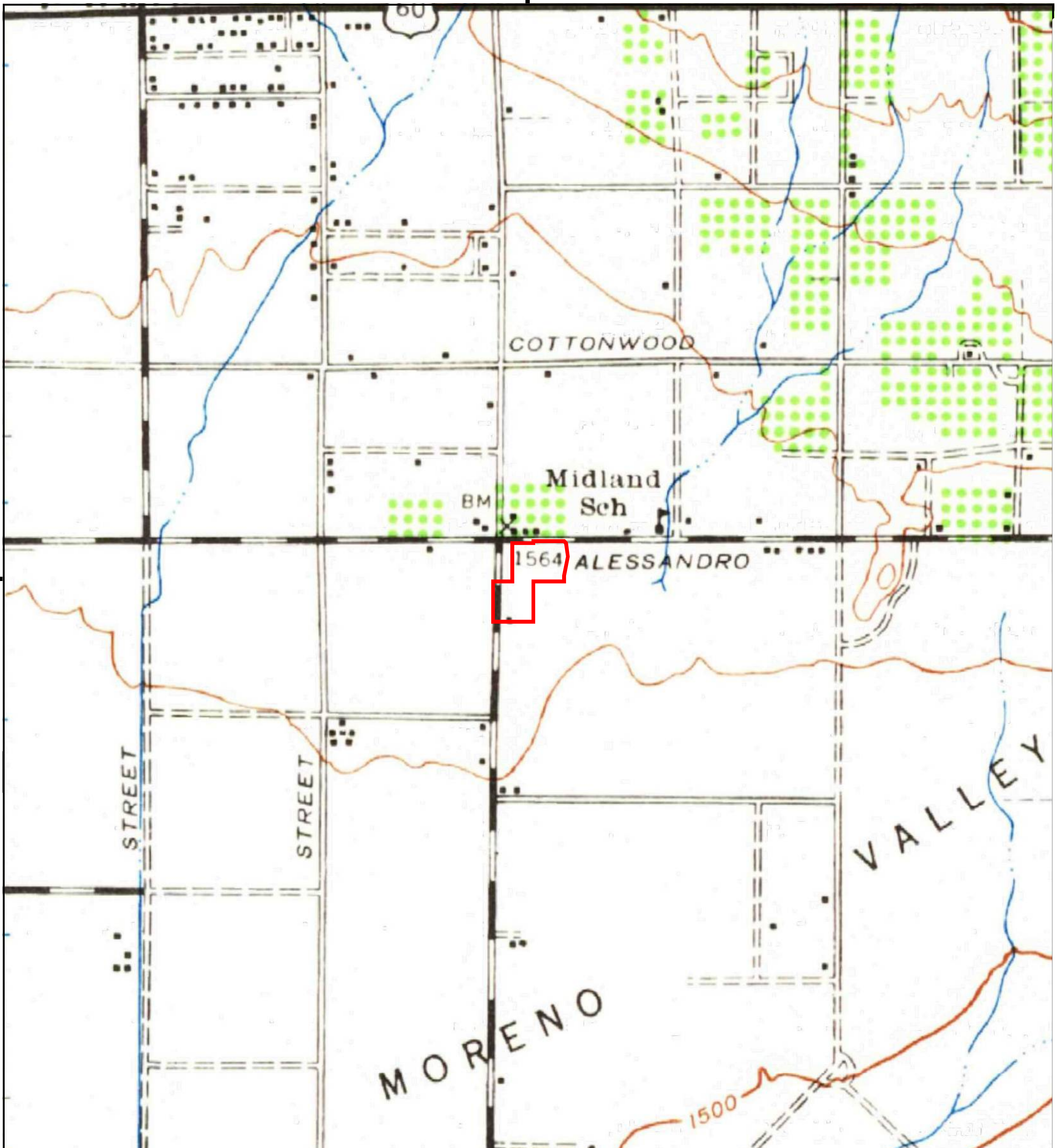
SITE NAME: Not Reported
ADDRESS: Not Reported
Moreno Valley, CA 92553
CLIENT: Hillmann Environmental Co.

N

1.o

Historical Topo Map

1942



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Perris, 1942, 15-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Moreno Valley, CA 92553
CLIENT: Hillmann Environmental Co.

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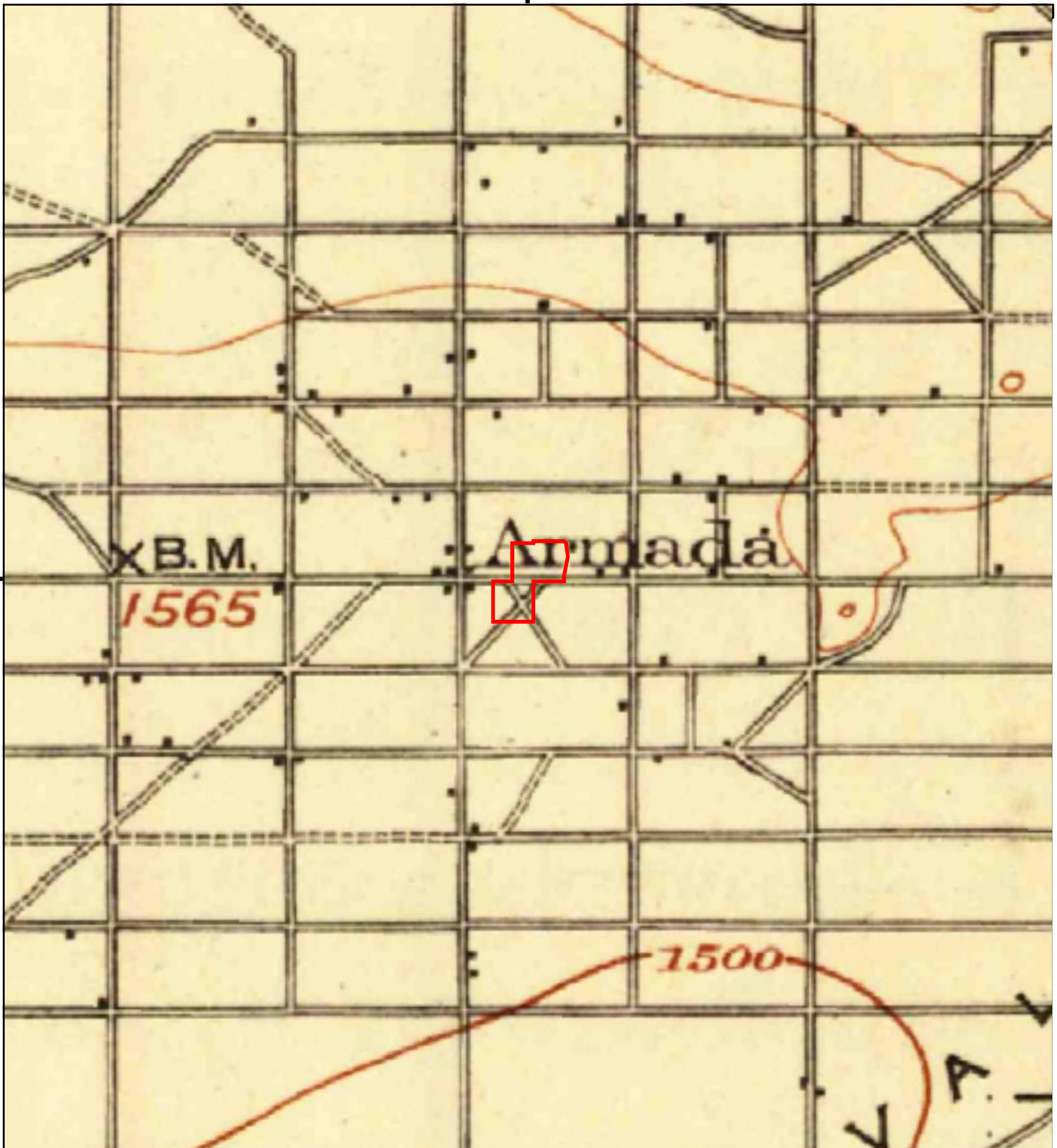
Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Historical Topo Map

1.o



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Elsinore, 1901, 30-minute

SITE NAME: Not Reported
ADDRESS: Not Reported
Moreno Valley, CA 92553
CLIENT: Hillmann Environmental Co.

N

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Not Reported

Not Reported

Moreno Valley, CA 92553

Inquiry Number: 4629924.3

May 25, 2016

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

05/25/16

Site Name:

Not Reported
Not Reported
Moreno Valley, CA 92553
EDR Inquiry # 4629924.3

Client Name:

Hillmann Environmental Co.
1745 W Orangewood Avenue
Orange, CA 92868-0000
Contact: Kristine Savona

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Hillmann Environmental Co. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 9168-42BF-850D

PO # NA

Project C3-6578

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 9168-42BF-850D

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

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Limited Permission To Make Copies

Hillmann Environmental Co. (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Not Reported
Not Reported
Moreno Valley, CA 92553

Inquiry Number: 4629924.5
May 31, 2016

The EDR-City Directory Image Report

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2013	☑	☐	Cole Information Services
2008	☑	☐	Cole Information Services
2003	☑	☐	Cole Information Services
1999	☑	☐	Cole Information Services
1995	☑	☐	Cole Information Services
1992	☑	☐	Cole Information Services
1985	☑	☐	Haines Criss-Cross Directory
1980	☑	☐	Haines Criss-Cross Directory
1975	☑	☐	Haines Criss-Cross Directory

RECORD SOURCES

FINDINGS

TARGET PROPERTY STREET

Not Reported
Moreno Valley, CA 92553

Year	CD Image	Source

ALESSANDRO BLVD

Year	CD Image	Source
2013	pg A2	Cole Information Services
2008	pg A32	Cole Information Services
2003	pg A60	Cole Information Services
1999	pg A81	Cole Information Services
1995	pg A106	Cole Information Services
1992	pg A124	Cole Information Services
1985	pg A138	Haines Criss-Cross Directory
1985	pg A139	Haines Criss-Cross Directory
1980	pg A142	Haines Criss-Cross Directory
1980	pg A143	Haines Criss-Cross Directory
1975	pg A146	Haines Criss-Cross Directory

PERRIS BLVD

Year	CD Image	Source
2013	pg A19	Cole Information Services
2008	pg A50	Cole Information Services
2003	pg A73	Cole Information Services
1999	pg A97	Cole Information Services
1995	pg A117	Cole Information Services
1992	pg A133	Cole Information Services
1985	pg A140	Haines Criss-Cross Directory
1985	pg A141	Haines Criss-Cross Directory
1980	pg A144	Haines Criss-Cross Directory
1980	pg A145	Haines Criss-Cross Directory
1975	pg A147	Haines Criss-Cross Directory
1975	pg A148	Haines Criss-Cross Directory

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

ALESSANDRO BLVD 2013

1	MORENO VALLEY FLORIST
235	YELLOW CAB
21801	FAMILY SERVICE ASSOCIATION
21820	TY WELL AUTOPARTS
21836	OCCUPANT UNKNOWN
21840	CHARLEBOIS LIQUORS
21866	ACE SMOG
	AXIS APPAREL
	BARONS AUTO SERVICE
21872	DANY GARCIA
21874	ALVIN RITCHIE
21876	FREDDY CEDENO
21878	OCCUPANT UNKNOWN
21882	JOHN VANDERLINDE
21891	BALDWINS AUTOMOTIVE SERVICE
21894	TONY SIMENTAL
21921	TRACTORLAND INC
21924	ELPIDIA RODRIGUEZ
21926	YOUSEF FARHA
21932	VANESSA CHAVIRA
21941	ALESSANDRO MINI STORAGE
	ALESSANDRO SELF STORAGE
21942	LA BUENA MARKET
	OCCUPANT UNKNOWN
21944	ERICA HUTCHINSON
21958	OCCUPANT UNKNOWN
21976	OCCUPANT UNKNOWN
22018	HECTOR ARIAS
	VALDEZ GLASS
22030	OCCUPANT UNKNOWN
22042	JENNIFER ESPARZA
22050	OCCUPANT UNKNOWN
22058	OCCUPANT UNKNOWN
22066	OCCUPANT UNKNOWN
22088	OCCUPANT UNKNOWN
22135	SUPREME TRUCK BODIES OF
22144	COMPLETE AUTO DETAIL
22156	LOS JILBERTOS MEXICAN FOOD
22180	ISMAEL ULLOA
22182	CHUCK VALDEZ
22184	JESUS CONTRERAS
22210	VERNON WHITE
22224	JOSE HERNANDEZ
22240	JAMES HURST
22275	ALTERNATIVE HEALTH SERVICES
	LIBERTY TAX SERVICE
	M & A TOUCH OF CLASS
22308	JOES ITALIAN RESTAURANT
22335	BEN CLYMERS THE BODY SHOP
	ENTERPRISE RENTACAR

ALESSANDRO BLVD 2013 (Cont'd)

22335	VIP ALL ACCESS BEVERAGES INC
22366	ALL SOLUTIONS INSURANCE
22400	ALWAYS AVAILABLE PLUMLEES PLUMBING
	PLUMLEES PLUMBING SERVICES INC
	PRECISION DOOR SERVICE
	YELLOW CAB
22405	ALESSANDRO AUTO BODY & PAINT
	CONTINENTAL PROPERTY
	DESERT WINDOW TINTING
	HMS
	JOHNS BARBER SHOP
22410	EMPIRE MOWERS
22425	BIG DOG TIRES
	IMMITAX SERVICE
	SHAMOLIAN HOMAYOON
	TRINITY MOTORSPORT
	XPRESS AUTO CARE
22435	AIRY SPA
	CELLINIE NAILS & SPA
	ELLSWORTH PLAZA LLC
	JR SMOKE BLUFF GIFT
	SUBWAY ELSWORTH 42439
	WIRELESS GALLERY
22445	FAMILY MUSIC ROOM
	TCAP MARTIAL ARTS ACADEMY
22455	ESTATES
	G HAIR CREATIONS
	NAIMS LOUNGE
	PLAZA PIZZA
	WASSIM ZOGHBI
22456	DRAGON HOUSE
22484	ALL DISCOUNT INSURANCE
22485	JACK IN THE BOX
22510	BUDS MORENO VALLEY TIRE PROS
	TIRE PROS
22512	MENOS CUSTOMS
22515	WESTECH COLLEGE
22555	DAVITA CANYON SPRINGS DIALYSIS CENTE
	NEPHROLOGY ASSOCIATES
22570	MENOS STEREO
22574	VALENCIAS TACO SHOP
22586	CARPET JS
22590	EMPIRE JEWERLY & LOAN 2
22592	SUBURBAN CLEANERS
22594	ROYS LIQUOR
22600	NEW FOUNDATION COGIC
22608	LA FAMOSA MARKET
22616	VFW VETERANS OF FOREIGN WARS
22635	ALESSANDRO PHARMACY
	LIMON JOSE M A PROFESSIONAL MEDICAL

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ALESSANDRO BLVD 2013 (Cont'd)

22635	RESCARE HOMECARE
22675	COMMUNITY HEALTH SVCS INC
22695	WESTECH COLLEGE
22700	A PATRIOT STORAGE
	CPT WIRELESS INC
	H&R BLOCK
	KLEITZS TAX SERVICE
	STYLING CAFE SALON THE
	VICKYNO AUTO WINDOW TINT
	VICTORS TUXEDOS
22740	FUSION MOTORS
22770	GERONIMO ARIAS
	JOSE GONZALEZ
	LUCY TRINIDAD
	VANESSA ANDRADE
22790	ALESSANDRO SMOG TEST ONLY
	CASINO DEALER SCHOOL
22810	BOTANICA CHANGO
	GRACE TEMPLE CHURCH
	IMMANUEL HOUSE
22862	COUNTRY LIQUOR
22876	KENKZ TAX SERVICE
	TOO SHARP STYLING SALON
22886	AAMCO TRANSMISSIONS
	AAMCO TRANSMISSIONS & TOTAL CAR CARE
	ADRIAN NERI
22920	ASIAN IMPORTS
	PONCHOS TACO SHOP
	SUPER V BEAUTY SALON
22940	FAMILY DENTAL CENTER
22990	TMSO INC
23020	TOMS NO 1 WORLD FAMOUS CHILIBURGER
23080	99+ FOOD MART
	CLINICA DENTAL FAMILIAR
	DEANZA OB GYN
	DEMOLA ANGEL MD
	HENRY NGUYEN OPTOMETRY
	LVRX
	MORENO VALLEY CLINICS MEDICA FAMILIA
	MORENO VALLEY WASH HOUSE
	UNITED STATES GOVERNMENT
23100	EBONY HAIR
	EXHILARATE FITNESS STUDIO
	GO GO CHINA
	M & M CLEANERS 2
	PLAZA HAND CAR WASH
23501	TABASSI CO LLC
23580	UNITED STATES GOVERNMENT
23581	MOTEL 7
23615	ALESSANDRO AUTO SPA INC

ALESSANDRO BLVD 2013 (Cont'd)

23615	CHASE AUTO TECH
	SPEEDY MOBILE LUB
23750	24 HOUR FITNESS
	BEVERAGES 4 LESS LIQUOR
	CITRUS BELT TAX SERVICE
	EXCEL PREP CHARTER SCHOOL
	FANCY TAN
	GOLDEN LANES
	GUS JR RESTAURANT
	HAPPY BUFFET
	KIANI DARIUSH LAW OFFICE OF
	LOS CANTARITOS MEXICAN RESTAURANT
	MENDYK CHIROPRACTIC INC
	MUSCLE HOUSE LLC
	OASIS COMMUNITY CHURCH
	RICK T KIM DDS
	RIVER KWAI THAI CUISINE
	WHITES BIKES
	WIENERSCHNITZEL
23880	ALBERTACOS
23890	ALCOHOLICS ANONYMOUS
	APEX AUTO BROKER
	ATLAS EXPRESS PADALA INC
	CALIF SCHOOL EMPLOYEES
	DUTALE
	EUGENES DENTAL
	FAIR HOUSING COUNCIL OF RIVERSIDE CO
	FAMILY HOSPICE CARE
	MORENO VALLEY LOCK & SAFE
23900	JESSIES JUMPERS
	MARTIN MENDOZA
	UNLIMITED QUEST INC
23910	CLEAN AIR SMOG
	FANCY STITCHIN
	JUST BRAIDS
	MOLLY MAID
	MORENO VALLEY LIONS CLUB
23920	AMERICAN AUTOMOTIVE
	BRADYS AUTOMOTIVE
	CERTIFIED TIRE & SERVICE CENTERS
	XPERT AUTOMOTIVE
23932	ALESSANDRO ANIMAL HOSPITAL
	AMB DRIVING SCHOOL
	DIRECT CARPET & FLOORING
	MAGANA AUTO UPHOLSTERY
	NATIONAL INSTITUTE LEGAL
	PLUMMERS ELEVATORS SERVICE
	VALDES AUTO GLASS
	VALDEZ AUTO GLASS & WINDOW TINT
	VICTORY TEMPLE

ALESSANDRO BLVD 2013 (Cont'd)

23942	LUIS ESPINOSA
	PARTS PLUS
	PULIDOS WHEELS & TIRES
	WEST COAST CABLE
23952	BEST VALLEY SMOG & AUTO
23962	ACA GROUP SERVICE CORPORTAION
	ALEJANDRA ORTEZ
	AMERICAN QUICK PRINTING
	AZTEC INSURANCE SERVICES INC
	BANIG RESTAURANT FILIPINO & ORIENTAL
	BEST IMPRESSION
	CALIFORNIA BUDGET FINANCE
	DESASI SANDIP J DR DDS
	ERNESTO CERVANTES
	L B C COURIER CO
	MARIA BUENO
	PHILAM ENTERPRISES
	RED RIBBON BAKE SHOP
	SKYROCKET MOBILE
	SONORA GRILL
	STADIUM FASHION
	SUPER V 2
	SUPER V BEAUTY SALON & GIFT STORE
	THE INK GALLERY
	XCLUSIVE CUTZ
24021	AARONS
	ACADEMIA TAX SERVICES
	AMYS BARBER SHOP
	CHUYITAS MEXICAN RESTAURANT
	CYNTHIAS HAIR CARE
	DESIGNER NAILS
	I DO WEDDINGS
	LOIS LAUER REALTY
	OREILLY AUTO PARTS
	PIZZA HUT
	SUNGADAN STUDIOS
	ZAPANTA DDS CRISTINA
24050	AV NAILS & SPA
	CIGARETTE KING
	DIAZ GROUP INC THE
	ESPINO LA PALMA
	TANMAKERS TANNING SALON
24100	DALIAS PIZZA EXPRESS
	KINGS DONUTS
24150	FLAVA SALON
	INKSMITH TATTOO
	LEADING EDGE LEARNING CENTER
	QWICK PICK
24430	ALLESANDRO COIN LAUNDRY
	AZTEC INSURANCE SERVICES

ALESSANDRO BLVD 2013 (Cont'd)

24430	BEAUTY SPOT
	OVERHEAD MORENO VALLEY GARAGE DOOR S
	PHYSICIANS FAMILY PRACTICE
	RANCHO DENTAL GROUP
	RED PERSIMMON NAILS & SPA
	TENAS SALON
	WIN WIN FASHION
24440	A1 LOCKSMITHS INC
	CHURCHS CHICKEN
	FOOD 4 LESS
	MCDONALDS
	MONEYTREE
	TONYS MOBIL
24481	APPLIANCE DISOUNTERS
	BEAUTY TRENDZ
24491	A B C FOOD STORE
24515	MVP BEAUTY PLUS
24525	ANIMAL ELEGANCE
	CONTINENTAL CURRENCY SERVICES
	VALLEY JEWELRY
24541	MORENO FAMILY DONUTS
24545	SUPER 99 CENTS UNIVERSE PLUS STORE
24553	APPLE FLORIST
24561	DEZA ANTHONY Y DDS INC
24563	LILY HAIR & NAILS
24565	MORENO VALLEY TV
24570	AUTOZONE
24641	IGLESIA DE DIOS PENTECOSTAL
24645	MASTER JEWELERS
24647	H&R BLOCK
	HAIR PLUS SALON
24649	TOP BEAUTY SALON
24651	TAQUERIA DON JOSE 2
24655	CHITOS BURGERS
24661	HOUSE OF DESTINY CHURCH
	SUPERCUTS
24673	FIRESTONE COMPLETE AUTO CARE
24685	BEST FURNITURE & APPLIANCES
24691	ALBERTOS
24695	STAR CLEANERS
24697	VOGUE NAILS
24699	THE BARBERS
24701	MARISCOS MELGOZA RESTAURANTE
24703	D B SUNWEAR
24707	99 CENT STORE
	WORLD TOWN
24725	3 BROS TATTOO
	ASSOCIATED FOREIGN EXCHANGE
	J & S JEWELRY
	JE SOX

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ALESSANDRO BLVD 2013 (Cont'd)

24725	KARINAS STORES
	MARYS STORE
	MORENO VALLEY ELECTRONIC
	PINA FURNITURE
	SUSIES HOSIERY
	TOP TEN
24735	PAPA JOES PIZZA
24741	MARINELLO SCHOOLS OF BEAUTY
24757	P I GRILL
24762	ARLENE PITCHFORD
24775	ALLESANDRO TIRES
	ANGGYS SALON
24798	FABIOLA CORDERO
24805	CLINICA MEDICA LATINA
	HACIENDA BON LINO RESTAURANT
	JUANITAS MARKET
	LA NUEVA RONDA NO 2
	ROSSTON BARBER COLLEGE
24810	MARIO NAVA
24822	OCCUPANT UNKNOWN
24825	M & M CLEANERS
	RIOS NOTARY SERVICES
	STUDIO 951
24834	ELSA COULTER
24846	MYSHANAE HARRIS
24853	ACE CASH EXPRESS
	DOMINOS PIZZA
	PHO HA
24858	GERARDO MARTIR
24870	EDWARD ELIAS
24875	BOTANICA JESUS MALVERDE
	ECHEVERRIA JULIETA DDS DENTAL OFFICE
	INLAND OASIS WATER
	LITTLE BEIJING
	MARC ANTHONY SHOES
	PRO VACUUM & JANITORIAL SUPPLIES
24899	99 CENT ONLY STORES
	BODEGA LATINA CORP DBA EL SUPER34
	FRED LOYA INSURANCE
	LATIN AMERICAN TAX SERVICE
	SORIANO REALTY
24990	ADVANCE AMERICA CASH ADVANCE
	CORAL TRAVEL
	FASHION NAILS
	SHANGHAI II
	SUBWAY SANDWICHES
	TV PLUS
	WATERMANIA DRINKING WATER
24991	RANCHO FOREIGN CAR PARTS
	RITE AID PHARMACY

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ALESSANDRO BLVD 2013 (Cont'd)

24992	ADRANAS INSURANCE
	ADRIANAS INSURANCE INLAND
	P & G BURGERS
	TORTILLERIA LOS REYES 3
25010	COSTO OUTLET
	NATIONS RENT TO OWN
25011	WALGREENS
25020	MORENO VALLEY UNION 76
25024	DEL TACO
25030	ALESSANDRO FAMILY DENTISTRY
	ALLURE HAIR & NAILS
	BEAR VALLEY CLEANERS
	CONTROL INSURANCE SERVICES
	CRISTYS DONUT SHOP
	GOLDEN ESTATE REALTY
	HICLASS NAILS
	MAMAYITA SALVADORIAN FOOD
	SALLY BEAUTY SUPPLY
	TAX 4 LESS
	USA CHECKS CASHED
25050	FRESH & EASY NEIGHBORHOOD MARKET
	MARCH INTERNATIONAL LOGISTICS CENTER
25070	LONGS DRUG STORE
25100	MATSURI JAPANESE
25251	ALICIA JONES
	ALLEN MONTGOMERY
	ARLISHA JACKSON
	CEDRIC TAITE
	CRISTINA WOODSON
	DANN NAJAR
	ERIKA MCGUIRE
	JOSEPH PELSUE
	MARIA CARRANZA
	PARIS GILBERT
	ROBERT CHARMACK
	SCOTT ALEXANDER
	SHAWNTELE CLARK
	SHELBY DAVIS
	SUSANA RODRIGUEZ
	TONY ARISTA
25263	ALTON RICHARDSON
	ANDREW WALTON
	ANTONIO BRADY
	CAMERINA NUNEZ
	CHRISTINE APOLONIO
	CLAUDIA ROSALES
	E SANTOYO
	ERIKA DAVIS
	JAMES JOHNSTON
	JEFFERY CLAYTON

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ALESSANDRO BLVD 2013 (Cont'd)

25263	JESUS VEGA
	JOHANNA FARUQ
	JOHNNY HALE
	KIMBERLY HARRISON
	KRISTOPHER NIJST
	LAWERENCE SCHOBEY
	MACK JAMES
	PORCHE JONES
	RUFUS HODGES
	SARFRAZ SHAHBAZ
	TAMESA BLAND
	WANDA KEYHEA
	WILLIAM DENNINGHAM
25275	ALICE HOWARD
	ARMANDO REYES
	AVIMAEL SANTIAGO
	BRIANTE LOCKRIDGE
	CARLOR AGUIAR
	DOTTIE BROWN
	JAIME MUNOZ
	JOSE TORRES
	JOSHUA GOINS
	KELLIE LOZANO
	LAUREN EDWARDS
	POLK RHONDA
	REGINALD GREEN
	ROBERT REGISTER
	SERENA BISQUERA
	TIFFANY MARTIN
25287	ANDREW VARTGESS
	ANGEL SANDOVAL
	BARRY DODSON
	CLAUDIA VARTGEFF
	DARRELL JENNINGS
	KIMBERLY HANKSTON
	PAMELA JOHNSON
	RHONDA PRATER
	ROBERT LOZANO
	TERRY DAVIS
	THEODORE PAYNE
	YEN CHUNG
	YESENIA CUEVAS
25299	AMBER CLARK
	BULMORO MEJIA
	CHEVIS FERGUSON
	DANTE MARKS
	JEFFREY TAYLOR
	K JUSTICE
	LATOYA FINLEY
	LATRICE REED

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ALESSANDRO BLVD 2013 (Cont'd)

25299	LUPE PALACIOS
	RODRIGO DIAZ
	TASHA LOMAX
	TERESA OCAMPO
	YVETTE CHAMBERS
25311	ANGELA BOOKER
	DAVID JENKINS
	DORIAN DANIEL
	ELLA HEMPSTEAD
	ISAIAH COMO
	KARRIE ALONZO
	NARIHA SERANO
	NORMAN TASSONE
	ROBERT LOVERSO
	SAMUEL MURPHY
	SHANNA SAVONE
	STEVE CRUONG
	TIA DAVIS
	WYNEMIA TERRELL
25323	ARTSHELL UDUHIRI
	BIANCUA BILLINGS
	DEBRA ARRIVE
	DEREZANN JOSEPH
	FAITH HAMILTON
	ILSI SUAZO
	JAMES SMITH
	JEFFREY TAYLOR
	JEWELL SCURLOCK
	LOREAN STRAUTHER
	RENEE ELLIOTT
	RHIANA ARMENTA
	VANESSA GARCIA
	WILLIAM MCDOWELL
	YOKO ECK
25335	WNRA MORENO VALLEY LLC
25347	AFTON WISNER
	AMBER PARK
	ANTONIOUS AWED
	CHRISTINA GOODLOE
	EMAD TADROS
	ISMAEL LOZANO
	JEFF TROUPE
	LETICIA ARREOLA
	LONNIE ORTIZ
	PAUL PETERSON
	THU TA
	WILBERT HICKENBOTTOM
25359	ANGEL GUZMAN
	ANTONIO PAGE
	CASSANDRA CASEY

ALESSANDRO BLVD 2013 (Cont'd)

25359 CHRIS HOLLIS
DELIA SUAREZ
KAREN VEGA
KENNETH FLETCHER
KRISTEN KRUEGER
ROBERT EDDINGTON
SALVADOR PALIZA
SAMNEANG PAN
TYLON BARLETT
25371 AMALIA ADHITYA
CRAIG SCHERF
DAYTON HERSHKOVITZ
DIONICIA PIZARRO
LUIS HERNANDEZ
SAMMY PARRA
SYLVIA SIMANDJUNTAK
25383 BRITTANY FARRIS
CHARLENE MOORING
D WASHINGTON
DEAN JACKSON
DEBORAH RUSSO
DELVIN FUNES
ERNESTO GIRON
EVYETTE GAINES
GENE ADAMS
JANELL GOUDEAU
JEDIDIAH SMITH
JOELLE BAILEY
KRISHAUNIA COPELAND
RUFINA CONSTINE
TIFFANY WOOD
VERONICA ARZATE
25395 BYRON WOODS
EMERY PALM
JACKIE LOGGINS
KENNETH KYLES
LAWRENCE SALONE
LLOYD GIX
RAYMOND MUNOZ
SHANTAL MUNOZ
SHERYL MASTERS
VINCENT HALL
25400 BURKHARDT CHRISTINA DC
CHRISTINA CORLEW
QUINN AFRICAN METHODIST EPISCOPAL CH
QUINN COMMUNITY OUTREACH
TRISTAR REAL ESTATE
25407 BROOK MOREHEAD
CAMILLE CRUMP
DEVAUGHN BROOKS

ALESSANDRO BLVD 2013 (Cont'd)

25407	DIANE BAILEY
	G GARRETT
	JAMES ARIAS
	JAYMEE BANDY
	KISHA CALLIER
	M HENDERSON
	MONA WILLIAMS
	PATRICE KEETON
	RAPHAEL HARRIS
	SAMUEL FRANKLIN
	TRAVIS BRADFORD
25419	AKPEVWOGHENE AKEMU
	ANDREW FENNELL
	BETTY ALEXANDER
	CANDACE WILSON
	CARLA VASQUEZ
	CARNISHA HARRIS
	CHRIS AVELAR
	COLLANDER BRIAN
	ESMERALDA MONTANEZ
	JOSEPH TAPLIN
	LUZ SANDOVAL
	MARCUS JONES
	NOAH GREEN
	TIA WHYNE
	WAYNE SMOOT
25431	BARBARA LOGAN-MURVINE
	BRIAN STEPHENS
	CRAIG PARKER
	ERENST WILKERSON
	JESSICA MARQUEZ
	KARMELL TRIISH
	MARCELINO CASTREJON
	RICARDO MORALES
	RUSSELL MCKENZIE
	STEPHANIE MAYBERRY
25445	AARON ANDRES
	ALICIA RIVIERA
	AMY CHOE
	ARELI ESCABAR
	ASHLEY HARRIS
	BRIAN SHRAMEK
	DIANA ANDERSON
	DOMINIQUE WILLIAMS
	G VALENZUELA
	JAZZMONAE SINEGAL
	MARVIN HALL
	RAUL CARDENAS
	STEPHAN HOWARD
	TANYA MORALES

ALESSANDRO BLVD 2013 (Cont'd)

25560	THE CHURCH OF JESUS CHRIST OF LATTER
	ZION WORSHIP CENTER
25631	NGOC NGUYEN
25634	MORENO VALLEY UNIFIED SCHOOL DISTRIC
25652	TERRY JOHNSTON ALLSTATE AGENT
25681	ABEL GONZALEZ
	ADOLFO OAJACA
	AGUSTIN CANCHOLA
	ALEJANDRO MACIAS
	AMAEDA BONIFACIO
	ANEL MARTINEZ
	ANTONETTE TATUM
	BARBARA CLARK
	BERNARDO NASSO
	BERTHA ARREOLA
	CAROLINA CREDIT
	CHARLOTTE GOODSON
	CHRISTIAN ABREGU
	CHRISTIAN MEDINA
	CLEMENTE ALVAREZ
	DANTE ASCUETA
	DIANA IBARRA
	EDDIE GREER
	EDITH BEEBE
	ELISA MENDOZA
	FELIX HERANDEZ
	FELIXBERTO MARFORI
	FERNANDO ORDORICA
	GAYLA BROWN
	GERMAN BECERRA
	GLORIA GUTIERREZ
	GLORIA MAGAN
	GLORIA MUNOZ
	GUADALUPE DELAROSA
	HERMAN RODEN
	JENNIFER TORRES
	JESUS LOPEZ
	JESUS VALDOVINOS
	JOEL CANTRELL
	JOSE LUPIAN
	JUAN CASTELLANOS
	JULIAN CALVILLO
	JULIO ESTRADA
	KRISTEN VELASQUEZ
	LADELL LEBARON
	LEONEL TALAMANTES
	LUIS ESCALANTE
	LYNNE LIVINGSTONE
	M RAMIREZ
	MARIA ALANIS

ALESSANDRO BLVD 2013 (Cont'd)

25681 MARIA GARCIA
MARIA VEGA
MARIANA ROCHA
MARIO RUBALCABA
MARITZA ADAME
MARSHALL HAMMER
MARTHA MORALES
MICHAEL SPRAGUE
MIGUEL GOMEZ
MILDRED HERNANDEZ
NANCY ROBLEDO
NENA UGAY
NEW HORIZON TRAILER PARK
P CALLER
PATRICIA TUROCY
PATY OLSEN
RAQUEL ULLOA
ROBIN GUILLEMETTE
ROGELIO MARTINEZ
ROSARIO DEMESA
RUBEN BERNAL
SIDNEY ROLAND
TIMOTHY MURPHY
TRUDY OHARE
WILLIAM CASSEL
25791 KAI WU
25793 RODRIGO LOPEZ
25807 OCCUPANT UNKNOWN
26755 VALLEY CHRISTIAN ACADEMY
26871 ABDUN SILABAN
ALEXIS MOFFITT
ALMA FALCON
ANA HILDEBRAND
ANGELA OLIVAREV
ANITA MAXWELL
ARMANDO CORRAL
BENJAMIN RUIZ
BERENICE FRANCO
BEVERLY CROCI
BLANCA MOYA
CAROL ALLEN
CAROL PURCELL
CASSIOPEI TURNER
COUNTRY SQUIRE MOBILE ESTATES
DAVID BANKS
DEBRA HARDER
DONNA MCCOLL
EDITH MEDINA
EDUARDO RIVERA
ERNEST ROBERTS

ALESSANDRO BLVD 2013 (Cont'd)

26871 FRANCINE MCGILL
GARY GLANCY
GEORGE STENBACHER
GUILLERMO CUEVAS
GUILLERMO ZAMBRANO
HELEN CONVER
HERBERT BUNNING
HOLLY RANDOLPH
HOWARD ASHLEY
JAMES LEONARD
JAMES MOORE
JAMES ZMUDKA
JAMIE TANDBERG
JEAN DODSON
JIRBOFIO FLORES
JOAQUIN RICO
JOHN BAKER
JOHN JIMENEZ
JORGE CALDERON
JOSE MARTINEZ
JOSEPH AIELLO
JUAN AGUILAR
JUAN VERDUZCO
KAREN HENDERSON
KATHLEEN BICKEL
LAURA TORRES
LESLIE MORGAN
LUCY BERLANDIER
MABLE KNIGHT
MARIA AYALA
MIGUEL NUNEZ
OMAR VILLAGRANA
PAUL SPENCER
PRISCILLA CLARK
RAUL ANGULO
RICHARD KATZ
RICHARD RODRIGUEZ
RICHARD TOTH
RONALD WILSON
ROSAMARIA PENA
ROSARIO RODRIGUEZ
RUSS HINIS
S YBARRA
SANTIAGO CARDENAS
SERENA BROMLEY
SHERRIE ROBERSON
STEVEN CARDIN
SUSAN STOWELL
SUZAN REYNOLDS
TRANG TRAN

ALESSANDRO BLVD 2013 (Cont'd)

26871	TROY MCKNIGHT
	WENDY WALTER
	WILLIAM HILDRETH
	WILLIAM KAISER
27046	JEHOVAHS WITNESS
27390	DENNIS POUNDS
27555	DISCOVERY CHRISTIAN CHURCH OF MORENO
27850	OCCUPANT UNKNOWN
28095	CARLOS MARTINEZ
28105	JAVED AHMED
28119	CHRISTOPHER DREW
28137	OCCUPANT UNKNOWN
28161	OCCUPANT UNKNOWN
28163	SHARLENE WILLIAMS
28165	HIPOLITO VALDES
28177	CARLOS SANTIAGO
28189	OCCUPANT UNKNOWN
28194	OCCUPANT UNKNOWN
28196	OCCUPANT UNKNOWN
28221	OCCUPANT UNKNOWN
28235	CHARLES WHEAT
28300	ROCKIE MORTON
28344	BRENDAN GOULD
28350	MICHAEL DUNCAN
28356	OCCUPANT UNKNOWN
28412	SHAWNA MARTIN
28432	JAMIE ARDEN
28446	RAUL SERRANO
28460	ROGER LARREA
28472	OCCUPANT UNKNOWN
28549	JASON KUKORELLI
28566	BRIAN GARRETT
28576	JEREMY DEEN
28580	JOSE RIOS
28594	OCCUPANT UNKNOWN
28612	OCCUPANT UNKNOWN
28614	LYDIA DYER
28616	MARHTA GUZMAN
28640	MAURICIO VELASQUEZ
28700	ERIC SEGAL
28720	STANTON HERPICK
28741	JOHNS LITE DELIVERY
	OCCUPANT UNKNOWN
28765	ANNETTE COPAS
28780	OCCUPANT UNKNOWN
28791	MARCIAL FELAYO
28819	OCCUPANT UNKNOWN
28820	ADIEUX TERMITE & PEST CONTROL
28825	PAOLA GONZALES
28839	STEVE CORNEJO

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ALESSANDRO BLVD 2013 (Cont'd)

28850	OCCUPANT UNKNOWN
28851	HILDA HERNANDEZ
28857	CATHERINE JORDAN
28862	RAPHAEL CHAVEZ
28869	JOHN PRADO
28873	ACE WEED ABATEMENT INC
	SIDNEY WHITAKER
28882	LUIS VELASCO
28900	RICHARD REISING
28910	NICOLE LOVINS
28915	OCCUPANT UNKNOWN
28929	OCCUPANT UNKNOWN
28930	EDWARD KNIGHT
28949	LAVERNE ROWAN
28973	MARIA CLARKSON
29010	CHANN CHAU
	EASTER MARKET
29022	SALVADOR GOMEZ
29030	LEXUS DYKES
29050	GUSTAVO PEREZ
29062	DAVID FREDERICK
29075	STEVE GARCIA
29076	TYRON ROBERTS
29086	BRYAN MONEY
29095	OCCUPANT UNKNOWN
29098	MIGUEL GONZALEZ
29105	JOSEPH REILLY
29110	KANIS BURKE
29124	JAMES BRYANT
29135	KEVIN COFFER
29144	EDWARD DYKSTRA
29155	NATTAPONG LADAWON
29166	PETER AMATULLI
29175	BRENDA DEWEES
29180	DAVID FRANKLIN
29205	MATTHEW COSGROVE
29210	JACK DANIELS
29220	GOLDEN STATE ROOFING
	OCCUPANT UNKNOWN
29230	SUSANA RODRIGUEZ
29235	OCCUPANT UNKNOWN
29240	MIGUEL VALENCIA

PERRIS BLVD 2013

1	FLORIST
	PETECH LLC
11010	JOHN JONES
11200	NATALIA GODZHAEVA
11261	MARIO CEPEDA
11269	OCCUPANT UNKNOWN
11285	BARRY ENGELMEIER
11315	ALBERTO VILLALPANDO
11349	GRACE EPISCOPAL CHURCH
11463	JOSEFINA VALDEZ
11467	ROBERT PALUSH
11469	ALEX BLASINGAME
11471	S IBARRA
11473	ROBERT HARRIS
11480	FLORENCE CARBULLIDO
11495	RUDY TORRES
11497	JOSE GALLARDO
11531	ROGELIO HERNANDEZ
11541	OCCUPANT UNKNOWN
11641	OCCUPANT UNKNOWN
11650	BIG SPRINGS EDUCATIONAL THERAPY CENT
	SHEPHERD OF THE VALLEY LUTHERAN CHUR
	SHEPHERD OF THE VALLEY PRESCHOOL & K
11673	FABIAN FELIX
11681	ANDY ANCHONDO
11701	OCCUPANT UNKNOWN
11725	CINDY AGUIAR
11730	MILFORD SANAME
11734	OCCUPANT UNKNOWN
11790	THE CHURCH OF JESUS CHRIST OF LATTER
11846	DANIEL GONZALEZ
11856	CANISHA WINCE
11866	HONG HAN
11961	MORENO VALLEY KINDERCARE
11987	CHARLES WALL
11991	CARL LEBLANC
	JOSE ALVAREZ
12190	BARGAIN SPOT INC
	COSMOPROF
	COST CUTTER FAMILY HAIR SALON
	DISCOUNT CENTER
	ERIC SMITH
	FANCY HAIR & NAILS
	GREAT AUTO INSURANCE
	HAIRMASTERS
	JABER YAHYA DDS
	JOSHUA TAYLOR
	JZ MASSAGE
	LITTLE CAESARS PIZZA
	NATIONWIDE EASTWOOD

PERRIS BLVD 2013 (Cont'd)

12190	NUMBER 1 NAILS
	SAMS QUALITY CLEANERS
	SING YENG HAIR CENTER
	STARBUCKS COFFEE
	STARGATE BILLING SERVICES
	TITAN INSURANCE
	TOUCHED MINISTRIES SERVICES INC
	UHAUL NEIGHBORHOOD DEALER
	YOLANDA HAYES
12200	FOOD 4 LESS
12210	ACE CASH EXPRESS
12230	HCR HOMES & LANDS
	PALACIOS VICTOR LAW OFFICE OF
	UHURU DOLLS & FIGUERINES
12240	OREILLY AUTO PARTS
12246	MORENO VALLEY AUTO BODY SHOP
12254	PAPA JOHNS PIZZA
12256	ALBERTITAS MEXICAN FOOD
12258	H&R BLOCK
12262	HOLLYWOOD NAILS & SPA
12264	KARNA HARRY DDS
	MARUKO EVELYN DMD
	QUACH ANH THU DDS
	SPARKLE FAMILY DENTISTRY
12266	MICHAELS DONUT COFFE SHOP
12270	SUBWAY SANDWICHES
12274	ELITE WIRELESS
	L A 2 MOVAL
12275	WALGREENS
12276	DIVINE FASHION OUTLET
	SMOKE PLUS
12280	SAVON DRUGS
12320	DDS DISCOUNTS
	DOLLAR TREE
12341	PERRIS BURGERS
12350	BANK OF AMERICA
12370	DESTINY HOME HEALTH
	FLEX TELECOM
12371	MCDONALDS
12380	HERBERT MERCER
12400	CARMINAS MEXICAN FOOD
	ULTRAMAR
12601	AUTOZONE
12605	LITTLE BAMBINOS PIZZA INC
12607	SEMI & NEW THRIFT STORE
12612	JAMIEN JACKSON
12615	JUAN POLLO NUMBER 101
12630	MARGIRITAS GRILL RESTAURANT & CATER
12656	ACTION RESTORATION
	AMERICAN LIBERTY BAIL BONDS

PERRIS BLVD 2013 (Cont'd)

12656	DIG DUG UNDERGROUND INC
	LOCK & KEY SERVICES INC
	MISSION HILLS MORTGAGE
	MOSS BROS BUICKGMC INC
	OAKLEAF INFANT & CHILDCARE AGENCY
	PENSKE TRUCK RENTAL
	PREFERRED SERVICE HEATING & AC
	VAN ORDER WM ATTORNEY
	WHOLESALE CAPITAL CORP
	WOLFFE & ASSOCIATES
12680	DAIJA SCRUGGS
12715	CRAIG CUNNIFF
12725	ST CHRISTOPHER DENTISTRY
12729	ANTONIO AGUILAR
12760	ANGELA HARRIS
	DIANA CURRY
	ISAAC BELLOC
	JAIME AGUILAR
	JEANEAL KINDER
	KEITH GILES
	MYRTLE RUMPH
	STEPHEN HUNG
	WILLIAM TANKSLEY
12765	ESMERALDA AMBRIS
	FLORENCE CONTRERAS
	JUAN SAAVEDRA
	KIMBERLY THOMAS
	RONISHA CORBIN
12773	NESTOR RAGUINDIN
12775	BRANDON BIRT
12777	HOME GALLERY
12795	MARTHA IZVERNARI
12800	AUSTREDERTA NUNEZ
	DEIRDRE WALKER
	EVAN EBRAHIMI
	JIM STROBL
	MARK BENTON
	NICOLE FOSTER
	NORMAN TAYLOR
	ROSIE TORRES
12801	OCCUPANT UNKNOWN
	SHEILA TURNER
12819	ROBERT CARNES
12830	ADRIANA SARAGOZA
	ADRIANA VASQUEZ
	ARLEEN DIAZ
	FRANKLIN FAUX
	ROBERT TANKSLEY
	ROBIN KNOWLTON
	SONNY MENDOZA

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PERRIS BLVD 2013 (Cont'd)

12830	TAWNYA CIPRIAN
12833	EARL JOHNSON
12860	ARELY GUTIERREZ
	BARBARA BROWN
	JAMES JOHNSON
	JOSE DEJESUS
	PAUL MILLER
	RANDY DUARTE
	TERESA PERKINS
	TONI WILLIAMS
12865	PAUL HURST
12875	HECTOR MINGUCHA
12900	CASTILLO DAVID DDS
	ELLSTROM MERVIN DDS
	HARDY INGE DDS
	HARRISON KENNETH T DDS MS
	HASSAN MOHAMED A DDS MS
	MOHAMED HASSAN
	OXYFRESH WORLD WIDE
	POGUE MAYNARD DDS
	STILSON PAM DDS
	SUNNYMEAD DENTAL GROUP
12950	ANNRITA SINGLETON
	BENNIE BARLOW
	BOBBIE MILLER
	DARLENE THOMPSON
	DEAREVALO SILVA
	E MONTGOMERY
	EFFIE HARRIS
	ESTELLA GRAY
	G ETHRIDGE
	JAE KIM
	JEAN SIMMONS
	JIMMIE STRAUSS
	JOE ROBERSON
	JOSE RIVERA
	KERR SADIE
	LARRY SPRAGLEY
	LATIF KHALIL
	M SMITH
	MARGARITA DEAREVALO
	MARIA CORRAL
	MICHAEL GRUYTCH
	MIKE OHARE
	MODESTO CARPO
	R DENNIS
	REBECCA CASPER
	ROBERT GOODRICH
	ROSALIA MORALES
	ROSEVELT PARHMES

PERRIS BLVD 2013 (Cont'd)

12950	TUAN LAM
12960	DURWOOD ANDERSON
12970	ALBERTO GOMEZ
	ALICIA VALENZUELA
	CAROLYN JAMES
	ELMO LARKINS
	HIRMA CORDAZ
	JAMES SIMMONS
	JUAN CISNEROS
	LOURA ANDERSON
	MARTHA VILLAGRAN
	R INDUSTRIAL & HEALTHCARE SUPPLY
	RAFAEL GASCA
	ROSA RUIZ
	T MIRELLA
	VIVIANNE WILLIAMSON
12980	A MAY
	ALBERTINE SMITH
	ARMANDO FLORES
	CRISTOBAL LOPEZ
	DENNIS CLARK
	GEORGETTE MELEIKA
	H WINSTON
	JERRY MARTIN
	JIMMIE LAWSON
	JOHN ANTHONY
	JOHNNIE WILLIAMS
	LAKISHA PIERCE
	LEANDRA PASKINS
	LEO BUENA
	MAGDLENA HERMOSILLO
	MARIA SALDANA
	MILO BEELES
	R SERNA
	RAQUEL SERMA
	RONALD SHIPP
	ROSA QUEA
	ROSALIND RICKS
	TERESA MORENO
	VALENTIN BURRIOLA
	VIRGINIA EDDY
	WENLIE STOKLEY
	WINIFRED CONLEY
12981	50 STATE CAR TRANSPORTATION
	ALTICORE REALTY
	E & E INCOME TAX SERVICE
	FARMERS INSURANCE GROUP
	FRED JEFFERSON MEMORIAL HOME FOR BOY
	INLAND EMPIRE ACCIDENT & INJURY CE
	INLAND EMPIRE TRANSPORT

PERRIS BLVD 2013 (Cont'd)

12981	JMW COLLECTIONS
	LEONHARD MARIA INSURANCE
	REGIONAL SECURITY PATROL
	RODRIGUEZ
	THE COMPUTER GUY COMPANY
	USIMMIGRATION LAW OFFICE
13027	CARIB ENTERPRISE
	FAITH CENTER CHRISTIAN BOOK & BIBLE
13057	POPULAR JEWELRY & LOAN
13117	A & A DISCOUNTS
	ALS BUSINESS SERVICE
	COMPLETE PC SPECIALISTS
	FACE MINISTRY
	KIDS NUTRITIONAL CENTER
	M & M HAIR SALON
	RAQUELS JEWLERY & GIFTS
	SUN VALLEY REAL ESTATE
13121	ASHLEYS PARTY PALACE
	FRANK S LIQUORS & MARKET
	MARTHAS HAIR FASHION
	NELIDA CASILLAS
13141	OCCUPANT UNKNOWN
13143	NICOLE GRIDER
13151	SUSSY GARCIA
13153	OCCUPANT UNKNOWN
13157	OCCUPANT UNKNOWN
13161	VINCENT MARTIN
13231	GOODYEAR TIRE & SERVICE NETWORK
13261	CIRCLE K
13373	99 CENTS BARGAIN MART
	A CENTER FOR FAMILY DENTAL CARE
	ALL STAR PIZZA
	CARNICERIA LAS GLORIAS
	CLINICA MEDICA PARA TODOS
	FAMILY FISH MARKET
	FELICIANO PETER PAUL DMD
	FORMOSA RENTALS LLC
	GLOBAL REALTY
	JAR INSURANCE SERVICES
	LOCKSMITH
	LYDIAS HAIR DESIGNERS
	MANILA RANCH
	MIRIAMS BEAUTY SALON
	OBY INTERNATIONAL
	PARAGON TATTOO STUDIO
	ROLLING DOUGH BAKERY & PATRIES
	TECHTREND INC
	TIKAL INSURANCE SERVICES
	TOOTY FROOTY
	UNITED FURNITURE

PERRIS BLVD 2013 (Cont'd)

13373	VALLEY DECORATORS & DESIGN
	VALLEY LIQUOR & MARKET
	ZAPATAZ RESTAURANT
13473	DOLLAR GENERAL STORE
13608	ASHONDA NELLUM
13620	ELI CASTILLO
13816	RICARDO SIC
13836	TISHA LUKE
13911	MORENO VALLEY UNIFIED SCHOOL DISTRIC
13945	KFC
14055	AGUAYO INSURANCE SOLUTIONS
	CHECK N GO
	LIDIAS HAIR DESIGNERS
	LOS AMAYA ELECTRONICA Y
	LOS AMAYA ELECTRONICA Y DISCOT
	M & M SHOE STORE
14070	WSS56
14090	3 COLORS JEWELERS
	CIGARETTE PLUS
14175	ABLE STORAGE
	BUDGET TRUCK RENTAL
14700	CHILDTIME LEARNING CENTER
14719	ELVIA GOMEZ
14739	DARRYL BROWN
14740	OCCUPANT UNKNOWN
14890	A HIGHER CAUSE
	ALFONSO OROZCO
	ARDETHA TAYLOR
	ARTHUR MORALES
	ARTHUR SMITH
	ASHLEY CASILLAS
	B NORTON
	BARBARA WEEMS
	BRANDON BAILEY
	BRANDON EYSELEE
	CARLOS ORNELAS
	CHARLES OUTLAND
	DONALD MANUEL
	DOUG DUREY
	EDITH ROBLES
	FEDERICO RAMIREZ
	GABRIELA ARANDA
	GARY SPENCER
	GERALD URIBE
	GERRY GERMAN
	GREGORY NOBLE
	ISABEL ALLEN
	JUAN GUAYDACAN
	LUCY THOMPSON
	MARIA ALCAZAR

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

PERRIS BLVD 2013 (Cont'd)

14890	MARIE CHAIDEZ
	MARY CAMPBELL
	NORMA BADER
	PAUL BARGER
	RANDY UNDERWOOD
	ROBERT CUNNINGHAM
	ROBERT GAUTHIER
	ROSA PENA
	SHEILA SCHNEIDER
	SKY TRAILS MOBILE VILLAGE
	UGOCHUKWU IFEACHO
	VERSA BROWN
	WAYNE CONWAY
14910	ACE HARDWARE
	DOLEX DOLLAR EXPRESS
	ECSTASY HAIR DESIGN
	MR DONUT
	POSTALANNEX+
	PRO TOP NAILS
	SMOKE SHOP & GIFTS
	THAI DINE RESTAURANT
	VIDEO VISIONSOUTH
14920	AMAZING DISCOUNT STORE
	BEST DEAL CLOSEOUT INC
	EL OJO DE AGUA TAQUERIA
	VAREE INVESTMENT LLC
14930	CARDENAS MARKET
	FRED LOYA INSURANCE
14940	BELLA QUINCEANERAI
	DIPTI PATEL
	HERA TEARA BEAUTY
	LITTLE CAESARS PIZZA
	MORENO VALLEY DENTAL GROUP
14950	EMERGENCY A ALWAYS AVAILABLE 24 HOUR
	STEER N STEIN RESTAURANT
15020	7ELEVEN
15025	CVS PHARMACY
15030	JACK IN THE BOX
15146	ALONDRA ALVAREZ
	CRISTINE PURIOY
	DAEJA SLACK
	EDNA SANCHEZ
	J RODRIQUEZ
	TONY CRUMP
15150	ANA VILLALOBOS
	BRIANDA REYES
	DAMIAN HUFF
	G COOK
	JOSE RAMIREZ
15154	ARTURO GASTELUM

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

PERRIS BLVD 2013 (Cont'd)

15154	DANIEL ARANDA
	KIM WILLIAMS
	LASAGNE SAWYER
	MARK MOORE
	NASHAUN HALL
	ROSA JOHNSON
	SOPHIA ZAMORA
	TRASHONA COLEMAN
15158	ANA JIMENEZ
	ATHENA VALENTIN
	DARICK GRINNER
	LAURA CARRERA
	ROSALIO CARROSO
15162	ALFREDO LUNA
	CHRISTINA PRICE
	JANIE ACOSTA
	KENNETH PERRY
	LETICIA CARRETO
	LINDA PERLA
	MARCEL KNIGHTON
	MARIA LUVIANO
	MIRIAM REYES
	TERESA TORRES
15166	BARABRA MAGANA
	CASSANDRA SMITH
	CYNTHIA BARNES
	MALIKA GARRETT
	MYRON WATTS
	REBECCA RODRIGUEZ
	RENEE COOK
	WILLIE GREEN
15170	OAKWOOD APARTMENTS
15174	DARREN YOPP
15178	ADRAIN BOLLER
	CARRIE MOULTRY
	CLEMENTINA JOYA
	ELENA AZPEITIA
	JAMES DEVANT
	JERMAINE ROBERTS
	KILEENA GARNES
	LARON ROBINSON
	LUCIANO VALENTE
	ROSIE AGUILAR
	RYSHECIA THEUS
	SHARINA BURNS
	TAMELA WALLACE
	TAMIKA WILLIAMS
15182	DELIA RODRIGUEZ
	ROSHAWN JONES
	RUBEN CAMPOS

PERRIS BLVD 2013 (Cont'd)

15182	THERESA MORRISON
15186	DANIELLE ROTHENBUEHLER
	ERIKA LOPEZ
	LISA MALECKE
	MARIO QUINTANAR
	VENNESSA WILLIAMS
15190	ADRIAN CONLEY
	KENISHA ALEXANDER
	LATASHA MIMMS
	P SHORTERS
	PAOLA ELIAS
	SAMANTHA MULKINS
	SARAH JACKSON
	WENDA BLACKWELL
15194	A MAGA
	CELIA WEST
	CHANAL MARSH
	SALVADOR ROBLES
15198	CORETTA SANDERS
	ISMAEL QUINTERO
	JOEYLIN ENAY
	JOSE PLASCENCIA
	JUANA RICO
	LAMAR SMITH
	LATRICE GRIMES
	RAUL LEMUS
	WATLER MEJIA
	YOLANDA MARTINEZ
15202	ANDRE WOODWARD
	ANTONIO DELGADO
	CHRIS GEORGE
	EARL DENNIS
	IDA MOORE
	LILIA SACRISTAN
	R MIDDLETON
	THOMAS LETE
15206	DANIEL VELASCO
	ELSA GUTIEREZ
	JUVENTINO RIVERA
	LACHERYL KEETEN
	M JIMENEZ
	ROSE LAIRY
15210	ARTURO MARES
	DEBORAH WILLIAMS
	IVAN HERNANDEZ
	JEAN MYERS
	JEVON GRINNER
	PATRICK NICKLEBERRY
	SUSANN HERNANDEZ
	TAMIKO SMITH

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

PERRIS BLVD 2013 (Cont'd)

15210 VINCENT GRINNER
15214 ANA BRAVO
APRIL BENSON
ISAAC SIMMS
JAMEL ATKINS
JANIE ROBERSON
JERROD CONNORS
JOSE VILLASENOR
MARIE WILLIAMS
ROSALBA SOTA
SHANNON AXTELL
15218 CHRISTOPHER RANGEL
GINA COVARRUBIA
HARVEY HOLLY
JACQUELINE MENJIVAR
JALILEH ALBALA
MISTY ALONSO
S HARVEY
15222 ANTHONY MONDRAGON
ANTONIA ALVAREZ
ANTONIO MARTINEZ
FELIPE HUITRON
TERESA DOTSON
TOMISHA WALKER
UNDINA SEGERS
15226 CATALINO GALVAN
DIANA LEE
ELIZABETH NIETO
FABIOLA PEREZ
JORGE BELTRAN
MARTHA LIZARRAGA
15230 ALICE BUCKLEY
ANGELA NORQUIST
BRADLEY JONES
DANIELLE MACKENZIE
GEORGE DAVIS
JERRY THOMAS
LUCRETIA JOHNSON
MALCOLM FIGURES
RICKEY JAMERSON
ROY BREWER
STEPHAN BRIDGES
SUSANA GONZALEZ
YETTE RICKS
15320 AURELIO VASQUEZ
CYNTHIA LOPEZ
XAVIER RODGERS
15332 ANSELMO REYES
HILDA GUZMAN
L KELLY

PERRIS BLVD 2013 (Cont'd)

15332	LUIS OROZCO
	MARIA HERNANDEZ
	PEDRO MORALES
	PEDRO PICENA
15344	MARIAH VELER
	MARTHA ALVAREZ
	STEWART CHAMBERS
	VERNACILE MCCLENDON
15360	JORGE MONTIEL
15384	HENRY ALVAREZ
	HILDA CHAVEZ
	LUIS BELTRAN
	RENE CUEVAS
15394	BARRY TOLBERT
	DAVID PARIS
	DESTINEE FERNANDEZ
	EBONIE BARNETT
15414	ERNESTO TORRES
	JAIRO ALVARADO
	KENNETH DANIELS
	KRISTINA WATSON
	LANESHIA BROWN
	MICHELLE LOUIS
15426	LORENA GUTTIEREZ
	LYDIA MCCALL
	MAGDALENO PINEDA
	MARISA LEAL
	TEILIA SILVER
15452	LETICIA GARCIA
	SILVIA HERNANDEZ
15670	CITY OF MORENO VALLEY
15928	CHERRY ROSS
	DAMIEN MARZETT
	DEBORAH JAQUAY
	EL RANCHO RESTAURANT
	JAMES REYNOLDS
	JOBFINDERZ INC
	KEVIN MARTIN
	MIKE MUNOZ
	PERRIS DONUT & BURGER
	POSTAL ETC
	REGINA WAGNER
	SHELLI DUFFY
	TINA MURRY
	TYNISA WARHOP
	WEST GATE LIQUOR
	WILLIE JOHNSON
15952	A1 PAYDAY ADVANCE
	JACKI MATULEWICZ STATE FARM INSURA
15974	ORTIZ BEAUTY SALON

PERRIS BLVD 2013 (Cont'd)

15974	PIZZA HUT
	ROLLING RIDGE CLEANERS
15975	LA ROSA BAKERY
	THE HOME DEPOT
15980	WESTGATE SHELL FOOD MART
15982	MARY RADE
15991	FARMER BOYS
16020	WALGREENS
16040	KFC
16080	FITNESS 19
	P
16090	JOSHI ACHYUT DDS
	PIRIS CLEANER
	TUTU BARRE
16100	FRESH & EASY NEIGHBORHOOD MARKET
16110	MISTER YOU EXPRESS 3
	PROVIDENT BANK
	RUBY HAIR SALON
	SMOKE SHOP MV
	SWEET TART NATURAL FROZEN YOGURT
	TOLEDOS BRIDAL & PARTY SUPPLIES
16150	DEL TACO
16170	ARBYS
	DMSI STAFFING
	FURNITURE PALACE SUPER STORE
	METROPCS
16190	CERTIFIED TIRE & SERVICE CENTER
16210	AUTOZONE
16340	EXTRA SPACE STORAGE
16380	ALBERTOS MEXICAN FOOD
	ANGELICA BARRAZAPENUELAS STATE FA
	CITY NAILS
	DORYS BEAUTY SALON
	LIBERTY TAX SERVICE
	LIDIA HAIR DESIGN
	SMOKE SHOP 99 CENTS & GIFT
	TREASURED PETS
	YANEZ SERVICES
16466	SALIB ENTERPRISE INC
16641	KEN LEE
16659	LARRY BRAATEN
16675	OCCUPANT UNKNOWN
17041	RICHARD WILLIAMS
17111	MARIA DERDA
17300	ELDORADO STONE
17500	BERKELEY LEASING
	WALGREENS
17800	MJO STAFFINGMV

ALESSANDRO BLVD 2008

21801	RANCHO DISCOUNT MARKET
21820	DELIA FURNITURE
	MI CASA CABINETS GRANITE & TILE
21830	MILLENNIUM DISCOUNT CARPET
21832	MARIA ALVARADO
21836	OCCUPANT UNKNOWN
21840	CHARLEBOIS LIQUORS
21866	AXIS APPAREL
	KENDALLS AUTOMOTIVE SERVICE
	RAMON CONTRERAS BARON
21872	THUONG NGUYEN
21874	ALVIN RITCHIE
21876	FREDDY CEDENO
21878	WEST HOUSTON
21882	OCCUPANT UNKNOWN
21891	BALDWINS TOWING & AUTOMOTIVE
21894	TNT KOI
	TONY SIMENTAL
21921	TRACTORLAND EQUIPMENT INC
21924	OCCUPANT UNKNOWN
21926	JASON PARKS
21932	ELAINE SANTIAGO
21941	ALESSANDRO MINI STORAGE
21942	DARLENE ZAMARRIPA
	J WILLIAMSON
	M & N MARKET
	MORENO FRESH PRODUCE
21944	ROBERTO RIVERA
22018	PAULO CORTEZ
22042	JENNIFER ESPARZA
22058	ERLINDA DELREAL
22101	SMART TRUCK SYSTEMS
22144	COMPLETE AUTO DETAIL
	OCCUPANT UNKNOWN
22156	MI TIERRA MEXICAN RESTAURANT
22180	ISMAEL ULLOA
22184	JESUS CONTRERAS
22201	SUPREME TRUCK BODIES OF CALIFORNIA
22210	OCCUPANT UNKNOWN
22224	JEFFERY PURIFOY
22240	OCCUPANT UNKNOWN
22308	D C P INC
	JOES ITALIAN RESTAURANT
22335	BEN CLYMERS THE BODY SHOP
22366	STATE FARM INSURANCE
22384	GTE BUILD MAINTENANCE LIGHTING INC
22400	PRECISION DOOR SERVICE
	U HAUL CO
22405	ALESSANDRO AUTO BODY & PAINT
	BEAUTIFUL NAIL

ALESSANDRO BLVD 2008 (Cont'd)

22405	DESERT WINDOW TINTING
	GONZALES FURNITURE UPHOLSTERY
	HOMAYOON SHAMOLIAN
	HONDA SHOPPE
	JOHNS BARBER SHOP
22410	EMPIRE MOWERS
22425	IMMITAX SERVICE
	JOSE CERVANTES
	LOS LOCOS STEREOS ALARMS INST
	SAVE AUTO REPAIR
	STOP N GO SMOG
22435	ALL N ONE CHECK CASHING
22456	DRAGON HOUSE
22484	ALL DISCOUNT INSURANCE SERVICE INC
22485	JACK IN THE BOX INC
22510	LUPPINO ENTERPRISES INC
22512	MENOS CUSTOMS
	UNIVERSAL CAR STEREOS & ELECTRONICS
22570	MENOS STEREOS
22588	GARYS BARBER SHOP
22592	SUBURBAN CLEANERS
22594	ROYS LIQUOR
22602	LORI BS LAUNDROMAT
	UCR COIN LAUNDRY
22608	GOLDENS PARALEGAL SERVICE
	LA FAMOSA MARKET
22616	VETERANS OF FOREIGN WAR CLUB 8547
22700	KLEITZ TAX SERVICE
	LABOR READY
	RAMONA DISCOUNT & 98 CENTER STORE
	RANCHO FOREIGN CAR PARTS
	THE STYLING CAFE SALON
	TWO DAY SIGNS
	VALLEY MOVING SERVICE
	VICTORS TUXEDOS
22770	DAMARIS SARMIENTO
	JUAN GUTIERREZ
	VEDA HERVEY
22790	CASINO DEALERS SCHOOL
	Z TRAVEL & INSURANCE
22810	LIS HEALTH CENTER
	MEDICAL WAY CONTROL
	SANCHEZ & CURRIER CHIROPRACTIC
22862	COUNTRY LIQUOR CO
22876	ASSISTANCE SERVICES OF MORENO VLY
	EAGLE SALES PRODUCT
	JUST BRAIDS
	KENKZ
	SAM SADIK
	SISTER SISTA BEAUTY SALON

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ALESSANDRO BLVD 2008 (Cont'd)

22876	TOO SHARP STYLING SALON
22886	ADRIAN NERI
	CHASE AUTO REPAIR
	GPI INC
	SOUTHERN AUTO SUPPLY
22920	ASIAN IMPORT MARKET
	HAIR INTERNATIONAL SALON
	RIVER KWAI THAI CUISINE
	SISTER SISTA HOUSE OF
	TONYS PIZZA KITCHEN
	VALLEY ECONO THRIFT
22960	ELKS LODGE OF MORENO VALLEY NO 2697
23020	TOMS WORLD FAMOUS CHILIBRGR
23060	HOLLYWOOD STYLE
	PH WOODS RESTAURANT
	ROSE GARLIC INC
23080	99 FOOD MART
	CLINICA MEDICAL FAMILIAR
	DEMOLA ANGEL MD
	DR DEZAS DENTAL OFFICE
	FRONTIER MORTGAGE SOLUTIONS
	HANANLELAS JAVA HUT & DELI
	HENRY NGUYEN OPTOMETRY
	MORENO VALLEY DRY CLEANERS ZURE GA
	MORENO VALLEY PHYSICIANS ASSOCIATES
	NEXT FRONTIER HOME LOANS INC
	SOUTHERN CA CUSTOM WINDOWS & DOORS
	SUPERIOR GLASS & GLAZING CONTRACTOR
23100	DON JOSE MEXICAN RESTAURANT
	EBONY HAIR
	GO GO CHINA
	HOUSE OF SISTER SISTAH
	M & M CLEANERS
	MAGICAL DAY
	PLAZA HAND CAR WASH
23501	TABASSI INC
23580	MARIE ASCENCIO
23581	MOTEL 7
23615	909 EXTREME MONITORING INC
	OCCUPANT UNKNOWN
23750	24 HOURS FITNESS
	99 CLEANERS
	ABC BOWL
	ARACELY SARMIENTO
	BAY CLEANERS
	CITRUS BELT TAX SERVICE
	CLASSY B LIQUOR DELI
	COLOSSEUM REALTY
	DARIUSH KIANI
	FANCY TAN

ALESSANDRO BLVD 2008 (Cont'd)

23750	FOR GOOD TATTOO STUDIO
	GOLDEN OX BURGERS
	JUAN SALDANA
	LOS EQUIPALES MEXICAN GRILL
	MORENO DENTAL CARE
	MORENO VALLEY FUN BOWL INC
	OASIS COMMUNITY CHURCH
	POWERHOUSE DANCE CENTER
	PREHISTORIC TIMES REPTILES
	ROBERT RAYNE HEALTH & JUICE
	RUNNING CLEANERS
	SHEAR CUTS
	STEPPING STONES LEARNING ACADEMY
	SUPERIOR NAILS
	WHITES BIKES
	WIENERSCHNITZEL RESTAURANT INC
23890	AP MORENO VALLEY LLC
	APEX AUTO BROKERS
	APFEL FURNITURE SALE
	ATLAS EXPRESS PADALA INC
	CA SCHOOL EMPLOYEES ASSN MORENO VALL
	DYNASTRY GROUP HOME INC
	FAIR HOUSING COUNCIL OF RIVERSIDE CO
	FAIRCHILD CHIROPRACTIC CLINIC
	NEW BEGINNINGS HOME LOANS
	PERFORMANCE TEAM THE
23900	CERTIFIED TIRE & SERVICE CENTERS
	FIRST SOURCE AWARDS INC
	GOLDENS ELECTRONIC REPAIR
	UNLIMITED QUEST INC
	VICKYNO AUTO WINDOW TINT
23910	FANCY STITCHIN
	GBM MACHINE SHOP
	JAVIER JIMENEZ
	MOLLY MAID OF REDLANDS
	MORENO VALLEY COMMUNITY EDUCATION CE
23920	1ST PLACE AUTOMOTIVE
	ACME TUNE & SMOG
	BRADYS AUTOMOTIVE
	CERTIFED TIRE & SERVICE CENTER
	D & C AUTO REPAIR
	MORENO VALLEY TRANSMISSIONS
23932	AMMA MEDICAL SUPPLY
	M MD S WEST
	MAGANA AUTO UPHOLSTERY
	MOBILE PROS
	MULTI TELECOM INC
	PLUMMERS ELEVATORS SERVICE
	RANDHAWA H S DVM
	TRUE FOUNDATION CHRISTIAN

ALESSANDRO BLVD 2008 (Cont'd)

23932	VICTORY TEMPLE
23942	AMB DRIVING SCHOOL
	PARTS PLUS
	PULIDOS WHEELS & TIRES
23952	BEST VALLEY SMOG & AUTO REPAIR
23962	ABBEY
	ACE TV RENTALS
	AMERICAN QUICK PRINTING
	ATLAS SHIPPERS MORENO VALLEY
	BANIG FILIPINO & ORIENTAL RESTAURANT
	BUENO MARIA SALVE A DDS
	DANCEL FLORENDO
	DSOUZA LORRAINE REALTY EXECUTOR
	ERMA FULCHER
	FULCHER ERMA
	FUN 4 ALL PARTYS
	HEISSER INSURANCE AGENCY
	LAW OFFICES OF EDWARD LLOYS & ASSOCI
	MARIA BUENO
	NEW IMPRESSIONS TILE INC
	PARADISE VALLEY HOLDINGS INC
	PHIL AM ENTERPRISES
	PICOZZI & LLOYD
	RED RIBBON BAKE SHOP
	RITA HARB
	SANDIP DESAI DDS
	SUPER V BEAUTY SALON
	SUPER V BEAUTY SALON & GIFT STORE
	T L C NUTRITION CENTER
	VIDEO TIME
	VINCENT DANIEL P LAW OFFICES
24021	AMYS BARBER SHOP
	CENTURY 21
	CHUYITAS
	CSK AUTO INC
	DEL SOL FURNITURE 2
	DESIGNER HAIR & NAILS
	I DO WEDDINGS
	JPMORGAN CHASE BANK NATIONAL ASSOCIA
	LOIS LAUER REALTY
	MAMA CHUYS
	NUEVO TORITOS MEAT MARKET
	OUBEIDS SOUTHPOINTE DENTAL PRACTICE
	P N B REMITTANCE CONTRACTORS INC
	PHILIPPINE NATIONAL BANK REMITTANCE
	PIZZA HUT
	SUNGADAN
24050	ALBIERTOS MEXICAN RESTAURANT
	CIGARETTE KING
	DIAZ GROUP INC

ALESSANDRO BLVD 2008 (Cont'd)

24050	INSTANT CASH
	MARISCOS MELGOZA
	MEGA CELLULAR
	PATTAYA PLACE
24100	DALIAS PIZZA NO 12
24150	AGUA FINA
	APPLE FLORIST
	FADES UNLIMITED
	INK AHOLICS TATTOO STUDIO
	INKAHOLICS
	KARENS GROOMING SHOPPE
	PACIFIC LABOR SOURCE INC
	QWICK PICK
24400	CHECKING CHECK CASHING CENTERS
	SERVICE ANNEX LLC
24430	ASTEC
	AZTEC INSURANCE SERVICES
	COMMUNITY RECRUITMENT STAFFING
	POSTAL EXPRESS
	RANCHO DENTAL GROUP
	RANCHO MEDICAL CLINIC
	VINCENTEOS MEXICAN FOOD
	YOUR WIRELESS RETAILER
24440	CHURCHS CHICKEN
	FOOD 4 LESS
	LA S LOW COST AUTO INSURANCE
	MCDONALDS
	MCMANGA FOODS
	TONYS MOBIL
24481	APPLIANCE DISCOUNTERS SALES & SERVIC
24515	FREDERICK L HOFFER DDS
	MVP BEAUTY PLUS
	SUNNYMEAD VILLAGE DENTAL
24525	ANIMAL ELEGANCE
	CURVES FOR WOMEN SOUTH
	PAYLESS SHOESOURCE
	RIVERSIDE CURRENCY SERVICES
24541	MORENO FAMILY DONUTS
24549	MORENO VALLEY COMMUNITY SCHOOL
24551	PC WIRELESS
24553	BOUTIQUE
24559	GOIN POSTAL
	RIVERSIDE COUNTY
24561	EYE CATCHER INC
24570	AUTOZONE INC
24595	STATER BROTHERS MARKETS
24641	STARZ SHOES
24643	RAINBOW GIFT
24645	MASTER JEWELERS
24651	CHINAFOOD & HAWAII B B Q

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ALESSANDRO BLVD 2008 (Cont'd)

24653	K & N SMOKE SHOP
24655	SUNNYMEAD HAMBURGERS NO 2
24659	FASHION FOR LESS
24661	SUPERCUTS
24673	BFS RTAIL COMMERCIAL OPRTONS
	FIRESTONE MASTERCARE CAR SERVICE
24681	M ERHARDT
24691	ALBERTOS
	ALBERTOS MEXICAN FOOD
24693	VOS FASHIONS PLUS
24695	KYUTIL KIM
24697	VOGUE NAILS
24701	MARISCOS MELGOZA RESTAURANTE
24703	D B SUNWEAR
24705	KIDS & MORE
24711	BEAUTYZONE
24725	BANKS CHRISTIAN BIBLE CENTER
	CRAZY SOUND
	FIRME TIMES SMOKE SHOP
	GLOBAL AZUL EXPRESS
	J & J JEWELRY
	JALISCO RECORDS
	JE SOX
	JUNS MEN
	LARAS CELLULAR
	SHOE AVE
	SILVER STAR
	SMARTTECH
	SUSIES HOSIERY
	TOP TEN TOTAL FASHION
24735	PAPAJOES PIZZA
24741	B & H EDUCATION INC
	COIFFURES ELEGANTE
	MARINELLO SCHOOLS OF BEAUTY
24757	PRO VACUUM & JANITORIAL SUPPLIES INC
	REZADOS PARTY SUPPLY
	ZAPATAS BURRITOS
24762	DAVID WADE
24775	A1 AUTOMOTIVE
	ALLESANDRO TIRES
	ANGGYS SALON
	LAUNDRY KING
	OCCUPANT UNKNOWN
	RELIABLE SMOG CORP
24786	JIMMY ROOK
24798	FABIOLA CORDERO
24805	CAMENITA RESTAURANT
	CLINICA MEDICAL LATINA
	CRAZY CUTS
	CRAZY CUTS BEAUTY SALON

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ALESSANDRO BLVD 2008 (Cont'd)

24805	HAIR INTERNATIONAL
	JUANITAS MARKET
	LA NUEVA RONDA NO 2
	MARISCORONA RESTAURANT
	MUEBLERIA Y REGALOS
	RIVERA PARTY BRIDAL SHOP
24810	OCCUPANT UNKNOWN
24822	FRANCISCO ANDRADE
24825	FANTASTIC NAIL
	IMMOBILIARIA CONTINENTAL LAS CONTINE
	ORIO CLEANERS
	VIP TOUCH OF CLASS
	WING STOP
24831	OCCUPANT UNKNOWN
	SUSIE DEALS
24834	VICENTE BAUTISTA
24846	LATROY PEPPER
24853	ACAPULCO TRAVEL & TOURS
	ACE CASH EXPRESS
	BLOCKBUSTER VIDEO
	DOMINOS PIZZA
	HELP U SELL ALXNDRA NREGA REALTY
	RANCHO FOREIGN CAR PARTS INC
24858	ROSA MARTIR
24870	OCCUPANT UNKNOWN
24875	DIRECT CARPET & FLOORING
	JULIETA Y ECHEVERRIA DDS INC
	LADYBUG
	MARC ANTHONY SHOES
	MG SMOKE SHOP
	PERFECT HAIR
	ROMOS SHOES
	TOTAL FASHION
	VIVA FURNITURE
24899	99 CENTS ONLY STORES
	ALENDYS JEWELRY
	FIESTA FOOD WAREHOUSE
	LATIN AMERICAN REAL ESTATE
	WHITE DIAMOND JEWELRY
	WORD OF LIFE CHRISTIAN CENTER
24910	INES MAZARIEGOS
24944	AM PM MINI MARKET
24990	ADVANCE AMERICA
	CHEPINAS DRINKING WATER N MORE
	DRINKING CHEPINAS
	FASHION NAILS
	HAIR ODYSSEY 2000
	PAGE POWER COMMUNICATIONS
	PIONEER CHECK CASHING
	SHANGHAI II

ALESSANDRO BLVD 2008 (Cont'd)

24990	SK DRINKING WATER
	SUBWAY
	SUNBRIGHT TILE & MARBLE
	THE HOOK UP CLOTHING OUTLET
24991	RITE AID
24992	ADRIANAS INSURANCE INC
	EL RUBEN TACOS
	P & G BURGERS
	STAPP HOME REALTY
	TITAS FLOWERS & MUSICA
25010	NATIONSRENT TO OWN
25011	WALGREENS PHARMACY 5527
25020	MORENO VALLEY UNION
25024	DEL TACO
25030	ALESSANDRO FAMILY DENTISTRY
	ALLURE HAIR & NAILS
	BEAR VALLEY CLEANERS
	CONTROL INSURANCE SERVICES
	CRISTYS DONUT SHOP
	EMPIRE PAGING
	GOLDEN ESTATE REALTY
	HI CLASS NAILS
	LAS CABANAS MEXICAN FOOD
	LUTONG FILIPINO LLC
	POPULAR JEWELRY & LOAN
	SALLY BEAUTY SUPPLY
	TAX 4 LESS
	USA CHECKS CASHED
25031	EVANS ENGRAVING & AWARDS
25070	LONGS DRUG STORE
25100	A 1 COIN LAUNDROMAT
	JOSE BENITES
	LORENZOS PIZZA
	MATSURI JAPANESE RESTAURANT
25251	FLORABELLE BEDURAL
	JENNIFER ROCK
	LILLIE BURTON
	MASUK RAYHAN
	R MCEROY
	SHIELA GILBERT
	VILMARY BAERGA
25263	ANGELICA RAMIREZ
	CHRISTOPHER MCMILLAN
	CINDY MARTINEZ
	CONSUELO SALAS
	DANIEL BOWSER
	ERIC JOHNSON
	ERIC STOCKER
	HEATHER HEALD
	ILYANA GAUCIN

ALESSANDRO BLVD 2008 (Cont'd)

25263	ILYANA RIOS
	L AYERS
	LISA MCKENZIE
	M GAYNOR
	MARIA GARCIA
	MICHAEL MOLINA
	PEGGY WALSTON
	RANDY ESPINO
	YVONNE LOPEZ
25275	ARTESIA OLIVER
	BONNIE JOHNSON
	CHRISTOPHER COOKS
	DEMIAN MOORE
	E JOHNSON
	JAMAL COOK
	JOSE LARA
	L THOMPSON
	LASHONDA HOWARD
	LISA TURNER
	MARCO DELAPAZ
	PETER BOCTOR
	ROSE CARR
	SONJA JONES
25287	ALBERTO TEJEDA
	FELIPE MENDEZ
	ISMAEL YEP
	LANCE NELSON
	MELINDA WALLS
	MILTON STRICKLAND
	SANDY HOWARD
25299	ALAN UNDERWOOD
	ALBA ALVARADO
	ALEJANDRO HERNANDEZ
	IMELDA VALLEJO
	JUSTIN MORENO
	KATRINA RUSSELL
	QUAZI SMITH
25311	ANNA LUNA
	BOB ROSALES
	BOBBY THOMPSON
	JEFFREY JOHNSON
	JORGE ZAZUETA
	JOSEFINA ROMAN
	KARRIE ALONZO
	L EDWARDS
	LESLIE BROOKS
	LINDA SMITH
	MALIA CRUBAUGH
	NICOLE GONZALEZ
	ROCIO RUIZ

ALESSANDRO BLVD 2008 (Cont'd)

25311	STEPHEN WATERS
25323	CARLOS CORTEZ
	CARLS CREATIVE TILE
	CATHERINE HUGGINS
	ERASTO AGUILAR
	JEREMY BLACKBURN
	KATHY COKER
	KIMBERLY WALTERS
	LEO BUENA
	NANNERL MEZA
	VALERE SHAW
	VELZEDA NELMS
	VICTORIA BROOKS
25347	ADRIANA CERVANTES
	CECILIA RODRIGUEZ
	DEWAYNE TYARS
	ERIKA HENDERSON
	H ABDULLAH
	LONNIE ORTIZ
	SOCORRO CASTILLO
	TRICIA MCLAIN
	YVETTE GARCIA
25359	DELVET DAWFON
	HECTOR VAZQUEZ
	JUANA AVALOS
	SAMI FAKHREDDIN
	TABITHA CERVANTES
	WILBERT HENRIQUEZ
25371	CARLOS LOPEZ
	ELIZABETH PEARSON
	MARILYN CANARIA
	SUSAN FOSTER
	ZAVONNIKA DAVIS
25383	BERNARD SANTOS
	BRYAN MONROE
	CHATRISE JONES
	CHRISTINA MAGANA
	ELIZABETH CAMPBELL
	GABRIEL GONZALES
	LAQUITA BROWNING
	LAURA DITO
	RALPH BOYD
	REMEDIOS DELAPENA
	ROSLAND BAILEY
	TRIANTAFILLOS TSANGARIS
	YVETTE WILLIAMS
	YVETTE WILLIAMS
25395	KENNETH KYLES
	LYNETTE CALVERLEY
	MEREDITH COOMBS

ALESSANDRO BLVD 2008 (Cont'd)

25395 PAULA DAVIS
STEVEN PARRA
VIVA POLLAND
WILLIE PETERSON
25400 ALESSANDRO CHIROPRACTIC
ALESSANDRO ORTHODONTICS
QUINN COMMUNITY OUTREACH CORP
SOUTHERN CALIFORNIA WITNESS
25407 DAE AHN
DOREEN SAMYEE
GABRIELA CASTRO
JAVIER GONZALEZ
LEONARD CALDERA
LOAN TRUONG
MARIA REECE
MONA WILLIAMS
SANTOS OLIVAS
25419 C FELIX
C TRAN
CANDICE JONES
CORA BEISON
GEMMA KINCADE
GEMMA MORRIS
GISL SERVICES
JACQUELINE NEWMAN
K GARCIA
LUZ SANDOVAL
PERLA ROBLES
ROSA GIL
STEVEN ALVAREZ
TAL SAVARIEGO
TERRANCE BROWN
V HUYNH
25431 ADMINS TO GO
BESSIE BARNES
BETTY CHAMBERS
CORRINA GAMBOA
DIANA MCDONALD
HOUSTON STALLING
JACKY OLIVAS
JESSE GUILLEN
RICH MENDOZA
SERGIO CARACHURE
25445 APRIL COOPER
CELINDABET FLORES
JASON SMITH
LAKISHA GANT
MANUEL FLORES
MAYNARD MALIC
25480 CITY OF MORENO VALLEY PUBLIC LIBRARY

ALESSANDRO BLVD 2008 (Cont'd)

25480	COUNTY OF RIVERSIDE
25539	BORIS PIRIH
25560	MORENO VALLEY CHRISTIAN INFANT CENTE
	MORENO VALLEY CHRISTIAN SCHOOL
25601	OCCUPANT UNKNOWN
25631	MINH NGUYEN
	RAFAEL ESPARZA
25634	MORENO VALLEY UNIFIED SCHOOL DISTRIC
25652	ALLSTATE INSURANCE CO
	TERRY JOHNSTON
25681	ABEL GONZALEZ
	ACH SERVICES
	ADELITA TALAMANTES
	ADOLFO OAJACA
	ALEJANDRO MACIAS
	ALICIA LARA
	ANA MARTINEZ
	ANGEL LEON
	ANNA BELL
	BENITO DELGADO
	BENITO PEREZ
	BERNARDO NASSO
	BILLIE SPEARMAN
	CHARLES BRADY
	DANTE ASCUETA
	DORLEEN HELMENDACH
	EDITH BEEBE
	ELEGENE MAHONEY
	EUSEBIO DIAZ
	F REBOLLEDO
	FELIXBERTO MARFORI
	FERNANDO YUSI
	FRANCISCO SORIA
	FRANKIE LOPEZ
	GALE HICKS
	GILBERTO DELEON
	GLORIA GUTIERREZ
	GLORIA MUNOZ
	HECTOR GARCIA
	HERMAN RODEN
	IVET BARERA
	JAMES CANTRELL
	JAVIER HINNAOUI
	JEANIE WOMACK
	JENNIFER MILLER
	JENNIFER TORRES
	JENNY GONZALEZ
	JERONIMO TELAMANTES
	JESUS VALDOVINOS
	JISELLA OLIVOS

ALESSANDRO BLVD 2008 (Cont'd)

25681	JOHN LIGHTNER
	JOSE RODRIGUEZ
	JUAN CASTELLANOS
	KENNETH BROWN
	KERMAN ECHEVERRIA
	LOUISE FARRER
	LUCIA FIGUEROA
	M RAMIREZ
	MARIA ALANIS
	MARIA AYALA
	MARIO ANGLES
	MARIO RUBALCABA
	MARITZA ADAME
	MARSHALL HAMMER
	MARY CLARK
	MICHAEL SPRAGUE
	MIGUEL HERNANDEZ
	MYRTLE JURGENSEN
	NEW HORIZON MOBILE HOME PARK
	NORBERTO MANZO
	NOVILLA BARNES
	PATY OLSEN
	PEGGY LAFON
	RALPH CALHOUN
	RAMON HERNANDEZ
	REFUGIO VEGAS
	RENATO SANTIAGO
	RENOO HMATPONGTUA
	RICHARD EDWARDS
	ROSARIO LOPEZ
	RUBEN BERNAL
	SANDRA HOLT
	SERGIO CORONA
	SERGIO VAZQUEZ
	SIDNEY ROLAND
	SYLVIA ROMERO
	VERNON ALLEN
	VICTOR ALVAREZ
	VIOLA AUSTIN-GREER
	WILLIAM STORCH
	YOLANDA PANEILINAN
	YOLANDA PANGILINAN
25767	OCCUPANT UNKNOWN
25791	SALINA GEORGE
25793	JAMES PATTERSON
25807	KELLE ROBERTS
25873	DR PARTNERS
	PRESS ENTERPRISE CO
25876	SU WU
26755	VALLEY CHRISTIAN CHURCH BRETHEREN OF

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ALESSANDRO BLVD 2008 (Cont'd)

26871 A C P TRUCKING
ALBERTO EQUIHUA
ALLEN L STICE TAX PREPARATION
ANNA JONES
ANTONIO VALERA
ARTHUR ALBERTS
BENJAMIN GARCIA
BENJAMIN RUIZ
BLANCA MOYA
BONNIE KIMBROUGH
BONNIE NEWMAN
CAROL ALLEN
CAROL BRUBECK
CAROL PURCELL
CAROL WEBSTER
CHRISTINE MAXWELL
CINDY JONES
COUNTRY SQUIRE MOBILE ESTATES
DANIEL ALLPHIN
DAVID TORRES
DEBRA HARDER
DORIS HAIGHT
EDITH MEDINA
ELIZABETH JACOBO
ELIZABETH JACOBSON
FELIPE LOPEZ
FOREST SMYTH
GEORGE STEINBACHER
GERALD ROUNDSLEY
GUILLERMO ZAMBRANO
HAROLD OBAK
HENRY SANCHEZ
HERBERT BUNNING
HOWARD ASHLEY
ISABEL EUCEDA
JAMES LEONARD
JAMES MANLEY
JANE SCHIAPPA
JASMIN JACOBO
JEAN ELLISON
JERI ROUNSLEY
JOAQUIN RICO
JOE MUIR
JOHN BAKER
JOHN CROUCH
JOHN JIMENEZ
JOHNNY DUGGAN
JORGE CALDERON
JOSEPH ALEJANDRE
KATHLEEN BICKEL

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ALESSANDRO BLVD 2008 (Cont'd)

26871	KATIA MONTIJO
	KATUSKA LECAROS
	KENNETH HOOPER
	LAURA CAZARES
	LEANNA WATTS
	LETICIA GUTIERREZ
	LIEU TRAN
	LINDA KAUFMAN
	MABLE KNIGHT
	MARIA ARELLANO
	MARIA OCHOA
	MARTHA SPENCER
	MARY BENNETT
	MARY JACOBS
	MAY AVANT
	MIGUEL GOMEZ
	MIGUEL MACIAS
	MIGUEL NUNEZ
	MIGUEL REYES
	MILTON SOLORZANO
	MURIEL STICE
	MYRTLE WILLIAMS
	NANCY PORTER
	PAULINE NIXON
	PENNY MOYER
	RAY HERRERA
	RICHARD TOTH
	ROBERT HANLEY
	ROBIN MENDEZ
	RON LASHWAY
	RONALD WILSON
	ROSA PENA
	ROSCHANEL KING
	RUTH WILKES
	SEAN ESPINOZA
	SINECIO MCCOLL
	SUSAN STOWELL
	SUZANNA VACA
	THOMAS BROWN
	TRANG TRAN
	V MARCUM
	WENDY WALTER
27045	MORENO BEACH CONGREGATION
27046	JEHOVAHS WITNESSES
27390	OCCUPANT UNKNOWN
27555	DISCOVERY CHRISTIAN CHURCH OF MORENO
28095	CARLOS MARTINEZ
28119	OCCUPANT UNKNOWN
28135	OCCUPANT UNKNOWN
28137	OCCUPANT UNKNOWN

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ALESSANDRO BLVD 2008 (Cont'd)

28161	OCCUPANT UNKNOWN
28163	OCCUPANT UNKNOWN
28165	CHRISTINA AGRAS
28167	JAMES PETERMAN
28177	CARLOS SANTIAGO
28189	OCCUPANT UNKNOWN
28194	JOSHUA MAY
28221	OCCUPANT UNKNOWN
28235	CHARLES WHEAT
28300	TOYA JEFFRIES
28344	BRENDAN GOULD
28382	RAUL VITERI
28412	OCCUPANT UNKNOWN
28432	WANDA NELSON
28446	OCCUPANT UNKNOWN
28460	YESENIA SANCHEZ
28470	STEVEN DUNCAN
28472	SANTIAGO GALICIA
28549	JOYCE MARTIN
28566	BRIAN GARRETT
28576	RONALD KORMOS
28580	SUZANNE COLLINS
28594	OCCUPANT UNKNOWN
28612	JOSIE POLANCO
28614	OCCUPANT UNKNOWN
28640	MAURICIO VELASQUEZ
28671	MICHAEL PUTNAM
28700	DJ FREESTYLES DJ SERVICE
28720	STANTON HERPICK
28741	JOHNS LITE DELIVERY
	OCCUPANT UNKNOWN
28765	ELIUTH BANUELOS
28780	OCCUPANT UNKNOWN
28791	ROSA TELAYO
28819	ROBIN KUEBLER
28820	ADIEUX TERMITE & PEST CONTROL
	OCCUPANT UNKNOWN
28825	BRYAN GLOVER
28836	CARLOS MARTINEZ
28839	MYNOR MONROY
28850	OCCUPANT UNKNOWN
28851	OCCUPANT UNKNOWN
28857	CATHERINE JORDAN
28862	RAFAEL CHAVEZ
28869	OCCUPANT UNKNOWN
28882	OCCUPANT UNKNOWN
28900	LESLEY TAVERNA
28910	JOSEPH HAYHURST
28915	OCCUPANT UNKNOWN
28929	PAUL WILSON

ALESSANDRO BLVD 2008 (Cont'd)

28930	MICHELLE BERNARDINO
28949	LAVERNE ROWAN
28973	MARIA CLARKSON
28981	OCCUPANT UNKNOWN
	UNITED STATES POSTAL SERVICE
29010	CHANN CHAU
	EASTER MARKET
29030	JENNY MALDONADO
	MARIA TRUXEL
29050	JOSE GARCIA
29062	D & L SATELLITE & HOME PRODUCTS
	DAVID FREDERICK
29075	RICHARD IRVINE
29076	OCCUPANT UNKNOWN
29086	BRYAN MONEY
29095	MICHAEL DRAKE
29098	OCCUPANT UNKNOWN
29105	PRAPAPORN SAVEDRA
29110	PATRICK BURKE
29124	JAMES BRYANT
29135	WALTER COFFER
29144	EDWARD DYKSTRA
29155	JEFF BROWNING
29166	ENERGY CONTROL SYSTEMS
	PETER AMATULLI
29175	BRENDA DEWEES
29180	DAVID FRANKLIN
	TONY YOUNG CONSTRUCTION
29205	E LEON
29210	JACK DANIELS
29220	GOLDEN STATE ROOFING
	LORENZO FIERRO
	LORENZO FIERRO
29230	OCCUPANT UNKNOWN
29235	SAMUEL MARTINEZ
29240	MIGUEL VALENCIA

PERRIS BLVD 2008

11010	JOHN JONES
11200	ELADIO ALVAREZ
11261	MARIO CEPEDA
11269	RONALD SHEPHERD
11285	OCCUPANT UNKNOWN
11315	RAMZI MAHMUD
11349	GRACE EPISCOPAL CHURCH
	SUNRISE BAPTIST CHURCH
11463	OCCUPANT UNKNOWN
11467	ROBERT PALUSH
11469	ALEX BLASINGAME
11471	MARK ALDACO
11473	CULTURAL HERITAGE PERFORMING ARTS SC
	OCCUPANT UNKNOWN
11480	AUGUST CARBULLIDO
11495	ARTURO RIVERA
	GONZALO MENDEZ
11531	ROGELIO HERNANDEZ
11541	EFRAIN LOPEZ
11641	PEGGY BENNETT
11650	SHEPHERD OF THE VALLEY PRESCHOOL & K
11673	VAN NGO
11681	JOHN LEGGETT
11725	CLARA DARGITZ
11730	MILFORD SANAME
11734	OCCUPANT UNKNOWN
11846	IRDIA DESAI
11856	JOHN ESTEL
11866	HONG HAN
11961	MORENO VALLEY KINDERCARE CORP
11987	CHARLIE WALL
12190	ANN GRCEVIC
	CENTRAL VALLEY REALTY & MANAGEMENT
	CICEROS HOPE YOUTH CENTER
	COSMOPROF
	DIANA BRADFIELD
	DIGITAL ACTIVE
	DISCOUNT CENTER TOB
	EDDIE HARRIS
	ELISHA LANDRUM
	ERICKA HERRERA
	ERNEST BELL
	FAMILY KNOTS EXPRESS INC
	GLORIA TORREZ
	GREEN TREE LEARNING CENTER INC
	HACIENDA FURNITURE
	HECTOR GARCIA
	HELP U SELL SUNNYMEAD REALTY
	HOP IN A BUCKET INC
	JOHN DUNN

PERRIS BLVD 2008 (Cont'd)

12190 JOSE LIMA
JOSE MATA
KELLI CLARK
KIM BAILEY
LA COUNTY ELECTRIC INC
LANCE HAYNES
LATASHA CHALMERS
LINDA STUTSMAN
MAGIC AUTO GLASS
MARISCOS EL REY
MON ZO INC
NUMBER 1 NAILS
PAUL SUNDQUIST
R G C CONSTRUCTION
RAFAEL CISNEROS
ROBERT STOKES
S JONES PROCESS SERVER
SAMS QUALITY CLEANERS
SHIRLEY DAVIS
SING YENG HAIR CENTER
STARBUCKS COFFEE CO
STEPHEN RUIZ
TAMBRA SWAFFORD
VALLEY DENTAL
VIRGINIA REISING
WARREN HENDERSON
YOLANDA HAYES
12200 FOOD 4 LESS
12210 ACE CASH EXPRESS
GLADIATOR INSURANCE SERVICES
OCCUPANT UNKNOWN
12220 BEST WIRELESS
CAP WORLD
DAE SANG U S A CORP
E HENRYS SPORTS WEAR
EASY LIVING FURNITURE
FOOT LOOSE
GOLDEN TOWER
HONG ACCESSORIES
KIDS LAND
KS SHIRTS
LUCKY SHOES
MIKI LA
MORENO VALLEY ELECTRONIC
SARAHS ROPA
SIN SUNG SHOES
12230 1ST FINANCIAL SERVICES INC
LIGHTHOUSE HOUSING COMMUNITY D
PALACIOS VICTOR S LAW
VICTOR PALACIOS

PERRIS BLVD 2008 (Cont'd)

12240	CSK AUTO INC
	KRAGEN AUTO PARTS
12248	DJB ENTERPRISES
12252	HOLLYWOOD ENTERTAINMENT CORP
12256	LA BARQUITA MEXICAN FOOD
	LA BARQUITA RESTAURANT
12258	BANTA KAMAY SANDATA SELF DEFENSE ART
12262	HOLLYWOOD NAILS & SPA
12264	SPARKLE FAMILY DENTISTRY
12266	MICHAEL DOUGHNUT SHOP
	MICHAELS DONUTS & COFFEE SHOP
12268	AAA CASH ADVANCE
12270	SUBWAY SANDWICHES
	TOOTY FROOTY
	TUTTI FROOTY
12274	L A 2 MO VAL
12275	WALGREENS PHARMACY 5220
12276	REALTY BENEFITS
12278	AMERICAN CLEANERS
	TWO HOUR MORENO VALLEY CLRS
12280	AMERICAN DRUG STORES
	CVS
	NEW ALBERTSONS INC
	SAV ON 9610
	SAV ON DRUGS
12320	DDS DISCOUNTS
	DOLLAR TREE STORES INC 3135
12341	PERRIS BURGERS
12350	BANK OF AMERICA NA
12370	ANITA ROBINSON REALTOR
	COUNTRYWIDE HOME LOANS INC
	CYD INTERNATIONAL INC
	GMAC REAL ESTATE
	SARESREGIS GROUP A CA PARTNER
12380	HERBERT MERCER
12400	CARMANAS
	VALERO
	VALERO ULTRAMAR
	ZOHURA CORP
12600	A1 YELLOW CAB
	CARRONA ANTHONY C LAW OFFICES
12601	AUTOZONE
12605	LITTLE BAMBINOS PIZZA
12607	LEWIS CLEANERS
	NORTHSTAR IMPEX CORP
12615	JUAN POLLO NUMBER 101
12656	GABBYS INTERIORS
	PRISTINE POOL SERVICES
	STEVEN MYERS
12715	CRAIG CUNNIFF

PERRIS BLVD 2008 (Cont'd)

12725	SAINT CHRISTOPHER DENTISTRY
12729	NICOLE ROBINSON
12760	ADRIANA VASQUEZ
	EVAN EBRAHIMI
	JEANEAL KINDER
	MYRTLE RUMPH
	REBA MARSHALL
	STEPHEN HUNG
12765	MARY NICHOLS
	OLEGARIA SALINAS
12773	MICHAEL SALVATORE
12775	BRANDON BIRT
12777	VICTORIA MUNIZ
12795	MARTHA IZVERNARI
12800	CLEMENTINA CONTRERAS
	CONTRERAS INVESTMENTS
	DENISE SANIGA
	EVAN EBRAHIMI
	H TORRES
	JACQUELINE MCGREW
	JIM STROBL
	LEONOR ZURITA
	NATALY SANCHEZ
	STEVEN BROWN
	THOMAS DEUS
12801	JAMES BAKER
	OCCUPANT UNKNOWN
12819	OCCUPANT UNKNOWN
12830	ARLEEN DIAZ
	BRIAN FAUX
	IRENE PARRA
	JEFFREY OGAN
	JUANA ZUNIGA
	MARK MATZNER
	NINA BOWMAN
	PASCAL MANSELL
	RHODA PONDER MEDICAL SUPPLIES
12833	OCCUPANT UNKNOWN
12860	ARLENE DAYOAN
	BARBARA BROWN
	BENNIE TRAPP
	GERALDINE LUCK
	ISRAEL GUTIERREZ
	LAUREN ALDRETE
	MARIA STELTON
	MARIO DUARTE
	PAUL DIAZ
12875	SARAH THOMPSON
12891	A 21 SU CASA REALTY
	INLAND TOWER REAL ESTATE

PERRIS BLVD 2008 (Cont'd)

12900	ANNETE HARRIS
	KENNETH T HARRISON DDS
	MERVIN L ELLSTROM DDS INC
	MOHAMED A HASSAN DDS MS
	MOHAMED HASSAN
	SUNNYMEAD DENTAL GROUP
12981	ALPHA QUALITY COMPUTER SERVICE
	BAJA BUSINESS SERVICES
	CARDSERVICE OF THE
	DESTINY HOME HEALTH AGENCY
	E & E INCOME TAX SERVICE
	E & E INICOME TAX SERVICE ASSOCS JAB
	EAGLE ONE MORTGAGE GROUP CORP
	INLAND EMPIRE ACCIDENT & INJURY CE
	INLAND TOWER REAL ESTATE INC
	LANDMARK MEDICAL SERVICES
	LEONHARD MARIA INSURANCE
	MERCHANTS SERVICES INC
	MORENO ESCROW INC
	ONTARIO PROSTHETICS
	QWEST MEDICAL
	THE GROUPING CENTER
	V K MATHUR FARMERS INSURANCE
13027	COLLEGE BAPTIST CH ARTES CA
	FAITH CENTER CHRISTIAN BOOK & BIBL
	GREATER FAITH CHRISTIAN FELLOWSHIP
	KINGS CHAPEL CHRISTIAN CENTER
	MORENO VALLEY PRESBYTERIAN CHURCH
13117	APPRAISAL CONSULTING GROUP INC
	COMPLETE PC SPECIALIST
	CREATIVE NAILS
	FLOORING ZONE
	HIGUCHI TAILOR SHOP
	KIDS NUTRITIONAL CENTER
	LASER COMMUNICATIONS
	M & M HAIR SALON
	RAIGOZAS LEATHER
	RAQUELS JEWELRY & GIFTS
	SUN VALLEY REAL ESTATE
	WUZ UP WITH THE PARTY
13121	CF DISCOUNT STORE
	DEPORTES AZTECA
	FRANKS LIQUORS
	MARTHAS HAIR FASHION
	MUEBLES RUSTICOS ZAVALA
	NEW LIFE CHURCH
	PANADERIA PAN DE VIDA
13141	LUIS EQUIZABAL
13151	JUAN HERNANDEZ
13153	MORETO NOGALES

PERRIS BLVD 2008 (Cont'd)

13157	GLORIA MELGAR
13161	BIGMAR ENTERPRISES
	DAWN BOYLL
13231	GOODYEAR TIRE & RUBBER CO
	JUST TIRES STORE
	PERFORMANCE MANAGEMENT
13261	CIRCLE K FOOD STORES
13317	KIDS NUTRITIONAL CENTER
13371	VALLEY LIQUOR & DELI
13373	99 CENTS BARGAIN MART
	AIRPORT TRANSPORTATION SERVICES
	ALL STAR PIZZA
	CARNICERIA LAS GLORIAS MARKET
	DANIEL NUTRITION
	DISCOVERY DRIVING SCHOOL
	EL MEZQUITE MEXICAN RESTAURANT
	ESTATE SALES WAREHO
	EXOTIC TROPICAL FISH OF THE WORLD
	FAMILY DENTAL CARE
	FELICIANO PETER PAUL DMD
	GHETTO FABULOUS INK INC
	HECTORS ASADERO
	HIGH CLASS MATTRESS CO
	LA PERLA MEAT MARKET
	LYDIAS HAIR DESIGNERS
	MANILA RANCH
	MIRIAMS BEAUTY SALON
	MORENO VALLEY DISCOUNT
	NUTRITION DANIEL
	OBY INTERNATIONAL AFRICAN CARIBBEA
	PARAGON TATTOO STUDIO
	QUEENS PROFESSIONAL HAIR
	RED ANCHOR FISH MARKET
	SIERRA AROMATHERAPY
	STEVEN & SON MATTRESS CO
	UNITED FURNITURE
13608	JORGE BELTRAN
13620	RAMIRO NAVARRO
13816	DIANA JUAREZ
13836	TISHA LUKE
13911	MORENO VALLEY UNIFIED SCHOOL DST
13945	KENTUCKY FRIED CHICKEN
14055	MANDYS CLOSET
	OROPEZA PHOTOGRAPHY & GIFTS
	SOLUTION GRAPHICS
14175	ABLE STORAGE
14700	CHILDTIME CHILDCARE INC
14719	ELVIA GOMEZ
14740	J & E BLADE RENTALS
	JOHN HUNSICKER

PERRIS BLVD 2008 (Cont'd)

14890 ALBERT EISELEE
ALEX VALENCIA
ALICE RIOS
ARTHUR MORALES
ARTHUR SMITH
CARLOS ORNELAS
CELESTE NOWAK
CYNTHIA BOBBETT
DAVID LIVINGSTON
DEBRA HEMMERLING
DOUG DUREY
ELMA JANSSEN
FEDERICO RAMIREZ
GERRY GERMAN
HOLLIS JOHNS
ISABEL ALLEN
JANNET SILVA
JEANNE EDWARDS
JILL KUBISCH
JOHN BRAVO
JOY ROBLES
KATHERINE RIDDLE
KATHLEEN MULLIGAN
LEOPOLDO GONZALEZ
LUCAS HODSON
LUCY THOMPSON
MARIE CHAIDEZ
MARY CAMPBELL
MARY LEININGER
MICHAEL CAIN
MICHAEL THOMPSON
MIKE GARCIA
NORMA BADER
OLGA OLIVER
PAUL BARGER
RENEE SCOTT
RICHARD SHORTELL
ROBERT DAWSON
ROBERT GAUTHIER
RUDOLF HELGERT
SKY TRAILS MOBILE VILLAGE
SUSAN CREANEY
UGOCHUKWU IFEACHO
WAYNE CONWAY
WILLIAM OHLINGER
14910 ECSTASY HAIR DESIGNS
FEATHERS & FINS
MARGARITA R CAMARGO
MR DONUT
NASHS TROPHIES & RIBBONS

PERRIS BLVD 2008 (Cont'd)

14910	PRO TOP NAILS
	RICHARD JACKSON
	SCRUBS 4 LIFE
	SUNNYMEAD ACE HARDWARE
	THAI DINETTE RESTAURANT
	TOPNAILS N SPA
	VIDEO VISION SOUTH
14920	ALONDRAS HOME FASHION
	AMAZING BEAUTY SUPPLY
	ANAS BEAUTY & BOUTIQUE
	D & D MENS WEAR
	GALAXY 2 CRAFT & CLOTHING
	GOLDEN AGE MEDICAL SUPPLIES
	HITECH WIRELESS
	J JEWELRY
	MR TACO GRILL
	THE HAIR EXPRESS
	TONYS NAILS
14930	BODEGA RANCH NO 15
	CARDENAS MARKETS
	TAF JOYAS JEWELRY
14940	ALPER CLEANERS
	APOLLO FINANCIAL SERVICE
	APOLLO REALTY
	CINETECH VIDEO PRODUCTIONS
	DIPTI PATEL DDS
	RAYMOND SECURITY SERVICES
14950	STEER N STEIN RESTAURANT OF CA INC
14980	PAT PATTERSON
15025	CVS
15030	JACK IN THE BOX
15320	ADOLFO ROSETE
	ALEJANDRA ORTEGA
	AURELIO VASQUEZ
	BERTA MUNOZ
	MARIA LOPEZ
15332	ANSELMO REYES
	CARMEN ORTEGA
	ELIZABETH DELAPORTILLA
	F GOMEZ
	HILDA GUZMAN
	L KELLY
	LUIS OROZCO
	MARTHA MENDEZ
	MARTHA PRECIADO
	TEODORO VILLEGAS
15344	APOLONIO VALENZUELA
	DIANA DOMINGUEZ
15360	CHANTEL CARR
	GREGORY FORD

PERRIS BLVD 2008 (Cont'd)

15384	CHRISTINA HALL
	HILDA CHAVEZ
	MABEL NORIEGA
	MARIA BELTRAN
	OLVIN ARIAS
	RENE CUEVAS
15394	ANA GRANADOS
	M LAFFERTY
	MAISHA PARKS
	MARIA CARDENAS
	SOPHANY CHONG
15414	MARIA PEREZ
	MAXIMO LEON
	VERONICA VALENZUELA
15452	MARIO TORRES
	REYNA GONZALEZ
15928	ALEXANDER BURNS
	ANGELA HERBEST
	CHARLES AVERY-JR
	CYNTHIA WILLIAMS
	DELORES TRAVIS
	DENISE MOORE
	EL RANCHO MEXICAN RESTAURANT
	FRANCES ESCALERA
	FREDERICK PEEVY
	HOMAYOON SHAMOLIAN
	JOLENE ORNELAZ
	MARCELINO PENA
	MARGIE GARCIA
	MICHELLE SORIANO
	MIKE MUNOZ
	MYRTLE WINANS
	NEW AGE INVESTMENTS
	NICOLE MONTGOMERY
	PERRIS DONUT & BURGER SHOP
	POSTAL ETC
	REBECCA LONA
	ROBERTA BAILEY
	SHAREE MCQUEEN
	WEST GATE LIQUOR
	WILLIAM HAZLETT
	WILLIE RICHARDSON
	WORASING RECYCLING
15952	A1 PAYDAY ADVANCE INC
	L T NAILS
	STATE FARM JACKI MATULEWICZ
15974	AYASS MALEK
	E S P VIDEO & ELECTRONICS
	ORTIZ BEAUTY SALON
	PIZZA HUT

PERRIS BLVD 2008 (Cont'd)

15974	ROLLING RIDGE CLEANERS
15975	THE HOME DEPOT
16020	WALGREENS
16380	CITY NAILS
	KISS ME FASHIONS
	LIBERTY TAX SERVICE OF MORENO VALLEY
	SMOKE SHOP 99 CENTS & GIFT
	TACO ALBERTIOS
	TREASURED PETS
16420	CAFE EXPRESS
	CURVES
	FAST BUCKS
	US HEALTHWORKS
16466	PRESTIGE STATIONS INC
	SALIB ENTERPRISE INC
16641	JAMES LEE
	KEN LEE SERVICE SUPPLY INC
16659	OCCUPANT UNKNOWN
16675	KEN LEE
17041	RICHARD WILLIAMS
17111	OCCUPANT UNKNOWN
17500	BERKELEY LEASING CO
	WALGREENS DISTRIBUTION

ALESSANDRO BLVD 2003

21801	GLADYS CAMERON PROPERTY OWNER
	RANCHO DISCOUNT MARKET
21805	GAZEBOS CURITA
	OCCUPANT UNKNOWN
	VALDEZ GLASS
21820	MOTHBALLS ANTIQUES
21832	MILLENIUM DISCOUNT CARPET
21840	HONG SHINE
21844	ROBERTO PEREZ
21866	ACE SMOG
	KENDALLS AUTOMOTIVE SERVICE
	OCCUPANT UNKNOWN
21872	ESCONDIDO PLAZA INC
	THUONG NGUYEN
21874	OCCUPANT UNKNOWN
21876	OCCUPANT UNKNOWN
21878	JEFFREY COOK
21880	OCCUPANT UNKNOWN
21882	OCCUPANT UNKNOWN
21891	PAUL BALDWIN
21894	TNT KOI
	TONY SIMENTAL
21921	OCCUPANT UNKNOWN
	TRACTORLAND
	TRACTORLAND EQUIPMENT CO
	TRACTORLAND PARTS WEST
	WESTERN CONSTRUCTION AUCTIONS INC
21924	EMMA BAEZA
21926	SARINA SANTAMARIA
21932	OCCUPANT UNKNOWN
21941	ALESSANDRO MINI STORAGE
21942	MORENO FRESH PRODUCE
	ROSENDO MAYA
21944	NATY QUINONEZ
22010	JEANNETTE TAJALLE
22018	MARIA MARTINEZ
22042	OCCUPANT UNKNOWN
22050	ANTONIO GUTIERREZ
22058	OCCUPANT UNKNOWN
22088	OCCUPANT UNKNOWN
22101	SMART TRUCK SYSTEMS
22135	MARY OIUM
22156	GASLIGHT TACQUERA
	MI TIERRA MEXICAN FOOD
22180	B CHANTHAPHASOUK
22184	JESUS CONTRERAS
22201	SUPREME TRUCK BODIES
22210	KC CONCRETE
	KIRK CORREA
22224	DANIEL CORREA

ALESSANDRO BLVD 2003 (Cont'd)

22240	EVELIA CEBALLOS
22308	M DUNNING
22314	JOE SANDOVAL
	VALLEY AUTO
22364	OCCUPANT UNKNOWN
22366	CHARLES STEWART
	CHAS L STEWART
22400	OCCUPANT UNKNOWN
22405	ALESSANDRO AUTO BODY & PAINT
	BERCIAN FASHION & BRIDAL
	CONTINENTAL PROPERTY
	CRISTINA E LIBRERIA
	DESERT WINDOW TINTING
	GRAND CONCEPTS SALON
	HONDA SHOPPE
22425	IMMITAX SERVICE
	LOS LOCOS STEREOS ALARMS INST
	TECH AUTO REPAIR
22456	DRAGON HOUSE
	OCCUPANT UNKNOWN
22484	ALL DISCOUNT INSUR SERVICES INC
	ALL DISCOUNT INSURANCE
	OCCUPANT UNKNOWN
22485	JACK IN THE BOX
22510	MARK WILLIAMS
	TIRE PROS
22512	VIDEO UNIVERSAL
22570	MENOS STEREO
	OCCUPANT UNKNOWN
22586	OCCUPANT UNKNOWN
	SHELIAS HOUSE OF BEAUTY
22588	OCCUPANT UNKNOWN
22592	SUBURBAN CLEANERS
22594	OCCUPANT UNKNOWN
22600	A SHOP FULL OF BLESSING
22604	HOME INTERIORS INC
	HONEYBEAR BAKERY & DELI INC
	KATHRYN TURNER
22608	GOLDENS ELECTRONIC REPAIR
	GOLDENS PARALEGAL SERVICE
	OCCUPANT UNKNOWN
22612	OCCUPANT UNKNOWN
22616	VFW CLUB
22700	A AMERICAN SELF STORAGE
	BOBBY PRIETO
	CHAZ OLVERA
	JOSE SALAS
	LABOR READY
	MICHAEL PASHLEY
	PHILIP MARTIN

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ALESSANDRO BLVD 2003 (Cont'd)

22700	RAMONA DSCNT & 98 CENT STORE
	SPANKYS MOTORSPORTS & PGNG
	TWO DAY SIGNS
	VICTORS TUXEDOS
22720	GORDOS
	GORDOS RESTAURANT
	VILASINEE BENHAR
22740	MANOUCHEHR LANKARANI
22770	ANTONIO ANAYA
22790	MONEY PRO
22810	CITRUS BELT TAX SERVICE
	CURRIER & SANCHEZ CHIROPRACTIC
	INTERNATIONAL AUTO CRAFTERS
	ROBERT SANCHEZ
	ROBERT SANCHEZ
22862	OCCUPANT UNKNOWN
22876	8 HOUR TAX SERVICE
	EAGLES CHECK CASHIG
	SAMIR SADIK
	TOO SHARP STYLING SALON
22886	CARQUEST
	HEACOCK AUTO SUPPLY
	OCCUPANT UNKNOWN
	SOUTHERN AUTO SUPPLY
22920	ASIAN IMPORT MARKET
	KAYS HAIRSTYLING
	MAGDA BANDEK
	RIVER KWAI THAI CUISINE
	UP N SMOKE
	WATERMILL EXPRESS INC
22940	OCCUPANT UNKNOWN
	TRINH & HO DENTAL
	TRINH & HO PROFESSIONAL DENTAL
22960	ELKS LODGE OF MORENO VALLEY NO
23060	PH WOODS RESTAURANT & BREWERY
23080	DEMOLA ANGEL MD
	DR DEZAS DENTAL OFFICE
	FRIENDSHIP CHRISTIAN BOOKS
	FRIENDSHIP CHRSTN FLWSHP CHRCH
	PLAZA MARKET & DELI
23100	A 1 CLEANERS
	CHINA GOGO
	DON JOSE MEXICAN RESTAURANT
	EBONY HAIR
	GOGO CHINA
23501	TABASSI CO
23580	LEIGH HICKS
23581	JIN KOO
23615	ALESSANDRO ENTERPRISES INC
	ALESSANDRO HAND CAR WASH

ALESSANDRO BLVD 2003 (Cont'd)

23615	MAGIC LUBE
	PEDROS FOOD
23750	BENS BEAUTY SALON
	CADILLAC BOWL
	CLASSY BS LIQUOR
	DEAN & ASSOCS
	FANCYTAN INC
	GINGER TAYLOR
	GINGER TAYLOR
	GOLDEN OX
	HAIRCUTS PLUS
	HEAR EASY HEARING AIDS
	INSPIRATIONS PRFRMNG ART CTR
	MAX MUSCLE
	MORENO VALLEY FUN BOWL INC
	MORENO VALLEY HEARING AIDS
	OASIS COMMUNITY CHURCH
	RAY CHAKMAKCHI
	ROBERT RYNNG HLTH & JUICE BAR
	RUSTIC
	SHEAR CUTS
	STEPPING STONES LEARNING ACDMY
	TAN FANCY
	THE RITE PLACE
	TWENTYFOUR HOUR FITNESS
	WED OF CANDLES
23880	TACO BELL NO
23890	CLINICAL MASSAGE THERAPY GROUP
	FAIR HOUSING COUNCIL OF RVRSD
	FAIRCHILD CHIROPRACTIC CLINIC
	LUIS DENTAL LAB
	MIRCH MASALA CORNER
23900	CERTIFIED TIRE & SERVICE
23910	ANGEL GARCIA
	COLE FINANCIAL INC
	FANCY STITCHIN
	GBM MACHINE SHOP
	LJR ROOFING
	SSS ALARM CO
23920	1ST PLACE AUTOMOTIVE
	D & C AUTO REPAIR
23932	H RANDHAWA
	MAGANA AUTO UPHOLSTERY
	MELVIN MARTE
	PLUMMERS ELEVATORS SERVICE
	TRUE FOUNDATION CHRISTIAN
23942	ABBEY CO
	ANGELINE TANCREDI
	AP MORENO VALLEY LLC
	CLAUDIAS FASHION

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ALESSANDRO BLVD 2003 (Cont'd)

23942	DYNO DUDES
	RANDY DARGITZ
23962	A PLUS COMPUTER SERVICES
	ACE TV RENTALS
	ATLAS BUILDERS
	BANIG RESTAURANT FLPN & ORNTL
	DEBORAH HEISSER
	DEBORAH HEISSER
	ERMA FULCHER
	FULCHER ERMA INSURANCE
	FUN 4 ALL PARTYS
	GROUND ZERO AUTO SALON
	LAW OFFICES OF MARC VINCENT
	MARC VINCENT
	MARC VINCENT & ASSOCS
	SUNBRIGHT TILE MARBLE
	SUPER V 2
	VINCENT DANIEL P LAW OFFICES
24021	CHELIS BEAUTY SALON
	DAIRY QUEEN
	DEL SOL FURNITURE
	EMYS BARBER SHOP
	KRAGEN AUTO PARTS MORENO VLY
	LUNA SUPER STORE
	MAMA CHUYS
	NUEVO TORITOS MEAT MARKET
	PIZZA HUT
	Q TEAZ FASHION
	SOUTH POINTE CTR LTD
24050	ALBERTOS MEXICAN FOOD
	FLASH PHOTO STUDIO
	INSTANT CASH
	KING CIGARETTE
	MEGA CELLULAR
	PERFECT TOUCH BEAUTY SALON
	RAMADA FLOORING
	S STYLIST
	STYLIST VI SMITH
24100	DALIAS PIZZA NO
	KINGS DONUTS
24150	APPLE FLORIST
	CHRISTINE CRENSHAW
	CHRISTINE CRENSHAW
	GABBYS LIQUOR
	KARENS GROOMING SHOPPE
	NRTHMD PRSCHL & CHILD CARE CTR
	QWICK PICK
	WINGS N THINGS
	WINGS N THINGS II
24400	SERVICE ANNEX LLC

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ALESSANDRO BLVD 2003 (Cont'd)

24440	TONYS MOBIL
24481	APPLIANCE DISCOUNTERS
24491	ABC FOOD STORE
	KWANG LEE
24525	ANIMAL ELEGANCE
	CALIFORNIA BANK & TRUST
	OCCUPANT UNKNOWN
	PAYLESS SHOESOURCE
	RIVERSIDE CURRENCY SERVICES
24545	99 CENT WORLD
	OCCUPANT UNKNOWN
24551	HANI KARAM
	WIRELESS PRO
24559	OCCUPANT UNKNOWN
	RIVERSIDE COUNTY
24563	LILY HAIR & NAILS
24565	AQUA CLEAR
24643	RAINBOW GIFT
24645	MASTER JEWELERS
24647	BLOCK H & R
24653	OCCUPANT UNKNOWN
24655	OCCUPANT UNKNOWN
	SUNNYMEAD HAMBURGERS NO
24661	SUPERCUTS
24681	M ERHARDT
24685	THONG VANTRAN
24691	CHINA RESTAURANT
24695	SUSAN KIM
24697	OCCUPANT UNKNOWN
	VOGUE NAILS
24699	BARBER SHOP
24701	MARISCOS MELGOZA LAS PALMAS
24705	IE MUSIC
	S & G ENTERPRISES
	SG ENTERPRISES
	SIGNS & WONDERS YOUTH PROGRAMS
24709	OCCUPANT UNKNOWN
24725	ANGEL LITTLE
	ASSOC FOREIGN EXCHANGE
	BANKS CHRISTIAN BIBLE CTR
	C & W QUICK COMM
	CAROLINE AHN
	CHINS SHOES
	CHUNG JEWELRY
	DB SUNWEAR
	HIGH FIDELITY
	HOTTIE WOMANS CLOTHES
	JE SOX
	JOHN SHIMOCKJUN
	JULIA PARKIN HAIR STYLIST

ALESSANDRO BLVD 2003 (Cont'd)

24725	JUNS MENS WORLD
	JUST BRAIDS
	KIMS JEWELRY
	LEES KITCHEN
	LITTLE ANGEL
	MARTHAS WOMENS CLOTHING
	RB QUICK PRINTS
	SANDY WANG
	SANDY WANG
	SANDYS LUGGAGE & ACSRY
	SENSUAL SENSUALITY
	SOX JE
	ST MICHEAL COLLECTION
	STAR SOX 2
	T & L JEWELRY
	TOP BEAUTY SUPPLY & HAIR
	TOP TEN TOTAL FASHION
	WEDDING ACSRY & GIFT SHOP
	YOURS
24735	VALENTINOS PIZZA
24741	ELEGANTE BEAUTY COLLEGE
24757	LOUISIANA FAMOUS FRIED CHICKEN
	ZAPATAS
24762	SONJA WADE
24774	OCCUPANT UNKNOWN
24786	OCCUPANT UNKNOWN
	ZOLL SUPERSCRUB CARPET CLEANIN
24798	IRENE CORDERO
24805	HAIR INTERNATIONAL
	MARISCORNOA SFD MRKT & RSTRNT
	MI LINDO ZACATECAS
	MUEBLERIA Y REGALOS
	RONDA LA NUEVA
24810	KAMF & NOLAS CORP
24822	JUAN ARROYOS
24825	FANTASTIC NAIL
	GREGORYS
	JOANAS ITALIAN RESTAURANT
	MEJIA SPORTS
	ORIO CLEANERS
24834	ARACELI BAUTISTA
24835	RANCHO FOREIGH CAR PARTS
24846	OCCUPANT UNKNOWN
24853	BLOCKBUSTER VIDEO
	BUI NYHANH
	CHINA PALACE
	TIFFANY BUI
24870	OCCUPANT UNKNOWN
24875	DAVID SMITH
	MG SMOKE SHOP

ALESSANDRO BLVD 2003 (Cont'd)

24875	PERFECT CONTROL
24890	PHILLIP HARTZELL
24899	A 1 AUTOMOTIVE
	CHOICE CLOTHIERS
	RELIABLE SMOG CORP
	WORLD OF LIFE CHRISTIAN CTR
24910	JORGE CASTRO
24990	ADVANCE AMERICA
	ALI CHECK CASHING
	FASHION NAILS
	IRMAS PLUS SIZE
	PIONEER CHECK CASHING
	PK PURE DRINKING WATER
	SHANGHAI II
	SUD & GRILL SUBWAY INC
	SUNBRIGHT CERAMICS
	TV PLUS
24991	OCCUPANT UNKNOWN
	RITE AID PHARMACIES
24992	ADRIANAS INSURANCE
	ADRIANAS INSURANCE SERVICES
	CHINESE MARKET
	GOLDEN JEWELRY
	MI PUEBLO SUSTI
	MIPUEBLO SUSTI
	SERGIO PACHECO
	STAPP HOME REALTY
24994	OCCUPANT UNKNOWN
25011	OCCUPANT UNKNOWN
	WALGREENS DRUG STORE
25024	DEL TACO
25030	ALESSANDRO FAMILY DENTISTRY
	ALLURE HAIR & NAILS
	CONTROL INSURANCE SERVICES
	CRISTYS DONUT SHOP
	EMPIRE PAGING
	GOLDEN ESTATE REALTY
	HI CLASS NAILS
	SALLY BEAUTY SUPPLY
	TAX 4 LESS
	USA CHECKS CASHED
	VENTURA COASTAL CORP
	YANG STEPHEN S DDS
25050	ALBERTSONS
25070	LONGS DRUG STORE
25100	A 1 COIN LAUNDROMAT
	JOSE BENITES
	MATSURI JAPANESE RESTAURANT
25400	ALESSANDRO CHIROPRACTIC
	ALESSANDRO ORTHODONTICS

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ALESSANDRO BLVD 2003 (Cont'd)

25400	MENDOZA ROSA R DDS
	NORMAN CORLEW
	QUINN AFRICAN METHODIST EPSCPL
	QUINN COMMUNITY OUTREACH CORP
	ROSA MENDOZA
	ROSA R MENDOZA DDS
25480	OCCUPANT UNKNOWN
25560	MORENO VALLEY CHRISTIAN SCHL
	OCCUPANT UNKNOWN
25631	ERNESTO GALLEGOS
	MILAGROS CTR
	NIKKI MCKENNA
25652	TERRY JOHNSTON
25681	CHANTA TREMBLAY
	CLARA BERACHAH
	COLLEEN BROWN
	DAVID GIEBRICH
	EARL MCCORKLE
	EDITH BEEBE
	ELEGENE MAHONEY
	FRANCISCO SORIA
	FRANK VAUGHN
	FRED CLARK
	GUS GEORGE
	HECTOR GARCIA
	JAMES CANTRELL
	JOAQUIN BERNAL
	JOSE RODRIGUEZ
	KARA WARNER
	KRISTEN VELASQUEZ
	LOUISE FARRER
	MARIA RUIZ
	MARSHALL HAMMER
	MARY YOUNG
	MICHAEL SPRAGUE
	MIKE CAVEN
	MYRTLE JURGENSEN
	NEW HORIZON TRAILER VILLAGE
	NORMA LAYDEN
	PATRICIA TUROCY
	PEARL WITT
	RALPH CALHOUN
	REFUGIO VEGAS
	RENOO HMATPONGTUA
	ROB MCNULTY
	ROBERT HIGGINS
	SAM LAFON
	SANDRA CERVANTES
	SIDNEY ROLAND
	VIC LATTERI

ALESSANDRO BLVD 2003 (Cont'd)

25681	VICTOR ALVAREZ
25791	CHRISTOPHER MANESS
25793	CLAYETTA CRAIG
25873	OCCUPANT UNKNOWN
	PRESS ENTERPRISE
	PRESS ENTRPRS THE NWSPPR MRN
26755	OCCUPANT UNKNOWN
26871	ALBERT PLOTKIN
	ALLEN STICE
	BECKY DELIND
	BRIDGETT NELSON
	CARMEN BYRNE
	CAROL ALLEN
	CAROL BRUBECK
	CAROL WEBSTER
	CHARLES TOBIAS
	CHARLOTTE LICK
	CHERYL ALLPHIN
	COUNTRY SQUIRE MOBILE ESTATES
	DANIEL DUNNINGTON
	DAVID LINSEMAYER
	DAVID VALDEZ
	DORIS HAIGHT
	ELIZABETH DUFF
	ETHEL PULIDO
	FLORENCE WASHINGTON
	FRETA GREEN
	GEORGE PERKINS
	GEORGE STEINBACHER
	GLEN STALEY
	GLORIA CORTEZ
	GUILLERMO ZAMBRANO
	GUY TRIFONE
	HELEN CONVER
	J SCHIAPPA
	JEAN ELLISON
	JOE MUIR
	JOSEPH BAILEY
	JOYCE ASHLEY
	JOYCE BURTON
	KAREN CHALLACOM
	KENNETH GARRETT
	LEANNA WATTS
	LINDA CORBIN
	LINDA KAY
	MARJORIE WATSON
	MATEO SEBASTIAN
	MELISSA JONES
	MITCHELL DWAYNE
	NEIL STEWART

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ALESSANDRO BLVD 2003 (Cont'd)

26871	OCCUPANT UNKNOWN
	OLIVER MORA
	PAPER TIGER R E APPRAISAL SRVC
	PREFERRED INSULATION CO
	RAYMOND ORIELLY
	ROBERT MURPHY
	ROBERT WILMATH
	ROBIN SCHAEFER
	ROGER ALLEY
	RONALD LASHWAY
	RUBY MANLEY
	SHAWN WALKER
	SHEILA BROWN
	STEVEN CARDIN
	SUZAN REYNOLDS
	TOMMIE MIMS
	VERNA KAMINS
	WADE WILLIAMS
	WALTER GROVER
	WAYNE HART
27046	JEHOVAHS WITNESSES
27390	MICHAEL SIMMONS
27555	DISCOVERY CHRIS CHURCH
	OCCUPANT UNKNOWN
27800	OCCUPANT UNKNOWN
27850	BRAD CLINE
28095	BELIA MARTINEZ
28105	GERALD NAVARRETTE
28119	MARTIN DEVILLE
28135	OCCUPANT UNKNOWN
28161	HERMAN DUNGO
28163	KASEY MILLER
28165	OCCUPANT UNKNOWN
28167	OCCUPANT UNKNOWN
28177	THOMAS DEGEN
28189	CARLOS CEBALLOS
28194	JOSHUA MAY
28196	PERRY MAY
28221	OCCUPANT UNKNOWN
28235	CHARLES WHEAT
28300	ROSETTA SAMUEL
28344	GENE GOULD
28350	GENEVIEVE SARNI
28356	OCCUPANT UNKNOWN
28382	JUAN MACIAS
28412	PHILLIP HARTZELL
28432	SUKHJINDER SINGH
28446	RAUL SERRANO
28460	JOSEPH REYNOLDS
28470	OCCUPANT UNKNOWN

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ALESSANDRO BLVD 2003 (Cont'd)

28472	LISA DIGALIZIA
28549	JOYCE MARTIN
28566	BRIAN GARRETT
28574	OCCUPANT UNKNOWN
28580	SUZANNE COLLINS
28594	OCCUPANT UNKNOWN
28612	OCCUPANT UNKNOWN
28616	OCCUPANT UNKNOWN
28720	OCCUPANT UNKNOWN
28741	DONALD NICHOLSON
28765	MARIA BANUELOS
28791	MARCIAL PELAYO
28819	PATRICK VALDEZ
28820	TIMOTHY BEADLE
28825	BRYAN GLOVER
28836	CARLOS MARTINEZ
28850	JOHN DAHL
28862	LENA TYE
28869	GONZALO RANGEL
28873	ACE WEEDABATEMENT
	CHARLES MACIEL
	GOT WEEDS
28882	ROBERT BARTON
28900	LESLEY TAVERNA
28910	JOSEPH HAYHURST
28929	PAUL WILSON
28930	OCCUPANT UNKNOWN
28949	LAVERNE ROWAN
28973	MARIA CLARKSON
29010	ROBERT CLARKSON
	U HAUL CO
29022	OCCUPANT UNKNOWN
29030	ANTHONY JACKS
29050	MARIA ROBLES
29062	DAVID FREDERICK
29075	RICHARD IRVINE
29076	MAURICE DUCKETT
29086	DAHLIA MONEY
29095	OCCUPANT UNKNOWN
29098	TANEAL WARNER
29105	ROBERT VANDEPOL
29110	PATRICK BURKE
29124	JAMES BRYANT
29135	WALTER COFFER
29144	EDWARD DYKSTRA
29155	CHRISTINA BEAVER
29166	PETER AMATULLI
29175	BRENDA MICHELSEN
29180	DAVID FRANKLIN
	TONY YOUNG CONSTRUCTION

ALESSANDRO BLVD 2003 (Cont'd)

29210	JACK DANIELS
29220	GOLDEN STATE ROOFING
	LORENZO FIERRO
29230	DONALD STOREY
29235	OCCUPANT UNKNOWN
29240	MIGUEL VALENCIA

PERRIS BLVD 2003

1355	ANGELA WILLIS
11010	JOHN JONES
11200	ELADIO ALVAREZ
11261	MARIO CEPEDA
11269	RONALD SHEPHERD
11285	JOHN ENGELBRECHT
11315	RAMZI MAHMUD
11349	GRACE EPISCOPAL CHURCH
11463	MICHAEL BLANCHETTE
11467	KAY PALUSH
11469	MICHAEL KELLEY
11471	CALVIN BLANC
	OCCUPANT UNKNOWN
11473	GRETC BAUGH
11480	AUGUST CARBULLIDO
11495	JENNIFER RODRIGUEZ
11531	SHERI MITCHELL
11541	EFRAIN LOPEZ
11641	QUINN ARRINGTON
11650	MORENO VALLEY GRACE LUTHERAN
	SHEPHERD OF THE VALLEY PRE
11673	OCCUPANT UNKNOWN
	SANDOVALS MARKET
11681	ANDY ANCHONDO
11701	JAMES OSTEEN
11725	CLARA DARGITZ
11730	WALLY BURGETT
11734	JOSE GODINEZ
11790	CHURCH OF JESUS CHRIST OF LTR
11846	IRDIA DESAI
11856	IRDIA DESAI
11866	HYON DEVIN
11961	KINDERCARE LEARNING CENTERS
11987	CHARLIE WALL
11991	SAIA AHLOE
12190	AIRBAG SAFETY SOLUTIONS
	ALIE LINN
	ALL ONE HEART
	ANN GRCEVIC
	CATCHING AIR SKATEBOARDS
	CENTRAL VALLEY REAL ESTATE
	COSMOPROF
	DEBRA WILLIAMS
	DISCOUNT CTR
	EDDIE HARRIS
	EL REY MARISCOS
	ELAINA HARTLE
	EMPIRE SCREEN PRINTING
	ERIC SMITH
	ERICK BURTON

PERRIS BLVD 2003 (Cont'd)

12190	EUGENE MC LELIA
	GLORIA TORREZ
	GUY CLARK
	HAIRMASTERS
	HEIDI TYKS
	KIMBERLY TAYLOR
	LA COUNTY ELECTRIC
	LETICIA CORBETT
	LISA STUTSMAN
	MAGIC AUTO GLASS & DETAIL
	MAIL BOXES ETC
	MAURICE VERNON
	NUMBER 1 NAILS
	PAUL UNGER
	RAFAEL CISNEROS
	REGINALD HAYNES
	RHONDA ARNOLD
	ROBERT WHITE
	S MANN
	SHEILA BARKER
	SHIRLEY DAVIS
	SNAPPY LANDSCAPE INC
	TAMBRA SWAFFORD
	TRACY HODGE
	TYRA SHEPPARD
	VALLEY DENTAL
	VIRGINIA REISING
	WARREN HENDERSON
12220	A 23
	ALL NEW MENS WEAR
	ANGEL NAIL
	ASTRO PAGE & CELLULAR
	BABY TOWN
	CAP WORLD
	CHUNGS JEWELRY
	DISCOUNT MART BTY SPLY & LGG
	E HENRYS SPORTS WEAR
	EUN SUNG FASHION CORP
	FASHION DIANA
	FASHION QUEEN
	GEORGINIA JACQUES SPA
	GOLDEN TOWER
	HIGH FIDELITY
	JANSOOZ ALTERATIONS
	JUST BRAIDS
	KS SPORTS
	LETYS HAIR STYLING
	LUCKY SHOES
	MORENO VALLEY DISCOUNT MRKT
	MV AUTO ACSRY STR & ALRM

PERRIS BLVD 2003 (Cont'd)

12220	NED S BEAUTY SUPPLY
	OK SOCKS PLUS
	SHOE TIME
	SHOES WORLD
	SOOKS HOSIERY
	SUN JEWELRY
	SUNGS JEWERLY
	THINMAX
	UHURU DOLLS & FIGUERINES
12240	IVORY HARRIS
	JM WATER TRUCK RENTAL
	KRAGEN AUTO PARTS
	MATRIX DEVELOPMENT
	SAFE YOUTH CTR
12252	HOLLYWOOD VIDEO
	OCCUPANT UNKNOWN
12254	A GONZALEZ
12258	BANTA KAMAY SNDT SYSTM SELF DF
12262	BAO PHAM
	CYNTHIAS HAIR CARE
	HOLLYWOOD HAIR & NAILS
12264	HARRY KARNA
	KARNA HARRY DDS
	PANKAJ NARKHEDE
	SPARKLE FAMILY DENTISTRY
12266	MICHAELS DONUT COFFEE HOUSE
	MICHAELS DONUTS
	SEAN CHHAY
12270	ROSALIO MOLINTA
12274	LA 2 MO VAL
	MOSES AGBOGHIDI
	TUTTI FROOTY
12275	WALGREENS DRUG STORE
12276	FAMILY REALTY
	JOSE CASTANON
12341	INSUNG JUHN
	SUPER TERIYAKI BOWL
12350	BANK OF AMERICA
	DOROTHY FIELDS
12362	ACUPRESSURE MORENO
	OCCUPANT UNKNOWN
12370	COUNTRYWIDE HOME LOANS INC
	MARY DALY
	PARK PLACE REALTY GMAC
12371	OCCUPANT UNKNOWN
12400	OCCUPANT UNKNOWN
	ULTRAMAR
12531	7 ELEVEN FOOD STORES
	WISHVAJITH BANDARANAYAKE
12605	OCCUPANT UNKNOWN

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PERRIS BLVD 2003 (Cont'd)

12605	SAVER CUTS
12607	LEWIS CLEANERS
	NORTHSTAR IMPEX CORP
12615	JUAN POLLO NUMBER
12715	CRAIG CUNNIFF
12725	OCCUPANT UNKNOWN
	ST CHRISTOPHER DENTISTRY
12729	OCCUPANT UNKNOWN
12760	CHARLES KERN
	JAMES BEAN
	JEANEAL KINDER
	KEITH GILES
	KEITH TAITT
	MYRTLE RUMPH
	PATRICK CAMOU
	QIAN WANG
	REBA MARSHALL
	STEPHEN HUNG
	STEVE QUINTERO
	THEO HALLUMS
12773	LEAH BAUTISTA
12775	OCCUPANT UNKNOWN
12777	HOME GALLERY
	VICTORIA MUNIZ
12800	CHARLES BOWER
	DENISE SANIGA
	H TORRES
	PAUL RICHARDS
	SHERRELLE HOWARD
	VANESSA DELEON
12801	SUBANH PHOUTHIRATH
12819	OCCUPANT UNKNOWN
12830	DAN ROTHWELL
	DARLENE CLAYTON
	JESUS ARMENDARIZ
	MARK TURNER
	MICHAEL DUNNING
	PASCAL MANSELL
	RHODA PONDER
	ROBERT MAXWELL
12860	BARBARA BROWN
	BENNIE TRAPP
	DANIEL LAKEY
	ELDEAN IHLE
	MARIA STELTON
	MARIO DUARTE
	OCCUPANT UNKNOWN
12865	JERRY BLANKENSHIP
12875	OCCUPANT UNKNOWN
12900	DAVID CASTILLO

PERRIS BLVD 2003 (Cont'd)

12900	HARRISON KENNETH T DDS MS
	SUNNYMEAD VILLAGE DENTAL GROUP
12981	CREATIVE SRFC FLOOR CVRNG
	DISH NETWRK SLS MERCHANTS SRVC
	ENRIQUE JIMENEZ
	EXPRESS CLERICAL & PRCSNG SRVC
	FARWEST REAL ESTATE
	LEONHARD MARIA INSURANCE
	LOVING OPTIONS
	MAX ALERT SECURITY SYSTEMS
	MORENO ESCROW INC
	SMILE & LEARN AT LOW COST TRFC
13027	AAA MEDICAL CTR
	FAITH SOUTHERN BAPTIST CHURCH
	GREATER FAITH CHRISTIAN FLWSHP
	WOMEN SPEAK OUT FOR JESUS
13057	ABORTION SERVICES
	JOSEPH DURANTE
13117	ADELPHI NURSING AGENCY
	ADLEPHI NURSING AGENCY
	HIGUCHI TAILOR SHOP
	M & M HAIR SALON
	PEDROS TACO SHOP
	VALLEY HEIGHTS MORTGAGE
13121	FRANKS LIQUORS
	MARK BRIDAL & TUXEDO
13141	JUSTINO LEYVA
13143	DONNA REYNOLDS
13151	TORO DEL
13153	OCCUPANT UNKNOWN
13157	GLORIA MELGAR
13161	BIG MAR ENT
	BIG MAR ENTERPRISES
13231	JUST TIRES
	WINSTON TIRE CO
13261	CIRCLE K FOOD STORES
13373	99 CENTS BARGAIN MART
	ALL STAR PIZZA
	CELLULAR NUTRICION WEIGHT
	DNL NTRTNL STORE FOR WIC ONLY
	DYE VERSITY HAIR SALON
	EL MEZQUITE MARISCOS & TACOS
	ESTATE SALES WAREHOUSE
	FAMILY DENTAL CARE
	GHETTO FABULOUS INK
	GLOBAL REALTY
	GREYHOUND BUS LINES
	GUILLERMO NIVEN
	JAZZ ARTS & CRAFTS
	MANILA RANCH

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PERRIS BLVD 2003 (Cont'd)

13373	MENDOZA MEAT MARKET
	MIRIAMS NUTRICION & CNTRL DPS
	MORROWS KICKBOXING
	NEW JUDAH CHRISTIAN FELLOWSHIP
	NIVEN GUILLERMO
	PROGUARD
	RODEO BOOTS
	SAN MARCOS MEAT MARKET
	SQUARE T CONSTRUCTION
	TOTAL TRUST INVESTMENT GROUP
	URGENT MONEY SERVICE
	VALLEY LIQUOR & DELI
13473	BARGAIN FAIR DEPT THRIFT STORE
13608	JORGE BELTRAN
13620	RAMIRO NAVARRO
13816	THRONG THI
13911	BAYSIDE SCHOOL
13945	KFC DINE IN OR CARRY OUT
13949	KENTUCKY FRIED CHICKEN
14700	CHILDTIME CHILDRENS CENTERS
	OCCUPANT UNKNOWN
14719	ANNAMARY YOUNG
14739	WALTER EDWARDS
14740	JOHN HUNSICKER
14890	ANITA BUEGE
	ARTHUR MORALES
	CHARLES RICHARDS
	DALE GLADSTONE
	GERALD CARTER
	ISABEL ALLEN
	J JONES
	JUNE MACKEY
	KENNETH NOWAK
	LOLA CONWAY
	MARIA ALMARAZ
	MIKE GARCIA
	NORMA BADER
	OCCUPANT UNKNOWN
	PATRICIA BERNAL
	PATRICIA DAVIS
	PAUL BARGER
	RENEE SCOTT
	RICHARD SHORTELL
	ROBERT DAWSON
	ROBERT GAUTHIER
	ROBERT SANDWICK
	RUSSELL HAGLE
	SKY TRAILS MOBILE VILLAGE
14910	ECSTASY HAIR DESIGNS
	MR DONUT

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PERRIS BLVD 2003 (Cont'd)

14910	PRO TOP NAILS
	THAI DINETTE RESTAURANT
14920	CARDENASSOCKS & LINGERIES
	EXUBRANTE
	HI TECH WIRELESS
	J JEWELRY
	JARAMILLO CAPS & MORE
	LA LA LANDS
	MIMIS ELECTRONICS
	NYYLAS AFRICAN BOUTIQUE
	RANGEL HANDBAGS & ACCESSORIES
	RICKS ACCESORIES
	ROMEROS TENNIS SHOES
	THE 3 BZ
14930	ADRIAN MONTOYA
	DOWNEY SAVINGS & LOAN
	DOWNEY SVNG & LOAN LCTD INSD
	HUGHES MARKETS MORENO VALLEY
	RALPHS GROCERY CO
14940	DIPTI PATEL
14950	OCCUPANT UNKNOWN
	STEERN STEIN RESTAURANT
15310	JR MARKET
	OCCUPANT UNKNOWN
15320	ALEJANDRA ORTEGA
	AURELIO VASQUEZ
	MARITZA DEROCA
	MIGUEL HERNANDEZ
15332	ANSELMO REYES
	CARMEN ORTEGA
	MARTHA PRECIADO
15344	ELISA ALVAREZ
	JESSICA RODRIGUEZ
	TOMAS BALCAZAR
15360	DAVID DAVIS
	EMERY CANTRELL
	SANTIAGO ALMAZAN
15384	ARACELI CALDERON
	KELLY SMITH
15394	EFFIE BARNEY
	JOANNA PARRISH
	LOUISE AMOS
15414	ALVIN PIERRE
	KEMEO MCCLENDON
	LANESHIA BROWN
15426	KERON SYKES
	MAY ZBIKOWSKI
15795	ORVAL MOSLEY
	RAINBOW RANCH
15928	ADAM & EVAS STYLISTS

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PERRIS BLVD 2003 (Cont'd)

15928	ALENE WILLIAMS
	ANGELA HERBEST
	BENJAMIN ESCOBAR
	DELORES TRAVIS
	DENISE MOORE
	EL RANCHO MEXICAN RESTAURANT
	ESTHUS LOFTON
	FLAGSTAFF TRADERS
	FREDERICK PEEVY
	HEATHER GUZMAN
	JAMES KING
	MARCELINO PENA
	MARGIE GARCIA
	MARY RADE
	MIKE MUNOZ
	MYRTLE WINANS
	PERRIS DONUT & BURGER SHOP
	POSTAL ETC
	REBECCA LONA
	ROBERTA BAILEY
	WEST GATE LIQUOR
15952	A 1 PAYDAY ADVANCE
	JACKI MATULEWICZ
	JACQUELINE MACDONALD
	LT NAIL
	MATULEWICZ JACKI INSURANCE
	MD INVESTMENTS
15974	ESP VIDEO & ELECTRONICS
	ORTIZ BEAUTY SALON
	PIZZA HUT
	ROLLING RIDGE CLEANERS
15980	OCCUPANT UNKNOWN
	SHELL FOOD MART INC
	WESTGATE SHELL
16466	OCCUPANT UNKNOWN
	SALIB ENTERPRISE INC
16641	EVA LEE
	KEN LEE SERVICE SUPPLY INC
16659	LARRY BRAATEN
16675	KEN LEE
17041	SHIRLEY ARNOLD
17111	HONG WEN

ALESSANDRO BLVD 1999

21801	ARTS HOME FURNISHINGS VASES LAMPS & ETC
	IRON IMAGE
21805	ROGERS INSTANT SHOE REPAIR
21820	LESSAS AUTO PARTS
21837	VFW CLUB
21840	CHARLEBOIS LIQUORS
21866	KENDALLS AUTOMOTIVE SERVICE
21872	CHANEL DANIELS
	REBECA MARIN
21874	ALVIN RITCHIE
	OCCUPANT UNKNOWN
21876	FREDDY CEDENO
	OCCUPANT UNKNOWN
21878	OCCUPANT UNKNOWN
	WEST HOUSTON
21891	BALDWINS AUTOMOTIVE SERVICE
	BALDWINS TOWING & AUTOMOTIVE
21894	OCCUPANT UNKNOWN
	TONY SIMENTAL
21921	GORIN MARK & ASSOCIATES AUCTIONEERS
	T E C STORAGE
	TRACTORLAND EQUIPMENT COMPANY
	TRACTORLAND INCORPORATED FROM RIVERSIDE TELEPHONES CALL
21924	JOSE ACEVEDO
21926	YOUSEF FARHA
21932	ELIZABETH DOMINGUEZ
	OCCUPANT UNKNOWN
21941	ALESSANDRO MINI STORAGE
	STONE CRAFTERS
21942	DARLENE ZAMARRIPA
	LUCIA BRAN
	OSTIONERIYA MAYA
21944	OCCUPANT UNKNOWN
	ROBERTO RIVERA
22018	HECTOR ARIAS
22030	OCCUPANT UNKNOWN
22042	JENNIFER ESPARZA
	OCCUPANT UNKNOWN
22058	OCCUPANT UNKNOWN
22066	OCCUPANT UNKNOWN
22088	OCCUPANT UNKNOWN
22101	SMART TRUCK SYSTEMS
22142	EDGEMONT COIN WASH
22144	NS ENTERPRISES
22156	CALIFORNIA BURGER
22180	ISMAEL ULLOA
22184	JESUS CONTRERAS
	OCCUPANT UNKNOWN
22201	SUPREME TRUCK BODIES OF CALIF
22224	JOSE HERNANDEZ

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ALESSANDRO BLVD 1999 (Cont'd)

22308	JOES ITALIAN RESTAURANT
22314	PARKS ELECTRIC
22400	ALOHA CHEM DRY
	MARVAC WHEREHOUSE
22405	ADVANCED AUTO BODY & FRAME
	TRINITY AUTOMOTIVE
22425	GENERAL AUTO REPAIRS
	HOMAYOON SHAMOLIAN
	JOSE CERVANTES
	LOS LOCOS STEREOS ALARMS INSTALLATION & DETAILING
22445	VAL MORENO
22456	DRAGON HOUSE
22484	RAINBOW PERFORMING ARTS GROUP
22485	JACK IN THE BOX
22510	MORENO VALLEY TIRE
	TIRE PROS
22512	MENOS STEREO
22570	A WALKERS CARBURETORS & POLISHING
22586	SUMMERHOUSE THE
22588	GARYS BARBER SHOP
22592	SUBURBAN CLEANERS
22594	ROYS LIQUOR
22600	MEDI CAL TRANSIT
22608	GOLDENS ELECTRONIC REPAIR
22612	TRINITY BAPTIST CHURCH
22614	HIGHER LIFE CHRISTIAN CENTER
22700	A AMERICAN SELF STORAGE
	HAIR CENTER THE
	HEALTHY DISTRIBUTORS
	KLEITZ TAX SERVICE
	LABOR READY
	SPANKYS CUSTOM MOTOR SPORTS
	U HAUL COMPANY INDEPENDENT DEALERS
	VICTORS TUXEDOS
22720	GORDOS
22740	CAR RENTAL & SALES
	MOUNTAIN MAGIC MOTORS
	MOUNTAIN MAGIC MOTORS CAR RENTALS
22770	JUAN GUTIERREZ
	RAMONA SANCHEZ
22790	CHECK CASHING OF MORENO VALLEY
22810	CITRUS BELT TAX SERVICE
	CURRIER & SANCHEZ CHIROPRACTIC
	SANCHEZ ROBERT
22862	COUNTRY LIQUOR COMPANY
22876	8 HOUR TAX SERVICE
	CHECKS CASHED MONEY ORDERS EAGLES
	EAGLES CHECKS CASHED MONEY ORDERS
	EXPRESSIONS INTERNATL
	FAST PAGE

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ALESSANDRO BLVD 1999 (Cont'd)

22876	MORENO VALLEY CHECK CASHING
	TOO SHARP STYLING SALON
22886	ADRIAN NERI
	CARQUEST
	CHASE AUTO REPAIR
	HAS AUTOMOTIVE WAREHOUSE AND MACHINE
	HEACOCK AUTO SUPPLY
22920	ASIAN IMPORTS
	KAYS HAIRSTYLING
	QUINN AFRICAN METHODIST EPISCOPAL CHURCH
	RIVER KWAI THAI CUISINE
22940	MORENO VALLEY PODIATRY GROUP AMBULATORY SURGERY CENTER
22960	ELKS LODGE OF MORENO VALLEY NO 2697
23080	FRIENDSHIP CHRISTIAN FELLOWSHIP CHURCH
	PLAZA MARKET & DELI
23100	A 1 CLEANERS
	BOTTOM GUN CAFE
	DON JOSE MEXICAN RESTAURANT
	EBONY HAIR
	PLAZA DEL SOL HAND CAR WASH
	STUDIO B
23580	POSTAL SERVICE
23581	MOTEL 7
23615	ALESSANDRO HAND CAR WASH
	EZ LUBE
	JAMAL SADIK
	MAGIC LUBE
	MAGIC TUNE
23750	24 HOUR FITNESS
	99 CLEANERS
	B KING
	BEN TURPIN HEARING AIDS
	CADILLAC BOWL
	CLUB CADILLAC
	COST CUTTERS
	FANCY TAN
	GOLDEN OX BURGERS
	HOT SPRINGS PORTABLE SPAS
	IN & OUT MARKET & LIQUOR
	INLAND EMPIRE HOT SPRING SPAS
	INSPIRATIONS PERFORMING ARTS CENTER
	L & M BOWLING EQUIPMENT
	MENDYK CHIROPRACTIC
	MORENO VALLEY HEARING AIDS
	NUTRI SYSTEM WEIGHT LOSS CENTER
	RIVER KWAI THAI CUISINE
	SHEAR CUTS
	SISLO ROSE MARIE
	SIZZLER RESTAURANTS
	SUN VALLEY REAL ESTATE

ALESSANDRO BLVD 1999 (Cont'd)

23750	SUPERIOR NAILS BY KIM
	SURF CITY SQUEEZE
	TUTOR TIME CHILD CARE LEARNING CENTER
	VALLEY CHIROPRACTIC
	WIENERSCHNITZEL NO 561
23880	TACO BELL NO 2858
23890	DIZZY DANIS CLEANING SERVICE
	EXPERT TIRE AND SERVICE CENTERS INCORPORATED
	FAIRCHILD CHIROPRACTIC CLINIC
	HOLY SPIRIT DURABLE MEDICAL EQUIPMENT
	MORENO VALLEY COMMERCE CENTER
	THE KOLL COMPANY
	TOTAL SECURITY SYSTEMS
23900	UNLIMITED QUEST INCORPORATED
23910	C & W TV
	FANCY STITCHIN
	JAVIER JIMENEZ
	LEONARDS CARPET
23920	D & C AUTO REPAIR
	EXPERT TIRE AND SERVICE CENTERS INCORPORATED
	GOODYEAR TIRE DLRS EXPERT TIRE AND SERVICE CENTERS INCORPORA
	JAPANESE CARS UNLIMITED
	LEES AUTO REPAIR
	MORENO VALLEY TRANSMISSIONS
	SUPERSTORES
	TIRE WHEEL & BRAKE SUPERSTORES
23932	ALESSANDRO ANIMAL HOSPITAL
	MAGANA AUTO UPHOLSTERY
	MULTI TELECOM INCORPORATED
23942	B & F AUTO REPAIR
	B & F MOBIL AUTO REPAIR
	PRAISE CHAPEL CHRISTIAN FELLOWSHIP
23952	AUTO SERVICE CLUB
	CLUB AUTO SALES
23962	AMERICAN QUICK PRINTING
	BANIG RESTAURANT FILIPINO & ORIENTAL
	CLASSY BS LIQUOR DELI
	ERMA FULCHER
	FUN 4 ALL PARTYS
	MARIA BUENO
	PHIL AM ENTERPRISES
	PIZZA ITALIA & SUBS
	SUPER V 2
	VIDEO TIME
24021	BRIAN HOMES
	DESIGNER NAILS
	G & M BEAUTY SUPPLY & SALON
	HIGH 9
	HOT SHOTS BILLIARDS & SPORTS BAR
	I DO WEDDINGS

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ALESSANDRO BLVD 1999 (Cont'd)

24021	KRAGEN AUTO PARTS
	MR ANTHONYS
	MR ANTHONYS BEAUTY SALON
	OLD WEST MERCANTILE COMPANY
	PIZZA HUT
	SOUTH POINTE CENTER LIMITED
	US TROPHY
24050	GAME SPOT
	INSTANT CASH
	KHALED NOOR
	PATTAYA PALACE
	PERFECT TOUCH BEAUTY SALON
	STYLIST VI SMITH
	TANMAKERS TANNING SALON
24100	LITTLE CAESARS PIZZA NO 5
	MUFFIN & DOUGHNUT
24150	A & S MARKET
	APPLE FLORIST
	EL CHALAN PERUVIAN RESTAURANT
	INK AHOLICS TATTOO STUDIO
	KARENS GROOMING SHOPPE
	PRECISION TAX & ACCOUNTING SERVICES
	T S SINFUL PRODUCTIONS
24440	MCDONALDS RESTAURANTS
	MOBIL OIL
	RALPHS GROCERY COMPANY
	TONYS MOBIL
24481	CHIEF AUTO PARTS
24491	A B C FOOD STORE
24515	DR JOE FIKTARZ CHILDRENS DENTISTRY
	HOME SAVINGS & LOAN ASSOCIATE
	HOUSEHOLD BANK F S B
	SUNNYMEAD VILLAGE DENTAL GROUP
	VANDYKE TRISH DDS
24525	ANIMAL ELEGANCE
	BOYLAN RICHARD N RIVERSIDE MEDICAL CLINIC
	FIRST PACIFIC NATIONAL BANK
	HAMOUI TAHA RIVERSIDE MEDICAL CLINIC
	PAYLESS SHOESOURCE
	VIDEO LAND MV
24541	MORENO FAMILY DONUTS
24545	99 CENT WORLD
24551	A TRAVEL TEAM
24553	BOUTIQUE THE
24555	COPY CENTER THE
24559	PRESS ENTERPRISE THE NEWSPA
	RIVERSIDE CNTY OF CONTD OFFICE OF EDUCATION CONTD
24595	STATER BROTHERS MARKET
24643	RAINBOW GIFT
24645	MASTER JEWELERS

ALESSANDRO BLVD 1999 (Cont'd)

24647 BLOCK H & R LOCAL OFFICES (CONTD)
24649 KINGS BEAUTY SUPPLY
24655 PAPA VICS BURGERS & MORE
SUNNYMEAD BURGERS NO 2
24661 SUPERCUTS
24673 FIRESTONE TIRE & SERVICE CENTERS
24681 M ERHARDT
24685 BEST FURNITURE & APPLIANCES
24691 CHINA RESTAURANT
24695 STAR CLEANERS
24697 VOGUE NAILS
24699 BARBER SHOP THE
24705 BLOCK H & R
24709 C B PAWN
PAGE PROS
24725 CACHANILLA RECORDS
FAMILY TOYS
HARVEST PAGING
KIMS JEWELRY
24735 VALENTINOS PIZZA
24741 ELEGANTE BEAUTY COLLEGE
24757 3 DS SPORTSCARDS
BASKIN ROBBINS 31 FLAVORS ICE CREAM STORES
WHITES BIKES
ZAPATAS
24762 DAVID WADE
24775 MORENO 4 CINEMAS
24786 JIMMY ROOK
24798 FABIOLA CORDERO
24805 CLINICAL SYSTEMS & SERVICES
CLUB RENDEZVOUS
HOUSE OF PRAISE PRODUCTION & DANCE THEATER INCORPORATED
LABODEGA MARKET
LANUEVA RONDA NO 2 NIGHT CLUB
LAUNDERLAND
MARISCORONA SEAFOOD MARKET & RESTAURANT
SANTA MEDICAL CLINIC
24810 MARIO NAVA
24825 EL RANCHITO TACO SHOP
GREGORYS
MAIL BOXES & MORE
ORIO CLEANERS
PAGERS PLUS
24831 SAVE A LOT
24834 VICENTE BAUTISTA
24853 AMERICAS HAIR STUDIO
BLOCKBUSTER VIDEO
CHINA PALACE
HA PHO
HEYKES JAMES H MD RIVERSIDE MEDICAL CLINIC

ALESSANDRO BLVD 1999 (Cont'd)

24853	LAWRENCE WILLIAM MD RIVERSIDE MEDICAL CLINIC
	RANCHO FOREIGN CAR PARTS
24870	ED ELIAS
	F E BERNARD HYPNO THERAPY
24875	ALESSANDRO OPTOMETRIC VISION CENTER
	FAMILY AFFAIR HAIR DESIGN MORENO VALLEY
	FASHION FOR LESS
	MORENO VALLEY FURNITURE
	MORENO VALLEY VISION CENTER
	SALLY BEAUTY SUPPLY
	TRUE WONDER
	VISION CENTER
24910	LEONARDO GIRON
24990	FASHION NAILS
	HAIR ODYSSEY 2000
	ODYSSEY HAIR & NAILS
	P K PURE DRINKING WATER
	PIONEER CHECK CASHING
	POWER PAGE COMMUNICATIONS
	SUBWAY
	T & C VCR TV REPAIR
24991	E & L FLOWERS
	RITE AID PHARMACIES
	VANS TENNIS SHOES
	VENUS BURGERS
24992	CALIF SCHOOL EMPLOYEES ASSOCIATION MORENO VALLEY CHAPTER 410
	CHINESE MARKET
	DOMINOS PIZZA
	GOLDEN JEWELRY
	P & G BURGERS
	R PERRY KUNG FU
25010	KRAGEN AUTO PARTS MORENO VALLEY
25011	T & S AUTOMOTIVE
	WALGREENS DRUG STORE
25019	ELECTRO SERVICE MARTINEZ
25020	MORENO VALLEY UNOCAL 76
25024	DEL TACO
25025	SUPER V
25027	MORENO VALLEY MARKET
25030	A AVENUE NINE HAIR DESIGN
	ALESSANDRO FAMILY DENTISTRY
	ANIMAL MEDICAL CENTER OF MORENO VALLEY
	BEAR VALLEY CLEANERS
	CRISTYS DONUT SHOP
	EMPIRE PAGING
	GOLDEN ESTATE REALTY
	TAX 4 LESS
	USA CHECKS CASHED
	VIDEO WARD
	WESTERN UN CONTD TO PICK UP OR SEND MNY TRANSFERS

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ALESSANDRO BLVD 1999 (Cont'd)

25030	YANG STEPHEN S DDS
25035	EVANS ENGRAVING & JEWELERS
25037	MORENO VALLEY TATTOO
25045	WORD OF LIFE CHRISTIAN CENTER APOSTOLIC CHURCH
25050	LUCKY STORES
25070	LONGS DRUG STORES MORENO VALLEY
25100	A 1 COIN LAUNDROMAT
	LORENZOS PIZZA NO 2
	MATSURI JAPANESE RESTAURANT
25251	LILLIE BURTON
	MASUK RAYHAN
	R MCEROY
	TARAL PATEL
	Y GORDAN
25263	ANA ESCALERA
	ANGELICA RAMIREZ
	CONSUELO SALAS
	DANIEL BOWSER
	ERIC JOHNSON
	FELIX GALAN
	FELIX VEGA
	ILYANA GAUCIN
	JAVIER LUNA
	JERRY LEWIS
	JOHNNY HALE
	L AYERS
	MARIA AVELAR
	MARYLOU GUERRERO
	PEGGY WALSTON
	YVETH MOLINA
	YVONNE LOPEZ
25275	ARTESIA OLIVER
	BONNIE JOHNSON
	CHRISTOPHER COOKS
	DELMER DAVILA
	DEMIAN MOORE
	DOTTIE BROWN
	E JOHNSON
	JEANINE HOLLEY
	JOSE LARA
	JR LOWERS
	KELLIE LOZANO
	PETER BOCTOR
25287	ALBERTO TEJEDA
	FELIPE MENDEZ
	ISMAEL YEP
	JERUERU LOGA
	LANCE NELSON
	MELINDA WALLS
	MILTON STRICKLAND

ALESSANDRO BLVD 1999 (Cont'd)

25287	S KINER
25299	J DOMINGUEZ
	JUSTIN MORENO
	KATRINA RUSSELL
	SEAN LOMAX
25311	ANNA LUNA
	DAVID CASTILLO
	HORTENCIA HORTA
	JEFFREY JOHNSON
	JOYALE GILBEAUX
	L EDWARDS
	NICHOLE HARRIS
	RICARDO RUIZ
	RINISHA MEDLOCK
	SANKISTA WIMBERLY
	VALENTAI GRINNER
25323	LAVONNE JOHNSON
	RHIANA ARMENTA
	VALERE SHAW
	VELZEDA NELMS
	YOKO ECK
25347	ADRIANA CERVANTES
	ARASELI OROZCO
	CHRISTINA GOODLOE
	DENISE BARRON
	DEWAYNE TYARS
	E LEE
	ERIKA HENDERSON
	JULLIAN HUGHES
	KEISHAUNDA LYONS
	LANETTE MEARS
	LONNIE ORTIZ
	PEARL TAYLOR
	ROCIO MERCADO
	RYAN HARBERT
	SOCORRO CASTILLO
	WILLA CANNON
25359	AMBER REILLY
	G ORNELAS
	MARTIN VALENCIA
	OLGA TAPIA
	R BROWN
	SAMI FAKHREDDIN
	T FOUCHE
25371	DAJUAN WILLIAMS
	DEDRICK FOSTER
	DIANA LEE
	GERALDINE SMITH
	GERARDO RAMERIZ
	MARILYN CANARIA

ALESSANDRO BLVD 1999 (Cont'd)

25371	STEVEN KING
25383	ALEJANDRO HERNANDEZ
	CASANDRA LEE
	DANIEL DELAPENA
	JULIO IRIBE
	LAQUITA BROWNING
	LAURA DITO
	LAWANDA STOVALL
	LISA CRUZ
	ROSLAND BAILEY
25395	ANTHONY MITCHELL
	DANIELLE LEFRIDGE
	JAMIE SHELDON
	LYNETTE CALVERLEY
	MELISSA MURATALLA
	MICHAEL REESE
	SHAMBRIA SHAW
	SHAREE SMALLING
	WILLIE PETERSON
25400	ALESSANDRO CHIROPRACTIC
	OCCUPANT UNKNOWN
25407	ALFONSO VARGAS
	DAE AHN
	G GARRETT
	LAWRENCE CAPONPON
	MIGUEL ESPARZA
	MOMHAMMAD SAMYEE
	OSBALDO CASTRO
	RASHONE MOROW
25419	ANTONIO CAMPOS
	C FELIX
	CHRIS CONNERS
	K GARCIA
	LUZ SANDOVAL
	MARIA CLARK
	MARINELLE DIODOS
	STEPHEN WINTER
	STEVEN ALVAREZ
	TAMMY MENDOZA
	TERRANCE BROWN
25431	AMANDA TURNER
	ANGELA PRICE
	APRIL CORRALES
	BESSIE BARNES
	BETTY CHAMBERS
	CORRINA GAMBOA
	JACKY OLIVAS
	JR THOMAS
	MARC STUART
	MARILYN GANN

ALESSANDRO BLVD 1999 (Cont'd)

25431	RICH MENDOZA
	RONALD DAVIS
	T MILLER
	WANDA BEAN
25445	CELINDABET FLORES
	JACQUELINE CASTELLANOS
	JESSUS FLORES
25480	MORENO VALLEY LIBRARY
	RIVERSIDE COUNTY OF LIBRARIES
25539	BORIS PIRIH
	OCCUPANT UNKNOWN
25560	MORENO VALLEY CHRISTIAN FELLOWSHIP
	MORENO VALLEY CHRISTIAN PRESCHOOL
	MORENO VALLEY CHRISTIAN SCHOOLS
25631	NGOC NGUYEN
	RAFAEL ESPARZA
25634	MORENO VALLEY UNIFIED SCHOOL DISTRICT
25652	ALLSTATE INSURANCE COMPANIES SALES OFFICES
	AMERICOMP SOLUTIONS INCORPORATED
	JOHNSTON TERRY INS
	OCCUPANT UNKNOWN
25681	ABEL GONZALEZ
	ADELITA TALAMANTES
	ADOLFO OAJACA
	ALICIA AVALOS
	ALISHA GRUALVA
	ARACELY RIOS
	BENITO PEREZ
	BERNARDO NASSO
	BRIAN COMPTON
	CEASAR BARRERA
	CHARLES BRADY
	CHARLOTTE GOODSON
	CHUONG CAO
	CRUZ INIGUEZ
	DANTE ASCUETA
	DELGADO PEREZ
	DORLEEN HELMENDACH
	EDDIE GREER
	EDITH BEEBE
	ELIZABETH OJEDA
	EUSEBIO DIAZ
	F REBOLLEDO
	GILBERTO DELEON
	GLORIA GUTIERREZ
	GLORIA MUNOZ
	GUADALUPE ROSA
	HAMMER MARSHALL
	HAZEL MORAN
	HECTOR GARCIA

ALESSANDRO BLVD 1999 (Cont'd)

25681 HERMAN RODEN
ISABEL CERRO
IVET BARERA
JAMES CANTRELL
JAVIER HINNAOUI
JEANIE WOMACK
JENNIFER MILLER
JENNIFER TORRES
JENNY GONZALEZ
JERONIMO TELAMANTES
JESUS VALDOVINOS
JISELLA OLIVOS
JOSE REYES
JOSE RODRIGUEZ
JUAN AYALA
JUAN BALDOVINOS
JUAN CASTELLANOS
JULIO ESPINOZA
KENNETH BROWN
KRISTEN VELASQUEZ
LEON HITCHLER
LUCIA FIGUEROA
M RAMIREZ
MARIA ALANIS
MARIA CAMPOS
MARIA CRUZ
MARIA FLORES
MARIA GONZALES
MARIA VEGA
MARIANA ROCHA
MARIO ANGLES
MARIO RUBALCABA
MARITZA ADAME
MARSHALL HAMMER
MARY CLARK
MICHAEL SPRAGUE
MIGUEL HERNANDEZ
MY NGUYEN
MYRNA ALBA
NEW HORIZON TRAILER VILLAGE
OMER COMPUTING
PATY OLSEN
PEGGY LAFON
RAMON HERNANDEZ
RENATO SANTIAGO
RICHARD EDWARDS
RUBEN BERNAL
SANDRA HOLT
SERGIO CORONA
SERGIO VAZQUEZ

ALESSANDRO BLVD 1999 (Cont'd)

25681	SYLVIA ROMERO
	TIMOTHY MURPHY
	TRUDY OHARE
	WILLIAM JIMENEZ
	YOLANDA PANEILINAN
25791	SALINA GEORGE
25793	LAUREL PATTERSON
25873	VALLEY TIMES THE
25876	SU WU
26755	MORENO CHRISTIAN SCHOOL
	MORENO COMMUNITY CHURCH
	VALLEY CHRISTIAN ACADEMY
26871	ALBERTO EQUIHUA
	ANNA JONES
	ARTHUR ALBERTS
	BELTRAN VALLE
	BENJAMIN GARCIA
	BENJAMIN RUIZ
	BLANCA MOYA
	BONNIE GRANADOS
	BUD SIZELOVE
	C ANDERSON
	CAROL ALLEN
	CAROL PURCELL
	CECELIA TORRES
	CESAR CANOVAS
	COUNTRY SQUIRE MOBILE ESTATES
	DANIEL ALLPHIN
	DEBRA HARDER
	EDITH MEDINA
	ELIZABETH CAZARES
	ELIZABETH JACOBSON
	ERICA BALAZS
	ERIKA LACAROS
	FOREST SMYTH
	FRANCISCA AGUAS
	GEORGE STEINBACHER
	GERALD ROUNDSLEY
	GUILLERMO ZAMBRANO
	HAROLD OBAK
	HENRY SANCHEZ
	HERBERT BUNNING
	HOWARD ASHLEY
	JAMES LEONARD
	JAMES MOFFITT
	JANE SCHIAPPA
	JASMIN JACOBO
	JEAN ELLISON
	JOAQUIN RICO
	JOHN BAKER

ALESSANDRO BLVD 1999 (Cont'd)

26871	JOHN JIMENEZ
	JOHN SMAW
	JOLYNN ROEPKE
	JOSEPH ALEJANDRE
	JOYCE BURTON
	KATUSKA LECAROS
	KENNETH HOOPER
	LEANNA WATTS
	LETICIA GUTIERREZ
	LIEU TRAN
	LINDA KAY
	LOREN WEBSTER
	LORETO BELTRAN
	MABLE KNIGHT
	MARTHA SPENCER
	MARY JACOBS
	MARY NIXON
	MAY AVANT
	MIGUEL GOMEZ
	MILTON SOLORZANO
	MOBILE MARINE
	MURIEL STICE
	MYRTLE WILLIAMS
	NANCY PORTER
	PENNY MOYER
	PERSONS BEVERLY
	PRISCILLA CLARK
	RAY HERRERA
	REBECCA BULLOCK
	RICHARD TOTH
	ROBERT CROCI
	ROBERTO EUCEDA
	ROBIN MENDEZ
	RON LASHWAY
	RONALD WILSON
	ROSA PENA
	SINECIO MCCOLL
	STEVEN CARDIN
	SUSAN STOWELL
	SUZANNA VACA
	THOMAS BROWN
	TRANG TRAN
	WENDY WALTER
	WILLIAM MARKS
27046	JEHOVAHS WITNESSES MORENO VALLEY
27390	DENNIS POUNDS
28119	DEVILLE MURPHY
28135	LINDA OGRATTIS
	OCCUPANT UNKNOWN
28161	ARTURO HUASTE

ALESSANDRO BLVD 1999 (Cont'd)

28163	SHARLENE WILLIAMS
28165	OCCUPANT UNKNOWN
28167	JAMES PETERMAN
28177	CARLOS SANTIAGO
28189	JEFFREY WOOD
28196	PERRY MAY
28221	OCCUPANT UNKNOWN
28235	CHARLES WHEAT
28344	BRENDAN GOULD
28350	OCCUPANT UNKNOWN
28356	OCCUPANT UNKNOWN
28412	JEFF MAY
28432	PHYLLIS FRANKLIN
28446	RAUL SERRANO
28460	YESENIA SANCHEZ
28470	STEVEN DUNCAN
28472	LUIS MAYA
	SANTIAGO GALICIA
28549	JOYCE MARTIN
28576	JEREMY DEEN
28580	SUZANNE COLLINS
28594	OCCUPANT UNKNOWN
28612	JOSIE POLANCO
28614	RICHARD VILLA
28640	MAURICIO VELASQUEZ
28671	MICHAEL PUTNAM
28700	ERIC SEGAL
28720	OCCUPANT UNKNOWN
	STANTON HERPICK
28741	DON NICHOLSON
28765	ELIUTH BANUELOS
28791	OCCUPANT UNKNOWN
	ROSA TELAYO
28819	PATRICK VALDEZ
28820	OCCUPANT UNKNOWN
28825	BRYAN GLOVER
	OCCUPANT UNKNOWN
28836	OCCUPANT UNKNOWN
28850	JOHN DAHL
	OCCUPANT UNKNOWN
28851	NINA ALVAREZ
28857	JORDAN COVEY
28873	CHARLES MACIEL
	NAOMI THOMAS
28882	GONZALO SARABIA
	OCCUPANT UNKNOWN
28900	LESLEY TAVERNA
	OCCUPANT UNKNOWN
28910	JOSEPH HAYHURST
	OCCUPANT UNKNOWN

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ALESSANDRO BLVD 1999 (Cont'd)

28929	MARISA GONZALEZ
28930	EDWARD KNIGHT
	OCCUPANT UNKNOWN
28949	LAVERNE ROWAN
28970	OCCUPANT UNKNOWN
28973	MARIA CLARKSON
	OCCUPANT UNKNOWN
29010	CHANN CHAU
29022	OCCUPANT UNKNOWN
29030	MARIA TRUXEL
29050	JOSE GARCIA
	OCCUPANT UNKNOWN
29062	DAVID FREDERICK
29075	RICK IRVINE
29076	OCCUPANT UNKNOWN
29086	BRYAN MONEY
	OCCUPANT UNKNOWN
29092	OCCUPANT UNKNOWN
29095	OCCUPANT UNKNOWN
29105	ROBERT PEREZ
29110	PATRICK BURKE
29124	JAMES BRYANT
29135	JUSTIN INGLETT
29144	EDWARD DYKSTRA
29166	PETER AMATULLI
29175	BRENDA DEWEES
29180	DAVID FRANKLIN
29205	E LEON
29210	JACK DANIELS
29220	GOLDEN STATE ROOFING
29230	OCCUPANT UNKNOWN
29240	MIGUEL VALENCIA
30755	MEDIA IN MOTION

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PERRIS BLVD 1999

11010	JOHN JONES
11261	MARIO CEPEDA
11269	RONALD SHEPHERD
11285	BARRY ENGELMEIER
11315	RAMZI MAHMUD
11349	GRACE EPISCOPAL CHURCH
11463	OCCUPANT UNKNOWN
11469	ALEX BLASINGAME
	OCCUPANT UNKNOWN
11471	MARK ALDACO
	OCCUPANT UNKNOWN
11473	OCCUPANT UNKNOWN
	ROBERT HARRIS
11480	AUGUST CARBULLIDO
11495	GONZALO MENDEZ
11531	ROGELIO HERNANDEZ
11541	EFRAIN LOPEZ
11641	LARRY BENNETT
11650	SHEPHERD OF THE VALLEY LUTHERAN CHURCH
	SHEPHERD OF THE VALLEY PRE SCHOOL
11673	OCCUPANT UNKNOWN
	VAN NGO
11681	ANDY ANCHONDO
11725	CINDY AGUIAR
11730	CHERYL ACKERMAN
11734	JOSE GODINEZ
11790	CHURCH OF JESUS CHRIST OF LTTR DAY SAINTS MORENO V
11846	IRDIA DESAI
11856	JOHN ESTEL
	QUALITY SIGNS
11866	HONG HAN
11961	KINDERCARE LEARNING CENTERS
11987	CHARLIE WALL
12190	ANTHONY WOODARD
	CHINA KITCHEN
	COST CUTTERS
	DANIEL GLENN
	EMPIRE VIDEO
	ERIC SMITH
	ERICKA HERRERA
	ERNEST BELL
	JOSE LIMA
	JOYCE BARKSDALE
	KIM BAILEY
	LATASHA CHALMERS
	MAMA PEARLS RESTAURANT
	MAURICE VERNON
	MICHAEL LANDRUM
	NEW YORK DELI & CATERING
	NORA PINEDA

PERRIS BLVD 1999 (Cont'd)

12190	NUMBER 1 NAILS
	ROUND TABLE PIZZA
	ROUND TABLE PIZZA PERRIS
	SAMS QUALITY CLEANERS
	SASSY SHEARS
	STEPHEN RUIZ
	VIRIS FASHION
12200	FOOD 4 LESS
12210	CAMPUS WEAR
12220	ANGEL NAIL
	ASTRO PAGE & CELLULAR
	BABY TOWN
	CAP WORLD
	HIGH FIDELITY
	K S SPORTS
	LEE EUN
	LUCKY SHOES
	M V AUTO ACCESSORIES STEREOS & ALARMS
	MORENO VALLEY DISCOUNT MART
	NEDS BEAUTY SUPPLY
	NETWORK MARKETING COMPANY LIMITED
	NEW FASHION
	PERRIS DISCOUNT FASHION MART
	SHOES WORLD
	SOOKS HOSIERY
	STAR JEWELRY
	THINMAX
	YOUNGS JEWELRY
12240	MAIL BOXES ETC USA
	MEMBERSHIP AND INSURANCE SALES & SERVICES CALL
	WESTERN UN CONTD TO PICK UP OR SEND MNY TRANSFERS
12252	HOLLYWOOD VIDEO
12258	BANTA KAMAY SANDATA SYSTEM SELF DEFENSE ARTS
12262	HOLLYWOOD HAIR & NAILS
12264	KARNA HARRY DDS
	SPARKLE FAMILY DENTISTRY
12266	Z & M DONUTS
12268	ITS ABOUT TIME
12270	TEACHERS PET EDUCATIONAL SUPPLIES
12274	BONA REAL ESTATE NO 1
	L A 2 MO VAL
12278	2 HOUR MORENO VALLEY CLEANERS
12280	SAV ON DRUGS MORENO VALLEY
12341	SUPER TERIYAKI BOWL
12370	BETTER HOMES & GARDENS PARK PLACE REALTY
	PARK PLACE REALTY BETTER HOMES & GARDENS
12371	MCDONALDS RESTAURANTS
12380	HERBERT MERCER
12400	GAS 4 LESS
12531	7 ELEVEN FOOD STORES

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PERRIS BLVD 1999 (Cont'd)

12601	CHIEF AUTO PARTS
12605	SAVER CUTS
12607	LEWIS CLEANERS
12615	LITTLE CAESARS PIZZA
12630	MARGARITAS MEXICAN FOOD
12656	BISHOPS CARPET & UPHOLSTERY CLEANING & EMERGENCY WATER RES
12715	CRAIG CUNNIFF
12729	NICOLE ROBINSON
	OCCUPANT UNKNOWN
12760	ADRIANA VASQUEZ
	EVAN EBRAHIMI
	JEANEAL KINDER
	KEITH GILES
	MYRTLE RUMPH
	STEPHEN HUNG
12765	JUAN SAAVEDRA
	MARY NICHOLS
	OLEGARIA SALINAS
12773	MICHAEL SALVATORE
	OCCUPANT UNKNOWN
12775	BRANDON BIRT
12777	OCCUPANT UNKNOWN
	VICTORIA MUNIZ
12795	MARTHA IZVERNARI
12800	DENISE SANIGA
	H TORRES
	JACQUELINE MCGREW
	JIM STROBL
	THOMAS DEUS
12801	JAMES BAKER
	OCCUPANT UNKNOWN
12819	OCCUPANT UNKNOWN
12830	ARLEEN DIAZ
	BRIAN FAUX
	C MANSELL
	JEFFREY OGAN
	JUANA ZUNIGA
	SHELA TRUEHEART
	THOMAS JONES
12833	OCCUPANT UNKNOWN
12860	ARLENE DAYOAN
	BARBARA BROWN
	DARREN SCOTT
	ISRAEL GUTIERREZ
	KEVIN BRYANT
	KRISHNA CHANDLER
	LAURI MADDOCK
	MARIA STELTON
	MARY MEADOR
	RANDY DUARTE

PERRIS BLVD 1999 (Cont'd)

12860	TONI WILLIAMS
12875	THOMAS CAHOE
12900	HARDY INGE DDS
	KUNIHIRA DANL M DDS
	MOHAMED HASSAN
	MORENO VALLEY PERIODONTAL GROUP
	SUNNYMEAD DENTAL GROUP
12950	AIDA TORRES
	BOBBIE MILLER
	D HAMILTON
	DORIS MUSE
	DOROTHY ALLEN
	DOROTHY OVERTON
	ERLINDA MUYA
	HOWARD ROMINGTON
	ISABEL LOPEZ
	JOYCE GRIM
	LINDA GRISSIN
	M RODRIGUEZ
	MARIA SALAS
	R DENNIS
	ROBERT GOODRICH
	T OHARE
12970	JAIME VALENCIA
12980	L SALDANA
12981	BEAMANS RADIOGRAPHIC LABORATORY
	CALIFORNIA STAT OF CONTRACTORS STAT LICENSE BD
	DAGGETT ASSOCIATES INSURANCE AGENCY
	FARMERS INSURANCE GROUP AGENTS
	GARCIA ENTERPRISES REALTY
	GENERAL STORES INSURANCE AGENCY
	GIORDANO TONY INS
	INLAND SPEECH & LANGUAGE CENTER
	INSURANCE STORE INCORPORATED
	LOVING OPTIONS
	MORENO ESCROW
	NATIONAL DIAGNOSTIC LABORATORIES INCORPORATED
	SMILE & LEARN AT LOW COST TRAFFIC SCHOOL
13027	CALIFORNIA STATE OF ASSEMBLY
	FAITH BAPTIST CHURCH
	GRANLUND BRETT ASSEMBLYMAN 65TH DISTRICT
	MCCOY ENGINEERING
	MORENO VALLEY PRESBYTERIAN CHURCH
13057	ABORTION SERVICES
13117	ALL NATION REALTY
	ALL NATIONS REALTY
	BELLS & SIRENS SECURITY
	COMONT EVICTION SERVICE
	CREATIVE NAILS
	HARDY LARRY

PERRIS BLVD 1999 (Cont'd)

13117	HIGUCHI TAILOR SHOP
	JANS DONUTS
	L AS FINEST
	LOS JORGES TACOS
	SUPER TACO
	TRAVIS & TRAVIS ATTORNEYS AT LAW
	VALLEY HEIGHTS MORTGAGE
13121	BESSIES BEST
	FRANKS LIQUORS
	JAVIER NAVARRO
	JESUS CHRISTIAN CENTER
	L & B PRINTING COMPANY
	MINAS HAIR FASHION
	NAVARRO GARCIA
	NEW LIFE CHRUCH
13141	ELENA FERNANDO
13153	MORETO NOGALES
13161	BIG MAR ENTERPRISES
	JASON HARRIS
13231	WINSTON TIRE COMPANY
13261	CIRCLE K FOOD STORES
13373	99 CENTS BARGAIN MART
	A & S FAMILY PAGING
	A CENTER FOR FAMILY DENTAL CARE
	ALL STAR PIZZA
	CHECKS CASHED MONEY ORDERS EAGLES
	CONNECTIONS & MORE
	DEBBIE DS INSPIRATIONAL AFRO AMERICAN GIFTS VIDEOS MUSIC B
	DRYCLEAN WEST
	EAGLES CHECK CASHING
	EL MEZQUITE MARISCOS & TACOS
	EYE CARE OF MORENO VALLEY
	FAMILY DENTAL CARE
	FHP INCORPORATED MEDICAL AND DENTAL CENTERS
	FOOD STAMP ISSUING CENTER
	FORD THOMAS DR
	GREEN BURRITO THE
	INLAND CHIROPRACTIC & SPORTS CARE CENTER
	J C C THRIFT MART
	JAZZY BOYY SALON & BOUTIQUE
	LAPERLA MEAT MARKET
	LAQUINTA FUENTE
	LOTSA OAK
	MANILA RANCH
	MATEO CARPET
	MONEY GRAM SERVICE
	MORENO VALLEY CHECK CASHING
	MORENO VALLEY TROPICAL FISH
	NUTRITION DANIEL
	PROFESSIONAL WEIGHT LOSS CLINIC

PERRIS BLVD 1999 (Cont'd)

13373	QUALITY STATIONERS
	RAMIREZ ANGEL
	RED ANCHOR FISH MARKET
	SCHMIDT FRED OPTOMETRISTS
	SHANNONS HEALTH FOODS
	SUPER V 4
	TALBERT MEDICAL GROUP
	TROPICAL FISH OF MORENO VALLEY
	VALLEY PAIN MANAGEMENT MEDICAL CLINIC INCORPORATED
13473	BARGAIN FAIR
	SUPERIOR THRIFT
13510	ST CHRISTOPHERS CHURCH
13608	JAIME BELTRAN
13620	RAMIRO NAVARRO
13816	OCCUPANT UNKNOWN
13836	TISHA LUKE
13911	CHARTER SCHOOL
	MORENO VALLEY UNIFIED SCHOOL DISTRICT
	MORENO VALLEY UNIFIED SCHOOL DISTRICT SCHOOLS
13949	KENTUCKY FRIED CHICKEN
14050	PHILS PLACE
14719	ELVIA GOMEZ
14740	ADAM HUNSICKER
	J & E BLADE RENTALS
14890	ALBERT EISELEE
	ARTHUR MORALES
	ARTHUR SMITH
	B NORTON
	CARLOS ORNELAS
	CYNTHIA BOBBETT
	DAVID LIVINGSTON
	DEBRA HEMMERLING
	DOUG DUREY
	ELIZABETH VALLADOLID
	ELMA JANSSEN
	FEDERICO RAMIREZ
	GERRY GERMAN
	HOLLIS JOHNS
	ISABEL ALLEN
	JANNET SILVA
	JEANNE EDWARDS
	JOHN BRAVO
	JOY ROBLES
	KATHERINE RIDDLE
	KATHLEEN MULLIGAN
	LEOPOLDO GONZALEZ
	LUCAS HODSON
	LUCY THOMPSON
	MARCUS JORDAN
	MARIA ALCAZAR

PERRIS BLVD 1999 (Cont'd)

14890	MARIE CHAIDEZ
	MARY CAMPBELL
	MICHAEL CAIN
	NORMA BADER
	OLGA OLIVER
	PAUL BARGER
	ROBERT GAUTHIER
	S ISLAS
	SKY TRAILS MOBILE VILLAGE
	SUSAN CREANEY
	TOCHUKWU IFEACHO
	WAYNE CONWAY
14910	ACE HARDWARE SUNNYMEAD
	ECSTASY HAIR DESIGNS
	EXPRESS 1 HOUR PHOTO & MAILING
	FEATHERS & FINS
	MR DONUT
	NASHS RIBBONS
	SUNNYMEAD ACE HARDWARE
	THAI DINE RESTAURANT
	VIDEO VISION SOUTH
14930	DOWNEY SAVINGS & LOAN
	HUGHES MARKETS
14940	ALPER CLEANERS
	CLIP JOINT
	LITTLE CAESARS PIZZA
	MORENO VALLEY DENTAL GROUP
	PATEL DIPTI DDS
14950	STEER N STEIN RESTAURANT
	STEER N STEIN RESTAURANT MORENO VALLEY
14980	PAT PATTERSON
15310	JR MARKET
	WESTERN UN CONTD TO PICK UP OR SEND MNY TRANSFERS
15320	AURELIO VASQUEZ
	BERTA MUNOZ
	MARIA LOPEZ
	RANGEL BEATRIZ
	VERONICA VALENZUELA
15332	ANSELMO REYES
	CARMEN ORGEGA
	CARMEN ORTEGA
	ELIZABETH DELAPORTILLA
	ELIZABETH GOMEZ
	HILDA GUZMAN
	IGNACIO ARREOLA
	L KELLY
	LUIS OROZCO
	MARTHA MENDEZ
	TEODORO VILLEGAS
15344	APOLONIO VALENZUELA

PERRIS BLVD 1999 (Cont'd)

15344	DIANA DOMINGUEZ
	ENRIQUE DEVIDES
15360	CHANTEL CARR
	JORGE MONTIEL
	MARTHA SANDERS
15384	ARACELI CALDERON
	CHRISTINA HALL
	HILDA CHAVEZ
	MABEL NORIEGA
	MARISOL HARRIS
	OLVIN ARIAS
	RENE CUEVAS
15394	ADAM GRANADOS
	BENITO MEDINA
	LOUISE WILLIAMS
15414	ERNESTO TORRES
	ISAAC TURNER
	VERONICA VALENZUELA
15452	FLORENCE DAY CARE
	MARIO HERRERA
	OCCUPANT UNKNOWN
	REYNA GONZALEZ
15795	KINGS CHAPEL CHRISTIAN CENTER
	RAINBOW RANCH
15928	ADAM & EVAS STYLISTS
	ALAN SRADER
	CHERRY ROSS
	FRANCES ESCALERA
	HOMAYOON SHAMOLIAN
	MIKE MUNOZ
	PERRIS DONUT & BURGER SHOP
	POSTAL ETC
	STEPHANIE DUFFY-HARRIS
	WEST GATE LIQUOR
	WILLIAM HAZLETT
15952	MATULEWICZ JACKI INSURANCE
	MORENO VALLEY COMMUNITY SCHOOL
	NAIL COTTAGE
	SISTER LIZS ACCESSORIES
	STAT FRM INS COMPANIES MORENO VALLEY AGENTS
15974	E S P VIDEO & ELECTRONICS
	HAIR ETC BARBER & BEAUTY
	KUTZ PLUS
	PIZZA HUT DELIVERY OR CARRYOUT
	ROLLING RIDGE CLEANERS
15980	WESTGATE SHELL FOOD MART
15982	MARY RADE
16641	JOHN LEE
17041	DAVID EIDE CONSTRUCTION
	RICHARD WILLIAMS

PERRIS BLVD 1999 (Cont'd)

17111 SANDRA CAMARENA

ALESSANDRO BLVD 1995

21804	JOSES MARKET
21805	GLASS FACTORY
21806	OCCUPANT UNKNOWNN
21820	LESSAS AUTO PARTS
21824	OCCUPANT UNKNOWNN
21836	OCCUPANT UNKNOWNN
21837	VFW CLUB
21844	OCCUPANT UNKNOWNN
21866	KENDALLS AUTOMOTIVE SVC
21872	MORAN, CARMELE
21874	SUAREZ, RAUL
21876	RUBIO, JUAN
21880	HUTSON, TORY
21882	OCCUPANT UNKNOWNN
21891	BALDWINS TOWING & AUTOMOTIVE
21894	OCCUPANT UNKNOWNN
21914	WEST STATES RECYCLING
21916	AM & PM ELECTRIC
21921	MARK GORIN & ASSOC AUCTIONEERS
	PARTS WEST
	TEC STORAGE
	TRACTORLAND EQUIPMENT CO
	TRACTORLAND INC
21924	BARRERA, EVA
21941	ALESSANDRO MINI STORAGE
21942	LOYAL ORDER OF MOOSE 883
22010	AGUON TYPEWRITER REPAIR
22018	NORIEGA, JOSE
22030	OCCUPANT UNKNOWNN
22050	LOYA, SUSANA
22058	OCCUPANT UNKNOWNN
22060	OCCUPANT UNKNOWNN
22066	VALENCIA, C
22088	SMALL, KEITH A
22135	ROHR INDUSTRIES EDGEMONT PLANT
	ROHR INDUSTRIES INC
22142	EDGEMONT COIN WASH
22144	TEXACO FLITE CHIEF
22156	GOLDEN TACO
22184	OCCUPANT UNKNOWNN
22224	OCCUPANT UNKNOWNN
22240	HUNG, MAI V
22308	JOES ITALIAN RESTAURANT
22314	PARKS ELECTRIC
22405	ADVANCED AUTO BODY & FRAME
	INTERNATIONAL AUTO BROKERS
22406	HONEY BEAR BAKERY & DELI
22410	DESERT MOTEL
22425	GENERAL AUTO REPAIRS
	PURRFECT AUTO SVC

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ALESSANDRO BLVD 1995 (Cont'd)

22456	DRAGON HOUSE
22484	CANYON SPRINGS PRINTING
22510	MORENO VALLEY TIRE PROS
22512	MENOS STEREO
22586	SUMMERHOUSE
22588	GARYS BARBER SHOP
22592	SUBURBAN CLEANERS
22594	PETTIT LIQUOR
22600	MEDI CAL TRANSIT
22608	GOLDENS VIDEO LABORATORIES
22614	HIGHER LIFE CHRISTIAN CTR
22700	A & A COPIERS
	A & A PRINTING
	A AMERICAN SELF STORAGE
	CLARKS TV CTR
	E LOHA LAWNMOWER SHOP
	GOLF FORE LESS
	HAIR CENTER
	KENNEDY, RAYMOND
	KLEITZ TAX SVC
	SUPERIOR GOLF
22720	GORDOS
22740	MOUNTAIN MAGIC MOTORS
22770	RHODES, LARRY
22810	CASSANDRA PERKINS MD
	CASSANDRA, PERKINS
	CITRUS BELT TAX SVC
	CURRIER & SANCHEZ CHIROPRACTIC
	HAROLD, B L
	ROBERT SANCHEZ DC
22862	COUNTRY LIQUOR CO
	OCCUPANT UNKNOWNN
22876	CHECKS CASHED MONEY ORDERS
	SECURITY PROFESSIONAL SVC
	YELLOWS CAB CO
22886	DEARTH, MACHINE
22920	KOO, KOK L
	RIVER KWAI THAI CUISINE
	TRINITY BAPTIST CHURCH
	VIS KEY TO BEAUTY
22940	BISSOT, STEVEN G
	MORENO VALLEY PODIATRY GROUP
	NEIGHBORHOOD PODIATRY CTR
22960	MORENO VALLEY ELKS LODGE 2697
23040	DON JOSE MEXICAN RESTAURANT
23080	ANTONIO A TAN MD
	MORENO VALLEY OBSTETRICS & GYN
	PLAZA MARKET & DELI
	TAN, ANTONIO A
23100	A 1 CLEANERS

ALESSANDRO BLVD 1995 (Cont'd)

23100	BOTTOM GUN CAFE
	GOGO CHINA
	PLAZA HAND CAR WASH
23580	US POST OFFICE
23615	ALESSANDRO HAND CAR WASH
	EZ LUBE
23750	ALESSANDRO PLAZA
	ANDERSON, LORI J
	CADILLAC BAR & RESTAURANT
	CANYON PRESS
	COST CUTTERS FAMILY HAIR CARE
	FAMILY FITNESS CTR
	FANCY TAN
	HAPPYS WHOLESALE AUTO ACCES
	IN & OUT MARKET & LIQUOR
	INSPIRATIONS PERFORMING ARTS
	KRIS CRONAUER
	LACEY & ASSOC INSURANCE
	MAHARAJAH INDIA CUISINE
	NUTRI SYSTEM WEIGHT LOSS CTR
	OSCAR
	PINKYS BOWL WEST
	SIZZLER
	WIENERSCHNITZEL
23888	TACO BELL
23890	FAIRCHILD CHIROPRACTIC CLINIC
	STATE FARM INSURANCE
	STEWART, CHARLES L
	SUNNYMEAD ANSWERING SVC
23910	AUTO FINE TRIM
	C & W TV
	FANCY STITCHIN
	MORENO VLY HOUSE SPORTS
	OCCUPANT UNKNOWNN
23920	ACME TUNE & SMOG
	ALEXANDERS TOWING
	MORENO VALLEY TRANSMISSIONS
23932	ALESSANDRI ANIMAL HOSPITAL
	ALESSANDRO ANIMAL HOSPITAL
	GENE BRIGHAMS MARTIAL ARTS
	MAGANAS UPHOLSTERY
	RANDHAWA, H S
	STRAIGHTEDGE INC
23942	CHARLES ESTEY DELIVERY AGENT
	RONS RADIATOR REPAIR
23952	AUTO SERVICE CLUB
23962	AMERICAN SPEEDY PRINTING CTR
	ARJAY COMMUNICATION
	BANIG RESTAURANT FILIPINO
	BUENO, MARIA S

ALESSANDRO BLVD 1995 (Cont'd)

23962	CLASSY BS LIQUOR DELI
	FUN IN THE SUN QUAD RENTAL INC
	KIM, JANG
	MARIA S BUENO DDS
	MAXWELL STREET PIZZA
	PHIL AM ENTERPRISES
	PRIMELAND CORP
	STAR BRITE CLEANERS
	SUPER V2
	SUPER, V II
	VIDEO TIME
	WEIGHT CONTROL
	YESTERYEAR COMICS
24021	DESIGNER NAILS
	MR ANTHONYS BEAUTY SALON
	PIZZA HUT
	SHAGNASTYS BILLIARDS & BAR
	VIDEO SYNDROME
24050	KAYS HAIRSTYLING
	PATTAYA PLACE
	PERFECT TOUCH BEAUTY SALON
	TANMAKERS TANNING SALON
24100	MUFFIN & DOUGHNUT
24150	BUFORDS BARBEQUE
	GORDYS MARKET
	KIN FOLK BARBEQUE
	SINGH, H
24375	FLOWERS & MORE
24400	GOLDEN SWIRL FORZEN YOGURT
24440	MC DONALDS
	MOBIL OIL CORP
	SMITHS FOOD & DRUG CTR
24481	CHIEF AUTO PARTS
24515	DONALD R HODSON DDS
	HOUSEHOLD BANK FSB
	HOWARD STAPLETON DDS
	JOE FIKTARZ DDS
	LOUIS HERZFELD DDS
	MERLIN J LARSON DDS
	ROBERT A MILNER DDS
	RUSSELL I WEBB DDS
	SUNNYMEAD VILLAGE DENTAL GROUP
24525	PAYLESS SHOE SOURCE
	VIDEO LAND MV
24541	FOSTERS DONUTS
24545	DOUGANS DOUG HOUSE
24551	A TRAVEL TEAM
24553	ISAAC E PRICE
	PRICE, ISAAC E
24555	COPY CENTER

ALESSANDRO BLVD 1995 (Cont'd)

24559	PRESS ENTERPRISE
24595	STATER BROTHERS MARKETS
24643	RAINBOW GIFTS
24645	MASTERS JEWELERS
24649	KINGS BEAUTY SUPPLY
24653	NENAS CRAFTS
24655	SUNNYMEAD BURGERS
24657	KIDS MART INC
24661	SUPERCUTS
24673	FIRESTONE TIRE & SVC CTR
24685	CLARK DRUGS
24691	CHINA RESTAURANT
24693	GRANNYS TREASURES
24695	STAR CLEANERS
24697	VOGUE NAILS
24705	H & R BLOCK INC
24707	JAPANESE KOI DELI
24709	C B PAWN
24725	BUILDERS EMPORIUM
24735	ROUND TABLE PIZZA
24757	BASKIN ROBBINS ICE CREAM
	VIRGINIA CITY CANDY CO
	WHITES BIKES
	ZAPATAS
24762	WADE, SONJA E
24775	MORENO 4 CINEMAS
24786	ANDERSON, PAULINE
24798	MOSQUEDA, MONICA
24805	DON WOMACK DC
	GONZALES, MANUEL
	JOHN H RIGGS DC
	LA NUEVA RONDA
	LAUNDERLAND
	MENDYK CHIROPRACTIC
	MILINDO ZACATEZAS
	OUR BEAUTY SUPPLY SALON & NAIL
24810	VELZZQUEZCERNA, RAQUEL
24822	OCCUPANT UNKNOWNN
24825	3 DS SPORTSCARDS
	EL RANCHITO TACO SHOP
	LIBERTY MUTUAL INSURANCE
	PRESTIGE CLEANERS
	PRONTO INCOME TAX & REAL EST
24831	MICHAELS ARTS & CRAFTS INC
24834	CARRILLO, FERNAND
24846	OCCUPANT UNKNOWNN
24853	CHINA PALACE
	DENTAL ASSOCIATES OF SUNNYMEAD
	GARY D LEE DDS
	LEE E OLSEN DDS

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ALESSANDRO BLVD 1995 (Cont'd)

24853	MARLENE SALAZAR DDS
	OCCUPANT UNKNOWNN
	RONALD L MOORE DDS
24858	PETRULAK, JOHN
24870	GALLEGOS, FRANK
24875	ALESSANDRO OPTOMETRIC VISION
	BELL, GARY R
	COLONNAS COLORS
	FAMILY AFFAIR
	FAMILY AFFAIR HAIR DESIGN
	FASHION FOR LESS
	MARK A ROSA OD
	MORENO VALLEY FURNITURE
	ROSA, MRRK A
	SALLY BEAUTY SUPPLY
	TERRYS HALLMARK
24899	K MART
	LITTLE CAESARS PIZZA
24910	KEITHLEY, MABLE L
24990	DATTAR STORE
	ESPIGA BAKERY
	FASHION NAILS
	INTRIGUE HAIR NAIL CLUB
	SHANGHAI II
	SUBWAY SANDWICHES & SALADS
24991	E & L FLOWERS
	RANCHO FOREIGN CAR PARTS
	VANS TENNIS SHOES
	VENUS BURGERS
24992	DOMINOS PIZZA
	P & G BURGERS
24994	OCCUPANT UNKNOWNN
25010	KRAGEN AUTO PARTS
25011	T & S AUTOMOTIVE
25019	DEES FLORIST & GREENHOUSE
25020	MORENO VALLEY UNOCAL
25023	F & M CHECK CASHING
	WESTERN UNION
25024	NAUGLES
25025	SUPER, V
25027	MORENO VALLEY MARKET
25030	A AVENUE NINE HAIR DESIGN
	AARON SHOOLMAN DVM
	ALESSANDRO CHIROPRACTIC
	ALESSANDRO FAMILY DENTISTRY
	ANIMAL MEDICAL CTR
	BEAR VALLEY CLEANERS
	BURKHARDT, C
	CORLEW, NORMAN
	CRISTYS DONUT SHOP

ALESSANDRO BLVD 1995 (Cont'd)

25030	NORMAN CORLEW DC
	SPLENDOR ONE HOUR PHOTO & STD
	T & C VCR TV REPAIR
	USA CHECKS CASHED
	VIDEO WARD
25035	EVANS ENGRAVING/JEWELERS
25037	MORENO VALLEY TATTOO
25050	LUCKY FOOD CTR
25070	LONGS DRUG STORE
25090	OCCUPANT UNKNOWNN
25100	A 1 COIN LAUNDROMAT
	LORENZOS PIZZA
	MATSURI JAPANESE RESTAURANT
25400	ALESSANDRO ORTHODONTICS
	ALLSTATE INSURANCE
	CENTURY 21
25480	MORENO VALLEY LIBRARY
	SENIOR CITIZENS NUTRITION
	STUMP, RON
25560	MORENO VALLEY BAPTIST CHURCH
	MORENO VALLEY BAPTIST SCHOOL
25631	QUILTY, JOSEPH
25634	MORENO VALLEY SCHOOL DISTRICT
25652	FRANK S BUTLER
25681	ALCOX, JIM
	BAKER, FRANK C
	BARNES, DONALD H
	BERNAL, JOAQUIN
	BITTNER, BOB J
	CANTRELL, JAMES L
	CAVEN, MIKE
	CLARK, FRED
	FAILE, SHARON
	FARRER, LOUISE
	FICKES, C
	GARCIA, NELLIE I
	GEIGER, F
	HAMMER, M
	HAYNES, DOUGLAS R
	HIGGINS, ROBERT
	JARA, R
	JOHNSON, GARY J
	LAFON, LEVA
	LAFON, SAM
	LAYDEN, BETTY
	LEWIS, VIOLA
	MANN, JUDITH
	MITCHELL, AIKO
	NEW HORIZON TRAILER VILLAGE
	OHAIR, T H

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ALESSANDRO BLVD 1995 (Cont'd)

25681	OMER COMPUTING
	PARKHOUSE, BERTHA
	RHODES, OMER
	ROOK, JUNE
	STICKMAN, DAVID
	TREMBLAY, ROCKY
	WILSON, PAULA
	WOOD, E
	YOUNG, LAVERN
25767	OCCUPANT UNKNOWNN
25791	WEAVER, LILLIAN
25793	GILBERT, LILLIE
25873	VALLEY TIMES
26755	MORENO CHRISTIAN SCHOOL
	MORENO COMMUNITY CHURCH
26871	ALLEN, DAVIS A
	ANDERSON, C
	ASHLEY, M G
	BARNES, RALPH
	BATES, BRIAN
	BECK, MILTON
	BERTHIAUNE, CHARLES
	BRADFORD, WILBUR
	BRUGADA, D
	BRYANT, J
	BUNNING, MARY
	BURTON, J
	BUTLER, DOROTHY
	CHACON, FRANK J
	CHRISMAN, D
	COUNTRY SQUIRE MOBILE ESTATES
	DORRIS, LEO
	DUFF, E
	DUNNINGTON, CALVIN E
	FRAHM, K T
	GROOM, RAY
	GRUBB, PAULINE
	JACQUES, ALBERT
	JONES, FLOSSIE
	KAY, LINDA
	KUSHNER, RONALD
	LARSON, ESTHER
	LINDSEY, DONALD
	MARKS, WILLIAM
	MASSEY, STEVEN
	MAY, JOHN
	MCLEAN, RICHARD J
	MERCED, DEBRA
	MILLER, DOROTHY H
	MOBILE MARINE

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ALESSANDRO BLVD 1995 (Cont'd)

26871	NELSON, GEORGIA F
	PEARSON, CARL
	PERSONS, BEVERLY
	PUCKETT, M J
	RAWDIN, RUTH M
	REDMON, N L
	REUSS, CAROLYN L
	ROSADO, HECTOR
	ROUNSLEY, CAROL
	SANTOS, MARIA E
	SCOTT, FRANK S
	SHAVER, M E
	SMITH, REBECCA
	STEINBACHER, GEORGE
	STEVENS, DOLORES
	STONER, SCOTT
	SWARTS, R G
	TABLER, JOVITA
	TRENT, MILTON
	VALERA, ANTONIO
	WATTS, JOHN S
	WILKES, RUTH A
	WILLIAMS, R E
	WILLIAMS, WADE
	WINSTON, CALVIN
	WOOLEY, DON
	ZOOK, EDWARD
27045	MORENO BEACH CONGREGATION
27390	SIMMONS, MICHAEL
27480	RASMUSSEN, WILLIAM
27555	MORENO VALLEY CHRISTIAN CHURCH
27850	OCCUPANT UNKNOWNN
28119	DEVILLE, MURPHY
28135	QUINONES, LINDA S
28137	NICHOLS, TERRY
28161	OCCUPANT UNKNOWNN
28163	OCCUPANT UNKNOWNN
28165	BERMAN, MARK
28167	OCCUPANT UNKNOWNN
28177	DEGEN, THOMAS E
28189	CEBALLOS, CARLOS
	GONZALEZ, MIRTA I
	ZEPPENFELDP, RICHARD
28193	OCCUPANT UNKNOWNN
28194	YODER, GLENN
28196	HELM, KANDIS
28221	EDWARDS, DOUGLAS
28235	WHEAT, MARY
28300	SAMUEL, F
28344	GOULD, GENE R

ALESSANDRO BLVD 1995 (Cont'd)

28350	OCCUPANT UNKNOWNN
28356	OCCUPANT UNKNOWNN
28382	LETCHWORTH, DALE C
28412	MAY, JOHN E
28432	OCCUPANT UNKNOWNN
28446	SERRANO, RENA
28460	OCCUPANT UNKNOWNN
28470	OCCUPANT UNKNOWNN
28549	GOTTLIEB, JOHN
28566	OCCUPANT UNKNOWNN
28574	OCCUPANT UNKNOWNN
28576	OCCUPANT UNKNOWNN
28612	SORICH, JOHN J
28700	NELSON, BRIDGET
28720	LUTE, GWEN
28741	ELKINS, JAMES JR
28765	HARDIN, ERMA N
28780	OCCUPANT UNKNOWNN
	SUNSET HOUSE
28791	WEIR, ROBERT E
28819	VALDEZ, PATRICK
28820	OCCUPANT UNKNOWNN
28825	KAWAHARA, RANDALL
28836	OCCUPANT UNKNOWNN
28850	OCCUPANT UNKNOWNN
28862	TYE, L
28869	SCHUTTE, STEVE
28873	LAFOON, JAYE
28882	OCCUPANT UNKNOWNN
28900	OCCUPANT UNKNOWNN
28910	IMEL, BETTY
28929	WILSON, PAUL R
28949	OCCUPANT UNKNOWNN
28959	DUFF, DAVID
28973	OSTERMEYER, DELIA
28981	US POST OFFICE
29022	NAVARRETTE, GERALD
29030	BAEZ, RAFAEL
29050	OCCUPANT UNKNOWNN
29062	CHRISTIAN, THOMAS
29075	GARCIA, STEVE
	IRVINE, RICHARD
29076	MURPHY, FRED W
29086	DELISO, GEORGE R
29095	OCCUPANT UNKNOWNN
29098	POPE, DENNIS A
29105	VANDEPOL, ROBERT A
29110	BURKE, PATRICK H
29124	BRYANT, JAMES D
29135	COFFER, WALTER

ALESSANDRO BLVD 1995 (Cont'd)

29144	ROBERTS, CRAIG
29155	PLANCHAK, EUGENE
29166	CARBAJAL, ROBIN
29175	MICHELSEN, NORMAN E
29180	FRANKLIN, DAVID
29210	DANIELS, JACK
29220	GOLDEN STATE ROOFING
	OCCUPANT UNKNOWNN
29230	OCCUPANT UNKNOWNN
29235	MARTINEZ, SAMUEL J
29240	WALLACE, DAVID L

PERRIS BLVD 1995

11010	JONES, JOHN W
11016	OCCUPANT UNKNOWNN
11050	OCCUPANT UNKNOWNN
11065	BERSHAS, M J
11079	HOFFMAN, CHESTER A JR
11080	COSIO, SYLVIA
11091	OCCUPANT UNKNOWNN
11110	RUSH, TERRY
11200	LELAND, GEORGE S
11261	OCCUPANT UNKNOWNN
11269	SHEPHERD, RICHARD A
11285	BAKER, JERRY R
11315	CUTRIGHT, BRYAN
11345	EPISCOPAL COMMUNITY MORENO VLY
11349	SUNRISE BAPTIST CHURCH
	SUNRISE BAPTIST SCHOOL
11463	OCCUPANT UNKNOWNN
11467	PALUSH, KAY K
11469	KELLEY, MICHAEL E
11471	BEIGLE, HAROLD C
11480	CARBULLIDO, AUGUST C
11495	OCCUPANT UNKNOWNN
11531	KIRKPATRICK, M E
11541	HUNT, LEEANN
11641	DUFFY, GLORIA J
11650	SHEPHERD THE VALLEY LUTHERAN
11673	OCCUPANT UNKNOWNN
11681	ANCHONDO, ANDY
11701	OCCUPANT UNKNOWNN
11725	DARGITZ, R L
11730	OCCUPANT UNKNOWNN
11734	SERNA, MICHAEL
11790	CHURCH OF JESUS CHRIST LDS
11846	DESAI, IRDIA R
	TILLERY, A
11856	DESAI, IRDIA R
11866	OCCUPANT UNKNOWNN
11961	KINDER CARE LEARNING CTR INC
11971	OCCUPANT UNKNOWNN
11987	WALL, CLARA
11991	PROVENCE, THOMAS C
12190	CHAKAR, JOSEPH M
	CHINA KITCHEN
	COST CUTTERS FAMILY HAIR CARE
	CROWN & GLORY BEAUTY SALON
	EMPIRE VIDEO
	GARY STEWART AT CROWN & GLORY
	JOSEPH M CHAKAR DDS
	NEW YORK DELI & SANDWICH
	NO 1 NAILS

PERRIS BLVD 1995 (Cont'd)

12190	PASZTERNAK, JERI
	RICON, C
	RINCON CASTILLO
	ROUND TABLE PIZZA
	SAMS QUALITY CLEANERS
	SASSY SHEARS
12200	FOOD 4 LESS
12210	CAMPUS WEAR
12220	PAYLESS DRUG STORE
12230	M & M WHOLESALE
12240	JAGOURS, GARY L
	MACFARLANE, MELODEE
	MAIL BOXES ETC
	RAMIREZ, CELIA
	SALAZAR, JOSE
	SLINEY, DAVID
	SOUTHERN CALIF CHRISTIAN TIMES
	YOUNG, EVELYN
12252	GREAT WESTERN BANK
12254	GRAZIANOS PIZZA RESTAURANT
12260	GREAT WESTERN BANK
12264	KARNA, HARRY
	SPARKLE FAMILY DENTISTRY
12268	ITS ABOUT TIME
12274	FENNEMA & HUTTER
12280	SAV ON DRUGS
12370	COUNTRYWIDE THRIFT & LOANS
12371	MC DONALDS
12400	ZOHURA CORP
12531	7 ELEVEN FOOD STORE
12601	CHIEF AUTO PARTS
12607	MR CLEANERS
12630	MARGARITAS MEXICAN FOOD
12685	MORENO VALLEY PRESBYTERIAN
12715	LANHAM, CHERYL
12725	OCCUPANT UNKNOWNN
12729	CRUZ, MARIA
12760	ANDERSON, JOHN
	ARAKAWA, PATRICK Y
	MCELROY, TERRY
	MORRIS, F
	PAGDONSOLAN, ZONIA
	STRINGER, JEFFERY L
	VARGAS, PABLO
12765	BRENNAN, C
12773	OCCUPANT UNKNOWNN
12775	MOCERINO, NICK J
12777	MADRIGAL, JOANNE
12800	BOWER, CHARLES A
	BRITT, M

PERRIS BLVD 1995 (Cont'd)

12800	HAHN, PAULINE
	MUNIZ, WILLIAM
	OSULLIVAN, JOHN J
	SERBIN, JUAN J
	SRROBL, JIM
	VASQUEZ, T
	WHITNEY, MICHAEL J
12801	GARNICA, HILDA
12819	OCCUPANT UNKNOWNN
12830	BARTLEY, V
	DUNNING, MICHAEL P
	FAUX, BEVERLY
	ISSA, CHERYL
	LOVESEE, ROGER
	MCDONALD, DENETTA
	OVERMAN, MATSUKO
	PINEDO, RICHARD
	SHADER, F R
12833	RODRIGUEZ, RAFAEL
12836	MEDINA, LOUIE
12860	HOMER, C
	IHLE, ELDEAN H
	LAMBARRI, ELVIRA
	MAULDIN, SANDRA
	PHILLIPS, EXA L
	ROME, ALBERT
	STELTON, MARIA C
	THYDEN, JONI L
	ULMAN, ALVIN
12865	SPARKS, E D
12875	OCCUPANT UNKNOWNN
12900	DAN NEWBOLD DDS
	DOUGLAS J MC KENDRY DDS
	INGE HARDY DDS
	INGE, HARDY
	JOHN CUMMINGS DDS
	KENNETH T HARRISON DDS
	KUNIHIRA, DANIEL M
	MARINO VALLEY PERIODONTAL GRP
	MCKENDRY, DOUGLAS J
	MERVIN L ELLSTROM DDS
	SUNNYMEAD DENTAL GROUP
12919	VELAZQUEZ, JUAN
12925	OCCUPANT UNKNOWNN
12981	AHMAD, B
	BAKHTIAR AHMAD MD
	BEAMNAS RADIO GRAPHIC LAB
	COWANS SECURITY & PATROL SVC
	FARMERS INSURANCE GROUP
	INLAND SPEECH & LANGUAGE CTR

PERRIS BLVD 1995 (Cont'd)

12981	INTEGRITY FINANCIAL SVC
	JAMES, D B
	JOSE LIMON MD
	LIMON, JOSE M
	MARK, NOVY
	MORENO ESCROW
	MORENO, ESCROW
13027	ALPHA OMEGA FOUNDATION
	DANA CONSTRUCTION INC
	GENERAL REAL ESTATE
	INLAND PACIFIC ESCROW INC
	ORANGE CREST MORTGAGE
	STROUD, WILLIE
	VONDORA KARAKY TAX PREPARATION
13117	CREATIVE NAILS
	DONUTS PLUS
	HIGUCHI TAILOR SHOP
	VALLEY HEIGHTS MORTGAGE
13121	C F DISCOUNT STORE
	FRANKS LIQUORS
	MARCUM, LARRY
	MINAS HAIR FASHION
	PANADERIA PAN DE VIDA
	VCR REPAIR
	VIDEO SHOW
13141	OCCUPANT UNKNOWNN
13151	OCCUPANT UNKNOWNN
13161	BIG MAR ENTERPRISES
	KAULIA, K K
13231	WINSTON TIRE CO
13261	CIRCLE K FOOD STORE
13373	BREAD RANCH
	CASH PLUS
	DESIGN HOUSE INTERIORS
	DONATO, LORI A
	DRY CLEAN WEST INC
	EYE CARE OF MORENO VALLEY
	FAMILY DENTAL CARE
	FHP INC
	FHP MORENO VALLEY PHARMACY
	FITNESS WORLD
	FOUR STAR PIZZA
	HAIR DESIGNS BY BONITA
	INLAND CHIROPRACTIC SPORTS CTR
	INLAND EMPIRE HOT SPRINGS SPAS
	JONI AT NIP & CUT
	LION BUSINESS INTL CORP
	LOTSA OAK
	MORENO VALLEY TROPICAL FISH
	NIP & CUT THE NAIL & HAIR

PERRIS BLVD 1995 (Cont'd)

13373	NIP N CUT
	PEDRO S ALUPAY MD
	QUALITY STATIONERS
	QUALITY VACUUM & SEWING
	RED ANCHOR FISH MARKET
	RICE, DEBBIE
	SCHMIDT, FRED
	SENOR BIG ED
	SHANNONS HEALTH FOODS
	SUN VALLEY REAL ESTATE
	VALLEY LIQUOR & MARKET
	VALLEY MEDICAL PAIN CLINIC
	WESTERN UNION
	WHITE, BUFFALO
13473	STANDARD BRANDS PAINT
13510	ST CHRISTOPHERS CHURCH
13760	JEFFERYS, JIM
13776	OCCUPANT UNKNOWNN
13778	BURDINE, DIONA
13800	OCCUPANT UNKNOWNN
13802	OCCUPANT UNKNOWNN
13816	IBARRA, CARMEN
13836	HOWARD, MELVIN
13911	MARCH MOUNTAIN HIGH SCHOOL
	MORENO VALLEY COMMUNITY ADULT
13949	KFC
14050	KEG ROOM
14700	CHILDTIME CHILD CARE
14739	EDWARDS, WALTER L
14740	HUNSICKER, JOHN
	J & E BLADE RENTALS
14890	BARGER, PAUL
	BARTLETT, WANDA M
	BUEGE, ANITA
	BUNGER, MARY
	CARTER, GERALD
	DOBSON, DOROTHY A
	GAUTHIER, ROBERT C
	GOODIER, HELEN
	HAGLE, RUSSELL
	KURTZ, GLEN
	MACKEY, G W
	MADISON, L
	MARTINEZ, M
	MCGINNIS, JEAN B
	MERCER, R D
	MILLER, ALLEN T
	NORRIS, F
	POWERS, PAM
	RAY, WILLIAM W

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PERRIS BLVD 1995 (Cont'd)

14890	REED, MARCIA
	ROBERTS, ROBERT SR
	SAMPSON, G
	SCHIMKOLA, D M
	SHELTON, JOSEPH A
	SKY TRAILS MOBILE VILLAGE
	SMITH, DONALD T SR
	WINARS, NORMAN
	WOLFENBARGER, BETTY
14899	JANSSEN, WALT
14910	BRYANT, PAULA
	ELLIS, SHON
	EVERETT, K
	EXPRESS 1 HOUR PHOTO & MAILING
	FANTASTIC SAMS
	FEATHERS & FINS
	FERNANDEZ, ROBERT M
	FREEMAN, JULIA S
	GIORDANO, JOE
	JACKSON, ROBERT
	MISTER DONUT
	NASHS RIBBONS
	ROWE, ARTHUR
	SUNNYMEAD HARDWARE
	THAI DINETTE RESTAURANT
	VIDEO VISION SOUTH
14920	PAYLESS DRUG STORE
14930	HUGHES MARKETS INC
14940	CLIP JOINT
	IVE BEEN FRAMED
	LITTLE CAESARS PIZZA
14950	STEER N STEIN RESTAURANT
15320	MAJOR, TETAUN
15332	OCCUPANT UNKNOWNN
15344	HOWARD, DOROTHY
15360	BAUTISTA, ANITA
	MCNEELY, LINDA
15384	SAVITZ, E R
15394	SCOBEY, RICHARD L
15414	GREEN, NADINE
15426	OCCUPANT UNKNOWNN
	WHETTEN, C
15452	WRIGHT, R
15795	KINGS CHAPEL ACADEMY
	KINGS CHAPEL CHRISTIAN CTR
	RAINBOW RANCH
15928	ADAM & EVAS BARBER SHOP
	NEVINS, RICHARD F
	PARKER, TINA
	PERRIS DONUT & BURGER SHOP

PERRIS BLVD 1995 (Cont'd)

15928	TEA ROOM CHINESE RESTAURANT
	WEST GATE LIQUOR
15952	NAIL COTTAGE
	PARK PLACE REALTY
	STATE FARM INSURANCE
15964	HAIR ETC
15974	ESP VIDEO
	HAIR ETC
	ROLLING RIDGE CLEANERS
	SUB SHOPS
15980	SHELL FOOD MARKET
16641	LEE, JOHN
16659	OCCUPANT UNKNOWNN
16675	OCCUPANT UNKNOWNN
17041	DAVID EIDE CONSTRUCTION
17111	CALHOUN, BRENDA

ALESSANDRO BLVD 1992

21801	SUSAN RAPA INTRS
21804	JOSES MARKET
21805	GLASS FACTORY THE
21820	LESSAS AUTO PTS 2
21837	V F W CLUB
21840	CHARLEBOIS LIQUORS
21866	KENDALLS AUTO SERV
21876	RUBIO, JUAN
21880	BAKER, MARY
	RORIVE, V
21891	BALDWINS AUTMTV SRV
21914	WEST STATES RCYCLNG
21916	A M PM ELECTRIC
	A M&PM ELECTRIC
21921	GORIN MARK&ASSOCTS
	P&B EQUIPMENT RPR
	PARTS WEST
	SOUTH CST PORTABLE
	TRACTORLAND INC
21941	ALESSANDRO MNI STRG
21942	LOYAL ORDR MSE 883
22010	AGUON TYPEWRITR RPR
22018	NORIEGA, JOSE
22058	BANDA, AURORA
22088	SMALL, KEITH A
22135	ROHR INDUSTRIES
22142	EDGEMONT COIN WASH
22144	TEXACO FLITE CHIEF
22156	GOLDEN TACO NO 3
22224	ARTIC AIR COND&HTNG
22308	JOES ITALIAN REST
22314	PARKS ELECTRIC
22364	M Y MARKET
22405	ADVANCED AUTO BODY
	STOP BRAKE SHOPS
22410	DESERT MOTEL
22425	GENL AUTO REPAIRS
22456	DRAGON HOUSE
22484	HEANEY REALTY
22485	JACK IN THE BOX
22510	MORENO VLY TIRE
22512	MENOS STEREO
22586	SUMMERHOUSE THE
22588	GARYS BARBER SHOP
22592	SUBURBAN CLEANERS
22594	PETTIT LIQUOR
22604	HONEY BEAR BAKERY
22608	GOLDENS VIDEO LABS
22614	HIGHER LIFE CHRSTN
22616	EL RODEO RESTAURANT

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ALESSANDRO BLVD 1992 (Cont'd)

22690	A AMERICAN SLF STRG
22700	A C COPY SYS
	BEST IMPRESSIONS
	E LOHA LAWN MOWR SV
	EDWARDS CARL
	GOLDEN ESTATE RLTY
	HAIR CENTER THE
	KLEITZ TAX SERVICE
	PARTY MAGIC INC
	SUPERIOR GOLF
	UNIFORMS IN FSHN
22720	GORDOS
22740	UGLY DCKLNG RNT CAR
22790	CIRCLE K FOOD 300
22810	CITRUS BELT TAX SRV
	JOY CHRISTIAN BOOKS
	PERKINS C MD
	SANCHEZ ROBERT
22862	COUNTRY LIQUOR CO
22876	CAB CO BY EAGLES
	CHECKS CASHED EAGLS
	SECURITY PRFSNL SRV
	TAX COM
22886	DEARTH MACH&MARINE
	PERFRMNC PLZ AUTO
22920	ASIAN IMPORTS
	KAYS HAIRSTYLING
	RIVER KWAI THAI
	TRINITY BAPTIST CH
	VIS KEY TO BEAUTY
22940	CARRASCO, P
	N C O A SERVICE CTR
	PARKER ROBERT E DPM
22960	MORENO VLY ELK 2697
22990	THRIFTY OIL CO
23100	DON JOSE MEXCN REST
	GARLIC ROSE RSTRNT
	PLAZA HAND CAR WASH
	Y E S YOUR EMP SLTN
23580	US POSTAL SERV
23581	MOTEL 6
23615	ALESSANDRO 100 WASH
	EZ LUBE
23750	ABSOLUTELY NAILS
	BLUEPORT ENTPRS
	BOX OFFICE MEMORY
	CADILLAC SPORT BAR
	CANYON PRESS
	COST CUTTERS
	FAMILY FITNESS CNTR

ALESSANDRO BLVD 1992 (Cont'd)

23750	FANCY TAN
	HAPPYS WHLSL AUTO
	KEYBOARD MASTERS
	LACEY&ASC INS AGCY
	MEAT N EAT DELI
	SPORT MED CONNECTN
	T SHIRTS PLUS
23880	TACO BELL
23890	CARNES BUSNS&TAX
	D F C TRANSPRTN
	FAIRCHILD CHIRO
	STEWART CHAS L
	STEWART, CHARLES L
	STRAIGHTEDGE INC
	WESTRN UNTD FNCL
23900	FLOWER BOX MOR VLY
	SC STOP EDUC SPLY
23910	C&W T V
	FANCY STITCHIN
	GREAT AMER WINDOW
	HOUSE OF SPORTS
	LEONARDS CARPET
23920	ACME TUNE&SMOG
	ALEXANDERS TOWING
	BRAKE TECH
	GOODYEAR TIRE&SV CT
	MORENO VLY TRNSMSNS
	MY MECHANIC
23932	EDWARDS GLASS
	HUBER BARTON C DVM
	MAGANA AUTO UPHOL
	MERRY MAIDS
	PAPILLON
	SHORIN KUNG FU
23942	ESTEY C DLVRY AGENT
	NEW DIRECTIONS INC
	RONS RADIATOR RPR
23952	FIVE STAR AUTOMTV
23962	2 DAY SIGNS
	A A T HM MED EQUIP
	AMER SPEEDY PRNTG
	ARJAY COMMUNICATION
	BANIG REST FILIPINO
	CLASSY BS LQR DELI
	FUN SUN QUAD RENTAL
	MAXWELL ST PIZZA
	PHIL AM ENTERPRISES
	STAR BRITE CLNRS
	SUPER V 2
	TARBELL REALTORS

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ALESSANDRO BLVD 1992 (Cont'd)

23962	VIDEO TIME
	WEIGHT CONTROL
	YESTERYEAR COMICS
24021	A&W RESTAURANTS
	DESIGNER NAILS
	HEACOCK MARKET
	MR ANTHONYS
	PIZZA HUT
	ROCKETS&POCKETS
	VIDEO SYNDROME
24050	BARRETO ILIANA
	KUTTS AUTO PARTS
	PATTAYA PALACE
	PERFECT TOUCH BTY
	STONE CHIROPRACTIC
	TANMAKERS TANNG SLN
24100	LITTLE CAESARS PZA
	MUFFINS DUFFINS
24150	GORDYS MARKET
	KIN FOLK BARBEQUE
24400	SMITHS FOOD&DRUG CT
24440	MCDONALDS RSTRNTS
	MOBIL OIL
24481	CHIEF AUTO PARTS
24491	SEVEN 11 FOOD 20402
24515	HODSON DONALD R DDS
	HOUSEHOLD BANK FSB
24525	CAL WEST NATL BANK
	PAYLESS SHOESOURCE
24541	FOSTERS DONUTS
24545	DOUGANS DOG HOUSE
24549	CAL WEST NATL BANK
24551	A TRAVEL TEAM
24553	PRICE ISAAC E CPA
	PRICE, ISAAC E
24555	COPY CENTER THE
24559	PRESS ENTERPRISE
24565	BOOK BANK
24595	STATER BROS MKT
24643	RAINBOW GIFT
24645	MASTER JEWELERS
24647	YS BUYS THRIFT SHOP
24649	KINGS BEAUTY SUPPLY
24653	NENAS CRAFTS
24655	SUNNYMEAD BURGERS 2
24657	KIDS MART
24661	SUPERCUTS
24673	FIRESTONE TIRE&SERV
24685	CLARK DRUGS
24691	CHINA RESTAURANT

ALESSANDRO BLVD 1992 (Cont'd)

24693	GRANNYS TREASURES
24695	STAR CLEANERS
24697	VOGUE NAILS
24699	HAIR CONNECTION THE
24701	LUIGIS ITALIAN REST
24703	KAN DO 1 HOUR PHOTO
24705	BLOCK H&R
24707	JAPANESE KOI DELI
24709	C B PAWN
24725	BUILDERS EMPORIUM
24735	ROUND TABLE PIZZA
24757	BASKIN ROBBINS 31
	CANDY CO
	WHITES BIKES
24774	GARRIS, GROVER
	HARTER, MARGIE F
24775	SUNNYMEAD CINEMA 4
24798	FELLS, PAUL
	WILLIAMS DON INS
24805	AIRPORT LIQUOR
	BRANDIS DOLLAR PLUS
	GONZALES, MANUEL
	KING, CHAN
	LAUNDERLAND
	MILINDO ZACATEZAS
	OUR BTY SPLY SLN&NL
	VIDEO LAND MV
	WOMACK CHIRO OFC
24825	LIBERTY MUTUAL INS
	PRESTIGE CLEANERS
	PRONTO INCOME TAX
24831	MICHAELS
24853	CHINA PALACE
	OLSEN LEE E DDS INC
	TOMMIES VIDEO
24858	PETRULAK, JOHN
24875	COLONNAS COLORS
	FAMILY AFFAIR HAIR
	FASHION FOR LESS
	FAYVA SHOES 8691
	MORENO VLY FRNTR
	OLSON NATE S OD
	SALLY BEAUTY SUPPLY
	TERRYS HALLMARK
24889	K MART 3542
24910	KEITHLEY, M L
24990	ESPIGA BAKERY
	FASHION NAILS
	INDO PAK GROC&VIDEO
	NAIL WORKS

ALESSANDRO BLVD 1992 (Cont'd)

24990	PROFSNL HAIR&NAILS
	SHANGHAI 2
	SUBWAY SANDWICHES
	VIDEO TIME EAST
24991	AMER DONUTS
	B&H IMPORT AUTO SPL
	T&L FLOWERS
	VANS TENNIS SHOES
	VENUS BURGERS
24992	DOMINOS PIZZA
	INTL MARKET
	P&G BURGERS
	RENAYS
	VALLEY VCR TV RPR
25010	KRAGEN AUTO WORKS
25011	T&S AUTOMOTIVE
25019	DEES FLRST&GREENHSE
25020	SUNNYMEAD UNOCAL 76
25021	MANILA SANDS GNL ST
25023	F&M CHECK CASHING
	WESTRN UNION CASHNG
25024	NAUGLES DRIVE THRU
25025	SUPER V
	SUPER, V
25027	MORENO VLY MKT
25030	A AV NINE HAIR DSGN
	BEAR VLY CLNRS
	BURKHARDT C DC
	BURKHARDT, C
	CORLEW, NORMAN
	CRISTYS DONUT SHOP
	DELGADILLO RIC DVM
	DELGADILLO, RIC
	NAILS BY AMY
	PICTURES FROM US
	SPENDOR PHOTO&STDO
	T&C VCR TV REPAIR
	VIDEO WARD
	YANG STEPHEN S DDS
	YOGURT CAFE
25035	EVANS ENGRAVE&JWLRY
25037	TRIPLE PLAY
25043	MAHARLIKA SARI SARI
25045	MORENO VLY HUMAN SV
	OASIS COMMUNITY CH
25050	LUCKY FOOD CENTERS
25070	LONGS DRG PRSCPTN
25100	A 1 COIN LAUNDROMAT
	LORENZOS PIZZA NO 2
	SEAFOOD COOKER

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ALESSANDRO BLVD 1992 (Cont'd)

25400	ALESSANDRO ORTHO
	ALLSTATE INS SALES
	BAHAM DONALD C DR
	CENTURY 21 AGENT
	PETERSON, HUGH M
	PROFSNL TRNSLTN SVS
25480	MORENO VLY LIBRARY
	SENIOR CTZNS NUTRTN
25560	MORENO VLY BAPT CH
	ZION WORSHIP CENTER
25634	MORENO VLY SC ADM
25652	BUTLER, FRANK S
	HOUGH, JACK W JR
25660	MORENO VLY BAPT ELM
25681	AKIN, E
	BAKER, FRANK C
	BARNES, DONALD H
	BARWELL, R
	BERNAL, JOAQUIN
	CANTRELL, JAMES L
	CATANZARO, JOSEPH
	CAVEN, MIKE
	CLARK, FRED
	DAVIDSON, PAUL
	FAILE, SHARON
	FARRER, LOUISE
	FICKES, C
	GEIGER, F
	GRAVES, LOWELL
	HAMMER, M
	HIGGINS, ROBERT
	JOHNSON, SEAN P
	KEMMERER, VIOLA M
	LAFON, LEVA
	LAFON, SAM
	LAYDEN, B
	LEE, ALLEN
	MITCHELL, AIKO
	NEW HORIZON TRAILER
	NOONAN, P
	OHAIR, T H
	OMER COMPUTING
	PARKHOUSE, BERTHA
	PICKETT, TONY
	RHODES, O
	ROBISON, RANDY
	SALEM, SUSANNE
	SMITH, LOLA
	THOMAS, MAY A
	WILSON, P

ALESSANDRO BLVD 1992 (Cont'd)

25681 YOUNG, LAVERN
25791 WEAVER, LILLIAN
25873 BUTTERFIELD EXPRSS
26755 MORENO CHRISTIAN SC
26871 ALLEN, DAVIS A
ANDERSON, C
ASHLEY, M G
BARNES, RALPH
BARTON, CLAYTON M
BEAVERS, WILMA
BECK, MILTON
BERTHIAUNE, CHARLES
BRUGADA, D
BRYANT, J
BURTON, J
BUTLER, DOROTHY
CARGILL, RUBY
CHURCHILL, WARREN A
CONDRON, DANIEL F
COUNTRY SQ MBL EST
DORRIS, LEO
DUNNINGTON, CALVIN E
FRAHM, K T
GERSTEL, HARRY
GRUBB, JOHN L
HAYES, FRANK E
IRISH, JOHN C
JACQUES, ALBERT
JONES, FLOSSIE
LARSON, ESTHER
MARKS, WILLIAM
MASSEY, STEVEN
MCLEAN, RICHARD J
MILLER, KENNETH C
MOBILE MARINE
PEARSON, CARL
PERSONS, BEVERLY
PETTIT, RODNEY
PUCKETT, M J
RAWDIN, RUTH M
REDMON, N L
SCOTT, FRANK S
SHAVER, M E
STEINBACHER, GEORGE
STEVENS, ELMER
SWARTS, R G
TABLER, JOVITA
VALERA, ANTONIO
WATTS, JOHN S
WILKES, RUTH A

ALESSANDRO BLVD 1992 (Cont'd)

26871	WILLIAMS, R E
	WILLIAMS, WADE
	WILSON, CLARK
	ZOOK, EDWARD
27045	MORENO BCH CNGRGTN
27390	SIMMONS, MICHAEL
27480	RASMUSSEN, WILLIAM
28095	MARTINEZ CONSTR
28119	DEVILLE, MURPHY
28163	CHANICKA, ANTHONY
28194	YODER, GLENN
28196	MAY, PERRY
28221	EDWARDS, F V
28235	WHEAT, MARY
28300	SAMUEL, F
28350	HAMMOND, JEFF
28354	CHURCH OF GOD CLVND
28356	BRIMM, KENNETH J
28432	DEARTH, SCOTT
28446	SERRANO, RENA
28470	MAYA, LUIS
28549	MARTIN, JOYCE
28566	NYBERG, KEVIN
28574	CONWAY, MICHAEL R
28612	SORICH, JOHN J
28720	LUTE, GWEN
28741	ELKINS, JAMES JR
28825	KAWAHARA, RANDALL
28862	TYE, JOHN
28869	BARWICK, R
28873	LAFOON, JAYE
28882	DYER, PATRICK
28900	MCCRUMB, R W
28910	IMEL BETTY
	IMEL, BETTY
28949	SHILLING, PEGGY
28959	DUFF, DAVID
28981	US POSTAL SERV
29062	CHRISTIAN, THOMAS
29075	GARCIA, STEVE
	IRVINE, RICHARD
29086	DELISO, GEORGE R
29095	SNOWDEN, F
29110	BURKE, PATRICK H
29124	BRYANT, JAMES D
29180	YOUNG, TONY
29210	DANIELS, JACK
29220	FIERRO, LORENZO
	GOLDEN STATE ROOFNG
29240	HELMS, CHARLES

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PERRIS BLVD 1992

11010	JONES, JOHN W
11016	HARTIG, J
11065	BERSHAS, M J
11079	HOFFMAN, CHESTER A JR
11091	BERRY, RAYMOND W
11261	ROBBINS, N C
11269	SHEPHERD, R A
11285	BAKER, JERRY
11315	CUTRIGHT, BRYAN
11349	SUNRISE BAPT MNTNC
11463	BROWN, MURPHY W
11467	PALUSH, KAY K
11495	KINNEY, JOHN
11531	KIRKPATRICK, M E
11650	SHEPHERD LUTH CH
11681	ANCHONDO, ANDY
11725	DARGITZ, R L
11790	CHURCH JESUS CHRIST
11846	DESAI, IRDIA R
	TILLERY, A
11961	KINDER CARE LRNG CT
11987	WALL, CLARA
12190	CHAKAR JOS M DDS
	CHAKAR, JOSEPH M
	CHINA KITCHEN
	COST CUTTERS
	CROWN&GLORY BTY SPL
	EMPIRE VIDEO
	LAS ESPUELAS RSTRNT
	NO 1 NAILS
	NY DELI&SANDWICH
	PASZTERNAK, JERI
	REMAX INLAND PRPRTY
	ROUND TABLE PIZZA
	SAMS QLTY CLEANERS
	SASSY SHEARS
	WELLS FRGO
12200	FOOD 4 LESS
12210	CAMPUS WEAR
	M&M WHOLESALE
12220	PAY LESS DRUG
12226	A M DONUTS
12240	AUTOMBL CLUB SO CA
	MAIL BOXES ETC USA
12252	GREAT WSTRN BK SVGS
12254	GRAZIANO PIZZA REST
12260	GREAT WSTRN BANK
12262	FANTASTIC SAMS
12264	SHAH, S
	SPARKLE DENTISTRY

PERRIS BLVD 1992 (Cont'd)

12268	ITS ABOUT TIME
12270	CANYON SPG FNCL
12274	HUTTER RALPH F OD
12276	HALLMARK WEST RLTY
12278	2 HOUR MOR VLY CLNR
12280	SAV ON DRUGS
12350	SECURITY PAC
12362	JENNY CRG WGHT LSS
12370	COUNTRYWIDE THRIFT
12371	MCDONALDS REST
12400	K FOOD MART
12531	SEVEN 11 FOOD 17940
12601	CHIEF AUTO PARTS
12605	SOFTWARE&CO
12607	M R CLEANERS
12615	PAPIS TACOS AL CRBN
12630	MARGARITAS MXCN FD
12656	CAL WESTERN TERMITE
12715	LANHAM, CHERYL
12725	TODD, JAMES
12760	JAGOURS, GARY
	MACEDO, B P
	MAY, VERLA D
12765	BRENNAN, C
12777	HAMPE, ROBERT L
12800	HAHN, PAULINE
	MUNIZ, WILLIAM
	VASQUEZ, T
12801	GARNICA, HILDA
12860	DESAL, BIPLN
	HOMER, C
	MAULDIN, S
	ULMAN, ALVIN
12865	SPARKS, E D
12900	INGE, HARDY
12919	VELAZQUEZ, JUAN
12981	ANDREAS ELCTRLYS
	BRUNMIER JAS D INS
	COWANS SECRTY&PATRL
	FARMERS INS AGENT
	GIORDANO TONY INS
	GREATER SUBRBN MRTG
	JAMES, D B
	LIMON JOSE M MD
	MARK, NOVY
	MORENO ESCROW
	MORENO, ESCROW
13027	ALLSTATE INS SALES
	CENTURY 21 GEN RE
	DANA CONSTRUCTION

PERRIS BLVD 1992 (Cont'd)

13027	EDUCATNL PRTNRSHP
	INLAND PAC ESCROW
	ORANGE CREST MRTG
	SEA PAC MORTGAGE
13117	A M DONUTS
	A&L JANITORIAL SERV
	COMPUTER BALANCE SH
	CREATIVE NAILS
	EMPIRE CONSULTING
	VALLEY HEIGHTS MRTG
13121	CANDY&FUN
	FRANKS LIQUORS
	LEES BASEBALL CARDS
	MINAS HAIR FASHION
	PANADERIA PANDEVIDA
	V C R REPAIR
	VIDEO SHOW
13153	PRIESTLEY, STACEY
13161	BIG MAR ENTERPRISES
13231	WINSTON TIRE CO
13261	CIRCLE K FOOD 872
13373	BREAD RANCH
	BROWN, KAREN
	CASH PLUS
	DONATO LORI ANN
	DONATO, LORI A
	DRYCLEAN WEST INC
	EMYS
	EYE CARE MORENO VLY
	F H P INC
	FELICIANO PETER DMD
	FITNESS WORLD
	FOUR STAR PIZZA
	HAIR DESIGNS BONITA
	HOT SPRING SPAS
	INLAND CHIROPRTC CT
	LEVYS MRNO VLY FLWR
	LOTSA OAK
	MORENO VLY FISH
	PETKIN ROBT LAND CO
	QUALITY STATIONERS
	RED ANCHOR FISH MKT
	RICE DEBBIE
	RICE, DEBBIE
	SENOR BIG ED
	SHANNONS HEALTH FDS
	SUN VLY REAL ESTATE
	TRAVEL STATION
	VALLEY LIQUOR&MKT
	VIDEO, RAY

PERRIS BLVD 1992 (Cont'd)

13373	WALKER CHAS E INTRS
	WESTRN UNION PCK UP
	WHITE BUFFALO
	WHITE, BUFFALO
13473	STANDRD BRAND PAINT
13510	ST CHRISTOPHERS CH
	TEMPLE OF PRAISE CH
13620	FISHER, LEONARD
13776	VARGAS, ANGEL
13778	WASHINGTON, C
13802	GARCIA, C
13911	MORENO VLY MARCH HI
13949	KENTUCKY FRIED CHKN
14050	KEG ROOM
14360	BAUTISTA, ANITA
14700	CHILDTIME CHLD CRE
14739	EDWARDS, WALTER L
14740	HUNSICKER, JOHN
	J&E BLADE RENTALS
14890	ALLEN, S R
	BARGER, PAUL
	BARRIGAR, FRED N
	BARRIGAR, JOHN D
	BARTLETT, WANDA M
	BUCK, RETA S
	BUEGE, ANITA
	BUNGER, MARY
	DOBSON, D A
	GAUTHIER, ROBERT C
	GOODIER, HELEN
	HAGLE, RUSSELL
	KURTZ, GLEN
	MACKEY, G W
	MADISON, L
	MARTINEZ, M
	MCGINNIS, L O
	MERCER, R D
	MILLER, ALLEN T
	NORRIS, F
	PUTNAM, OLIVE
	RAY, WILLIAM W
	REED, MARCIA
	SCHIMKOLA, D M
	SHELTON, JOSEPH A
	SKY TRAILS MBL VLG
	SMITH, DONALD T SR
	WINARS, NORMAN
14899	JANSSEN, WALT
14910	EXPRESS 1 HR PHOTO
	FANTASTIC SAMS

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PERRIS BLVD 1992 (Cont'd)

14910	FEATHERS&FINS
	MR DONUT
	NASHS RIBBONS
	SUNNYMEAD HARDWARE
	THAI DINETTE RSTRNT
	VIDEO VISION SOUTH
14920	PAY LESS DRUG
14930	HUGHES MARKET
14940	CA CLEANERS
	E R A IMPERIAL RLTY
	HAIR UNIQUE
	IVE BEEN FRAMED
	LIBERTYS HAIR DSGN
	LITTLE CAESARS PZA
14950	STEERN STEIN RSTRNT
15344	CRUZ, GUSTAVO
15384	SAVITZ, E R
15394	HONG, SAM
15426	CARRASCO, RAFAEL
	WHETTEN, C
15452	SHANLEY, JAMES F
15558	WIXOM, BILL
15710	DESEARS, DONALD
15795	FLORES, DEBRA
	KINGS CHPL CHRSTN
15952	BETTER HMS&GARDENS
	MAIL PROS
	MATULEWICZ J INS
	MORENO VLY MRTG CO
	NAIL COTTAGE
15980	SHELL FOOD MART
16641	LEE, JOHN
16659	STANSBURY, CHRIS
17010	KIEWIT PACIFIC CO
17041	DAVID EIDE CONSTR
17111	RAYMOND, AL

ALESSANDRO BLVD 1985

24805	SUNNYMEAD MATTRESS	924-5111	+5
24810	XXXX	00	
24822	POLZIN EARL	924-4098	+5
24825	CRAFTS ALAN L ATTY	656-3515	+5
	DARLING SCOTT ATTY	656-3515	+5
	FALSETTI A A ATTY	656-3515	+5
	FALSETTI CRAFTS	656-3515	+5
	FARMERS INS AGENT	653-9494	+5
	FEMININE NAILS	924-2050	+5
	MEDOF ROBT G ATTY	656-3515	+5
	MILLER JAXON E ATTY	656-3515	+5
	PALM DAVID	653-9494	+5
	PECK JIMMY INS	653-2182	+5
	PIONEER CHICKEN 297	924-2267	+5
	PRESTIGE 1 CLEANERS	924-2337	+5
	PRITCHARD R E ATTY	656-3515	+5
	WEBB THOMAS ATTY	656-3515	+5
24831	MOSKATELS	656-4439	+5
24834	XXXX	00	
24845	CLIC PHOTO	653-4598	+5
24846	XXXX	00	
24853	DENTAL ASSOCIATES	924-1988	+5
	MING DYNASTY	924-3131	+5
	PIZZA PLAYHOUSE	653-3121	+5
	PLUMB JEWELRY	653-7333	+5
	RAMKO TECH SRV INC	924-2188	+5
	RIVRSD MEDICAL CLNC	924-1871	+5
	SUNNYMEAD CENTER	924-1871	+5
	VIDEORAMA U S A	924-2188	+5
24858	NOONAN THOS	924-2119	+5
	PETRULAK JOHN	653-1625	
24870	HITCHINS GEO D	653-2754	+5
24875	CLOTHES TIME	656-6533	+5
	COLONNAS COLORS	653-0706	+5
	FAMILY AFFAIR HAIR	656-7474	4
	FAYVA SHOES	653-9891	+5
	KIRANS HALLMARK	656-3911	+5
	MALE BOX THE	924-1331	+5
	NEW DIMENSIONS	924-1344	+5
	OPTICAL OUTLET	656-2341	+5
	PET CENTER	653-6650	+5
24891	XXXX	00	
24899	K MART DSCNT STR	656-4466	4
24910	KEITHLEY M LOVERNE	653-4047	
24991	AMER DONUTS	653-0636	+5
	B&H IMPORT AUTO SPL	924-1986	+5
	VANS TENNIS SHOES	656-5176	+5
24994	MOTTERT BILL	653-1766	7
25011	MIKES AUTO	653-9888	+5
25019	A 1 LAWNMOWR SLS&SV	653-3879	2
25020	XXXX	00	
25021	DENNIS MCCLELLANS	653-4991	4
25023	HAIRPORT	656-6336	+5
25025	BABYS NEW&USED FURN	653-1236	+5
25027	MORENO VLY MARKET	653-2810	
25031	WORD LF CHRISTN CT	656-1188	+5
25037	ELDER DENTAL STUDIO	924-3555	+5
	NUMBER ONE NAILS	924-3383	+5
25043	COMPETITION TV	653-4526	+5
25045	FIELD CABLEVISION	656-3489	+5
	FIELD CABLEVISION	656-3488	+5
25120	XXXX	00	
25161	XXXX	00	
25400	KYKER SCOTT	653-1514	2
25508	MACIAS ADELLA	924-2834	+5
25539	RENFRO PAUL	653-5863	+5
25560	MORENO VLY BAPT CH	924-1977	+5
	MORENO VLY BAPT SC	924-1979	+5
25622	TAYLOR C K	653-4759	0
25631	KING ROLAND	653-6280	
25634	HANSEN DIANE R	924-5344	+5
25652	XXXX	00	
25676	BLECKERT ROY SR	653-5919	9
25681	...... NEW HORIZN TRLR VLG		
	ALLISON PHILLIP	653-0012	0
	AUVIL S A	653-0692	0
17	BARWELL REGINALD	653-3966	7
18	BEACHAM MAUDIE	653-1916	8
	BEHL BARBARA ANN	653-3571	0
	BEHL CLARENCE E	653-3571	
	BROWN COLLEEN	653-6635	+5
	CANTRELL JAS	656-5756	4
	CARNER RICK	924-4684	+5
	CLARK FRED	653-3539	2
	CLINEDINST DENNIS	924-2406	+5
	COOPER RONALD	656-2697	3
	CRABTREE RONALD	924-3981	+5
	DAVIDSON SARA	653-4396	0
	DESCH GREG	653-6426	4
	ELLIS TERRY	656-3341	4
36	EVANS DOROTHY P	653-5473	6
	FICKES C	653-5300	1
56	FORD THOS N	653-3488	
	HALSTEAD F K	924-3468	+5
	HAMILTON EUGENE	653-8519	3

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ALESSANDRO BLVD 1985

	ALESSANDRO BLVD	92388 CONT	
	HAMMER MARSHALL	656-5747	+5
	HARPER CARL C	656-3827	+5
	HARRYS REFRIGERATN	**656-5222**	+5
	HOBBS RUTH	653-6490	3
	JACKSON DAVID W	653-5783	0
	JONES ROBERT L	653-8695	8
	KELLEY V	653-5342	0
	KELLY O A	656-1767	3
	LAFON LEVA	924-3517	+5
	LATTIN VOIL	924-5100	+5
	LEDBETTER WM	924-3807	+5
	MOORE IRA	656-3058	+5
	MULRINE MYRTIE ELLA	924-3948	+5
44	NEALE B	653-3430	6
	NEW HORIZON TRL VLG	**653-2991**	
	ONATIVIA JEANETTE D	653-4785	0
	PAQUIN EDGAR J	656-2740	2
	PHILLIPS RUTH E	653-0095	4
	PICKETT ANTHONEY	656-7026	+5
	RHODES O	656-7037	+5
	RIDDLE JACK	656-5105	3
	ROOK RICHARD	653-0652	1
	SANDOVAL JOE M	924-1366	+5
	SCOTT JIM L	924-4635	+5
	SMITH LOLA	653-3655	2
	STARR LAWRENCE	653-9757	1
	THOMAS ARTHUR	653-3483	
	THOMAS LOUISE	924-1460	+5
	THOMAS MARY B	924-1460	+5
	WIED J H	653-2973	+5
	WILSON P	653-4763	0
	YODER DEAN	924-3554	+5
25681	....		
25687	XXXX	00	
25733	XXXX	00	
25767	XXXX	00	
25780	BARTON GLEN	924-5368	+5
25791	WEAVER LILLIAN	653-3654	
25876	STEINBACHER ROBT	653-2612	
26871	...... COUNTRY SQR MBL EST		
	ALLEN DAVIS A	653-7377	3
	ASHLEY M G	653-1056	9
	AVERY J M	653-6805	2
	BALDWIN M	656-3148	2
	BARNES RALPH	656-2148	2
	BARTON CLAYTON M	656-1081	4
	BECK MILTON	653-5660	1
	BENNER LONDELL	656-2507	2
	BERGER FRANK	924-1544	+5
	BRETON JOS	653-2934	+5
37	BRYANT JACQUELINE	653-3048	8
	BUCKWALD EDNA	924-2424	+5
	BUXTON L DALE	653-7769	2
	CALLAHAN C T	653-1332	3
	CAMPBELL ROBT C	653-0027	4
	CARGILL RUBY	653-8696	2
	CHILDERS CURTIS	656-3148	2
	CHILDERS G	924-3381	+5
	CHRISMAN WM SR	656-7912	+5
51	CHURCHILL WARREN A	653-6532	6
16	COKASH JAS	653-0716	9
9	CONDRON DANL F	653-7487	9
	COUNTRY SQ MBL EST	**653-2817**	
	DAHLKE HARRY	924-1322	+5
8	DORRIS LEO	653-6047	7
	DUFF ALLEN	656-1592	+5
	DUNNINGTON CALVIN E	653-6051	3
	FLATHAU G	924-5348	+5
	FRAHM K T	653-6763	4
	GERSTEL HARRY	656-6531	4
	GRAY JAS D	653-6101	2
	GRUBB JOHN L	653-4740	2
	GUNNOE JOS D	656-3183	3
	GUSTAFSON L R	656-1933	2
	HALL HOMER	653-3579	3
	HECK FRED	656-2312	2
	HEIL RONALD	924-4864	+5
	HELEWICZ H	653-8980	3
	HENDERSON WAYNE	653-9754	4
	HESS CHARLES	656-1030	1
	HINDS SAM	656-5702	4
	HNATT ANTONY	653-3631	+5
	IRISH JOHN C	656-2882	2
	JENSEN CALVIN	653-1460	1
17	JONES FLOSSIE	653-7141	7
	KUCERA DENNIS	656-5500	4
	LARSON ESTHER	653-4792	6
	MARKS WM	653-3985	2
32	MCLEAN RICHARD J	653-1904	9
	MENDENHALL GERALD	653-8997	1
	MILLER KENNETH C	653-0389	2
	MOLITOR SUSAN	653-7859	2
	PARKER S	653-5689	1
	PORTER KENNETH W	653-5869	2
	PUCKETT M J	653-7336	
	RAWDIN RUTH M	653-3391	8
39	SHAVER MEREDITH E	653-0267	9
41	SPENCER BOBBY G	653-7781	7
	SWARTS R G	653-3659	0
	TABLER JOVITA	924-3748	+5
	TOLLEFSON THEODORE	653-7276	1
	VALERA ANTONI O	656-3285	2
	VANWAY VALERIE	656-5500	4
	VEZIE J G	656-1673	1
29	VOGEL J P	653-5821	8
	WAGGONER V G	653-6832	2
	WATTS JOHN S	656-1897	4
	WILKES RUTH A	653-7341	3
	WILLIAMS WADE	653-6853	2
	WILSON RUBY J	653-7218	+5
	WITHROW ALBERT	653-3566	1
	WOLDEN MARY	656-3981	3
	ZOOK EDW A	653-1979	1
26871	....		
26960	XXXX	00	
26995	XXXX	00	
27241	HARRIS VIRGIL	653-2940	6
27380	GETTNER E	653-2457	9
27390	PAXTON WM	653-2070	+5
27480	RASMUSSEN WILLIAM	653-9118	1
27740	XXXX	00	
27774	XXXX	00	
27800	XXXX	00	
27850	XXXX	00	

PERRIS BLVD 1985

PERRIS BLVD 92388
SUNNYMEAD

11001	XXXX	00	
11010	JONES JOHN W	653-2043	
11016	XXXX	00	
11050	LESTER HAROLD	653-4105	9
11065	BERSHAS M J	653-2593	6
11079	HOFFMAN CHESTER	924-4241	+5
	HOFFMAN CHESTER JR	653-2367	
11080	RILEY ROBT J	656-7762	+5
11091	BERRY RAYMOND W	653-2545	
11110	LIMOGES LARRY	653-1092	+5
11200	CHELBANA T	656-5770	+5
	CHELBANA TOM	653-4588	1
11261	ROBBINS KENNETH R	653-3936	8
11269	SHEPHERD RICHARD	653-1946	
11315	XXXX	00	
11463	BROWN MURPHY W	653-7740	
11467	PALUSH KAY K	653-2709	9
11469	XXXX	00	
11471	FOLKES THOS	924-3353	+5
11473	XXXX	00	
11495	TABOR EDGAR T	653-2047	
11520	MILLER GRADY L	653-4037	8
11531	KIRKPATRICK F W	653-2788	
11541	RADOSEVICH VICTOR A	653-5140	1
11573	XXXX	00	
11581	**ST DUNSTAN EPSCL CH**	**924-3030**	+5
11641	XXXX	00	
11650	**SHEPHERD VLY LUTHRN**	**924-4688**	+5
11673	STICKNEY MICHAEL	653-0429	3
11681	ANCHONDO ANDY	653-6244	1
11701	XXXX	00	
11725	DARGITZ R L	653-2023	
11730	FLORA THOS	656-5904	+5
11734	XXXX	00	
11755	XXXX	00	
11846	TILLERY A	653-9210	9
11856	XXXX	00	
11866	XXXX	00	
11885	XXXX	00	
11961	MULLER DANA	924-3237	+5
11971	XXXX	00	
11987	GOZZO JAS	653-3378	
11991	PROVENCE THOS C	653-4830	
12196	XXXX	00	
12252	**GREAT WSTRN SVGS FS**	**656-3454**	+5
12254	**GRAZIANOS PZZA REST**	**656-4487**	+5
12258	**ELENAS MEXICAN REST**	**924-2220**	+5
12262	**FANTASTIC SAMS**	**924-1811**	+5
12264	**VIDEO STATION THE**	**656-5657**	+5
12266	**BON DONUTS**	**924-2256**	+5
12272	**BUCK MICHAEL W**	**653-5470**	+5
12274A	**DAGGETT ASC INS AG**	**924-1821**	+5
B	**BORGHI RICHARD A OD**	**924-1877**	+5
12278	**2 HR MORENO VLY CLN**	**653-8181**	+5
12280	**SAV ON DRUGS GNRL**	**656-4431**	+5
	SAV ON DRUGS PHRMCY	**656-3596**	+5
12320	**SAFEWAY STORES INC**	**656-4379**	+5
	SAFEWAY STORES INC	**653-7770**	+5
12350	**SECURITY PAC**	**653-3124**	+5
12362	**BETTER NUTRITION CT**	**653-9393**	+5
12364	**VENUS DE MILO**	**656-4481**	+5
12370	**MORENO VLY THRFT&LN**	**653-1147**	+5
12371	**MCDONALDS RESTS**	**656-6557**	4
12400	**HOPPYS UNION 76**	**924-1328**	+5
12531	**SEVEN ELEVEN 17964**	**653-6669**	0
12605	**SHEILAS HAIRSTYLING**	**656-3339**	+5
12630	**MARGARITAS MXCN FD**	**924-2500**	+5
12656	XXXX	00	
12685	**CHAMBER OF COMMERCE**	**924-1928**	+5
	MORENO VLY C OF C	**924-1928**	+5
	MORENO VLY YOUTH	**924-2405**	+5
	MORENO VLY YWCA	**924-3550**	+5
12715	EDWARDS FLOYD	653-1041	
12725	TODD JAS	653-3651	2
12729	XXXX	00	
12760	COCKRILL RANDY	656-1380	3
	ELLINGSEN BOB	653-3523	+5
	GITTENS HAZEL D	653-3591	3
	MAY VERLA D	656-1547	+5
12765	RHOADES JIM	653-7737	6
12773	XXXX	00	
12777	HAMPE ROBT L	653-2793	2
12795	XXXX	00	
12800......	APARTMENTS		
	CHAPPELL J M	924-2448	+5
	FINCH URSULA	656-2624	2
	HAHN PAULINE	653-7229	3
	VASQUEZ T	656-1257	+5
	WALL BOB	924-2697	+5
12800..........			
12801	HAYES FRANK E	653-2410	
12819	SUMY ROY	656-4245	3
12830......	OLIVE WOOD VLG		
	BARBARINO JOHN	924-4445	+5
	FAUX BRIAN H	653-1695	+5
	INGRAM JOE	924-5289	+5
	NEAL VERL	653-3089	3
	NYGREN RICHARD	653-7571	3
	OLIVE WOOD VILLAGE	**656-1824**	3
	TURNER DAVID	653-3049	3
12830..........			
12833	XXXX	00	
12860	BIXENMAN C	656-7656	4
	BOWYER D	924-4730	+5
	CARPENTER JEFF	653-0920	3
12865	SPARKS E D	653-4796	9

PERRIS BLVD 1985

PERRIS BLVD		92388 CONT	
12875	XXXX	00	
12901	XXXX	00	
12925	XXXX	00	
12981	DAVIS NORMAN A	653-4524	
13057	XXXX	00	
13141	ASTORIAN CRAIG	924-4709	+5
13143	XXXX	00	
13151	XXXX	00	
13153	XXXX	00	
13157	XXXX	00	
13161	**BIG MAR ENTERPRISES**	**653-4422**	2
13237	XXXX	00	
13261	**CIRCLE K FOOD 872**	**653-7715**	
13485	XXXX	00	
13510	**ALESSANDRO PRE SCH**	**653-0323**	2
	ST CHRISTOPHERS CH	**924-1968**	+5
	ST CHRISTOPHERS CLB	**653-7695**	3
13582	XXXX	00	
13620	LUTTRELL WILLIS	653-2742	0
13635	XXXX	00	
13776	XXXX	00	
13778	WASHINGTON C	653-7230	
13800	COSTA ERMA	653-2051	2
13802	ARAIS ANTONIO	653-7971	2
13814	POWERS JESSE J	653-7376	8
13816	XXXX	00	
13836	KRASTEL RICHARD	924-1506	+5
13890	XXXX	00	
13911	**MORENO VLY SC ADMIN**	**653-8441**	2
	MORENO VLY SC TRANS	**653-1677**	2
13912	**MARCH MT HI SCHOOL**	**653-1233**	2
14050	**KEG ROOM**	**653-9942**	
14500	XXXX	00	
14631	XXXX	00	
14739	EDWARDS WALTER L	656-1327	0
14740	HUNSICKER JOHN	653-6004	2
14890	...... SKY TRAILS MBL VLG		
	ALLEN S R	653-2655	2
	ANDERSON ROBT	656-7605	+5
	BALDWIN ADA	656-7771	+5
23	BARRIGAR FRED N	653-6582	8
	BARTLETT WANDA MAY	653-7470	3
48	CAINE ELEANOR	653-6321	8
	CALLIOTTE NAOMI	653-3986	7
	CALLIOTTE RAY	653-3986	
	CANTRELL ALLEN J	656-2205	2
	CHENIER GERARD	924-5280	+5
	CHITWOOD ROBT	656-4911	3
	CONWAY ROBT M	653-5290	1
	DOBSON D A	653-7329	0
	FREEMAN HELEN D	653-7172	3
	GAUTHIER ROBT C	656-1206	0
	HAGLE RUSSELL	653-7220	4
	HILL JOHN DAVID	924-4768	+5
	KELLY JOHN	656-1784	2
	KLOK S	653-8816	9
	LULL GLEN	924-5317	+5
	MANN JIMMY	656-4949	+5
	MCGINNIS L O	653-1272	2
	MONTGOMERY MARK	924-4697	+5
	PATTEN HARRY T	653-9746	1
	POST MYRTLE	656-6510	+5
	PUTNAM OLIVE	653-2355	+5
	RAY WM W	653-5226	2
	ROCHTE GEORGE	653-0580	1
	SHELTON JOS A	653-4594	1
	SKAGGS FRANK	653-7454	+5
	SKY TRAILS MOBL VLG	**653-1261**	
16	SMITH DONALD SR	653-5135	8
	SPARKS JOHN D	656-4853	+5
	SPEAR DAVID T	924-2248	+5
	STATSMANN ROSALIE	924-2541	+5
	STRAUGHAN HOWARD	656-4272	4
	VEALITZEK RAYMOND	653-8707	+5
	WEST SALLY M	924-5280	+5
	WORSHAM E M	656-3737	3
14890	....		
15332	LONG PENNY	924-1874	+5
15344	XXXX	00	
15360	HAYNES JAS E	924-5287	+5
	MOORE ESKEY J	656-1967	+5
15384	BUCKLEY NANCY	924-2471	+5
	KIRBY TONI	924-2129	+5
15394	XXXX	00	
15414	BROCK BILL	656-3852	+5
	WELLS N	924-5559	+5
15426	RAVARE RAYMOND	924-2849	+5
	RICHARDSON CURTIS	653-8347	+5
15452	JENSEN TINA	924-1584	+5
	MARSDEN S A	653-8536	2
15670	**GUERDON INDUSTRIES**	**653-8471**	4
15795	**KINGS CHPL PENTCSTL**	**653-2210**	2
	MOSLEY ORVAL C REV	653-9211	+5
	RAINBOW RANCH	**653-2210**	+5
★	43 BUS 151 RES	73 NEW	

ALESSANDRO BLVD 1980

24774	HARTER MARGIE F	653-1610	4
24786	RIDGE B J	653-2035	8
24798	XXXX	00	
24810	XXXX	00	
24822	RODRIGUEZ DAVID L	653-1910	+0
24834	XXXX	00	
24846	SHAMHART HAZEL	653-3206	
24858	PETRULAK JOHN	653-1625	
24870	XXXX	00	
24891	BANTA J B	653-1445	
24910	KEITHLEY M LOVERNE	653-4047	5
24994	MOTTERT BILL	653-1768	7
25011★	**MORENO SHELL**	**653-3400**	9
25019★	**PUPPY LUV GRMNG SLN**	**653-2368**	+0
25020	BATSCH FRANK E	653-4411	+0
25021★	**SARGIES SUNNYMD INN**	**653-9944**	6
25023	XXXX	00	
25025	XXXX	00	
25027★	**MORENO VLY MARKET**	**653-2810**	4
25031★	**SUN ENERGY**	**656-1456**	+0
25037★	**G E&ASSOCIATES**	**653-8477**	9
25043★	**POWERHOUSE ENTRPRS**	**653-4231**	9
★	**TELFORD STEVEN**	**653-4231**	9
25045★	**SUN ENERGY**	**653-4176**	9
25120	MATTSON DALE	653-3689	+0
	MATTSON DALE	653-1550	8
25161	XXXX	00	
25400	CASTLEBERRY ROY	653-1765	
25508	RANCK F EDW	653-3849	
	RANCK M	653-5378	9
25539	XXXX	00	
25622	TAYLOR C K	653-4759	+0
25631	KING ROLAND	653-6280	
25634	HANSEN BENNIE M	653-4057	6
25652	HUTCHINSON JIMMIE	653-4758	6
25676	BLECKERT ROY SR	653-5919	9
25681......	NEW HORIZN TRLR VLG		
	ADKINS JOHN	653-8025	+0
	ALLISON PHILLIP	653-0012	+0
	AUVIL S A	653-0692	+0
	BARTON LEE	653-9118	+0
17	BARWELL REGINALD	653-3966	7
18	BEACHAM MAUDIE	653-1916	8
	BEHL BARBARA ANN	653-3571	+0
	BEHL CLARENCE E	653-3571	+0
	BERENDT R KATHLEEN	653-8292	+0
	BOX THERESA	653-4937	+0
	BROWN COLLEEN	653-6635	+0
37	CHRISTOFFRSON ERIC	653-1750	9
	CLINTON BOB	653-7983	+0
	COOPER JAS D	653-9312	+0
	DAVIDSON SARA	653-4396	+0
36	EVANS DOROTHY P	653-5473	6
56	FORD THOS N	653-3488	
87	FUNK GREGORY L	653-3432	7
	GARCIA NELLIE	653-1458	+0
	GOODWIN SANDRA	653-0445	+0
	GREENSIDES JIM	653-0824	+0
	JACKSON DAVE	653-5783	+0
	JINKENS ROBT E JR	653-3789	+0
	JOHNSON GARY	653-7957	+0
40	JONES MACK	653-2944	9
	JONES ROBERT L	653-8695	8
	KELLEY V	653-5342	+0
	LADD BRUCE	653-5916	+0
67	LASON LEVA	653-3887	8
	LOVE SCOTT	656-1334	+0
43	MCFADDEN R H	653-0372	9
	MENICHELLI BLASE	653-1981	+0
	MERCIER HAROLD	653-6182	+0
44	NEALE B	653-3430	6
65★	**NEW HORIZN TRLR VLG**	**653-2991**	
54	NEWBERRY HARRY	653-2942	
	OLLEY DONNA	653-1792	+0
	OLLEY STEVE	653-1792	+0
	ONATIVIA JEANETTE D	653-4785	+0
	PARKER ANNETTE	653-6057	+0
70	PEREA FRANK REY	653-7816	5
	PICKETT ANTHONEY	656-1186	+0
	POLSTON GERALD	653-1511	+0
	REICHERT ROBT SR	653-0928	+0
	RHODES ROY L	653-3459	+0
30	RICE IRWIN	653-4930	
	RICHARDSON EDWIN	653-0819	+0
	SAGER DON	653-7793	+0
	SCHUBERT ALICE	653-0913	+0
41	THOMAS ARTHUR	653-3483	
71	THURMAN GENE	653-0187	9
85	WHITELEY MICHAEL J	653-8863	9
	WILSON P	653-4763	+0
25681................................			
25687	XXXX	00	
25733	XXXX	00	
25767	CRAIG CLAYETTA	653-2997	9
25780	XXXX	00	
25791	WEAVER LILLIAN	653-3654	
25793	YEARRY DELL	653-9304	7
25807	THOMAS THERON GRANT	653-9753	+0
25817	XXXX	00	
25843	XXXX	00	
25873	XXXX	00	
25876	STEINBACHER ROBT	653-2612	
26871......	COUNTRY SQR MBL EST		
	ASHLEY M G	653-1056	9
37	BRYANT JACQUELINE	653-3048	8
50	CALLEROS GUILLERMO	653-1320	7
48	CHESTER WM A	653-3826	8
51	CHURCHILL WARREN A	653-6532	6
20	CODONA ED	653-6841	7
16	COKASH JAS	653-0716	9
9	CONDRON DANL F	653-7487	9
★	**COUNTRY SQ MBL ESTS**	**653-2817**	
	DITTLER KERRY W	653-7035	+0
8	DORRIS LEO	653-6047	7

ALESSANDRO BLVD 1980

..ALESSANDRO BLVD 92388 CONT..

	DRENNAN ARTHUR	653-9261	+0
6	GULDNER KEN L	653-2732	8
	HEISE HERMAN	653-1601	
40	HILL LILY	653-6382	8
10	JACKSON ADDIE C	653-3059	8
43	JOHNSON JEAN	653-3490	9
17	JONES GUY W SR	653-7141	7
4	KIGER MARK	653-0327	9
23	LARSON OSCAR L	653-4792	6
	LAUDICINA PETER	653-2657	+0
38	MACKAY DONALD M	653-5257	8
31	MATE JOHN R	653-7270	
32	MCLEAN RICHARD J	653-1904	9
22	MORTON JOHN C	653-3593	6
24	NICHOLSON TOM	653-2527	
	NOLL PHILIP F	653-8141	+0
11	PETTY WALTER W	653-0261	9
49	PUCKETT JOS JR	653-7336	4
	RANDALL FRED L	653-9479	+0
18	RAWDIN RUTH M	653-3391	8
39	SHAVER MEREDITH E	653-0267	9
41	SPENCER BOBBY G	653-7781	7
	STEPHENS W R	653-8661	+0
30	STRENG REX	653-8029	7
	SWARTS LEWIS E	653-3659	+0
29	VOGEL J P	653-5821	8
46	WATSON KRIS	653-6988	9
5	WEISBROD M W	653-8807	8
26	WELCH M C	653-7480	9
26	WELCH PAUL R	653-7480	9
	WILSON PAUL	653-1240	6
26871	....		
26960	XXXX	00	
26995	SCOTT O H	653-2647	
27241	HARRIS VIRGIL	653-2940	6
27380	GETTNER E	653-2457	9
27740	XXXX	00	
27774	XXXX	00	
27800	XXXX	00	
27850	XXXX	00	
28095	MARTINEZ CARLOS	653-3081	5
28105	XXXX	00	
28135	XXXX	00	
28161	PRIMITIVE PREBOT	653-2869	8
28163	HERRING THADDEUS JR	653-3512	9
28165	XXXX	00	
28167	XXXX	00	
28189	XXXX	00	
28221	EDWARDS F V	653-6228	5
28300	SAMUEL FREDRICK	653-4697	
28344	XXXX	00	
28350	SAULNIER JOSEPH R	653-9130	9
28354	STEWART LEWIS	653-1032	
28382	XXXX	00	
28430	XXXX	00	
28432	KAUFFMAN HOWARD	653-7171	
28448	METCALF ED E	653-4787	8
28460	CRUMB LEANORD	653-5859	9
28470	PALMER CHAS	653-1708	+0
28472	XXXX	00	

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

PERRIS BLVD 1980

11001	XXXX	00	
11010	JONES JOHN W	653-2043	
11016	KNEHANS W HAROLD	653-1589	
11050	LESTER HAROLD	653-4105	9
11065	BERSHAS M J	653-2593	6
11079	HOFFMAN CHESTER JR	653-2367	
11080	HARMON RALPH	653-0816	+0
11091	BERRY RAYMOND W	653-2545	
11110	LIMOGES LARRY	653-1092	6
11200	XXXX	00	
11261	ROBBINS KENNETH R	653-3936	8
11269	SHEPHERD RICHARD	653-1946	4
11315	ALTMEYER FRED	653-5341	5
11463	BROWN MURPHY W	653-7740	
11467	PALUSH ROBERT S	653-2709	9
11469	SNYDER LEONARD G	653-2044	+0
11471	STEELE TIM	653-5725	+0
11473	DEGRUYTER THOS H	653-4416	+0
11480	MCROY IRVIN E	653-1070	+0
	MCROY LE I	653-3779	+0
11495	TABOR EDGAR T	653-2047	
11520	MILLER GRADY L	653-4037	8
11531	KIRKPATRICK F W	653-2788	
11541	KINDER JOHN	653-5713	+0
11581	FOUCRAULT VERNON E	653-1822	8
11641	SNYDER JERRY	653-0405	+0
11650	MISER RHODA MRS	653-2022	
11673	MCFADDEN EARL L	653-1346	+0
11681	XXXX	00	
11701	BROWN CARL	653-5992	8
11725	DARGITZ R L	653-2023	
11734	XXXX	00	
11755	XXXX	00	
11846	LIST N	653-9210	9
	TILLERY A	653-9210	9
11730	OKERT TERRY	653-2937	+0
11866	VONBATSCH EARLE	653-1402	9
11885	XXXX	00	
11971	BONITA MELVIN L	653-5851	+0
11987	GOZZO JAS	653-3378	4
11991	PROVENCE THOS C	653-4830	
12196	XXXX	00	
12371	CARLSON BERGER	653-3942	
12400★	**JAMES WHITE OIL CO**	**653-9815**	5
12531★	**SEVEN 11 FD 17964**	**653-6669**	+0
12656	XXXX	00	
12685★	**MORENO VLY YOUTH**	**653-6730**	+0
★	**MORENO VLY YOUTH**	**653-0450**	+0
12715	EDWARDS FLOYD	653-1041	
12725	COCHRAN CHERYL	653-5556	8
12729	XXXX	00	
12765	RHOADES JIM	653-7737	6
12773	HEISE CALLIE	653-4072	+0
12775	HEISE C	653-2771	9
12795	XXXX	00	
12801	HAYES FRANK E	653-2410	
12819	XXXX	00	
12833	WILLIAMSON CURTIS	653-3425	9
12865	SPARKS E D	653-4796	9
12875	GREEN CHAS A JR	653-3697	
12901	JOHNSON PAUL J	653-2584	
12925	LOMELI ERNEST	653-3954	+0
12981	DAVIS NORMAN A	653-4524	
13057	SANDERS L D	653-4849	6
13141	PENA RICHARD	656-1517	+0
13143	XXXX	00	
13151	METHENY RENEE	653-9731	9
13153	BALDWIN HERMAN	653-9445	8
13237	XXXX	00	
13261★	**CIRCLE K FOOD 872**	**653-7715**	5
13485	HEDRICK A O	653-2912	
13510★	**MARCH MT HI SCHOOL**	**653-1233**	
★	**STCHRISTOPHERS CLUB**	**653-7695**	8
13582	XXXX	00	
13620	LUTTRELL WILLIS	653-2742	+0
13510★	**STCHRISTOPHERS CH**	**653-5310**	
13635	XXXX	00	
13776	XXXX	00	
13778	WASHINGTON C	653-7230	
13800	WATFORD J DAN	653-8939	+0
13802	XXXX	00	
13814	POWERS IRENE	653-7376	8
	POWERS JESSE J	653-7376	8
13816	XXXX	00	
13836	URQUIZA GLORIA	653-8830	+0
13890	XXXX	00	
13911★	**SC MORENO VLY ADMIN**	**653-8441**	
★	**SC MORENO VLY TRNSP**	**653-1677**	
14050★	**KEG ROOM**	**653-9942**	4
14500	XXXX	00	
14631	ULRICH JOHN W	653-4475	
14739	EDWARDS WALTER L	656-1327	+0
14740	TOTTEN ALZBETH	653-3665	+0
14890			
	BARRIGAR FRED N	653-6582	8
	BEATTY VELMA MRS	653-8786	9
	BRANDT SAM	656-1251	+0
	BURCH HUGH	653-5069	+0
	CAINE ELEANOR	653-6321	8
	CALLIOTTE NAOMI	653-3986	7
	CALLIOTTE RAY	653-3986	8
	DOBSON D A	653-7329	+0
	EDDINGER CHAS	653-8820	+0
	EDWARDS OSCAR H	653-8396	+0
	ERICKSON DONNA L	653-1495	8
	FEDDER S G	653-0981	+0
	FLOM LEONARD M	653-6650	8
	FRITZ CLARENCE	653-4861	9
	GAUTHIER ROBT C	656-1206	+0
	GLASSMAN B	653-1057	8
	HARVEY HENRY	653-4556	9
	HAY HOWARD	653-8275	8
	HOBBS RUTH	653-6490	4
	KING GENE	653-7430	9
	KLOK STEFANIJA	653-8816	9
	LESLIE STEPHEN R	653-5830	8
	LEYDECKER JOHN	653-7649	+0
	ONEAL HAROLD J	653-0583	+0
	PHILLIPS FRANK	653-3370	+0
	PROVANCE HARRY M	653-0055	+0
	REGH JACK G	653-7812	9
★	**SKY TRAILS MOBL VLG**	**653-1261**	
	SMITH DONALD SR	653-5135	8
	SOTO ROBT M	653-0682	+0
	TEAGUE JOHN T	653-0356	9

PERRIS BLVD 1980

..PERRIS BLVD		92388 CONT..	
	TUCKER GARY D	653-1757	8
	ZELLERS LAWRENCE E	653-8777	8
15168	XXXX	00	
15260	XXXX	00	
15310	XXXX	00	
15320	XXXX	00	
15344	GARDNER JIMMIE	653-7636	+0
	INMAN RANDY M	653-6453	+0
	RHOADS MARY	653-7836	+0
	WALL ROBT A	653-8094	+0
15360★	**REBCO DEVELOPMENT**	**653-8262**	+0
15670★	**PACIFIC LIVING SYS**	**653-8471**	6
★	14 BUS 122 RES	39 NEW	

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ALESSANDRO BLVD 1975

24774	HARTER MARGIE F	653-1610 4
24798	XXXX	00
24810	WILSON F	653-6098+5
24822	RIDGE JAS D	653-5631 4
24834	XXXX	00
24846	SHAMHART HAZEL	653-3206
24858	PETRULAK JOHN	653-1625
24870	CLARK LARRY W	653-6656+5
24891	BANTA J B	653-1445
24910	KEITHLEY M LOVERNE	653-4047+5
24994	MOTTERT BILL	653-1766
25011	*MORENO SHELL	653-9917
25019	XXXX	00
25021	*SUNNYMEAD TAVERN	653-9944
25023	*CROSSROADS LAUNDRMT	653-9812 4
25025	*BILLYS REST&TK OUT	653-8263 4
25027	*MORENO VALLEY MKT	653-2810 4
25031	*FRANS HOUSE OF PERM	653-9035 4
25037	*SYKES REALTY CO	653-2184 4
25043	*MCINTOSH TLR&CLNRS	653-9890+5
25120	XXXX	00
25161	ROSENZWEIG SOL	653-1804+5
25400	CASTLEBERRY ROY	653-1765
25508	RANCK F EDW	653-3849
25539	SEEMATTER PAUL	653-3558
25622	XXXX	00
25631	KING ROLAND	653-6280
25634	WALDRON LEATHA F	653-2785
25652	HANSEN BENNIE M	653-4057
25681	...NEW HORIZN TRLR VLG	
63	BADGER STEPHEN A	653-5965
45	BALLOU LUISE	653-4210
45	BALLOU ROLAND	653-4210
	BEARD ALBERT LT	653-5830+5
65	BIGGERS HELEN	653-1393
	BLAIR CHAS A JR	653-4266+5
	BRANAM CHRIS	653-7635+5
53	BRUGADA DRUSILLA	653-3406
38	CHAVEZ VINCENT	653-8222 4
	CHERMACK GEO L JR	653-5895+5
	CHRISMAN RENEE	653-7602+5
	CHRISMAN WM M	653-7334+5
	CLUBB LEROY	653-5304+5
	DAY JOHN	653-4828+5
	DAY MARY	653-4828+5
27	DEAN RALPH MRS	653-3075
52	DELYLE ED	653-6989
57	DUKES SPENCER B	653-6618
	ELLIS PAUL	653-8289+5
56	FORD THOS N	653-3488
	GRIFFIN JIM L	653-1569+5
	HILKEY EUGENE	653-1762+5
	MEIERS N M	653-1025+5
33	NESTOR JOHN A	653-6505 4
	*NEW HORIZN TRLR VLG	653-2991
54	NEWBERRY HARRY	653-2942
	PEREA FRANK REY	653-7816+5
	POPE ERNEST P	653-6979+5
40	RAY EARL T	653-2334 4
30	RICE IRWIN	653-4930
58	SCHAAK RUSSELL	653-3230 4
	SMITH ROBT F	653-6079+5
41	THOMAS ARTHUR	653-3483
10	VESTER TOMMIE FAYE	653-3870
	YOUNGS R	653-7958+5
25681	....	
25687	OCANA JENNY	653-7505+5
25733	XXXX	00
25767	DEVAUX GILBERT	653-1978 4
25780	XXXX	00
25791	WEAVER LILLIAN	653-3654
25793	XXXX	00
25807	HINOTE BOB	653-7603+5
25817	XXXX	00
25838	KNIGHT EUGENE	653-4557+5
25843	XXXX	00
25873	TATE WILMA V	653-4285
25876	STEINBACHER ROBT	653-2612
26871	...COUNTRY SQR MBL EST	
	*COUNTRY SQR MBL EST	653-2817
36	ENGLAND WM E	653-7357 4
8	HAWCK ALBERT	653-2795
19	HEISE HERMAN	653-1601
11	JOHNSON G J	653-6425 4
	JONES DICK	653-7030+5
2	KESSLER HARVEY P	653-6159
	KOWALEWSKI DENNIS	653-7892+5
45	LEATHERS MAX W	653-2460
37	MATE JOHN R	653-7270
	MOWER MAX	653-5548+5
24	NICHOLSON TOM	653-2527
49	PUCKETT JOS JR	653-7336 4
10	THOMPSON DONALD	653-6603 4
26871	....	
26995	SCOTT O H	653-2647
27241	HARRIS VIRGIL	653-2940
27380	DAWSON IRVIN	653-4874
27740	*NIEBURGER JACK DR	653-7517
27774	XXXX	00
28095	MARTINEZ CARLOS	653-3081+5
28119	DEVILLE MURPHY W	653-3035+5
28135	JACKSON ADDIE C	653-3059
28161	XXXX	00
28163	XXXX	00
28189	EDWARDS JACK A MRS	653-2913
28221	EDWARDS F V	653-6228+5
28300	SAMUELS FREDRICK	653-4697
28344	BERRY JOSIE C	653-6479 4
28350	JOHNSON JAS P	653-1547
28354	STEWART LEWIS	653-1032

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

PERRIS BLVD 1975

11001	MARQUIS RILEY	653-6455
11010	JONES JOHN W	653-2043
11016	KNEHANS W HAROLD	653-1589
11065*	BALTES MICHAEL J	653-8491+5
	BERSHAS PHILIP	653-2593 4
11079	HOFFMAN CHESTER JR	653-2367
11080	XXXX	00
11091	BERRY RAYMOND W	653-2545
11200	LAMBERT F S	653-2044
11261	SPOMER WM	653-5779
11269	SHEPHERD RICHARD	653-1946 4
11315	ALTMEYER FRED	653-5341+5
11463	BROWN DEBBIE	653-7740
	BROWN MURPHY W	653-7740
11473	POTTER THOS J	653-6236+5
11480	MCROY IRVIN E	653-1070
11495	TABOR EDGAR T	653-2047
11520	JONES LESLIE	653-5200+5
11531	KIRKPATRICK F W	653-2788
11581	FOUCRAULT HELEN S	653-1822
11641	SCHMIDT JACK	653-2345 4
11650	MISER RHODA MRS	653-2022
11673	KING JOHN	653-3706+5
11681	EGGERT HARRY G	653-1821
11725	DARGITZ R L	653-2023
11734	XXXX	00
11755	CRADLE NATHANIEL	653-6706+5
11846	KAEHLER E A	653-1823
11885	XXXX	00
11971	XXXX	00
11987	GOZZO JAS	653-3378 4
11991	PROVENCE THOS C	653-4830
12371	CARLSON BERGER	653-3942
12400*	JAMES WHITE OIL CO	653-9815+5
12656	KIRKWOOD D H	653-6697+5
12715	EDWARDS FLOYD	653-1041
12725	COCHRAN DAN R	653-3961 4
12729	PATTERSON ROBT	653-4172 4
12765	RHODES JIM	653-7737
12773	FLUITER J	653-3534
12775	GALLAND MIKE	653-6774+5
12777	ANGELO JOHN 3D	653-5858+5
12795	XXXX	00
12801	HAYES FRANK E	653-2410
12819	TODRIFF ROY J	653-4949
12833	JOHNSON EARL A	653-5138 4
12865	JOHNSTON GRACE R	653-2272
12875	GREEN CHAS A JR	653-3697
	GREEN MARIE ANN	653-3697
12901	JOHNSON PAUL J	653-2584
12981	DAVIS NORMAN A	653-4524
13141	KITTRELL JOHN E	653-5242+5
13143	ENDSLEY JACKIE L	653-7812 4
13151	XXXX	00

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

PERRIS BLVD 1975

..PERRIS BLVD 92388 CONT..

13153	BECHAR RAMAN L	653-6164+5
13161	RACICOT GABRIELLE	653-6631+5
13237	XXXX	00
13261	*CIRCLE K FD STR 872	653-7715+5
13485	HEDRICK A O	653-2912
13510	*MORENO VLY HI ANNEX	653-1233
	*ST CHRISTOPHERS CH	653-5310
13582	XXXX	00
13620	ROWSEY HUBERT	653-3694 4
13635	POND PATRICE	653-7236 4
	POND ROBT	653-7236 4
13730	GLASSCOCK STEVEN	653-2229+5
13776	XXXX	00
13778	WASHINGTON C	653-7230
13800	WASHINGTON FLOYD	653-3661+5
13802	ROSS WILLIE RAY	653-4534
13814	CARTER PRESTON L	653-4746
13816	RESENDIZ ARMANDO	653-5871 4
13890	XXXX	00
13911	*MORENO VLY SC MNTNC	653-1677
	*MORENO VLY SC TRNSP	653-1677
	*MORENO VLY UNFD SC	653-3174+5
14050	*KEG ROOM	653-9942 4
14631	ULRICH JOHN W	653-4475
14739	DUNNINGTON CALVIN	653-6051 4
14740	HAIR E E	653-4433
14890	...SKY TRAILS MOBL VLG	
	ANDERSON BILL	653-4401+5
21	ANDERSON PAUL A	653-2556
64	CAMPBELL D SSGT	653-1639
36	CHRISTIAN JOS	653-8185
48	COLEMAN N C	653-2587
	COOK ELIZABETH	653-5236+5
	CRUMLEY JERE SSGT	653-2258+5
7	DORMAN T	653-7523
42	EASDALE HAROLD O	653-1598
	HAIDET GLEN R	653-4403+5
	HAMMOND CLARENCE J	653-1879+5
	HAND J R	653-2887+5
3	HOBBS RUTH	653-6490 4
	KAUFMAN ERNEST	653-5510+5
61	MARTI J J S SGT	653-5374
8	MILLER G B	653-5273
	OSTERMANN LARRY	653-5998+5
35	SAVAGE L E	653-6139
	*SKY TRAILS MOBL VLG	653-1261
57	SOMMER DOROTHY I	653-3895
11	STAPLETON ROBT	653-3400 4
14890	....	
15168	CARLSON MERRITT	653-6504+5
	GARZA RODOLFO	653-3929
15260	XXXX	00
15310	*CIRCLE K FOOD 531	653-2215
15320	CLARK EUGENE R	653-1502+5
	FOSSE JERRY	653-3450 4
	MINEGAR STEVE	653-1858+5
	RAMIREZ ARTURO	653-1626+5
15332	GILL OWEN J JR	653-6998+5
	HENNING ROBT D	653-1357+5
	OAS JOHN R	653-7805+5
	RESENDEZ BOBBI	653-6651+5
15344	BOWEN TEDDY	653-2026 4
	SHIMEALL ROBT	653-8166
15600	XXXX	00
15670	*ARLINGTON HOMES INC	653-1191
	*GREENBRIAR HOMES	653-1191
	*RAMADA HOMES INC	653-1191
16641	LEE JOHN	653-3588 4
16659	STAROSTKA WM	653-7755+5
16675	XXXX	00

* 14 BUS 108 RES 34 NEW

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

APPENDIX E

REGULATORY RECORDS DOCUMENTATION

Not Reported
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The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

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GEOCHECK ADDENDUM

Thank you for your business.

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

EXECUTIVE SUMMARY

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TARGET PROPERTY INFORMATION

ADDRESS

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COORDINATES

Ô¿¬·¬«¼» øÒ±®¬¸÷æ	33.9154920 - 33• 54’ 55.77’’
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AERIAL PHOTOGRAPHY IN THIS REPORT

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ßï	ËÒÑÝßÔ ýêçêî	îëðîë ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÍÉÛÛÐÍ ËÍÌô Ýß ÚÈÜ ËÍÌ	Ø·¹¸»®	çðô ðòðïé Ò
Þî		îëïðð ßÔÔÛÍÍßÒÜÎÑ ÞÔ	ÛÜÎ Ø·-¬ Ý´»¿²»®	Ø·¹¸»®	ïðèô ðòðîð
Þí	ÝÊÍ ÐØßÎÓßÝÇ ÒÑ çîîì	îëðéð ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÎÝÎßôÒÙ Ú×ÒÜÍô ÛÝØÑ	Ø·¹¸»®	ïîïô ðòðîí
ßì	ÉßÔÙÎÛÛÒÍ ýëëîé	îëðïï ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÎÝÎßóÝÛÍÏÙ	Ø·¹¸»®	ïíêô ðòðîê
ßë		îëðíð ßÔÔÛÍÍßÒÜÎÑ ÞÔ	ÛÜÎ Ø·-¬ Ý´»¿²»®	Ø·¹¸»®	îðëô ðòðíç
ßê	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ	îëðíð ßÔÔÛÍÍßÒÜÎÑ ÞÔ	ÜÎÇÝÔÛßÒÛÎÍ	Ø·¹¸»®	îðëô ðòðíç
ßé	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ	îëðíð ßÔÔÛÍÍßÒÜÎÑ Þ	ÎÝÎßóÍÏÙô ÚÈÜÛÍÌô ÛÝØÑ	Ø·¹¸»®	îïìô ðòðìï
ßè	ÌÑÍÝßÒß éê ÍÌßÌ×ÑÒ ýê	îëðîð	ÔËÍÌô Ø×ÍÌ ÝßÔ ÝÑÍÌÍ	Ø·¹¸»®	îîçô ðòðìí
ßç	ÓÑÎÛÒÑ ÊßÔÔÛÇ éê ýêç	îëðîð ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÔÍÌ	Ø·¹¸»®	îîçô ðòðìí
ßïð	ÌÑÍÝßÒß éê ÍÌßÌ×ÑÒ ý	îëðîð ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÔÍÌ	Ø·¹¸»®	îîçô ðòðìí
ßïï		îëðîð ßÔÔÛÍÍßÒÜÎÑ ÞÔ	ÛÜÎ Ø·-¬ ß«¬±	Ø·¹¸»®	îîçô ðòðìí
ïî		ïìííë ßÌßÊÛ ÍÌ	ÛÜÎ Ø·-¬ Ý´»¿²»®	Ô±©»®	ëðîô ðòðçë
Ýïí	ßÎÝÑ ýëëîè	îìççì ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÔËÍÌô Ýß ÚÈÜ ËÍÌ	Ø·¹¸»®	ëðéô ðòðçê
Ýïì	ßÎÝÑ ýëëîè	îìççì ßÔÔÛÍÍßÒÜÎÑ ÞÑË	ÔËÍÌ	Ø·¹¸»®	ëðéô ðòðçê
Ýïë	ÓÑÎÛÒÑ ÌßÍÍ ÓßÎÌ	îìççì ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ËÍÌô ÝÛÎÍ ËÍÌ	Ø·¹¸»®	ëðéô ðòðçê
Ýïê	ßÎÝÑ ÚßÝ×Ô×ÌÇ ÒÑ ðëî	îìççì ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÎÝÎßóÍÏÙô ÚÈÜÛÍÌô ÛÝØÑ	Ø·¹¸»®	ëðéô ðòðçê
ïé	ÓÑÎÛÒÑ ÊßÔÔÛÇ ËÒ×ÚÛ×Û	îìçïì ÐÛÎÎ×Ò ÞÔÊÜ	ÝÛÎÍ ÝßÔ ÝÑÍÌÍ ÚÈÜ ËÍÌ	Ø·¹¸»®	ëêêô ðòïðé
Ýïè	Î×Ì ßÌ ÚßÓ×Ô×ÛÍ ïïïí	îìçëî ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÎÝÎßóÍÏÙ	Ø·¹¸»®	êíçô ðòïîï
Ýïç	Î×Ì ßÌ ÌÛÍÌ ÞÛÌÌÛÎ	îìçëï ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÎÝÎßóÍÏÙ	Ø·¹¸»®	êìçô ðòïîí
Üîð	Ó ú Ó ÝÔÛßÒÛÎÍ ×××	îìèîë ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÜÎÇÝÔÛßÒÛÎÍô ØßÆÒÛÌ	Ø·¹¸»®	ïìèê ðòïë
Üîï	ÑÒÛ ÝÔÛßÒÛÎÍ	îìèîë ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÎÝÎßóÍÏÙô ÚÈÜÛÍÌô ÛÝØÑ	Ø·¹¸»®	ïìèê ðòïë
îî	ÓÑÎÛÒÑ ÊßÔÔÛÇ ÎÛÙ×ÑÒ	ÝÛÝ ÐÛÎÎ×Ò ÞÔÊÜ ßÒÜ	ÛÒÊ×ÎÑÍÌÑÎ ÍÐÍ	Ø·¹¸»®	ïïîç ðòîç
Ûîí	Ú×ÎÍÌ ÍÌÛÐ ÙÎÑËÐ ×ÒÝ	îìêëí ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÍÏÙ	Ø·¹¸»®	ïçðé ðòíë
Ûîì	Ú×ÎÍÌ ÍÌÛÐ ÙÎÑËÐ ÓßÒ	îìêëí ßÔÔÛÍÍßÒÜÎÑ ÞÔÊ	ÍÏÙô ÚÈÜÛÍÌô ÛÝØÑ ÒÍÌ	Ø·¹¸»®	ïçðé ðòíë
îë	ÞßÇ ßÎÛßÍ ÜÛÙÎÛÛÍ	îìèçï ÐßÇ ßÎÛßÍ	ÛÒÊ×ÎÑÍÌÑÎ ÍÐÍ	Ø·¹¸»®	ïçìé ðòíè
îê	ÐÎÑÐÛÎÌ× ßÍÍÑÝ×ßÌÛÍ	ÍÛÝ ÝßÍÝßÜÛ ßÎÛßÍ ßÒ	ÛÒÊ×ÎÑÍÌÑÎ ÍÐÍ	Ô±©»®	îìîè ðòìê
îé	ÞßÜÙÛÎ ÍÐÎ×ÒÙ ÓÑÒÌÛ	îìèðë ÞßÎÌÑÒ ÍÌ ßÔÔ	ÛÒÊ×ÎÑÍÌÑÎ ÍÐÍ	Ô±©»®	íïèê ðòêð

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

Ì¸» ¬¿®¹»¬ °®±°»®¬§ ©¿- ²±¬ ´·-¬»¼ ·² ¿²§ ±º ¬¸» ¼¿¬¿¾¿-»- -»¿®½¸»¼ ¾§ ÛÜÎò

DATABASES WITH NO MAPPED SITES

Ò± ³¿°°»¼ -·¬»- ©»®» º±«²¼ ·² ÛÜÎ\'- -»¿®½¸ ±º ¿ª¿·´¿¾´» ø'®»¿-±²¿¾´§ ¿-½»®¬¿·²¿¾´»þ ¹±ª»®²³»²¬ ®»½±®¼- »·¬¸»® ±² ¬¸» ¬¿®¹»¬ °®±°»®¬§ ±® ©·¬¸·² ¬¸» -»¿®½¸ ®¿¼·«- ¿®±«²¼ ¬¸» ¬¿®¹»¬ °®±°»®¬§ º±® ¬¸» º±´´±©·²¹ ¼¿¬¿¾¿-»-æ

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

ÒÐÔ____________________ Ò¿¬·±²¿´ Ð®·±®·¬§ Ô·-¬
Ð®±°±-»¼ ÒÐÔ____________ Ð®±°±-»¼ Ò¿¬·±²¿´ Ð®·±®·¬§ Ô·-¬ Í·¬»-
ÒÐÔ Ô×ÛÒÍ_______________ Ú»¼»®¿´ Í«°»®º«²¼ Ô·»²-

Federal Delisted NPL site list

Ü»´·-¬»¼ ÒÐÔ_____________ Ò¿¬·±²¿´ Ð®·±®·¬§ Ô·-¬ Ü»´»¬·±²-

Federal CERCLIS list

ÚÛÜÛÎßÔ ÚßÝ×Ô×ÌÇ_______ Ú»¼»®¿´ Ú¿½·´·¬§ Í·¬» ×²º±®³¿¬·±² ´·-¬·²¹
ÍÛÓÍ____________________ Í«°»®º«²¼ Û²¬»®°®·-» Ó¿²¿¹»³»²¬ Í§-¬»³

Federal CERCLIS NFRAP site list

ÍÛÓÍóßÎÝØ×ÊÛ__________ Í«°»®º«²¼ Û²¬»®°®·-» Ó¿²¿¹»³»²¬ Í§-¬»³ ß®½¸·ª»

Federal RCRA CORRACTS facilities list

ÝÑÎÎßÝÌÍ_______________ Ý±®®»½¬·ª» ß½¬·±² Î»°±®¬

Federal RCRA non-CORRACTS TSD facilities list

ÎÝÎßóÌÍÜÚ______________ ÎÝÎß ó Ì®»¿¬³»²¬ô Í¬±®¿¹» ¿²¼ Ü·-°±-¿´

Federal institutional controls / engineering controls registries

ÔËÝ×Í___________________ Ô¿²¼ Ë-» Ý±²¬®±´ ×²º±®³¿¬·±² Í§-¬»³
ËÍ ÛÒÙ ÝÑÒÌÎÑÔÍ________ Û²¹·²»»®·²¹ Ý±²¬®±´- Í·¬»- Ô·-¬
ËÍ ×ÒÍÌ ÝÑÒÌÎÑÔ________ Í·¬»- ©·¬¸ ×²-¬·¬«¬·±²¿´ Ý±²¬®±´-

Federal ERNS list

ÛÎÒÍ_____________________ Û³»®¹»²½§ Î»-°±²-» Ò±¬·º·½¿¬·±² Í§-¬»³

State- and tribal - equivalent NPL

ÎÛÍÐÑÒÍÛ_______________ Í¬¿¬» Î»-°±²-» Í·¬»-

EXECUTIVE SUMMARY

State and tribal landfill and/or solid waste disposal site lists

Í É Ú ñ Ô Ú____________________ Í±´·¼ É¿-¬» ײ±® ³ ¿¬·±² Í§-¬» ³

State and tribal leaking storage tank lists

ׂÒÜׂßÒ ÔË Í Ì__________________ Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ײ¼·¿² Ô¿²¼
Í Ô ×Ý_______________________ Í¬¿¬»©·¼» ÍÔ×Ý Ý¿-»-

State and tribal registered storage tank lists

ÚÛÓß ËÍ Ì____________________ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ô·-¬·²¹
ß Í Ì________________________ ß¾±ª»¹®±«²¼ Ð»¬®±´»«³ Í¬±®¿¹» Ì¿²µ Ú¿½·´·¬·»-
ׂÒÜׂßÒ ËÍ Ì_________________ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ײ¼·¿² Ô¿²¼

State and tribal voluntary cleanup sites

ÊÝÐ_________________________ Ê±´«²¬¿®§ Ý´»¿²«° Ð®±¹®¿³ Ð®±°»®¬·»-
ׂÒÜׂßÒ ÊÝÐ________________ Ê±´«²¬¿®§ Ý´»¿²«° Ð®·±®·¬§ Ô·-¬·²¹

State and tribal Brownfields sites

Þ Î Ñ É ÒÚ×ÛÔÜ Í______________ Ý±²-·¼»®»¼ Þ®±©²º·»´¼- Í·¬»- Ô·-¬·²¹

<u>**ADDITIONAL ENVIRONMENTAL RECORDS**</u>

Local Brownfield lists

ËÍ Þ Î Ñ É ÒÚ×ÛÔÜ Í__________ ß Ô·-¬·²¹ ±º Þ®±©²º·»´¼- Í·¬»-

Local Lists of Landfill / Solid Waste Disposal Sites

É ÓËÜ Í ñ Í É ß Ì______________ É¿-¬» Ó¿²¿¹»³»²¬ Ë²·¬ Ü¿¬¿¾¿-»
Í É Î ÝÇ_______________________ Î»½§½´»® Ü¿¬¿¾¿-»
ØßËÔÛÎ Í_____________________ λ¹·-¬»®»¼ É¿-¬» Ì·®» Ø¿«´»®- Ô·-¬·²¹
ׂÒÜׂßÒ ÑÜ×____________________ λ°±®¬ ±² ¬¸» Í¬¿¬«- ±º Ñ°»² Ü«³°- ±² ײ¼·¿² Ô¿²¼-
ÜÛÞ× Í ×Î ÛÜÌ×ÑÒ Ç_____________ Ì±®®»- Ó¿®¬·²»¦ λ-»®ª¿¬·±² ׫²·½·°¿´ Ü«³° Í·¬» Ô·-¬·²¹
ÑÜ×__________________________ Ñ°»² Ü«³° ײª»²¬±®§

Local Lists of Hazardous waste / Contaminated Sites

ËÍ Ø× Í Ì ÝÜÔ_________________ Ü»´·-¬»¼ Ò¿¬·±²¿´ Ý´¿²¼»-¬·²» Ô¿¾±®¿¬±®§ λ¹·-¬®§
Ø× Í Ì Ý¿´ó Í·¬»-________________ Ø·-¬±®·½¿´ Ý¿´-·¬»- Ü¿¬¿¾¿-»
Í Ý Ø__________________________ Í½¸±±´ Ð®±°»®¬§ Û ª¿´«¿¬·±² Ð®±¹®¿³
ÝÜÔ__________________________ Ý´¿²¼»-¬·²» Ü®«¹ Ô¿¾-
Ì±¨·½ Ð·¬-_____________________ Ì±¨·½ Ð·¬- Ý´»¿²«° ß½¬ Í·¬»-
ËÍ ÝÜÔ________________________ Ò¿¬·±²¿´ Ý´¿²¼»-¬·²» Ô¿¾±®¿¬±®§ λ¹·-¬®§

Local Lists of Registered Storage Tanks

Ø× Í Ì ËÍ Ì____________________ Ø¿¦¿®¼±«- Í«¾-¬¿²½» Í¬±®¿¹» Ý±²¬¿·²»® Ü¿¬¿¾¿-»

Local Land Records

Ô×ÛÒ Í_______________________ Û²ª·®±²³»²¬¿´ Ô·»²- Ô·-¬·²¹

EXECUTIVE SUMMARY

Ô×ÛÒÍ Î______ ÝÛÎÝÔß Ô·»² ×²º±®³ ¿¬·±²
ÜÛÛÜ______ Ü»»¼ Î»-¬®·½¬·±² Ô·-¬·²¹

Records of Emergency Release Reports

ØÓ×ÎÍ______ Ø¿¦¿®¼±«- Ó¿¬»®·¿´- ×²º±®³ ¿¬·±² Î»°±®¬·²¹ Í§-¬»³
ÝØÓ×ÎÍ______ Ý¿´·º±®²·¿ Ø¿¦¿®¼±«- Ó¿¬»®·¿´ ×²½·¼»²¬ Î»°±®¬ Í§-¬»³
ÔÜÎ______ Ô¿²¼ Ü·-°±-¿´ Í·¬»- Ô·-¬·²¹
ÓÝÍ______ Ó·´·¬¿®§ Ý´»¿²«° Í·¬»- Ô·-¬·²¹
ÍÐ×ÔÔ Çð______ ÍÐ×ÔÔ Çð ¼¿¬¿ ºº±³ Ú·®- Î»¿®½¸

Other Ascertainable Records

ÎÝÎß Òò²Ù»² ñ ÒÔÎ______ ÎÝÎß ó Òò² Ù»²»®¿¬±®- ñ Ò± Ô±²¹»® Î»¹«´¿¬»¼
ÚËÜÍ______ Ú±®³»®´§ Ë-»¼ Ü»º»²-» Í·¬»-
ÜÑÜ______ Ü»°¿®¬³»²¬ ±º Ü»º»²-» Í·¬»-
ÍÝÎÜ ÜÎÇÝÔÛßÒÛÎÍ______ Í¬¿¬» Ý±¿´·¬·±² º±® Î»³»¼·¿¬·±² ±º Ü®§½´»¿²»®- Ô·-¬·²¹
ËÍ Ú×Ò ßÍÍÛÌ______ Ú·²¿²½·¿´ ß--«®¿²½» ×²º±®³¿¬·±²
ÛÐß ÉßÌÝØ Ô×ÍÌ______ ÛÐß ÉßÌÝØ Ô×ÍÌ
îðîð ÝÑÎ ßÝÌ×ÑÒ______ îðîð Ý±®®»½¬·ª» ß½¬·±² Ð®±¹®¿³ Ô·-¬
ÌÍÝß______ Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´ ß½¬
ÌÎ×Í______ Ì±¨·½ Ý¸»³·½¿´ Î»´»¿-» Í§-¬»³
ÍÍÌÍ______ Í»½¬·±² é Ì®¿½µ·²¹ Í§-¬»³-
ÎÑÜ______ Î»½±®¼- Ñº Ü»½·-·±²
ÎÓÐ______ Î·-µ Ó¿²¿¹»³»²¬ Ð´¿²-
ÎßßÌÍ______ ÎÝÎß ß¼³·²·-¬®¿¬·ª» ß½¬·±² Ì®¿½µ·²¹ Í§-¬»³
ÐÎÐ______ Ð±¬»²¬·¿´´§ Î»-°±²-·¾´» Ð¿®¬·»-
ÐßÜÍ______ ÐÝÞ ß½¬·ª·¬§ Ü¿¬¿¾¿-» Í§-¬»³
×ÝÍ______ ×²¬»¹®¿¬»¼ Ý±³°´·¿²½» ×²º±®³¿¬·±² Í§-¬»³
ÚÌÌÍ______ Ú×ÚÎß ñ ÌÍÝß Ì®¿½µ·²¹ Í§-¬»³ ó Ú×ÚÎß ñ ÌÍÝß ñ Ü»°¿®¬³»²¬ ±º Ô¿¾±®
ßÍÌ ÌÍÝß ñ ÌÍÝß ñ ÚÌÌÍ
ÓÔÌÍ______ Ó¿¬»®·¿´ Ô·½»²-·²¹ Ì®¿½µ·²¹ Í§-¬»³
ÝÑßÔ ßÍØ ÜÑÛ______ Í»´»½¬»¼ Ð±©»® Ð´¿²¬ Ü¿¬¿
ÝÑßÔ ßÍØ ÛÐß______ Ý±¿´ Ý±³¾«-¬·±² Î»-·¼«»- Í«®º¿½» Ì³°±«²¼³»²¬-
ÐÝÞ ÌÎßÒÍÚÑÎÓÛÎ______ ÐÝÞ Ì®¿²-º±®³»® Î»¹·-¬®¿¬·±² Ü¿¬¿¾¿-»
ÎßÜ×ÒÚÑ______ Î¿¼·±´±¹·½¿´ ×²º±®³¿¬·±² Ü¿¬¿¾¿-»
Ø×ÍÌ ÚÌÌÍ______ ÚÌÌÍ ×²-°»½¬·±² ¿²¼ Û²º±®½»³»²¬ Ý¿-» Ô·-¬·²¹
ÜÑÌ ÑÐÍ______ ×²½·¼»²¬ ¿²¼ ß½½·¼»²¬ Ü¿¬¿
ÝÑÒÍÛÒÌ______ Í«°»®º«²¼ øÝÛÎÝÔß÷ Ý±²-»²¬ Ü»½®»»-
×ÒÜ×ßÒ ÎÛÍÛÎÊ______ ×²¼·¿² Î»-»®ª¿¬·±²-
ÚËÍÎßÐ______ Ú±®³»®´§ Ë¬·´·¦»¼ Í·¬»- Î»³»¼·¿´ ß½¬·±² Ð®±¹®¿³
ËÓÌÎß______ Ë®¿²·«³ Ó·´´ Ì¿·´·²¹- Í·¬»-
ÔÛßÜ ÍÓÛÔÌÛÎÍ______ Ô»¿¼ Í³»´¬»® Í·¬»-
ËÍ ß×ÎÍ______ ß»®±³»¬®·½ ×²º±®³¿¬·±² Î»¬®·»ª¿´ Í§-¬»³ Ú¿½·´·¬§ Í§-¬»³
Ë Ì ÓßÍÍ______ Ð±´´«¬·±² Ð®»ª»²¬·±² Í§-¬»³
Ü×ÎÜ Ï______ ×²¼«-¬®·¿´ ¿²¼ Ø¿¦¿®¼±«- Ú¿½·´·¬·»- Í·¬»- Ô·-¬·²¹
ÚÓ Ô ÚßÍ ÓÊÝÉÌ ÚÑÌ______ Ð±¬»²¬·¿´´§ Ý±²¬¿³·²¿¬»¼ Í·¬»-
Ý±¿´ ß-¸-______ ¬Ý±¿´ ß-¸- ¿²¼ Ø¿¦¿®¼±«- É¿-¬» Ô·-¬·²¹
ÝÛÜß Ô·-¬·²¹ -______ ÝÛÜß Î»-°±²-» Ô·-¬
ÛÐÝ×______ Û ³ · - - ·±² - ×²ª»²¬±®§ Ü¿¬¿
ÛÍÝ______ Û²º±®½»³»²¬ ß½¬·±² Ô·-¬·²¹
Ú·²¿²½·¿´ ß--«®¿²½»______ Ú·²¿²½·¿´ ß--«®¿²½» ×²º±®³¿¬·±² Ô·-¬·²¹
ØßÆÒÛÌ______ Ø¿¦¿®¼±«- É¿-¬» Ó¿²¿¹»³»²¬ Ü¿¬¿

EXECUTIVE SUMMARY

ØÉÐ____________________ Û²ª·®±Í¬±® Ð»®³·¬¬»¼ Ú¿½·´·¬·»- Ô·-¬·²¹
ØÉÌ____________________ Î»¹·-¬»®»¼ Ø¿¦¿®¼±«- É¿-¬» Ì®¿²-°±®¬»® Ü¿¬¿¾¿-»
ÓxÒÛÍ____________________ Ó·²»- Í·¬» Ô±½¿¬·±² Ô·-¬·²¹
ÓÉÓÐ____________________ Ó»¼·½¿´ É¿-¬» Ó¿²¿¹»³»²¬ Ð®±¹®¿³ Ô·-¬·²¹
ÒÐÜÛÍ____________________ ÒÐÜÛÍ Ð»®³·¬- Ô·-¬·²¹
ÐÛÍÌ ÔxÝ____________________ Ð»-¬·½·¼» Î»¹«´¿¬·±² Ô·½»²-»- Ô·-¬·²¹
ÐÎÑÝ____________________ Ý»®¬·º·»¼ Ð®±½»--±®- Ü¿¬¿¾¿-»
Ò±¬·º§ êë____________________ Ð®±°±-·¬·±² êë Î»½±®¼-
ËxÝ____________________ ËxÝ Ô·-¬·²¹
ÉßÍÌÛÉßÌÛÎ ÐxÌÍ____________________ Ñ·´ É¿-¬»©¿¬»® Ð·¬- Ô·-¬·²¹
ÉÜÍ____________________ É¿-¬» Ü·-½¸¿®¹» Í§-¬»³
ÉxÐ____________________ É»´´ x²ª»-¬·¹¿¬·±² Ð®±¹®¿³ Ý¿-» Ô·-¬
ÛÝØÑ____________________ Û²º±®½»³»²¬ ú Ý±³°´·¿²½» Ø·-¬±®§ x²º±®³¿¬·±²
ÚËÛÔÍ ÐÎÑÙÎßÓ____________________ ÛÐß Ú«»´- Ð®±¹®¿³ Î»¹·-¬»®»¼ Ô·-¬·²¹

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

ÛÜÎ ÓÙÐ____________________ ÛÜÎ Ð®±°®·»¬¿®§ Ó¿²«º¿½¬«®»¼ Ù¿- Ð´¿²¬-

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

ÎÙß ÔÚ____________________ Î»½±ª»®»¼ Ù±ª»®²³»²¬ ß®½¸·ª» Í±´·¼ É¿-¬» Ú¿½·´·¬·»- Ô·-¬
ÎÙß ÔËÍÌ____________________ Î»½±ª»®»¼ Ù±ª»®²³»²¬ ß®½¸·ª» Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ

SURROUNDING SITES: SEARCH RESULTS

Í«®®±«²¼·²¹ -·¬»- ©»®» ·¼»²¬·º·»¼ ·² ¬¸» º±´´±©·²¹ ¼¿¬¿¾¿-»-ò

Û´»ª¿¬·±²- ¸¿ª» ¾»»² ¼»¬»®³·²»¼ º®±³ ¬¸» ËÍÙÍ Ü·¹·¬¿´ Û´»ª¿¬·±² Ó±¼»´ ¿²¼ -¸±«´¼ ¾» »ª¿´«¿¬»¼ ±² ¿ ®»´¿¬·ª» ø²±¬ ¿¾-±´«¬»÷ ¾¿-·-ò Î»´¿¬·ª» »´»ª¿¬·±² ·²º±®³¿¬·±² ¾»¬©»»² -·¬»- ±º ½´±-» °®±¨·³·¬§ -¸±«´¼ ¾» º·»´¼ ª»®·º·»¼ò Í·¬»- ©·¬¸ ¿² »´»ª¿¬·±² »¯«¿´ ¬± ±® ¸·¹¸»® ¬¸¿² ¬¸» ¬¿®¹»¬ °®±°»®¬§ ¸¿ª» ¾»»² ¼·ºº»®»²¬·¿¬»¼ ¾»´±© º®±³ -·¬»- ©·¬¸ ¿² »´»ª¿¬·±² ´±©»® ¬¸¿² ¬¸» ¬¿®¹»¬ °®±°»®¬§ò Ð¿¹» ²«³¾»®- ¿²¼ ³¿° ·¼»²¬·º·½¿¬·±² ²«³¾»®- ®»º»® ¬± ¬¸» ÛÜÎ Î¿¼·«- Ó¿° ®»°±®¬ ©¸»®» ¼»¬¿·´»¼ ¼¿¬¿ ±² ¬¸» ·²¼·ª·¼«¿´ -·¬»- ½¿² ¾» ®»ª·»©»¼ò

Í·¬»- ´·-¬»¼ ·² ***bold italics*** ¿®» ·² ³«´¬·°´» ¼¿¬¿¾¿-»-ò

Ë²³¿°°¿¾´» øø±® ±®°¸¿²÷ -·¬»- ¿®» ²±¬ ½±²-·¼»®»¼ ·² ¬¸» º±®»¹±·²¹ ¿²¿´§-·-ò

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

ÎÝÎßóÔÏÙ: ÎÝÎß ×²º± ·- ÛÐßŽ- ½±³°®»¸»²-·ª» ·²º±®³¿¬·±² -§-¬»³ô °®±ª·¼·²¹ ¿½½»-- ¬± ¼¿¬¿ -«°°±®¬·²¹ ¬¸» Î»-±«®½» Ý±²-»®ª¿¬·±² ¿²¼ Î»½±ª»®§ ß½¬ øÎÝÎß÷ ±º ïçéê ¿²¼ ¬¸» Ø¿¦¿®¼±«- ¿²¼ Í±´·¼ É¿-¬» ß³»²¼³»²¬- øØÍÉß÷ ±º ïçèìò Ì¸» ¼¿¬¿¾¿-» ·²½´«¼»- -»´»½¬·ª» ·²º±®³¿¬·±² ±² -·¬»- ©¸·½¸ ¹»²»®¿¬»ô ¬®¿²-°±®¬ô -¬±®»ô ¬®»¿¬ ¿²¼ñ±® ¼·-°±-» ±º ¸¿¦¿®¼±«- ©¿-¬» ¿- ¼»º·²»¼ ¾§ ¬¸» ÎÝÎßò Ô¿®¹» ¯«¿²¬·¬§ ¹»²»®¿¬±®- øÔÏÙ-÷ ¹»²»®¿¬» ±ª»® ïôððð µ·´±¹®¿³- øµ¹÷ ±º ¸¿¦¿®¼±«- ©¿-¬»ô ±® ±ª»® ï µ¹ ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬» °»® ³±²¬¸ò

ß ®»ª·»© ±º ¬¸» ÎÝÎßóÔÏÙ ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜÎô ¿²¼ ¼¿¬»¼ ïîñðçñîðïë ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ¿®» í

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

EXECUTIVE SUMMARY

Î Ý Î ßóÔ Ï Ù -·¬»- ©·¬¸·² ¿°°®±¨· ³ ¿¬»´§ ðòîë ³ ·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CVS PHARMACY NO 9224	*25070 ALESSANDRO BLV*	*N 0 - 1/8 (0.023 mi.)*	*B3*	*10*
Î×ÌÛ ß×Ü ýêî í ï	î ì çç ï ßÔÛ Í Í ßÒÜ Î Ñ ÞÔÊ	ÒÉ ð ó ïñè øðòï ïé ³ ·ò÷	Ý ï è	ì ï
Î×ÌÛ ß×Ü ÒÑ êî í ï	î ì çç ï ßÔÛ Í Í ßÒÜ Î Ñ ÞÔÊ	ÒÉ ð ó ïñè øðòï ïé ³ ·ò÷	Ý ï ç	ì í

Î Ý Î ßóÍ Ï Ù¿ Î Ý Î ß×²º± ·- ÛÐßž- ½± ³ °®»¸»²-·ª» ·²º±®³ ¿¬·±² -§-¬» ³ ò °®±ª·¼·²¹ ¿½½»-- ¬± ¼¿¬¿ -«°°±®¬·²¹ ¬¸» Î»-±«®½» Ý±²-»®ª¿¬·±² ¿²¼ Î»½±ª»®§ ß½¬ øÎ Ý Î ß÷ ±º ïçéê ¿²¼ ¬¸» Ø¿¦¿®¼±«- ¿²¼ Í±´·¼ É¿-¬» ß³»²¼³»²¬- øØ Í É ß÷ ±º ïçèìò Ì¸» ¼¿¬¿¾¿-» ·²½´«¼»- -»´»½¬·ª» ·²º±®³ ¿¬·±² ±² -·¬»- ©¸·½¸ ¹»²»®¿¬»ô ¬®¿²-°±®¬ô -¬±®»ô ¬®»¿¬ ¿²¼ñ±® ¼·-°±-» ±º ¸¿¦¿®¼±«- ©¿-¬» ¿- ¼»º·²»¼ ¾§ ¬¸» Î Ý Î ß ò Í ³ ¿´´ ¯«¿²¬·¬§ ¹»²»®¿¬±®- øÍ Ï Ù-÷ ¹»²»®¿¬» ¾»¬©»»² ïðð µ¹ ¿²¼ ïôððð µ¹ ±º ¸¿¦¿®¼±«- ©¿-¬» °»® ³ ±²¬¸ò

ß ®»ª·»© ±º ¬¸» Î Ý Î ßóÍ Ï Ù ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜ Î ô ¿²¼ ¼¿¬»¼ ï îñðçñîðïë ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ¿®» í Î Ý Î ßóÍ Ï Ù -·¬»- ©·¬¸·² ¿°°®±¨· ³ ¿¬»´§ ðòîë ³ ·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BEAR VALLEY CLEANERS	*25030 ALLESSANGRED B*	*NW 0 - 1/8 (0.041 mi.)*	*A7*	*19*
ARCO FACILITY NO 052	*24994 ALESSANDRO BLV*	*NW 0 - 1/8 (0.096 mi.)*	*C16*	*37*
ORIO CLEANERS	*24825 ALESSANDRO BLV*	*WNW 1/8 - 1/4 (0.225 mi.)*	*D21*	*47*

Î Ý Î ßóÝÛ Í Ï Ù¿ Î Ý Î ß×²º± ·- ÛÐßž- ½± ³ °®»¸»²-·ª» ·²º±®³ ¿¬·±² -§-¬» ³ ò °®±ª·¼·²¹ ¿½½»-- ¬± ¼¿¬¿ -«°°±®¬·²¹ ¬¸» Î»-±«®½» Ý±²-»®ª¿¬·±² ¿²¼ Î»½±ª»®§ ß½¬ øÎ Ý Î ß÷ ±º ïçéê ¿²¼ ¬¸» Ø¿¦¿®¼±«- ¿²¼ Í±´·¼ É¿-¬» ß³»²¼³»²¬- øØ Í É ß÷ ±º ïçèìò Ì¸» ¼¿¬¿¾¿-» ·²½´«¼»- -»´»½¬·ª» ·²º±®³ ¿¬·±² ±² -·¬»- ©¸·½¸ ¹»²»®¿¬»ô ¬®¿²-°±®¬ô -¬±®»ô ¬®»¿¬ ¿²¼ñ±® ¼·-°±-» ±º ¸¿¦¿®¼±«- ©¿-¬» ¿- ¼»º·²»¼ ¾§ ¬¸» Î Ý Î ß ò Ý±²¼·¬·±²¿´´§ »¨»³ °¬ -³ ¿´´ ¯«¿²¬·¬§ ¹»²»®¿¬±®- øÝÛ Í Ï Ù-÷ ¹»²»®¿¬» ´»-- ¬¸¿² ïðð µ¹ ±º ¸¿¦¿®¼±«- ©¿-¬»ô ±® ´»-- ¬¸¿² ï µ¹ ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬» °»® ³ ±²¬¸ò

ß ®»ª·»© ±º ¬¸» Î Ý Î ßóÝÛ Í Ï Ù ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜ Î ô ¿²¼ ¼¿¬»¼ ï îñðçñîðïë ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ·- ï Î Ý Î ßóÝÛ Í Ï Ù -·¬» ©·¬¸·² ¿°°®±¨· ³ ¿¬»´§ ðòîë ³ ·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
É ßÔÙ Î ÛÛÒ Í ýëëîé	îëðïï ßÔÛ Í Í ßÒÜ Î Ñ ÞÔÊ	ÒÒÉ ð ó ïñè øðòðîê ³ ·ò÷	ß ì	ïê

State- and tribal - equivalent CERCLIS

ÛÒÊ×Î Ñ Í Ì ßÎ Ì¿ Ì¸» Ü»°¿®¬³ »²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´ž- ¼¿¬¿¾¿-» ·- ¾»·²¹ ®»½·®½«´¿¬»¼ º±® ¬¸» °«®°±-» ±º ·¼»²¬·º§·²¹ °±¬»²¬·¿´ ½±²¬¿³ ·²¿¬»¼ -·¬»-ò Ì¸» ¼¿¬¿¾¿-» °®±ª·¼»- ·²º±®³ ¿¬·±² ¿¾±«¬ ´±½¿¬·±²-ô ³ ¿²¿¹»³ »²¬ô ¿²¼ ½«®®»²¬ -¬¿¬«- ±º ¬¸» ¿½¬·ª·¬·»- ·²ª±´ª·²¹ ¸¿¦¿®¼±«- -«¾-¬¿²½» ®»´»¿-»- ±® ¬¸®»¿¬»²»¼ ®»´»¿-»-ô ¿²¼ ©·´´ ¸»´° Ü Ì Í Ý ¿²¼ ¬¸» °«¾´·½ «²¼»®-¬¿²¼ ¬¸» ²¿¬«®» ¿²¼ »¨¬»²¬ ±º ¬¸» ½±²¬¿³ ·²¿¬·±² ¿²¼ ¬¸» °®±¹®»-- ±º ¬¸» ½´»¿²«° ¿½¬·ª·¬·»-ò

ß ®»ª·»© ±º ¬¸» ÛÒÊ×Î Ñ Í Ì ßÎ Ì ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜ Î ô ¿²¼ ¼¿¬»¼ ðîñðêñîðïê ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ·- ì ÛÒÊ×Î Ñ Í Ì ßÎ Ì -·¬» ©·¬¸·² ¿°°®±¨· ³ ¿¬»´§ ï ³ ·´» ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MORENO VALLEY REGION Ú¿½·´·¬§ ×¼æ êðððëðî Í¬¿¬«-æ Ò± Ú«®¬¸»® ß½¬·±²	***NEC PERRIS BOULEVARD***	***N 1/4 - 1/2 (0.290 mi.)***	***22***	***48***
BAY AVENUE ELEMENTAR Ú¿½·´·¬§ ×¼æ ííèîðïð Í¬¿¬«-æ Ò± Ú«®¬¸»® ß½¬·±²	***24801 BAY AVENUE***	***NW 1/4 - 1/2 (0.368 mi.)***	***25***	***55***

Lower Elevation	Address	Direction / Distance	Map ID	Page
PROPOSED ALTERNATIVE Ú¿½·´·¬§ ×¼æ êðððëëí Í¬¿¬«-æ Ò± Ú«®¬¸»® ß½¬·±²	***SEC CACTUS AVENUE AN***	***SW 1/2 - 1 (0.549 mi.)***	***26***	***58***
BADGER SPRINGS MIDDL Ú¿½·´·¬§ ×¼æ êðððèîê Í¬¿¬«-æ Ò± Ú«®¬¸»® ß½¬·±²	***24750 DELPHINIUM AVE***	***SSW 1/2 - 1 (0.569 mi.)***	***27***	***61***

State and tribal leaking storage tank lists

ÔËÍ Ìæ Ì¸» Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ ×²½·¼»²¬ Î»°±®¬- ½±²¬¿·² ¿² ·²ª»²¬±®§ ±º ®»°±®¬»¼ ´»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ ·²½·¼»²¬-ò Ì¸» ¼¿¬¿ ½±³» º®±³ ¬¸» Í¬¿¬» É¿¬»® Î»-±«®½»- Ý±²¬®±´ Þ±¿®¼ Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ ×²º±®³¿¬·±² Í§-¬»³ò

ß ®»ª·»© ±º ¬¸» ÔËÍ Ì ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜ Îô ¿²¼ ¼¿¬»¼ ðíñïìñîðïê ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ¿®» ê ÔËÍ Ì -·¬»- ©·¬¸·² ¿°°®±¨·³¿¬»´§ ðòë ³·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TOSCO/ 76 STATION #6 Ú¿½·´·¬§ Í¬¿¬«-æ Ð®»´·³·²¿®§ -·¬» ¿--»--³»²¬ «²¼»®©¿§ Ù´±¾¿´ ×Üæ Ìðêðêëðêðëíë	***25020***	***NNW 0 - 1/8 (0.043 mi.)***	***A8***	***21***
ÌÑÍÝÑ ñéê ÍÌßÌ×ÑÒ ý Í¬¿¬«-æ Ý±³°´»¬»¼ ó Ý¿-» Ý´±-»¼ Ú¿½·´·¬§ ×¼æ çèðêðç Ú¿½·´·¬§ ×¼æ îðêîîëéí Ù´±¾¿´ ×¼æ Ìðêðêëðêðëíë Ù´±¾¿´ ×¼æ Ìðêðêëðìëðí Ú¿½·´·¬§ Í¬¿¬«-æ ç	îëðîð ßÔÛÍ ÍßÒÜÎÑ ÞÔÊ	ÒÒÉ ð ó ïñè øðòðìí ³·ò÷	ßïð	îî
ARCO #5208 Í¬¿¬«-æ Ý±³°´»¬»¼ ó Ý¿-» Ý´±-»¼ Ú¿½·´·¬§ ×¼æ îðîïïèìðë Ù´±¾¿´ ×¼æ Ìðêðêëðêîéç Ú¿½·´·¬§ Í¬¿¬«-æ ç	***24994 ALESSANDRO BLV***	***NW 0 - 1/8 (0.096 mi.)***	***C13***	***32***
ßÎÝÑ ýëîðè Ú¿½·´·¬§ Í¬¿¬«-æ Ð®»´·³·²¿®§ -·¬» ¿--»--³»²¬ ©±®µ°´¿² -«¾³·¬¬»¼ Ù´±¾¿´ ×Üæ Ìðêðêëðêîéç	îìççì ßÔÛÍ ÍßÒÜÎÑ ÞÔÊ	ÒÉ ð ó ïñè øðòðçê ³·ò÷	Ýïì	íë
Ú×ÎÛ ÍÌßÌ×ÑÒ ÍÌß Ì×ÑÒ ýîîë Í¬¿¬«-æ Ý±³°´»¬»¼ ó Ý¿-» Ý´±-»¼ Ú¿½·´·¬§ ×¼æ çèðïïç Ù´±¾¿´ ×¼æ Ìðêðêëðèðïé	îìêéí ßÔÛÍ ÍßÒÜÎÑ ÞÔÊ	ÉÒÉ ïñì ó ïñî øðòíêï ³·ò÷	Ûîí	ëï

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

EXECUTIVE SUMMARY

Ú¿½·´·¬§ Í¬¿¬«-æ ç

FIRESTONE STORES #27	*24673 ALESSANDRO BLV*	*WNW 1/4 - 1/2 (0.361 mi.)*	*E24*	*53*

Ú¿½·´·¬§ Í¬¿¬«-æ Ý¿-» Ý´±-»¼
Ù´±¾¿´ ×Üæ Ìðêðêëðð ë ïé

State and tribal registered storage tank lists

Ë Í Ìæ Ì¸» Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ ¼¿¬¿¾¿-» ½±²¬¿·²- ®»¹·-¬»®»¼ ËÍÌ-ò ËÍÌ- ¿®» ®»¹«´¿¬»¼ «²¼»® Í«¾¬·¬´» × ±º ¬¸» Î»-±«®½» Ý±²-»®ª¿¬·±² ¿²¼ Î»½±ª»®§ ß½¬ øÎÝÎß÷ò Ì¸» ¼¿¬¿ ½±³» º®±³ ¬¸» Í¬¿¬» É¿¬»® Î»-±«®½»- Ý±²¬®±´ Þ±¿®¼ù- Ø¿¦¿®¼±«- Í«¾-¬¿²½» Í¬±®¿¹» Ý±²¬¿·²»® Ü¿¬¿¾¿-»ò

ß ®»ª·»© ±º ¬¸» ËÍÌ ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜÎô ¿²¼ ¼¿¬»¼ ðíñïìñîðïê ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ¿®» î ËÍÌ -·¬»- ©·¬¸·² ¿°°®±¨·³¿¬»´§ ðòîë ³·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ÓÑ Î ÛÒÑ ÊßÔÔÛÇ éê ýêç	îëðîð ßÔÛÍ Í ßÒÜ Î Ñ ÞÔÊ	ÒÒÉ ð ó ïñè øðòðìí ³·÷	ßç	î î

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MORENO GAS MART	*24994 ALESSANDRO BLV*	*NW 0 - 1/8 (0.096 mi.)*	*C15*	*36*

Ú¿½·´·¬§ ×¼æ èðëè

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

Í ÉÛÛÐ Í Ë Í Ìæ Í¬¿¬»©·¼» Û²ª·®±²³»²¬¿´ Ûª¿´«¿¬·±² ¿²¼ Ð´¿²²·²¹ Í§-¬»³ò Ì¸·- «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ ´·-¬·²¹ ©¿- «°¼¿¬»¼ ¿²¼ ³¿·²¬¿·²»¼ ¾§ ¿ ½±³°¿²§ ½±²¬¿½¬»¼ ¾§ ¬¸» Í É Î ÝÞ ·² ¬¸» »¿®´§ ïççðù-ò Ì¸» ´·-¬·²¹ ·- ²± ´±²¹»® «°¼¿¬»¼ ±® ³¿·²¬¿·²»¼ò Ì¸» ´±½¿´ ¿¹»²½§ ·- ¬¸» ½±²¬¿½¬ º±® ³±®» ·²º±®³¿¬·±² ±² ¿ -·¬» ±² ¬¸» Í ÉÛÛÐ Í ´·-¬ò

ß ®»ª·»© ±º ¬¸» Í ÉÛÛÐ Í ËÍÌ ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜÎô ¿²¼ ¼¿¬»¼ ðêñðïñïççì ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ¿®» í Í ÉÛÛÐ Í ËÍÌ -·¬»- ©·¬¸·² ¿°°®±¨·³¿¬»´§ ðòîë ³·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNOCAL #6962	*25025 ALESSANDRO BLV*	*NNW 0 - 1/8 (0.017 mi.)*	*A1*	*8*

Í¬¿¬«-æ ß
Ì¿²µ Í¬¿¬«-æ ß
Ý±³° Ò«³¾»®æ ï íëèð

MORENO GAS MART	*24994 ALESSANDRO BLV*	*NW 0 - 1/8 (0.096 mi.)*	*C15*	*36*

Í¬¿¬«-æ ß
Ì¿²µ Í¬¿¬«-æ ß
Ý±³° Ò«³¾»®æ ïçê

MORENO VALLEY UNIFIE	*13911 PERRIS BLVD*	*NNW 0 - 1/8 (0.107 mi.)*	*17*	*39*

Í¬¿¬«-æ ß
Ì¿²µ Í¬¿¬«-æ ß
Ý±³° Ò«³¾»®æ ïêêìè

EXECUTIVE SUMMARY

Ýß ÚxÜ Ë Í Ì ìæ Ì ¸» Ú¿½·´·¬§ ×²ª»²¬±®§ Ü¿¬¿¾¿-» ½±²¬¿·²- ¿½¬·ª» ¿²¼ ·²¿½¬·ª» «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ ´±½¿¬·±²- Ì¸» -±«®½» ·- ¬¸» Í¬¿¬» É¿¬»® Î»-±«®½» Ý±²¬®±´ Þ±¿®¼Œ

ß ®»ª·»© ±º ¬¸» Ýß ÚxÜ Ë Í Ì ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜÎô ¿²¼ ¼¿¬»¼ ïðñíïñïççì ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ¿®» í Ýß ÚxÜ Ë Í Ì -·¬»- ©·¬¸·² ¿°°®±¨·³¿¬»´§ ðòîë ³·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNOCAL #6962 Ú¿½·´·¬§ ×¼æ í íðððêèç ï Í¬¿¬«-æ ß	*25025 ALESSANDRO BLV*	*NNW 0 - 1/8 (0.017 mi.)*	*A1*	*8*
ARCO #5208 Ú¿½·´·¬§ ×¼æ í íðððèèí Í¬¿¬«-æ ß	*24994 ALESSANDRO BLV*	*NW 0 - 1/8 (0.096 mi.)*	*C13*	*32*
MORENO VALLEY UNIFIE Ú¿½·´·¬§ ×¼æ í íðð î îéë Í¬¿¬«-æ ß	*13911 PERRIS BLVD*	*NNW 0 - 1/8 (0.107 mi.)*	*17*	*39*

Other Ascertainable Records

Ü Î ÇÝÔÛßÒÛ Î Íæ ß ´·¬ ±º ¼®§½´»¿²»® º¿½·´·¬·»- ¬¸¿¬ ¸¿ª» ÛÐß ×Ü ²«³¾»®- Ì¸»-» ¿®» º¿½·´·¬·»- ©·¬¸ ½»®¬¿·² ÍxÝ ½±¼»- °±©»® ´¿«²¼®·»-ô ¹¿®³»²¬ °®»--·²¹ ¿²¼ º·²·-¸·²¹ô ´¿«²¼®§ ¿²¼ ¹¿®³»²¬ -»®ª·½»-ô ½¿®°»¬ ¿²¼ «°¸±´-¬»®§ ½´»¿²·²¹ô ¿²¼ ¼®§½´»¿²·²¹ °´¿²¬-ô »¨½»°¬ ®«¹ ½´»¿²·²¹ò

ß ®»ª·»© ±º ¬¸» Ü Î ÇÝÔÛßÒÛ Î Í ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜÎô ¿²¼ ¼¿¬»¼ ðîñðèñîðïê ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ¿®» î Ü Î ÇÝÔÛßÒÛ Î Í -·¬»- ©·¬¸·² ¿°°®±¨·³¿¬»´§ ðòîë ³·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ÞÛß Î ÊßÔÔÛÇ ÝÔÛßÒÛ Î Í ÛÐß ×¼æ ÝßÔðððîìëëïì	îëðíð ßÔÔÛÍÍßÒÜ Î ß ÞÔ	ÒÒÉ ð ó ïñè øðòðíç ³·÷	ßê	ïç
M & M CLEANERS III ÛÐß ×¼æ ÝßÔððíçëêè	*24825 ALESSANDRO BLV*	*WNW 1/8 - 1/4 (0.225 mi.)*	*D20*	*45*

Øx Í Ì ÝÑ Î ÌÛ Í Ûæ Ì¸» -±«®½» ±º ¬¸·- ¼¿¬¿¾¿-» ·- ¬¸» Í¬¿¬» É¿¬»® Î»-±«®½» Ý±²¬®±´ Þ±¿®¼ ÅÔË Í Ì Åô ¬¸» ½±«²¬§ ¿²¼ ¬¸» ÉÌÑ ÅÍÉÛÛÐÍ ¿²¼ ¬¸» Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´ ÅÝßÔ Í × Ì Û Åò Ì¸·- ´·-¬ ·- ¿ ´·-¬·²¹ ±º ¬¸±-» ¬¿²µ- ¬¸¿¬ ¸¿ª» »¨·-¬»¼ò

ß ®»ª·»© ±º ¬¸» Øx Í Ì ÝÑ Î ÌÛ Í Û ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜÎô ¿²¼ ¼¿¬»¼ ðîñðïñïççð ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ¿®» î Øx Í Ì ÝÑ Î ÌÛ Í Û -·¬»- ©·¬¸·² ¿°°®±¨·³¿¬»´§ ðòë ³·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TOSCO/ 76 STATION #6 Î»¹ ×¼æ ðèííðíîíî	*25020*	*NNW 0 - 1/8 (0.043 mi.)*	*A8*	*21*
FIRESTONE STORES #27 Î»¹ ×¼æ ðèííðíïïèí	*24673 ALESSANDRO BLV*	*WNW 1/4 - 1/2 (0.361 mi.)*	*E24*	*53*

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

ÛÜÎ Ø·-¬ ß«¬±ª ÛÜÎ ¸¿- -»¿®½¸»¼ -»´»½¬»¼ ²¿¬·±²¿´ ½±´´»½¬·±²- ±º ¾«-·²»-- ¼·®»½¬±®·»- ¿²¼ ¸¿- ½±´´»½¬»¼ ´·-¬·²¹- ±º °±¬»²¬·¿´ ¹¿- -¬¿¬·±²ñº·´´·²¹ -¬¿¬·±²ñ-»®ª·½» -¬¿¬·±² -·¬»- ¬¸¿¬ ©»®» ¿ª¿·´¿¾´» ¬± ÛÜÎ ®»-»¿®½¸»®-ò ÛÜÎ Ž- ®»ª·»© ©¿- ´·³·¬»¼ ¬± ¬¸±-» ½¿¬»¹±®·»- ±º -±«®½»- ¬¸¿¬ ³·¹¸¬ô ·² ÛÜÎ Ž- ±°·²·±²ô ·²½´«¼» ¹¿- -¬¿¬·±²ñº·´´·²¹ -¬¿¬·±²ñ-»®ª·½» -¬¿¬·±² »-¬¿¾´·-¸³»²¬-ò Ì¸» ½¿¬»¹±®·»- ®»ª·»©»¼ ·²½´«¼»¼ ô ¾«¬ ©»®» ²±¬ ´·³·¬»¼ ¬± ¹¿-ô ¹¿-±´·²»ô ¹¿- -¬¿¬·±²ô ¹¿-±´·²» -¬¿¬·±²ô -»®ª·½» -¬¿¬·±²ô -»®ª·½» -¬¿¬·±² »¬½ò Ì¸·- ¼¿¬¿¾¿-» ·- ¼¿¬»¼ ¬± ¬¸» ´¿¬» ïçíð-ò ÛÜÎ ½´¿--·º·»- ¿ ¿²¼ ·²º±®³¿¬·±² ÛÜÎ ½´¿--·º·»- »²¬®·»- ¿- ÛÜÎ Ž- ØÎØÎ ò ÛÜÎ Ž- ØÎØÎ »ºº±®¬ °®»-»²¬- «²·¯«» ¿²¼ -±³»¬·³»- ¸¿®¼ ¬± ´±½¿¬» ¯«¿´·¬¿¬·ª» ¼¿¬¿ ±² ¬¸» ¸·-¬±®·½ ¿ª¿·´¿¾·´·¬§ ±º ½»®¬¿·² ¬§°»- ±º ¾«-·²»--»- ¬¸¿¬ ³¿§ ¸¿ª» ·³°¿½¬»¼ ¬¸» »²ª·®±²³»²¬¿´ ½±²¼·¬·±²- ±º ¿ ¹·ª»² ®»¿´ °®±°»®¬§ò

ß ®»ª·»© ±º ¬¸» ÛÜÎ Ø·-¬ ß«¬± ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜÎô ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ·- ï ÛÜÎ Ø·-¬ ß«¬± -·¬» ©·¬¸·² ¿°°®±¨·³¿¬»´§ ðòïîë ³·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Ò±¬ ®»°±®¬»¼	îëðîð ßÔÛÍ ÍßÒÜ ÎÑßÜ	ÒÒÉ ð ó ïñè ø ðòðìí ³·÷	ßïï	íï

ÛÜÎ Ø·-¬ Ý´»¿²»® ÛÜÎ ¸¿- -»¿®½¸»¼ -»´»½¬»¼ ²¿¬·±²¿´ ½±´´»½¬·±²- ±º ¾«-·²»-- ¼·®»½¬±®·»- ¿²¼ ¸¿- ½±´´»½¬»¼ ´·-¬·²¹- ±º °±¬»²¬·¿´ ¼®§ ½´»¿²»® -·¬»- ¬¸¿¬ ©»®» ¿ª¿·´¿¾´» ¬± ÛÜÎ ®»-»¿®½¸»®-ò ÛÜÎ Ž- ®»ª·»© ©¿- ´·³·¬»¼ ¬± ¬¸±-» ½¿¬»¹±®·»- ±º -±«®½»- ¬¸¿¬ ³·¹¸¬ô ·² ÛÜÎ Ž- ±°·²·±²ô ·²½´«¼» ¼®§ ½´»¿²·²¹ »-¬¿¾´·-¸³»²¬-ò Ì¸» ½¿¬»¹±®·»- ®»ª·»©»¼ ·²½´«¼»¼ ô ¾«¬ ©»®» ²±¬ ´·³·¬»¼ ¬± ¼®§ ½´»¿²»®-ô ¼®§ ½´»¿²»®- ø½±·² ±°»®¿¬»¼÷ô ¼®§ ½´»¿²·²¹ °´¿²¬-ô ¼®§ ½´»¿²·²¹ ·²¼«-¬®§ -«°°´·»-ô ¼®§ ½´»¿²»®- ¿²¼ ´¿«²¼»®»®-ô ´¿«²¼®§ ¿²¼ ¼®§ ½´»¿²»®-ô »¬½ò Ì¸·- ¼¿¬¿¾¿-» ·- ¼¿¬»¼ ¬± ¬¸» ´¿¬» ïçíð-ò ÛÜÎ ½´¿--·º·»- ¿ ¿²¼ ·²º±®³¿¬·±² ÛÜÎ ½´¿--·º·»- »²¬®·»- ¿- ÛÜÎ Ž- ØÎØÎ ò ÛÜÎ Ž- ØÎØÎ »ºº±®¬ °®»-»²¬- «²·¯«» ¿²¼ -±³»¬·³»- ¸¿®¼ ¬± ´±½¿¬» ¯«¿´·¬¿¬·ª» ¼¿¬¿ ±² ¬¸» ¸·-¬±®·½ ¿ª¿·´¿¾·´·¬§ ±º ½»®¬¿·² ¬§°»- ±º ¾«-·²»--»- ¬¸¿¬ ³¿§ ¸¿ª» ·³°¿½¬»¼ ¬¸» »²ª·®±²³»²¬¿´ ½±²¼·¬·±²- ±º ¿ ¹·ª»² ®»¿´ °®±°»®¬§ò

ß ®»ª·»© ±º ¬¸» ÛÜÎ Ø·-¬ Ý´»¿²»® ´·-¬ô ¿- °®±ª·¼»¼ ¾§ ÛÜÎô ¸¿- ®»ª»¿´»¼ ¬¸¿¬ ¬¸»®» ¿®» í ÛÜÎ Ø·-¬ Ý´»¿²»® -·¬»- ©·¬¸·² ¿°°®±¨·³¿¬»´§ ðòïîë ³·´»- ±º ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Ò±¬ ®»°±®¬»¼	îëïðð ßÔÛÍ ÍßÒÜ ÎÑßÜ	ÒÒÛ ð ó ïñè ø ðòðîð ³·÷	Þî	ç
Ò±¬ ®»°±®¬»¼	îëðíð ßÔÛÍ ÍßÒÜ ÎÑßÜ	ÒÒÉ ð ó ïñè ø ðòðíç ³·÷	ßë	ïè

Lower Elevation	Address	Direction / Distance	Map ID	Page
Ò±¬ ®»°±®¬»¼	ïìííë ßÙßÊÛ ÍÌ	ÍÍÛ ð ó ïñè ø ðòðçë ³·÷	ïî	íî

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

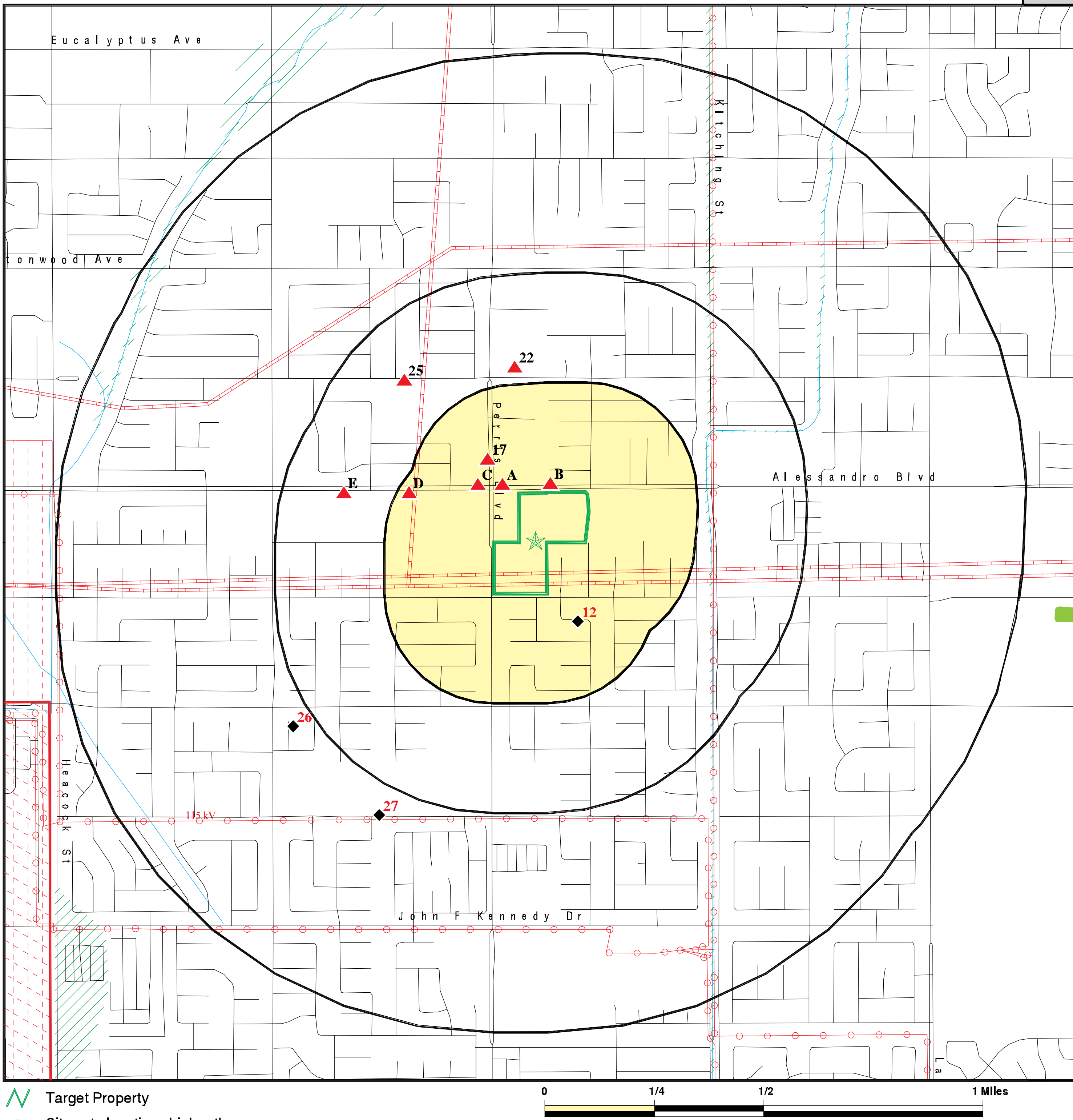
EXECUTIVE SUMMARY

Ü«» ¬± °±±® ±® ·²¿¼»¯«¿¬» ¿¼¼®»-- ·²º±®³¿¬·±²ô ¬¸» º±´´±©·²¹ -·¬»- ©»®» ²±¬ ³¿°°»¼ò Ý±«²¬§ î ®»½±®¼-ò

[illegible]	[illegible]
Ð Î ÑÐÑ Í ÛÜ ßÔÛ Í Í ßÒÜ Î Ñ ßÜÓ×Ò× Í Ì Î ß Ì ×ÑÒ	ÛÒÊ× Î Ñ Í Ì Ñ Î ô Í ÝØ
×ÒÜ×ßÒ Ó×ÜÜÔÛ Í ÝØÑÑÔ	ÛÒÊ× Î Ñ Í Ì Ñ Î ô Í ÝØ

OVERVIEW MAP - 04629924.2R

1.o



Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

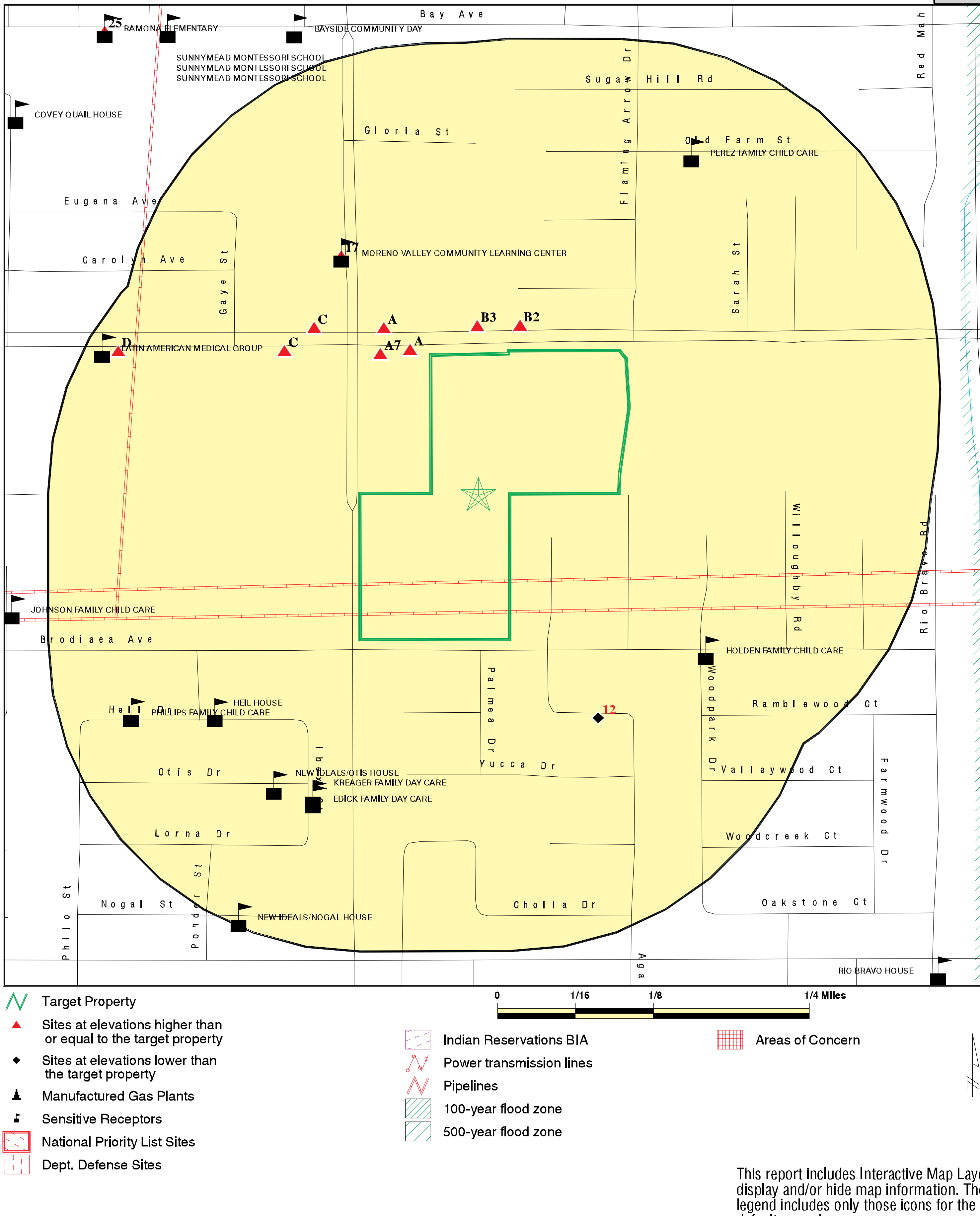
This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Not Reported
ADDRESS:	Not Reported
	Moreno Valley CA 92553
LAT/LONG:	33.915492 / 117.224571

CLIENT:	Hillmann Environmental Co.
CONTACT:	Kristine Savona
INQUIRY #:	04629924.2r
DATE:	May 25, 2016 7:08 pm

DETAIL MAP - 04629924.2R

1.o



Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Not Reported	CLIENT:	Hillmann Environmental Co.
ADDRESS:	Not Reported	CONTACT:	Kristine Savona
	Moreno Valley CA 92553	INQUIRY #:	04629924.2r
LAT/LONG:	33.915492 / 117.224571	DATE:	May 25, 2016 7:11 pm

MAP FINDINGS SUMMARY

Ü¿¬¿¾¿-»	Í»¿®½¸ Ü·-¬¿²½» øÓ·´»-÷	Ì¿®¹»¬ Ð®±°»®¬§	ä ïñè	ïñè ó ïñì	ïñì ó ïñî	ïñî ó ï	â ï	Ì±¬¿´ Ð´±¬¬»¼
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
ÒÐÔ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
Ð®±°±-»¼ ÒÐÔ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ÒÐÔ Ô×ÛÒÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
Federal Delisted NPL site list								
Ü»´·-¬»¼ ÒÐÔ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
Federal CERCLIS list								
ÚÛÜÛÎßÔ ÚßÝ×Ô×ÌÇ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ÍÛÓÍ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
Federal CERCLIS NFRAP site list								
ÍÛÓÍóßÎÝØ×ÊÛ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
Federal RCRA CORRACTS facilities list								
ÝÑÎÎßÝÌÍ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
Federal RCRA non-CORRACTS TSD facilities list								
ÎÝÎßóÌÍÜÚ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
Federal RCRA generators list								
ÎÝÎßóÔÏÙ	ðòîëð		í	ð	ÒÎ	ÒÎ	ÒÎ	í
ÎÝÎßóÍÏÙ	ðòîëð		î	ï	ÒÎ	ÒÎ	ÒÎ	í
ÎÝÎßóÝÛÍÏÙ	ðòîëð		ï	ð	ÒÎ	ÒÎ	ÒÎ	ï
Federal institutional controls / engineering controls registries								
ÔËÝ×Í	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ËÍ ÛÒÙ ÝÑÒÌÎÑÔÍ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ËÍ ×ÒÍÌ ÝÑÒÌÎÑÔ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
Federal ERNS list								
ÛÎÒÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
State- and tribal - equivalent NPL								
ÎÛÍÐÑÒÍÛ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
State- and tribal - equivalent CERCLIS								
ÛÒÊ×ÎÑÍÌÑÎ	ïòððð		ð	ð	î	î	ÒÎ	ì
State and tribal landfill and/or solid waste disposal site lists								
ÍÉÚñÔÚ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
State and tribal leaking storage tank lists								
ÔËÍÌ	ðòëðð		ì	ð	î	ÒÎ	ÒÎ	ê

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

MAP FINDINGS SUMMARY

Ü¿¬¿¾¿-»	Í»¿®½¸ Ü·-¬¿²½» øÓ·´»-÷	Ì¿®¹»¬ Ð®±°»®¬§	ä ïñè	ïñè ó ïñì	ïñì ó ïñî	ïñî ó ï	â ï	Ì±¬¿´ Ð´±¬¬»¼
xÒÜxßÒ ÔËÍÌ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ÍÔxÝ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
State and tribal registered storage tank lists								
ÚÛÓß ËÍÌ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
ËÍÌ	ðòîëð		î	ð	ÒÎ	ÒÎ	ÒÎ	î
ßÍÌ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
xÒÜxßÒ ËÍÌ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
State and tribal voluntary cleanup sites								
ÊÝÐ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
xÒÜxßÒ ÊÝÐ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
State and tribal Brownfields sites								
ÞÎÑÉÒÚxÛÔÜÍ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð

ADDITIONAL ENVIRONMENTAL RECORDS

Ü¿¬¿¾¿-»	Í»¿®½¸ Ü·-¬¿²½» øÓ·´»-÷	Ì¿®¹»¬ Ð®±°»®¬§	ä ïñè	ïñè ó ïñì	ïñì ó ïñî	ïñî ó ï	â ï	Ì±¬¿´ Ð´±¬¬»¼
Local Brownfield lists								
ËÍ ÞÎÑÉÒÚxÛÔÜÍ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
Local Lists of Landfill / Solid Waste Disposal Sites								
ÉÓËÜÍñÍÉßÌ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ÍÉÎÝÇ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ØßËÔÛÎÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
xÒÜxßÒ ÑÜx	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ÜÛÞÎxÍ ÎÛÙxÑÒ ç	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ÑÜx	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
Local Lists of Hazardous waste / Contaminated Sites								
ËÍ ØxÍÌ ÝÜÔ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ØxÍÌ Ý¿´ó Í·¬»-	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ÍÝØ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
ÝÜÔ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
Ì±¨·½ Ð·¬-	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ËÍ ÝÜÔ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
Local Lists of Registered Storage Tanks								
ÍÉÛÛÐÍ ËÍÌ	ðòîëð		í	ð	ÒÎ	ÒÎ	ÒÎ	í
ØxÍÌ ËÍÌ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
Ýß ÚxÜ ËÍÌ	ðòîëð		í	ð	ÒÎ	ÒÎ	ÒÎ	í
Local Land Records								
ÔxËÒÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÔxËÒÍ î	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÜÛÛÜ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
Records of Emergency Release Reports								
ØÓxÎÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð

MAP FINDINGS SUMMARY

Ü¿¬¿¾¿-»	Í»¿®½¸ Ü·-¬¿²½» øÓ·´»-÷	Ì¿®¹»¬ Ð®±°»®¬§	ä ïñè	ïñè ó ïñì	ïñì ó ïñî	ïñî ó ï	â ï	Ì±¬¿´ Ð´±¬¬»¼
ÝØÓ×ÎÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÔÜÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÓÝÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÍÐ×ÔÔÍ çð	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð

Other Ascertainable Records

Ü¿¬¿¾¿-»	Í»¿®½¸ Ü·-¬¿²½» øÓ·´»-÷	Ì¿®¹»¬ Ð®±°»®¬§	ä ïñè	ïñè ó ïñì	ïñì ó ïñî	ïñî ó ï	â ï	Ì±¬¿´ Ð´±¬¬»¼
ÎÝÎß Ò±²Ù»² ñ ÒÔÎ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
ÚËÜÍ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ÜÑÜ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ÍÝÎÜ ÜÎÇÝÔÛßÒÛÎÍ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ËÍ Ú×Ò ßÍÍËÎ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÛÐß ÉßÌÝØ Ô×ÍÌ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
îðîð ÝÑÎ ßÝÌ×ÑÒ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
ÌÍÝß	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÌÎ×Í	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÍÍÌÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÎÑÜ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ÎÓÐ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÎßßÌÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÐÎÐ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÐßÜÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
×Ý×Í	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÚÌÌÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÓÔÌÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÝÑßÔ ßÍØ ÜÑÛ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÝÑßÔ ßÍØ ÛÐß	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ÐÝÞ ÌÎßÒÍÚÑÎÓÛÎ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÎßÜ×ÒÚÑ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
Ø×ÍÌ ÚÌÌÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÜÑÌ ÑÐÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÝÑÒÍÛÒÌ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
×ÒÜ×ßÒ ÎÛÍÛÎÊ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÚËÍÎßÐ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ËÓÌÎß	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ÔÛßÜ ÍÓÛÔÌÛÎÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ËÍ ß×ÎÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ËÍ Ó×ÒÛÍ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
Ú×ÒÜÍ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ËÈÑ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ÜÑÝÕÛÌ ØÉÝ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÛÝØÑ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÚËÛÔÍ ÐÎÑÙÎßÓ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
Ýß ÞÑÒÜ ÛÈÐò ÐÔßÒ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
Ý±®¬»-»	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ÝËÐß Ô·-¬·²¹-	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
ÜÎÇÝÔÛßÒÛÎÍ	ðòîëð		ï	ï	ÒÎ	ÒÎ	ÒÎ	î
ÛÓ×	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÛÒÚ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
Ú·²¿²½·¿´ ß--«®¿²½»	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ØßÆÒÛÌ	ðòððï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
Ø×ÍÌ ÝÑÎÌÛÍÛ	ðòëðð		ï	ð	ï	ÒÎ	ÒÎ	î
ØÉÐ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ØÉÌ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

MAP FINDINGS SUMMARY

Ü¿¬¿¾¿-»	Í»¿®½¸ Ü·-¬¿²½» øÓ·´»-÷	Ì¿®¹»¬ Ð®±°»®¬§	ä ïñè	ïñè ó ïñì	ïñì ó ïñî	ïñî ó ï	â ï	Ì±¬¿´ Ð´±¬¬»¼
ÓxÒÛ Í	ðòðð ï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
Ó É ÓÐ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
ÒÐÜÛ Í	ðòðð ï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÐÛ Í Ì ÔxÝ	ðòðð ï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
Ð Î ÑÝ	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
Ò±¬·º§ êë	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ËxÝ	ðòðð ï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
É ß Í ÌÛ É ß ÌÛ Î Ðx Ì Í	ðòëðð		ð	ð	ð	ÒÎ	ÒÎ	ð
ÉÜ Í	ðòðð ï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
É xÐ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð
ÛÝØÑ	ðòðð ï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ÚËÛÔ Ð Î ÑÙ Î ßÓ	ðòîëð		ð	ð	ÒÎ	ÒÎ	ÒÎ	ð

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

ÛÜ Î ÓÙÐ	ïòððð		ð	ð	ð	ð	ÒÎ	ð
ÛÜ Î Ø·-¬ ß«¬±	ðòïîë		ï	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ï
ÛÜ Î Ø·-¬ Ý´»¿²»®	ðòïîë		í	ÒÎ	ÒÎ	ÒÎ	ÒÎ	í

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

Î Ùß ÔÚ	ðòðð ï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
Î Ùß ÔËÍ Ì	ðòðð ï		ð	ÒÎ	ÒÎ	ÒÎ	ÒÎ	ð
ó Ì±¬¿´ ó ó		ð	îì	î	ë	î	ð	íí

ÒÑÌÛÍæ

ÌÐ ã Ì¿®¹»¬ Ð®±°»®¬§

ÒÎ ã Ò±¬ Î»¯«»-¬»¼ ¿¬ ¬¸·- Í»¿®½¸ Ü·-¬¿²½»

Í·¬»- ³¿§ ¾» ´·-¬»¼ ·² ³±®» ¬¸¿² ±²» ¼¿¬¿¾¿-»

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ÓßÐ Ú×ÒÜ×ÒÙÍ

Ó¿° ×Ü Ü·®»½¬·±² Ü·-¬¿²½» Û´»ª¿¬·±²	Í·¬»	Ü¿¬¿¾¿-»ø-÷	ÛÜÎ ×Ü Ò«³¾»® ÛÐß ×Ü Ò«³¾»®
A1 **NNW** **< 1/8** **0.017 mi.** **90 ft.**	**UNOCAL #6962** **25025 ALESSANDRO BLVD** **MORENO VALLEY, CA 92388** **Site 1 of 9 in cluster A**	**SWEEPS UST** **CA FID UST**	**S101590260** **N/A**

Relative:
Higher

Actual:
1569 ft.

ÍÉÛÛÐÍ ËÍÌæ

Í¬¿¬«-æ	ß½¬·ª»
Ý±³° Ò«³¾»®æ	ïíëèð
Ò«³¾»®æ	ï
Þ±¿®¼ Ñº Û¯«¿´·¦¿¬·±²æ	ììóðððïðëé
Î»º»®®¿´ Ü¿¬»æ	ïïóðïóçóî
ß½¬·±² Ü¿¬»æ	ïïóðïóçóî
Ý®»¿¬»¼ Ü¿¬»æ	ðêóïìóèç
Ñ©²»® Ì¿²µ ×¼æ	êçêîóíì
ÍÉÎÝÞ Ì¿²µ ×¼æ	ííóðððóðïíëèðóðððððï
Ì¿²µ Í¬¿¬«-æ	ß
Ý¿°¿½·¬§æ	ëðð
ß½¬·ª» Ü¿¬»æ	ïïóðïóçóî
Ì¿²µ Ë-»æ	Ñ×Ô
ÍÌÙæ	É
Ý±²¬»²¬æ	ÉßÍÌÛ Ñ×Ô
Ò«³¾»® Ñº Ì¿²µ-æ	í

Í¬¿¬«-æ	ß½¬·ª»
Ý±³° Ò«³¾»®æ	ïíëèð
Ò«³¾»®æ	ï
Þ±¿®¼ Ñº Û¯«¿´·¦¿¬·±²æ	ììóðððïðëé
Î»º»®®¿´ Ü¿¬»æ	ïïóðïóçóî
ß½¬·±² Ü¿¬»æ	ïïóðïóçóî
Ý®»¿¬»¼ Ü¿¬»æ	ðêóïìóèç
Ñ©²»® Ì¿²µ ×¼æ	êçêîóîî
ÍÉÎÝÞ Ì¿²µ ×¼æ	ííóðððóðïíëèðóðððððî
Ì¿²µ Í¬¿¬«-æ	ß
Ý¿°¿½·¬§æ	ïîððð
ß½¬·ª» Ü¿¬»æ	ïïóðïóçóî
Ì¿²µ Ë-»æ	ÓòÊò ÚËÛÔ
ÍÌÙæ	Ð
Ý±²¬»²¬æ	ÎÛÙ ËÒÔÛßÜÛÜ
Ò«³¾»® Ñº Ì¿²µ-æ	Ò±¬ ®»°±®¬»¼

Í¬¿¬«-æ	ß½¬·ª»
Ý±³° Ò«³¾»®æ	ïíëèð
Ò«³¾»®æ	ï
Þ±¿®¼ Ñº Û¯«¿´·¦¿¬·±²æ	ììóðððïðëé
Î»º»®®¿´ Ü¿¬»æ	ïïóðïóçóî
ß½¬·±² Ü¿¬»æ	ïïóðïóçóî
Ý®»¿¬»¼ Ü¿¬»æ	ðêóïìóèç
Ñ©²»® Ì¿²µ ×¼æ	êçêîóïï
ÍÉÎÝÞ Ì¿²µ ×¼æ	ííóðððóðïíëèðóðððððí
Ì¿²µ Í¬¿¬«-æ	ß
Ý¿°¿½·¬§æ	ïîððð
ß½¬·ª» Ü¿¬»æ	ïïóðïóçóî
Ì¿²µ Ë-»æ	ÓòÊò ÚËÛÔ
ÍÌÙæ	Ð
Ý±²¬»²¬æ	ÎÛÙ ËÒÔÛßÜÛÜ
Ò«³¾»® Ñº Ì¿²µ-æ	Ò±¬ ®»°±®¬»¼

UNOCAL #6962 (Continued) **S101590260**

Ýß ÚÌÜ ËÍ Ì:

Ú¿½·´·¬§ ×Ü:	í íððêèçï
Î»¹«´¿¬»¼ Þ§:	ËÌÒÕß
Î»¹«´¿¬»¼ ×Ü:	Ò±¬ ®»°±®¬»¼
Ý±®¬»-» Ý±¼»:	Ò±¬ ®»°±®¬»¼
Í×Ý Ý±¼»:	Ò±¬ ®»°±®¬»¼
Ú¿½·´·¬§ Ð¸±²»:	Ò±¬ ®»°±®¬»¼
Ó¿·´ Ì±:	Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ ß¼¼®»--:	Ð Ñ ÞÑÈ éêðð
Ó¿·´·²¹ ß¼¼®»-- î:	Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ Ý·¬§ô Í¬¿¬»ô Æ·°:	ÓÑÎÛÒÑ ÊßÔÔÛÇ çî íèè
Ý±²¬¿½¬:	Ò±¬ ®»°±®¬»¼
Ý±²¬¿½¬ Ð¸±²»:	Ò±¬ ®»°±®¬»¼
ÜËÒ- Ò«³¾»®:	Ò±¬ ®»°±®¬»¼
ÒÐÜÛÍ Ò«³¾»®:	Ò±¬ ®»°±®¬»¼
ÛÐß ×Ü:	Ò±¬ ®»°±®¬»¼
Ý±³³»²¬-:	Ò±¬ ®»°±®¬»¼
Í¬¿¬«-:	ß½¬·ª»

B2
NNE
< 1/8
0.020 mi.
108 ft.

EDR Hist Cleaner **1015028273**
N/A

25100 ALESSANDRO BLVD
MORENO VALLEY, CA 92553

Site 1 of 2 in cluster B

Relative:
Higher

Actual:
1568 ft.

ÛÜÎ Ø·-¬±®·½¿´ Ý´»¿²»®-:

Ò¿³»:	ß ï ÝÑ×Ò ÔßËÒÜÎÑÓßÌ
Ç»¿®:	ïççç
ß¼¼®»--:	îëïðð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»:	ß ï ÝÑ×Ò ÔßËÒÜÎÑÓßÌ
Ç»¿®:	îððï
ß¼¼®»--:	îëïðð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»:	ß ï ÝÑ×Ò ÔßËÒÜÎÑÓßÌ
Ç»¿®:	îððî
ß¼¼®»--:	îëïðð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»:	ß ï ÝÑ×Ò ÔßËÒÜÎÑÓßÌ
Ç»¿®:	îððí
ß¼¼®»--:	îëïðð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»:	ß ï ÝÑ×Ò ÔßËÒÜÎÑÓßÌ
Ç»¿®:	îððì
ß¼¼®»--:	îëïðð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»:	ß ï ÝÑ×Ò ÔßËÒÜÎÑÓßÌ
Ç»¿®:	îððê
ß¼¼®»--:	îëïðð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»:	ß ï ÝÑ×Ò ÔßËÒÜÎÑÓßÌ
Ç»¿®:	îððé
ß¼¼®»--:	îëïðð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»:	ß ï ÝÑ×Ò ÔßËÒÜÎÑÓßÌ
Ç»¿®:	îððè
ß¼¼®»--:	îëïðð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ

(Continued) **1015028273**

Ò¿³»: ß ï ÝÑׁÒ ÔßËÒÜÎÑÓßÌ
Ç»¿®: îðð¢
ß¼¼®»--: îëïðð ßÔÛÍ ÍßÒÜÎÑ ÞÔÊÜ

Ò¿³»: ßï ÝÑׁÒ ÔßËÒÜÎÑÓßÌ
Ç»¿®: îðïð
ß¼¼®»--: îëïðð ßÔÛÍ ÍßÒÜÎÑ ÞÔÊÜ

Ò¿³»: ßï ÝÑׁÒ ÔßËÒÜÎÑÓßÌ
Ç»¿®: îðïï
ß¼¼®»--: îëïðð ßÔÛÍ ÍßÒÜÎÑ ÞÔÊÜ

Ò¿³»: ßï ÝÑׁÒ ÔßËÒÜÎÑÓßÌ
Ç»¿®: îðïî
ß¼¼®»--: îëïðð ßÔÛÍ ÍßÒÜÎÑ ÞÔÊÜ

B3 **CVS PHARMACY NO 9224** **RCRA-LQG** **1016139957**
North **25070 ALESSANDRO BLVD** **FINDS** **CAR000235374**
< 1/8 **MORENO VALLEY, CA 92553** **ECHO**
0.023 mi.
121 ft. **Site 2 of 2 in cluster B**

Relative: Higher

Actual: 1569 ft.

ÎÝÎßóÔÏÙ:
Ü¿¬» º±®³ ®»½»·ª»¼ ¾§ ¿¹»²½§: îðïîðëîðïì
Ú¿½·´·¬§ ²¿³»: ÝÊÍ ÐØßÎÓßÝÇ ýçîîì
Ú¿½·´·¬§ ¿¼¼®»--: îëðéð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
ÓÑÎÛÒÑ ÊßÔÔÛÇô Ýß çîëëí
ÛÐß ×Ü: Ýßîðððîíëíéì
Ó¿·´·²¹ ¿¼¼®»--: ÑÒÛ ÝÊÍ ÜÎ ÓßÝ îíðìí ÉÑÑÒÍÑÝÕÛÌô Î× ðîèçë
Ý±²¬¿½¬: ÛÒÊ×Î ÍÛÎÊ ÔÛÍÔ×Û ÞÑÉ×Ò
Ý±²¬¿½¬ ¿¼¼®»--: ÑÒÛ ÝÊÍ ÜÎ ÓßÝ îíðìí ÉÑÑÒÍÑÝÕÛÌô Î× ðîèçë
Ý±²¬¿½¬ ½±«²¬®§: ËÍ
Ý±²¬¿½¬ ¬»´»°¸±²»: ìðïóéêëóïëðð
Ý±²¬¿½¬ »³¿·´: ÛÒÊ×ÎÑÍÛÎÊ×ÝÛÍà ÝÊÍÝßÎÛÓßÎÕòÝÑÓ
ÛÐß Î»¹·±²: ðç
Ý´¿--·º·½¿¬·±²: Ô¿®¹» Ï«¿²¬·¬§ Ù»²»®¿¬±®
Ü»-½®·°¬·±²: Ø¿²¼´»® ¹»²»®¿¬»-: ïôððð µ¹ ±® ³±®» ±º ²±²ó¿½«¬» ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸å ±® ¹»²»®¿¬»- ³±®» ¬¸¿² ï µ¹ ±º ¿½«¬» ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸å ±® ¹»²»®¿¬»- ³±®» ¬¸¿² ïðð µ¹ ±º ¿²§ ®»-·¼«» ±® ½±²¬¿³·²¿¬»¼ -±·´ô ©¿¬»® ±® ±¬¸»® ¼»¾®·- ®»-«´¬·²¹ º®±³ ¬¸» ½´»¿²«° ±º ¿ -°·´´ ·²¬±ô ±² ¬¸» ´¿²¼ ±® ©¿¬»® ±º ¿²§ ¿½«¬» ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸å ±® ¹»²»®¿¬»- ï µ¹ ±® ´»-- ±º ¿½«¬» ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸ ¿²¼ ¿½½«³«´¿¬»¼ ³±®» ¬¸¿² ïðð µ¹ ±º ¬¸¿¬ ¿½«¬» ¸¿¦¿®¼±«- ©¿-¬» ¿¬ ¿²§ ¬·³»å ±® ¹»²»®¿¬»- ïðð µ¹ ±º ¬¸¿¬ ³¿¬»®·¿´ ¿¬ ¿²§ ¬·³»

Ñ©²»®ñÑ°»®¿¬±® Í«³³¿®§:
Ñ©²»®ñ±°»®¿¬±® ²¿³»: ÔÑÒÙÍ ÜÎËÙ ÍÌÑÎÛÍ ÝßÔ×ÚÑÎÒ×ß ÔÔÝ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--: ÑÒÛ ÝÊÍ ÜÎ ÓßÝ îíðìí ÉÑÑÒÍÑÝÕÛÌô Î× ðîèçë
Ñ©²»®ñ±°»®¿¬±® ½±«²¬®§: ËÍ
Ñ©²»®ñ±°»®¿¬±® ¬»´»°¸±²»: ìðïóéêëóïëðð

ÓßÐ ÚxÒÜxÒÙ Í

Ó¿° xÜ Ü·®»½¬·±² Ü·-¬¿²½» Ü´»ª¿¬·±²	Í·¬»	Ü¿¬¿¾¿-»ø-÷	ÛÜÎ xÜ Ò« ³¾»® ÛÐß xÜ Ò« ³¾»®

CVS PHARMACY NO 9224 (Continued) **1016139957**

Ô»¹¿´ -¬¿¬«-: Ð®·ª¿¬»
Ñ©²»®ñÑ°»®¿¬±® Ì§°»: Ñ©²»®
Ñ©²»®ñÑ° -¬¿®¬ ¼¿¬»: ðéñîèñîððë
Ñ©²»®ñÑ° »²¼ ¼¿¬»: Ò±¬ ®»°±®¬»¼

Ñ©²»®ñ±°»®¿¬±® ²¿³»: ÔÑÒÙ Í ÜÎËÙ Í ÌÑÎÛÍ ÝßÔxÚÑÎÒxß ÔÔÝ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--: Ò±¬ ®»°±®¬»¼
Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ½±«²¬®§: ËÍ
Ñ©²»®ñ±°»®¿¬±® ¬»´»°¸±²»: Ò±¬ ®»°±®¬»¼
Ô»¹¿´ -¬¿¬«-: Ð®·ª¿¬»
Ñ©²»®ñÑ°»®¿¬±® Ì§°»: Ñ°»®¿¬±®
Ñ©²»®ñÑ° -¬¿®¬ ¼¿¬»: ðïñîçñïçèê
Ñ©²»®ñÑ° »²¼ ¼¿¬»: Ò±¬ ®»°±®¬»¼

Ñ©²»®ñ±°»®¿¬±® ²¿³»: ÔÑÒÙ Í ÜÎËÙ Í ÌÑÎÛÍ ÝßÔxÚÑÎÒxß ÔÔÝ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--: ÑÒÛ ÝÊÍ ÜÎ
ÉÑÑÒÍÑÝÕÛÌô Îx ðîèçë
Ñ©²»®ñ±°»®¿¬±® ½±«²¬®§: ËÍ
Ñ©²»®ñ±°»®¿¬±® ¬»´»°¸±²»: ìðïéêêïêððð
Ô»¹¿´ -¬¿¬«-: Ð®·ª¿¬»
Ñ©²»®ñÑ°»®¿¬±® Ì§°»: Ñ©²»®
Ñ©²»®ñÑ° -¬¿®¬ ¼¿¬»: ðéñîèñîððë
Ñ©²»®ñÑ° »²¼ ¼¿¬»: Ò±¬ ®»°±®¬»¼

Ñ©²»®ñ±°»®¿¬±® ²¿³»: ÔÑÒÙ Í ÜÎËÙ Í ÌÑÎÛÍ ÝßÔxÚÑÎÒxß ÔÔÝ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--: Ò±¬ ®»°±®¬»¼
Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ½±«²¬®§: Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ¬»´»°¸±²»: Ò±¬ ®»°±®¬»¼
Ô»¹¿´ -¬¿¬«-: Ð®·ª¿¬»
Ñ©²»®ñÑ°»®¿¬±® Ì§°»: Ñ°»®¿¬±®
Ñ©²»®ñÑ° -¬¿®¬ ¼¿¬»: ðïñîçñïçèê
Ñ©²»®ñÑ° »²¼ ¼¿¬»: Ò±¬ ®»°±®¬»¼

Ø¿²¼´»® ß½¬·ª·¬§ Í«³³¿®§:

Ëò Íò ³±²·¬±® ±º ¸¿¦¿®¼±«- ©¿-¬»:	Ò±
Ó·¨»¼ ©¿-¬» ø¸¿¦ò ¿²¼ ®¿¼·±¿½¬·ª»÷:	Ò±
Î»½§½´»® ±º ¸¿¦¿®¼±«- ©¿-¬»:	Ò±
Ì®¿²-°±®¬»® ±º ¸¿¦¿®¼±«- ©¿-¬»:	Ò±
Ì®»¿¬»®ô -¬±®»® ±® ¼·-°±-»® ±º ØÉ:	Ò±
Ë²¼»®¹®±«²¼ ·²¶»½¬·±² ¿½¬·ª·¬§:	Ò±
Ñ²ó-·¬» ¾«®²»® »¨»³°¬·±²:	Ò±
Ú«®²¿½» »¨»³°¬·±²:	Ò±
Ë-»¼ ±·´ º«»´ ¾«®²»®:	Ò±
Ë-»¼ ±·´ °®±½»--±®:	Ò±
Ë-»® ±·´ ®»º·²»®:	Ò±
Ë-»¼ ±·´ º«»´ ³¿®µ»¬»® ¬± ¾«®²»®:	Ò±
Ë-»¼ ±·´ Í°»½·º·½¿¬·±² ³¿®µ»¬»®:	Ò±
Ë-»¼ ±·´ ¬®¿²-º»® º¿½·´·¬§:	Ò±
Ë-»¼ ±·´ ¬®¿²-°±®¬»®:	Ò±

ó Ú¿¬» ½±¼»:	ïîî
ó Ú¿¬» ²¿³»:	ïîî
ó Ú¿¬» ½±¼»:	ïîí
ó Ú¿¬» ²¿³»:	ïîí

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ÓßÐ ÚÒÜÒÙ Í

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·-¬¿²½»
Û´»ª¿¬·±² | Í·¬» | Ü¿¬¿¾¿-»ø-÷ | ÛÜÎ ×Ü Ò«³¾»® / ÛÐß ×Ü Ò«³¾»®

CVS PHARMACY NO 9224 (Continued) 1016139957

ò É¿-¬» ½±¼»æ ïíï
ò É¿-¬» ²¿³»æ ïíï

ò É¿-¬» ½±¼»æ ïíì
ò É¿-¬» ²¿³»æ ïíì

ò É¿-¬» ½±¼»æ ïìï
ò É¿-¬» ²¿³»æ ïìï

ò É¿-¬» ½±¼»æ ïèï
ò É¿-¬» ²¿³»æ ïèï

ò É¿-¬» ½±¼»æ îïì
ò É¿-¬» ²¿³»æ îïì

ò É¿-¬» ½±¼»æ íïï
ò É¿-¬» ²¿³»æ íïï

ò É¿-¬» ½±¼»æ ííï
ò É¿-¬» ²¿³»æ ííï

ò É¿-¬» ½±¼»æ íëî
ò É¿-¬» ²¿³»æ íëî

ò É¿-¬» ½±¼»æ ëìï
ò É¿-¬» ²¿³»æ ëìï

ò É¿-¬» ½±¼»æ ëêï
ò É¿-¬» ²¿³»æ ëêï

ò É¿-¬» ½±¼»æ éçï
ò É¿-¬» ²¿³»æ éçï

ò É¿-¬» ½±¼»æ Üððï
ò É¿-¬» ²¿³»æ ×ÙÒ×ÌßÞÔÛ ÉßÍÌÛ

ò É¿-¬» ½±¼»æ Üððî
ò É¿-¬» ²¿³»æ ÝÑÎÎÑÍ×ÊÛ ÉßÍÌÛ

ò É¿-¬» ½±¼»æ Üððì
ò É¿-¬» ²¿³»æ ßÎÍÛÒ×Ý

ò É¿-¬» ½±¼»æ Üððë
ò É¿-¬» ²¿³»æ ÞßÎ×ËÓ

ò É¿-¬» ½±¼»æ Üððê
ò É¿-¬» ²¿³»æ ÝßÜÓ×ËÓ

ò É¿-¬» ½±¼»æ Üððé
ò É¿-¬» ²¿³»æ ÝØÎÑÓ×ËÓ

ò É¿-¬» ½±¼»æ Üððè
ò É¿-¬» ²¿³»æ ÔÛßÜ

ò É¿-¬» ½±¼»æ Üððç
ò É¿-¬» ²¿³»æ ÓÛÎÝËÎÇ

ÓßÐ Ú×ÒÜ×ÒÙ Í

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·-¬¿²½»
Û´»ª¿¬·±² Í·¬» Ü¿¬¿¾¿-»ø-÷ ÛÜÎ ×Ü Ò« ³ ¾»®
ÛÐß ×Ü Ò« ³ ¾»®

CVS PHARMACY NO 9224 (Continued) 1016139957

ò É¿-¬» ½±¼»æ Üðïð
ò É¿-¬» ²¿ ³ »æ ÍÛÔÛÒ×ËÓ

ò É¿-¬» ½±¼»æ Üðïï
ò É¿-¬» ²¿ ³ »æ Í×ÔÊÛÎ

ò É¿-¬» ½±¼»æ Üðïê
ò É¿-¬» ²¿ ³ »æ îôìóÜ øîôìóÜ×ÝØÔÑÎ ÑÐØÛÒÑÈÇßÝÛÌ×Ý ßÝ×Ü÷

ò É¿-¬» ½±¼»æ Üðïè
ò É¿-¬» ²¿ ³ »æ ÞÛÒÆÛÒÛ

ò É¿-¬» ½±¼»æ Üðîì
ò É¿-¬» ²¿ ³ »æ ÓóÝÎÛÍÑÔ

ò É¿-¬» ½±¼»æ Üðîé
ò É¿-¬» ²¿ ³ »æ ïôìóÜ×ÝØÔÑÎÑÞÛÒÆÛÒÛ

ò É¿-¬» ½±¼»æ Üðíë
ò É¿-¬» ²¿ ³ »æ ÓÛÌØÇÔ ÛÌØÇÔ ÕÛÌÑÒÛ

ò É¿-¬» ½±¼»æ Üðíç
ò É¿-¬» ²¿ ³ »æ ÌÛÌÎßÝØÔÑÎÑÛÌØÇÔÛÒÛ

ò É¿-¬» ½±¼»æ Ðððï
ò É¿-¬» ²¿ ³ »æ îØóïóÞÛÒÆÑÐÇÎßÒóîóÑÒÛô ìóØÇÜÎÑÈÇóíóøíóÑÈÑóïóÐØÛÒÇÔÞË ÌÇÔ÷óô ú ÍßÔÌÍ ÉØÛÒ ÐÎÛÍÛÒÌ ßÌ ÝÑÒÝÛÒÌÎßÌ×ÑÒÍ ÙÎÛßÌÛÎ ÌØßÒ ðòí û øÉ ßÎÚßÎ×Òô ú ÍßÔÌÍô ÉØÛÒ ÐÎÛÍÛÒÌ ßÌ ÝÑÒÝÛÒÌÎßÌ×ÑÒÍ ÙÎÛßÌÛÎ ÌØßÒ ðòí û

ò É¿-¬» ½±¼»æ Ððïî
ò É¿-¬» ²¿ ³ »æ ßÎÍÛÒ×Ý Ñ È×ÜÛ ßÍîÑí øÑÎ÷ ßÎÍÛÒ×Ý ÌÎ×ÑÈ×ÜÛ

ò É¿-¬» ½±¼»æ Ððéë
ò É¿-¬» ²¿ ³ »æ Ò×ÝÑÌ×ÒÛô ú ÍßÔÌÍ øÑÎ÷ ÐÇÎ×Ü×ÒÛô íóøïóÓÛÌØÇÔóîóÐÇÎÎÑÔ×Ü×ÒÇÔ÷óôøÍ÷óô ú ÍßÔÌÍ

ò É¿-¬» ½±¼»æ Ððèï
ò É¿-¬» ²¿ ³ »æ ïôíóÞ ÛÒÆÑÜ×ÑÈÑÔô îôîóÜ×ÓÛÌØÇÔóìóÓÛÌØÇÔ ÝßÎÞßÓßÌÛ øÑÎ÷ ÞÛÒÜ×ÑÝßÎÞ

ò É¿-¬» ½±¼»æ Ðïèè
ò É¿-¬» ²¿ ³ »æ ÞÛÒÆÑ×Ý ß×Üô îóØÇÜÎÑÈÇó É×ÌØ øïßÍôîßÍôíÍôìÍôêÍô ïíËÍ ÛÐÎ×ÜÑÐÎÑÜÑ ÝÑÜÑÐÎÑÜÑÎ×ÜÑÐÎÑÜÑÐ×ÜÑÔ×ÜÛÒÛ÷ øïìóîîóíéóëï øîîðéòîç÷ øÑÎ÷ ÐØÇÍÑÍÌ×ÙÓ×ÒÛ ÍßÔ×ÝÇÔßÌÛ

ò É¿-¬» ½±¼»æ Ëððî
ò É¿-¬» ²¿ ³ »æ îóÐÎÑÐßÒÑÒÛ øÑÎ÷ ßÝÛÌÑÒÛ øÌ÷

ò É¿-¬» ½±¼»æ Ëðïð
ò É¿-¬» ²¿ ³ »æ ßÆ×Î×ÒÑ øîôíæíôì÷ÐÇÎÎÑÔÑøïôîóß÷×ÒÜÑÔÛóìôéóÜ×ÑÒÛô êóßÓ×ÒÑóèóÅ ø ßÓ×ÒÑÝßÎÞÑÒÇÔ÷ÑÈÇ÷ÓÛÌØÇÔÃóïôïßôîôèôèßôèÞóØÛÈßØÇÜÎÑóèßóÓÛÌØÑÈÇóëóÓÛÌØÇÔóô ÅïßÍóøïßßôèßôèßßôèßß÷Ãó øÑÎ÷ ÓÌÑÓÇÝ×Ò Ý

ò É¿-¬» ½±¼»æ Ëðíï
ò É¿-¬» ²¿ ³ »æ ïóÞËÌßÒÑÔ øÌ÷ øÑÎ÷ ÒóÞËÌÇÔ ßÔÝÑØÑÔ øÌ÷

ò É¿-¬» ½±¼»æ Ëðíì

CVS PHARMACY NO 9224 (Continued) **1016139957**

ò É¿-¬» ²¿ ³»æ ßÝÛ Ì ßÔÜÛØÇÜÛ Ì Î×ÝØÔÑ Î Ñó øÑ Î÷ ÝØÔÑ Î ßÔ

ò É¿-¬» ½±¼»æ Ëðíë
ò É¿-¬» ²¿ ³»æ ÞÛÒÆÛÒÛÞÛÌ ßÒÑ×Ý ßÝ×Üô ìóÅÞ×Íøîó ÝØÔÑ Î ÑÛ ÌØÇÔ÷ßÓ×ÒÑÃó øÑ Î÷ ÝØÔÑ Î ßÓÞËÝ×Ô

ò É¿-¬» ½±¼»æ Ëðìì
ò É¿-¬» ²¿ ³»æ ÝØÔÑ Î ÑÚÑ Î Ó øÑ Î÷ ÓÛ ÌØßÒÛ ÌÎ ×ÝØÔÑ Î Ñó

ò É¿-¬» ½±¼»æ Ëðëè
ò É¿-¬» ²¿ ³»æ îØóïôíôîóÑÈßÆßÐØÑ ÍÐØÑ Î×Òóîóßó×ÒÛ ÒòÒóÞ×Íøîó ÝØÔÑ Î ÑÛ ÌØÇÔ÷Ì ÛÌ Î ßØÇÜ Î Ñó îóÑ×Ü Û øÑ Î÷ ÝÇÝÔÑÐØÑ Í ÐØßÓ×ÜÛ

ò É¿-¬» ½±¼»æ Ëðëç
ò É¿-¬» ²¿ ³»æ ëôïîóÒßÐØ Ì ØßÝÛÒÛÜ×ÑÒÛ ... ÜßËÒÑÓÇÝ×Ò

ò É¿-¬» ½±¼»æ Ëðéð
ò É¿-¬» ²¿ ³»æ ÞÛÒÆÛÒÛ ïôîóÜ×ÝØÔÑ Î Ñó øÑ Î÷ ÑóÜ×ÝØÔÑ Î ÑÞÛÒÆÛÒÛ

ò É¿-¬» ½±¼»æ Ëðéï
ò É¿-¬» ²¿ ³»æ ÞÛÒÆÛÒÛ ïôìóÜ×ÝØÔÑ Î Ñó øÑ Î÷ ÐóÜ×ÝØÔÑ Î ÑÞÛÒÆÛÒÛ

ò É¿-¬» ½±¼»æ Ëðèç
ò É¿-¬» ²¿ ³»æ Ü×ÛÌØÇÔ Í Ì×ÔÞÛ Í ÌÎ ÑÔ øÑ Î÷ ÐØÛÒÑÔô ìôìù...

ò É¿-¬» ½±¼»æ Ëïîî
ò É¿-¬» ²¿ ³»æ ÚÑ Î ÓßÔÜÛØÇÜÛ

ò É¿-¬» ½±¼»æ Ëïîç
ò É¿-¬» ²¿ ³»æ ÝÇÝÔÑØÛÈßÒÛ ... Ô×ÒÜßÒÛ

ò É¿-¬» ½±¼»æ Ëïíï
ò É¿-¬» ²¿ ³»æ ØÛÈßÝØÔÑ Î ÑÛ ÌØßÒÛ øÑ Î÷ ÛÌØßÒÛô ØÛÈßÝØÔÑ Î Ñó

ò É¿-¬» ½±¼»æ Ëïëð
ò É¿-¬» ²¿ ³»æ ÓÛÔÐØßÔßÒ

ò É¿-¬» ½±¼»æ Ëïëï
ò É¿-¬» ²¿ ³»æ ÓÛ ÎÝË ÎÇ

ò É¿-¬» ½±¼»æ Ëïëì
ò É¿-¬» ²¿ ³»æ ÓÛ ÌØßÒÑÔ øï÷ øÑ Î÷ ÓÛ ÌØÇÔ ßÔÝÑØÑÔ øï÷

ò É¿-¬» ½±¼»æ Ëïêë
ò É¿-¬» ²¿ ³»æ ÒßÐØ ÌØßÔÛÒÛ

ò É¿-¬» ½±¼»æ Ëïèè
ò É¿-¬» ²¿ ³»æ ÐØÛÒÑÔ

ò É¿-¬» ½±¼»æ Ëîðð
ò É¿-¬» ²¿ ³»æ ÎÛ ÍÛ ÎÐ×ÒÛ øÑ Î÷ ...

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·-¬¿²½»
Û´»ª¿¬·±²

ÓßÐ ÚÒÜÒÙ Í

Í·¬» Ü¿¬¿¾¿-»ø-÷ ÛÜÎ ×Ü Ò« ³ ¾»® ÛÐß ×Ü Ò« ³ ¾»®

CVS PHARMACY NO 9224 (Continued) **1016139957**

ò É¿-¬» ½±¼»æ Ëîðï
ò É¿-¬» ²¿ ³ »æ ïôïóÞÛÒÆÛÒÛÜ×ÑÔ øÑ Î÷ ÎÛÍ ÑÎ Ý×ÒÑÔ

ò É¿-¬» ½±¼»æ Ëîðì
ò É¿-¬» ²¿ ³ »æ ÍÛÔÛÒ×ÑË Í ßÝ×Ü øÑ Î÷ ÍÛÔÛÒ×ËÓ Ü×ÑÈ×ÜÛ

ò É¿-¬» ½±¼»æ Ëîðë
ò É¿-¬» ²¿ ³ »æ ÍÛÔÛÒ×ËÓ ÍËÔÚ×ÜÛ øÑ Î÷ ÍÛÔÛÒ×ËÓ ÍËÔÚ×ÜÛ ÍÛÍ øÎ ôÍ÷

ò É¿-¬» ½±¼»æ Ëîðê
ò É¿-¬» ²¿ ³ »æ ÜóÙÔËÝÑ Í Û ô îóÜÛÑÈÇóîó ø¥ ÓÛÌØÇÔÒ×ÌÎÑÍÑ÷ßÓ ×ÒÑ÷óÝß ÎÞÑÒÇÔßÓ×ÒÑ÷ó øÑ Î÷ ÙÔËÝÑ ÍÛô îóÜÛÑÈÇóîó ø¥ ø ÓÛÌØÇÔÒ×ÌÎÑÍÑÛÑ÷ßÓ×ÒÑ÷ó ÝßÎÞÑÒÇÔ÷ óÜ ø Î÷
Í Ì Î ÛÐÌ ÑÆÑ Ì ÑÝ×Ò

ò É¿-¬» ½±¼»æ Ëîïð
ò É¿-¬» ²¿ ³ »æ ÛÌØÛÒÛô ÌÛÌ Î ßÝØÔÑÎÑ øÑ Î÷ ÌÛÌ Î ßÝØÔÑÎÑÛÌØÇÔÛÒÛ

ò É¿-¬» ½±¼»æ Ëîéç
ò É¿-¬» ²¿ ³ »æ Ýß Î Þß Î ÇÔ øÑ Î÷ ïóÒßÐØÌØßÔÛÒÑÔô ÓÛÌØÇÔÝß Î Þß ÓßÌÛ

ò É¿-¬» ½±¼»æ Ëìïï
ò É¿-¬» ²¿ ³ »æ ÐØÛÒÑÔô îóøïó ÓÛÌØÇÔÛÌØÑÈÇ÷ôô ÓÛÌØÇÔÝß Î Þß ÓßÌÛ øÑ Î÷ Ð Î ÑÐÑÈÛÎ

Ø·-¬±®·½¿´ Ù»²»®¿¬±®æ
Ü¿¬» º±® ³ ®»½»·ª»¼ ¾§ ¿¹»²½§æðïñðíñîðïí
Í·¬» ²¿ ³ »æ ÝÊÍ ÐØß ÎÓßÝÇ ÒÑ çîîì
Ý´¿--·º·½¿¬·±²æ Ô¿®¹» Ï«¿²¬·¬§ Ù»²»®¿¬±®

ò É¿-¬» ½±¼»æ Üððï
ò É¿-¬» ²¿ ³ »æ ×ÙÒ×ÌßÞÔÛ ÉßÍÌÛ

ò É¿-¬» ½±¼»æ Üððî
ò É¿-¬» ²¿ ³ »æ ÝÑ Î ÎÑÍ×ÊÛ ÉßÍÌÛ

ò É¿-¬» ½±¼»æ Ðððï
ò É¿-¬» ²¿ ³ »æ îØóïóÞÛÒÆÑÐÇ Î ßÒóîóÑÒÛô ìóØÇÜ ÎÑÈÇóíóøíóÑÈÑóïóÐØÛÒÇÔÞËÌÇÔ÷óô ú ÍßÔÌÍ
ÉØÛÒ Ð Î ÛÍÛÒÌ ßÌ ÝÑÒÝÛÒÌ Î ßÌ×ÑÒÍ Ù Î ÛßÌÛ Î ÌØßÒ ðòí û øÑ Î÷ ÉßÎÚß Î×Òô ú
ÍßÔÌÍ ÉØÛÒ Ð Î ÛÍÛÒÌ ßÌ ÝÑÒÝÛÒÌ Î ßÌ×ÑÒÍ Ù Î ÛßÌÛ Î ÌØßÒ ðòíû

ò É¿-¬» ½±¼»æ Ððìî
ò É¿-¬» ²¿ ³ »æ ïôîóÞÛÒÆÛÒÛÜ×ÑÔô ìóÅ ïóØÇÜ ÎÑÈÇóîóøÓÛÌØÇÔßÓ×ÒÑ÷ÛÌØÇÔÃóô ø Î÷ó øÑ Î÷
ÛÐ×ÒÛÐØ Î ×ÒÛ

ò É¿-¬» ½±¼»æ Ðððë
ò É¿-¬» ²¿ ³ »æ ÒóÝÑ×ÒÛô ú ÍßÔÌÍ øÑ Î÷ ÐÇ Î×Ü×ÒÛô íóøïóÓÛÌØÇÔóîóÐÇ Î ÎÑÔ×Ü×ÒÇÔ÷óô øÍ÷óô ú
ÍßÔÌÍ

ò É¿-¬» ½±¼»æ Ðð èï
ò É¿-¬» ²¿ ³ »æ ïôîôíóÐ Î ÑÐßÒÛÌ Î ×ÑÔô Ì Î ×Ò×Ì Î ßÌÛ ø Î÷ øÑ Î÷ Ò×Ì ÎÑÙÔÇÝÛ Î ×Ò ø Î÷

Ê·±´¿¬·±² Í¬¿¬«-æ Ò± ª·±´¿¬·±²- º±«²¼

ÚÒÜ Íæ

Î»¹·-¬®§ ×Üæ ïïðëëìíèðïï

Û²ª·®±²³ »²¬¿´ ×²¬»®»-¬ ß½¬·ª·¬§ ×²º± Í§-¬» ³

CVS PHARMACY NO 9224 (Continued) **1016139957**

Î Ý Î ßx²º± ·- ¿ ²¿¬·±²¿´ ·²º±®³¿¬·±² -§-¬»³ ¬¸¿¬ -«°°±®¬- ¬¸» Î»-±«®½» Ý±²-»®ª¿¬·±² ¿²¼ Î»½±ª»®§ ß½¬ øÎ Ý Î ß÷ °®±¹®¿³ ¬¸®±«¹¸ ¬¸» ¬®¿½µ·²¹ ±º »ª»²¬- ¿²¼ ¿½¬·ª·¬·»- ®»´¿¬»¼ ¬± º¿½·´·¬·»- ¬¸¿¬ ¹»²»®¿¬» ô ¬®¿²-°±®¬ ô ¿²¼ ¬®»¿¬ ô -¬±®» ô ±® ¼·-°±-» ±º ¸¿¦¿®¼±«- ©¿-¬»ò Î Ý Î ß·²º± ¿´´±©- ®¿½µ·²¹ ±º ³¿²¿¹»³»²¬ ±º ¸¿¦¿®¼±«- ©¿-¬»- ¿²¼ ¬¸»·® ³¿²¿¹»³»²¬ ¾§ Î Ý Î ßò

ØßÆß Î ÜÑËÍ ÉßÍ Ì Û ÞxÛÒÒxßÔ Î ÛÐÑÎ Ì Û Î

Í Ì ß Ì Û ÓßÍ Ì Û Î

ÛÝØÑæ
Û²ª·¼æ ïðïêïíçççéé
Î »¹·-¬®§ xÜæ ïïððëëìíèðîï
ÜÚÎ ËÎ Ôæ ¸¬¬°æññ»½¸±ò»°¿ò¹±ªñº¿½·´·¬§Á·²º±®³¿¬·±²ò·¼Á·²¼·½¿¬±®ãïïððëëìíèðîï

A4 **NNW** **< 1/8** **0.026 mi.** **136 ft.**	**WALGREENS #5527** **25011 ALESSANDRO BLVD** **MORENO VALLEY, CA 92553** **Site 2 of 9 in cluster A**	**RCRA-CESQG**	**1016954329** **CAL000323524**

Relative: **Higher**

Actual: **1569 ft.**

Î Ý Î ßôÝÛ Í Ï Ùæ
Ü¿¬» º±®³ ®»½»·ª»¼ ¾§ ¿¹»²½§æ ðíñðïñîðïì
Ú¿½·´·¬§ ²¿³»æ ÉßÔÙÎ ÛÛÒÍ ýëëîé
Ú¿½·´·¬§ ¿¼¼®»--æ îëðïï ßÔÛÍÍßÒÜÎ Ñ ÞÔÊÜ; ÓÑÎ ÛÒÑ ÊßÔÔÛÇô Ýß çîëëí
ÛÐß xÜæ Ýßôððððíîíëîì
Ó¿·´·²¹ ¿¼¼®»--æ ÐÑ ßÎ ÛÝ ÝÐ ÛÎ Ý Íð
Ý±²¬¿½¬æ Õß Î xÒß Û ÎÓÕÛ Î Í
Ý±²¬¿½¬ ¿¼¼®»--æ ÐÑ ßÎ ÛÝ ÝÐ ÛÎ Ý Íð
Ý±²¬¿½¬ ½±«²¬®§æ Ë Í
Ý±²¬¿½¬ ¬»´»°¸±²»æ øèêêô êíðóëèèè
Ý±²¬¿½¬ »³¿·´æ ÕÎ ÑÓÛÎ à ÉÛÎ ÝÍÞ ÕØ ÝÑÓ
ÛÐß Î »¹·±²æ ðç
Ý´¿--·º·½¿¬·±²æ Ý±²¼·¬·±²¿´´§ Û¨»³°¬ Í³¿´´ Ï«¿²¬·¬§ Ù»²»®¿¬±®
Ü»-½®·°¬·±²æ Ø¿²¼´»®æ ¹»²»®¿¬»- ïðð µ¹ ±® ´»-- ±º ¸¿¦¿®¼±«- ©¿-¬» °»® ½¿´»²¼¿® ³±²¬¸ ¿²¼ ¿½½«³«´¿¬»- ïððð µ¹ ±® ´»-- ±º ¸¿¦¿®¼±«- ©¿-¬» ¿¬ ¿²§ ¬·³»å ±® ¹»²»®¿¬»- ï µ¹ ±® ´»-- ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬» °»® ½¿´»²¼¿® ³±²¬¸ ¿²¼ ¿½½«³«´¿¬»- ¿¬ ¿²§ ¬·³» ï µ¹ ±® ´»-- ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬»å ±® ¹»²»®¿¬»- ïðð µ¹ ±® ´»-- ±º ¿²§ ®»-·¼«» ±® ½±²¬¿³·²¿¬»¼ -±·´ô ©¿-¬» ±® ±¬¸»® ¼»¾®·- ®»-«´¬·²¹ º®±³ ¬¸» ½´»¿²«° ±º ¿ -°·´´ô ·²¬± ±® ±² ¿²§ ´¿²¼ ±® ©¿¬»®ô ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬»- ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸ ¿²¼ ¿½½«³«´¿¬»- ¿¬ ¿²§ ¬·³» ïðð µ¹ ±® ´»-- ±º ¿²§ ®»-·¼«» ±® ½±²¬¿³·²¿¬»¼ -±·´ô ©¿-¬» ±® ±¬¸»® ¼»¾®·- ®»-«´¬·²¹ º®±³ ¬¸» ½´»¿²«° ±º ¿ -°·´´ô ·²¬± ±® ±² ¿²§ ´¿²¼ ±® ©¿¬»®ô ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬»

Ñ©²»®ñÑ°»®¿¬±® Í«³³¿®§æ
Ñ©²»®ñ±°»®¿¬±® ²¿³»æ ÉßÔÙÎ ÛÛÒ ÝÑ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--æ ÒÑÌ ÎÛÐÑÎ ÌÛÜ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ÓßÐ ÚxÒÜxÒÙ Í

Ó¿° xÜ
Ü·®»½¬·±²
Ü·--¿²½»
Ü´»ª¿¬·±² Í·¬»

Ü¿¬¿¾¿-»ø-÷

ÛÜÎ xÜ Ò« ³¾»®
ÛÐß xÜ Ò« ³¾»®

WALGREENS #5527 (Continued) 1016954329

	Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ½±«²¬§	Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ¬»´»° ¸±²»	Ò±¬ ®»°±®¬»¼
Ô»¹¿´ -¬¿¬«-	Ð®·ª¿¬»
Ñ©²»®ñÑ°»®¿¬±® Ì§°»	Ñ°»®¿¬±®
Ñ©²»®ñÑ° -¬¿®¬ ¼¿¬»	ðçñðîñîððë
Ñ©²»®ñÑ° »²¼ ¼¿¬»	Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ²¿³»	ÉßÔÎ ÎËÍ Ì ÐÎ ÑÐÛÎ ÌxÛ Í
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--	ÉxÔÔÑÌ ÎÜ
	ÜÛÛÎ ÚxÛÔÜ xÔ êðð ïë
Ñ©²»®ñ±°»®¿¬±® ½±«²¬§	Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ¬»´»° ¸±²»	øèìé÷ íïëóìïíç
Ô»¹¿´ -¬¿¬«-	Ð®·ª¿¬»
Ñ©²»®ñÑ°»®¿¬±® Ì§°»	Ñ©²»®
Ñ©²»®ñÑ° -¬¿®¬ ¼¿¬»	ðçñðîñîððë
Ñ©²»®ñÑ° »²¼ ¼¿¬»	Ò±¬ ®»°±®¬»¼

Ø¿²¼´»® ß½¬·ª·¬§ Í« ³ ³ ¿®§

Ëò Íò · ³ °±®¬»® ±º ¸¿¦¿®¼±«- ©¿-¬»	Ò±
Ó·¨»¼ ©¿-¬» ø¸¿¦¿®¼±«- ¿²¼ ®¿¼·±¿½¬·ª»÷	Ò±
Î »½§½´»® ±º ¸¿¦¿®¼±«- ©¿-¬»	Ò±
Ì®¿²-°±®¬»® ±º ¸¿¦¿®¼±«- ©¿-¬»	Ò±
Ì®»¿¬»®ô -¬±®»® ±® ¼·-°±-»® ±º ØÉ	Ò±
Ë²¼»®¹®±«²¼ ·²¶»½¬·±² ¿½¬·ª·¬§	Ò±
Ñ²ó-·¬» ¾«®²»® »¨»³ °¬·±²	Ò±
Ú«®²¿½» »¨»³ °¬·±²	Ò±
Ë-»¼ ±·´ º«»´ ¾«®²»®	Ò±
Ë-»¼ ±·´ °®±½»--±®	Ò±
Ë-»® ±·´ ®»º·²»®	Ò±
Ë-»¼ ±·´ º«»´ ³ ¿®µ»¬»® ¬± ¾«®²»®	Ò±
Ë-»¼ ±·´ Í °»½·º·½¿¬·±² ³ ¿®µ»¬»®	Ò±
Ë-»¼ ±·´ ¬®¿²-º»® º¿½·´·¬§	Ò±
Ë-»¼ ±·´ ¬®¿²-°±®¬»®	Ò±

ò Ê¿-¬» ½±¼»	Üðïï
ò Ê¿-¬» ²¿³»	xÙÒxÌßÞÔÛ ÉßÍÌÛ
ò Ê¿-¬» ½±¼»	Üððî
ò Ê¿-¬» ²¿³»	ÝÑÎÎÑÍxÊÛ ÉßÍÌÛ
ò Ê¿-¬» ½±¼»	Üððé
ò Ê¿-¬» ²¿³»	ÝØÎÑÓxËÓ
ò Ê¿-¬» ½±¼»	Üððç
ò Ê¿-¬» ²¿³»	ÓÛÎÝËÎÇ
ò Ê¿-¬» ½±¼»	Üðïð
ò Ê¿-¬» ²¿³»	ÍÛÔÛÒxËÓ
ò Ê¿-¬» ½±¼»	Üðîì
ò Ê¿-¬» ²¿³»	ÓóÝÎÛÍÑÔ
ò Ê¿-¬» ½±¼»	Ðððï
ò Ê¿-¬» ²¿³»	îóÞËÌßÒÑÒÛ ÐÛÎÑÈxÜÛô ÓÛÌØÇÔ ÛÌØÇÔ ÕÛÌÑÒÛ ÐÛÎÑÈxÜÛô ·² ½±²½»²¬®¿¬·±²- ¹®»¿¬»® ¬¸¿² êðû ÍÑÓÛ ÐÛÍÌxÝxÜÛ ÍÑÓÛ ÐÛÍÌxÝxÜÛ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

WALGREENS #5527 (Continued) **1016954329**

ò É¿-¬» ½±¼»æ	Ððéë
ò É¿-¬» ²¿³»æ	Ò×ÝÑÌ×ÒÛô ú ÍßÔÌÍ ôÑÎ ÐÇÎ×Ü×ÒÛ íóøíóÓÛÌØÇÔÐóîóÐÇÎ ÎÑÔ×Ü×ÒÇÔ÷ôôø Í÷ôô ú ÍßÔÌÍ
ò É¿-¬» ½±¼»æ	Ëðíì
ò É¿-¬» ²¿³»æ	ßÝÛÌßÔÜÛØÇÜÛ ÌÎ×ÝØÔÑÎÑ ôøÑÎ÷ ÝØÔÑÎßÔ
ò É¿-¬» ½±¼»æ	Ëïêë
ò É¿-¬» ²¿³»æ	ÒßÐØÌØßÔÛÒÛ
Ê·±´¿¬·±² Í¬¿¬«-æ	Ò± ª·±´¿¬·±²- º±«²¼

A5
NNW
< 1/8
0.039 mi.
205 ft.

Relative:
Higher

Actual:
1570 ft.

EDR Hist Cleaner **1015028043**
N/A

25030 ALESSANDRO BLVD
MORENO VALLEY, CA 92553

Site 3 of 9 in cluster A

ÛÜÎ Ø·-¬±®·½¿´ Ý´»¿²»®-æ

Ò¿³»æ	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ç»¿®æ	îððï
ß¼¼®»--æ	îëðíð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»æ	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ç»¿®æ	îððî
ß¼¼®»--æ	îëðíð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»æ	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ç»¿®æ	îððë
ß¼¼®»--æ	îëðíð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»æ	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ç»¿®æ	îððê
ß¼¼®»--æ	îëðíð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»æ	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ç»¿®æ	îððé
ß¼¼®»--æ	îëðíð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»æ	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ç»¿®æ	îððè
ß¼¼®»--æ	îëðíð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»æ	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ç»¿®æ	îðïð
ß¼¼®»--æ	îëðíð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»æ	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ç»¿®æ	îðïï
ß¼¼®»--æ	îëðíð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
Ò¿³»æ	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ç»¿®æ	îðïî
ß¼¼®»--æ	îëðíð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ

ÓßÐ ÚxÒÜxÒÙ Í

Ó¿° xÜ Ü·®»½¬·±² Ü·-¬¿²½» Û´»ª¿¬·±²	Í·¬»	Ü¿¬¿¾¿-»ø-÷	ÛÜÎ xÜ Ò« ³ ¾»® ÛÐß xÜ Ò« ³ ¾»®
A6 **NNW** **< 1/8** **0.039 mi.** **205 ft.**	**BEAR VALLEY CLEANERS** **25030 ALLESSANDRA BLVD** **MORENO VALLEY, CA 92553** **Site 4 of 9 in cluster A**	**DRYCLEANERS**	**S105030818** **N/A**

Relative: **Higher**

Actual: **1570 ft.**

ÜÎ ÇÝÔÛßÒÛÎ Í:

ÛÐß xܼ:	ÝßÔðððððìëëïì
ÒßxÝÍ Ý±¼»:	èïîíî
ÒßxÝÍ Ü»-½®·°¬·±²:	Ü®§½´»¿²·²¹ ¿²¼ Ô¿«²¼®§ Í»®ª·½»- ø»¨½»°¬ Ý±·²óÑ°»®¿¬»¼÷
ÍxÝ Ý±¼»:	éîïï
ÍxÝ Ü»-½®·°¬·±²:	Ð±©»® Ô¿«²¼®·»-ô Ú¿³·´§ ¿²¼ Ý±³ ³ »®½·¿´
Ý®»¿¬» Ü¿¬»:	ðêñîêñïççï
Ú¿½·´·¬§ ß½¬·ª»:	Ò±
x²¿½¬·ª» Ü¿¬»:	Ò±¬ ®»°±®¬»¼
Ú¿½·´·¬§ ß¼¼®îæ	Ò±¬ ®»°±®¬»¼
Ñ©²»® Ò¿ ³ »:	ÕxÓ ÝØÑÒÙ ÉÑÒ
Ñ©²»® ß¼¼®»--:	ïëçç ØxÙØ ÎxÜÙÛ ÍÌ
Ñ©²»® ß¼¼®»-- î:	Ò±¬ ®»°±®¬»¼
Ñ©²»® Ì»´»°¸±²»:	çðçéèðîçèì
Ý±²¬¿½¬ Ò¿ ³ »:	ÝØÑÒÙ ÉÑÒ ÕxÓñÑÉÒÛÎ
Ý±²¬¿½¬ ß¼¼®»--:	ïëçç ØxÙØ ÎxÜÙÛ ÍÌ
Ý±²¬¿½¬ ß¼¼®»-- î:	Ò±¬ ®»°±®¬»¼
Ý±²¬¿½¬ Ì»´»°¸±²»:	çðçéèðîçèì
Ó¿·´·²¹ Ò¿ ³ »:	Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ ß¼¼®»-- ï:	îëðíð ßÔÔÛÍÍßÒÜÎß ÞÔÊÜ ýÕ
Ó¿·´·²¹ ß¼¼®»-- î:	Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ Ý·¬§:	ÓÑÎÛÒÑ ÊßÔÔÛÇ
Ó¿·´·²¹ Í¬¿¬»:	Ýß
Ó¿·´·²¹ Æ·°:	çîëëíîððð
Ñ©²»® Ú¿¨:	ì
Î»¹·±² Ý±¼»:	Ò±¬ ®»°±®¬»¼

A7 **NW** **< 1/8** **0.041 mi.** **214 ft.**	**BEAR VALLEY CLEANERS** **25030 ALLESSANGRED BLVD STE K** **MORENO VALLEY, CA 92553** **Site 5 of 9 in cluster A**	**RCRA-SQG** **FINDS** **ECHO**	**1000594418** **CAD983582479**

Relative: **Higher**

Actual: **1570 ft.**

ÎÝÎßóÍ ÏÙ:

Ü¿¬» º±®³ ®»½»·ª»¼ ¾§ ¿¹»²½§:	ðëñðéñïççï
Ú¿½·´·¬§ ²¿ ³ »:	ÞÛßÎ ÊßÔÔÛÇ ÝÔÛßÒÛÎÍ
Ú¿½·´·¬§ ¿¼¼®»--:	îëðíð ßÔÔÛÍÍßÒÙÎÛÜ ÞÔÊÜ ÍÌÛ Õ ÓÑÎÛÒÑ ÊßÔÔÛÇô Ýß çîëëí
ÛÐß xÜ:	ÝßÜçèíëèîìéç
Ý±²¬¿½¬:	ÝÑÒÌßÝÌ ÓßÒßÙÛÎ
Ý±²¬¿½¬ ¿¼¼®»--:	îëðíð ßÔÔÛÍÍßÒÙÎÛÜ ÞÔÊÜ ÍÌÛ Õ ÓÑÎÛÒÑ ÊßÔÔÛÇô Ýß çîëëí
Ý±²¬¿½¬ ½±«²¬®§:	ËÍ
Ý±²¬¿½¬ ¬»´»°¸±²»:	øéïì÷ ëëëóïîïî
Ý±²¬¿½¬ »³ ¿·´:	Ò±¬ ®»°±®¬»¼
ÛÐß Î»¹·±²:	ðç
Ý´¿--·º·½¿¬·±²:	Í ³ ¿´´ Í ³ ¿´´ Ï«¿²¬·¬§ Ù»²»®¿¬±®
Ü»-½®·°¬·±²:	Ø¿²¼´»® ¹»²»®¿¬»-- ³ ±®» ¬¸¿² ïðð ¿²¼ ´»-- ¬¸¿² ïððð µ¹ ±º ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³ ±²¬¸ ¿²¼ ¿½½«³ «´¿¬»- ´»-- ¬¸¿² êððð µ¹ ±º ¸¿¦¿®¼±«- ©¿-¬» ¿¬ ¿²§ ¬·³ »ä ±® ¹»²»®¿¬»- ïðð µ¹ ±® ´»-- ±º ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³ ±²¬¸ ¿²¼ ¿½½«³ «´¿¬»- ³ ±®» ¬¸¿² ïððð µ¹ ±º ¸¿¦¿®¼±«- ©¿-¬» ¿¬ ¿²§ ¬·³ »

Ó¿° ×Ü ÓßÐ Ú×ÒÜ×ÒÙ Í

Ü·®»½¬·±²
Ü·-¬¿²½»
Û´»ª¿¬·±² Í·¬» Ü¿¬¿¾¿-»ø-÷ ÛÜÎ ×Ü Ò« ³¾»®
ÛÐß ×Ü Ò« ³¾»®

BEAR VALLEY CLEANERS (Continued) 1000594418

Ñ©²»®ñÑ°»®¿¬±® Í« ³ ³ ¿®§æ

Ñ©²»®ñ±°»®¿¬±® ²¿ ³»æ Õ×Ó ÝØÑÒÙ ÉÑÒ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--æ ÒÑÌ ÎÛÐÑÎÌÛÜ
ÒÑÌ ÎÛÐÑÎÌÛÜô ÓÛ çççç
Ñ©²»®ñ±°»®¿¬±® ½±«²¬®§æ Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ¬»´»°¸±²»æ øì ïë÷ ëëëó ïîïî
Ô»¹¿´ -¬¿¬«-æ Ð®·ª¿¬»
Ñ©²»®ñÑ°»®¿¬±® Ì§°»æ Ñ©²»®
Ñ©²»®ñÑ° -¬¿®¬ ¼¿¬»æ Ò±¬ ®»°±®¬»¼
Ñ©²»®ñÑ° »²¼ ¼¿¬»æ Ò±¬ ®»°±®¬»¼

Ñ©²»®ñ±°»®¿¬±® ²¿ ³»æ ÒÑÌ ÎÛÐÑÎÌÛÜ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--æ ÒÑÌ ÎÛÐÑÎÌÛÜ
ÒÑÌ ÎÛÐÑÎÌÛÜô ÓÛ çççç
Ñ©²»®ñ±°»®¿¬±® ½±«²¬®§æ Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ¬»´»°¸±²»æ øì ïë÷ ëëëó ïîïî
Ô»¹¿´ -¬¿¬«-æ Ð®·ª¿¬»
Ñ©²»®ñÑ°»®¿¬±® Ì§°»æ Ñ°»®¿¬±®
Ñ©²»®ñÑ° -¬¿®¬ ¼¿¬»æ Ò±¬ ®»°±®¬»¼
Ñ©²»®ñÑ° »²¼ ¼¿¬»æ Ò±¬ ®»°±®¬»¼

Ø¿²¼´»® ß½¬·ª·¬§ Í« ³ ³ ¿®§æ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

BEAR VALLEY CLEANERS (Continued) **1000594418**

ÜÚÎ ËÎÔæ ¸¬¬°æññ»½¸±ò»°¿ò¹±ªñ¼»¬¿·´»¼Á®»°±®¬ò½º³á º¿½·´·¬§Á·¼ãïïðððêìèïðéë

A8	**TOSCO/ 76 STATION #6962**	**LUST**	**S100944817**
NNW	**25020**	**HIST CORTESE**	**N/A**
< 1/8	**MORENO VALLEY, CA 92553**		
0.043 mi.			
229 ft.	**Site 6 of 9 in cluster A**		

Relative:
Higher

Actual:
1570 ft.

ÔËÍÌ ÎÛÙ èæ

Î»¹·±²æ	è
Ý±«²¬§æ	Î·ª»®-·¼»
Î»¹·±²¿´ Þ±¿®¼æ	Í¿²¬¿ ß²¿ Î»¹·±²
Ú¿½·´·¬§ Í¬¿¬«-æ	Ð®»´·³·²¿®§ -·¬» ¿--»--³»²¬ «²¼»®©¿§
Ý¿-» Ò«³¾»®æ	ðèííðîííîì
Ô±½¿´ Ý¿-» Ò«³æ	çèðêðç
Ý¿-» Ì§°»æ	ß¯«·º»® ¿ºº»½¬»¼
Í«¾-¬¿²½»æ	Ù¿-±´·²»
Ï¬§ Ô»¿µ»¼æ	Ò±¬ ®»°±®¬»¼
ß¾¿¬» Ó»¬¸±¼æ	Ò±¬ ®»°±®¬»¼
Ý®±-- Í¬®»»¬æ	ÐÛÎ ÎÎÍ
Û²º Ì§°»æ	Ò±¬ ®»°±®¬»¼
Ú«²¼·²¹æ	Ò±¬ ®»°±®¬»¼
Ø±© Ü·-½±ª»®»¼æ	Ò±¬ ®»°±®¬»¼
Ø±© Í¬±°°»¼æ	Ò±¬ ®»°±®¬»¼
Ô»¿µ Ý¿«-»æ	Ò±¬ ®»°±®¬»¼
Ô»¿µ Í±«®½»æ	Ò±¬ ®»°±®¬»¼
Ó¿¬»®·¿´ ×Üæ	Ìðêðêëðëìíë
Ø±© Í¬±°°»¼ Ü¿¬»æ	Ò±¬ ®»°±®¬»¼
Û²¬»®»¼ Ü¿¬»æ	çñîëñïççè
Ü¿¬» Ý±²º·®³ ¬± Ô»¿µ Þ»¹¿²æ	Ò±¬ ®»°±®¬»¼
Ü¿¬» Ð®»´·³·²¿®§ ß--»--³»²¬ Þ»¹¿²æ	ïñïêñîððð
Ü·-½±ª»®» Ü¿¬»æ	éñïêñïççè
Û²º±®½»³»²¬ Ü¿¬»æ	Ò±¬ ®»°±®¬»¼
Ý´±-» Ü¿¬»æ	Ò±¬ ®»°±®¬»¼
Ü¿¬» Ð®»´·³·²¿®§ ß--»--³»²¬ É±®µ°´¿² Í«¾³·¬¬»¼æ	Ò±¬ ®»°±®¬»¼
Ü¿¬» Ð±´´«¬·±² Ý¸¿®¿½¬»®·¦¿¬·±² Þ»¹¿²æ	Ò±¬ ®»°±®¬»¼
Ü¿¬» Î»³»¼·¿¬·±² ß½¬·±² Ë²¼»®©¿§æ	Ò±¬ ®»°±®¬»¼
Ü¿¬» Î»³»¼·¿´ ß½¬·±² Ð´¿² Í«¾³·¬¬»¼æ	Ò±¬ ®»°±®¬»¼
Ü¿¬» Ð±-¬ Î»³»¼·¿´ ß½¬·±² Ó±²·¬±®·²¹æ	Ò±¬ ®»°±®¬»¼
Û²¬»® Ü¿¬»æ	çñîëñïççè
ÙÉ Ï«¿´·º·»-æ	ã
Í±´ Ï«¿´·º·»-æ	ã
Ñ°»®¿¬±®æ	Ò±¬ ®»°±®¬»¼
Ú¿½·´·¬§ Ý±²¬¿½¬æ	Ò±¬ ®»°±®¬»¼
×²¬»®³ æ	Ò±¬ ®»°±®¬»¼
Ñª»®-·¹¸¬ Ð®±¹®¿³æ	ÔËÍÌ
Ô¿¬·¬«¼»æ	íí̀çïéíìéí
Ô±²¹·¬«¼»æ	óïïéòîíêðêé
ÓÌÞÛ Ü¿¬»æ	éñîçñîððî
ÓÌÞÛ Ú«»´æ	ëçððð
ÓÌÞÛ Ý±²½»²¬®¿¬·±²æ	î
ÓÌÞÛ Ó»¬¸±¼æ	òì
ÓÌÞÛ Ú«»´æ	ï
ÓÌÞÛ Ì»-¬»¼æ	ÓÌÞÛ Ü»¬»½¬»¼ò Í·¬» ¬»-¬»¼ º±® ÓÌÞÛ ú ÓÌÞÛ ¼»¬»½¬»¼
ÓÌÞÛ Ý´¿--æ	Þ
Í¬¿ºº æ	ÒÑÓ
Í¬¿ºº Ð±·²¬æ	ËÒÕ
Ô»¿¼ ß¹»²½§æ	Ô±½¿´ ß¹»²½§

TOSCO/ 76 STATION #6962 (Continued) **S100944817**

Ô±½¿´ ß¹»²½§ï í íðððÔ
Ø§¼® Þ¿-·² ýï Í ßÒ ÖßÝxÒ Ì Ñ øèóë÷
Þ»²»º·½·¿´ï Ò±¬ ®»°±®¬»¼
Ð®·±®·¬§ï Ò±¬ ®»°±®¬»¼
Ý´»¿²«° Ú«²¼ xÜï Ò±¬ ®»°±®¬»¼
É±®µ Í«-°»²¼»¼ï Ò±¬ ®»°±®¬»¼
Í«³³¿®§ï Ò±¬ ®»°±®¬»¼

ØxÍ Ì ÝÑÎ ÌÛÍÛï
Î»¹·±²ï ÝÑÎ ÌÛÍÛ
Ú¿½·´·¬§ Ý±«²¬§ Ý±¼»ï í í
Î»¹ Þ§ï ÔÌÒÕß
Î»¹ xÜï ðèííðííîíÌ

A9
NNW
< 1/8
0.043 mi.
229 ft.

MORENO VALLEY 76 #6962
25020 ALESSANDRO BLVD
MORENO VALLEY, CA 92553

UST **U003886076**
N/A

Site 7 of 9 in cluster A

Relative:
Higher

Actual:
1570 ft.

Ë Í Ìï
Ú¿½·´·¬§ xÜï ëíð
Ð»®³·¬¬·²¹ ß¹»²½§ï ÎxÊÛÎ ÍxÜÛ ÝÑËÒÌÇ
Ô¿¬·¬«¼»ï í íòçïèçëðî
Ô±²¹·¬«¼»ï óïïéòîîìêèí

ÎxÊÛÎ ÍxÜÛ ÝÑ Ë Í Ìï
Î»¹·±²ï ÎxÊÛÎ ÍxÜÛ
Ì±¬¿´ Ì¿²µ-ï î

A10
NNW
< 1/8
0.043 mi.
229 ft.

TOSCO / 76 STATION #6962
25020 ALESSANDRO BLVD
MORENO VALLEY, CA 92553

LUST **S107863276**
N/A

Site 8 of 9 in cluster A

Relative:
Higher

Actual:
1570 ft.

ÔË Í Ìï
Î»¹·±²ï Í ÌßÌÛ
Ù´±¾¿´ xÜï Ìðêðêëðððëíë
Ô¿¬·¬«¼»ï í íòçïèçîíéí
Ô±²¹·¬«¼»ï óïïéòîîêðêé
Ý¿-» Ì§°»ï ÔË Í Ì Ý´»¿²«° Í·¬»
Í¬¿¬«-ï Ý±³°´»¬»¼ ó Ý¿-» Ý´±-»¼
Í¬¿¬«- Ü¿¬»ï ïîñðçñîðïð
Ô»¿¼ ß¹»²½§ï ÎxÊÛÎ ÍxÜÛ ÝÑËÒÌÇ ÔÑÐ
Ý¿-» É±®µ»®ï ÔÜ
Ô±½¿´ ß¹»²½§ï ÎxÊÛÎ ÍxÜÛ ÝÑËÒÌÇ ÔÑÐ
ÎÞ Ý¿-» Ò« ³¾»®ï ðèííðííîíÌ
ÔÑÝ Ý¿-» Ò« ³¾»®ï çèðêç
Ú·´» Ô±½¿¬·±²ï Ô±½¿´ ß¹»²½§ É¿®»¸±«-»
Ð±¬»²¬·¿´ Ó»¼·¿ ß¬¬»²¬·±²ï ß¯«·º»® «-»¼ º±® ¼®·²µ·²¹ ©¿¬»® -«°°´§
Ð±¬»²¬·¿´ Ý±²¬¿³·²¿²¬ ±º Ý±²½»®²ï Ù¿-±´·²»
Í·¬» Ø·-¬±®§ï öööÜ¿¬¿ ³·¹®¿¬»¼ º®±³ ÙÛÑ Ì®¿½µ»® ©·¬¸ ¹¿°-ò Ý±²-«´¬¿²¬ ¸¿- »¨¬»²-·ª» ®»°±®¬- ¿²¼ ·²º±®³¿¬·±² ±² ÙÛÑ Ì®¿½µ»® ¿ª¿·´¿¾´»ò Í»» ¿´´ ¹®±«²¼©¿¬»® ¼¿¬¿ ¿²¼ ¼±½«³»²¬- º±® ³±®» ·²º±®³¿¬·±² ±² -·¬» ¸·-¬±®§ò

TOSCO / 76 STATION #6962 (Continued) **S107863276**

TOSCO / 76 STATION #6962 (Continued) **S107863276**

TOSCO / 76 STATION #6962 (Continued) **S107863276**

Ý´·½µ ¸»®» ¬± ¿½½»-- ¬¸» Ý¿´·º±®²·¿ Ù»±Ì®¿½µ»® ®»½±®¼- º±® ¬¸·- º¿½·´·¬§æ

Ý±²¬¿½¬æ
Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
Ý±²¬¿½¬ Ì§°»æ Ô±½¿´ ß¹»²½§ Ý¿-»©±®µ»®
Ý±²¬¿½¬ Ò¿³»æ Ô×ÒÜß ÍØË ÎÑÑ Ê
Ñ®¹¿²·¦¿¬·±² Ò¿³»æ Î×ÊÛÎ Í×ÜÛ ÝÑËÒÌÇ ÔÑÐ
ß¼¼®»--æ ìéçë Ô¿º¿§»¬¬» Í¬òô Í«·¬» ß
Ý·¬§æ ×²¼·±
Û³¿·´æ ´-¸«®±© à ®ª½±²¬¿½¬ò±®¹
Ð¸±²» Ò«³¾»®æ éêðèêìëêéð

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
Ý±²¬¿½¬ Ì§°»æ Î»¹·±²¿´ Þ±¿®¼ Ý¿-»©±®µ»®
Ý±²¬¿½¬ Ò¿³»æ ÒßÒÝÇ ÑÔÍÑÒóÓßÎÌ×Ò
Ñ®¹¿²·¦¿¬·±² Ò¿³»æ ÍßÒÌß ßÒß Î ÉÏÝÞ øÎÛÙ×ÑÒ è÷
ß¼¼®»--æ íéíé ÓßÒ Í×ÌÛ ÜÎ×ÊÛ Í«·¬» ëðð
Ý·¬§æ Î×ÊÛÎ Í×ÜÛ
Û³¿·´æ ²±´-±²ó³¿®¬·² à ©¿¬»®¾±¿®¼-ò½¿ò¹±ª
Ð¸±²» Ò«³¾»®æ Ò±¬ ®»°±®¬»¼

Í¬¿¬«- Ø·-¬±®§æ
Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
Í¬¿¬«-æ Ý±³°´»¬»¼ ó Ý¿-» Ý´±-»¼
Í¬¿¬«- Ü¿¬»æ ïîñðçñîðïð

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
Í¬¿¬«-æ Ñ°»² ó Ý¿-» Þ»¹·² Ü¿¬»
Í¬¿¬«- Ü¿¬»æ ðêñîìñïççè

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
Í¬¿¬«-æ Ñ°»² ó Î»³»¼·¿¬·±²
Í¬¿¬«- Ü¿¬»æ ïïñðïñîððì

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
Í¬¿¬«-æ Ñ°»² ó Í·¬» ß--»--³»²¬
Í¬¿¬«- Ü¿¬»æ ïðñîíñïççè

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
Í¬¿¬«-æ Ñ°»² ó Ê»®·º·½¿¬·±² Ó±²·¬±®·²¹
Í¬¿¬«- Ü¿¬»æ ðéñïçñîððê

Î»¹«´¿¬±®§ ß½¬·ª·¬§æ
Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÎÛÍÐÑÒÍÛ
Ü¿¬»æ ðìñïëñîððç
ß½¬·±²æ Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»æ ïïñðêñîððè
ß½¬·±²æ Ú·´» Î»ª·»©

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»æ ðçñïêñîððç

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·--¿²½»
Û´»ª¿¬·±² Í·¬»

ÓßÐ ÚÒÜÒÙÍ

Ü¿¬¿¾¿-»ø-÷

ÛÜÎ ×Ü Ò«³¾»®
ÛÐß ×Ü Ò«³¾»®

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ß½¬·±²:	Ô»¬¬»® ó Ò±¬·½» ý Î·ª Ý± ðç ï êðç
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»:	ðïñïïñîððè
ß½¬·±²:	Ñ¬¸»® Î»°±®¬ ñ Ü±½«³»²¬
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	ÛÒÚÑÎ ÝÛÓÛÒÌ
Ü¿¬»:	ðçñïêñîððè
ß½¬·±²:	Ú·´» ®»ª·»©
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	Ñ¬¸»®
Ü¿¬»:	ðéñïêñïççè
ß½¬·±²:	Ô»¿µ Ü·-½±ª»®§
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	Ñ¬¸»®
Ü¿¬»:	ðéñîïñïççè
ß½¬·±²:	Ô»¿µ Î»°±®¬»¼
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»:	ðèñïçñîððç
ß½¬·±²:	Í·¬» ß--»-- ³»²¬ Î»°±®¬
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»:	ïðñïëñîððç
ß½¬·±²:	Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»:	ðïñïëñîðïð
ß½¬·±²:	Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»:	ðìñïëñîðïð
ß½¬·±²:	Ó±²·¬±®·²¹ Î»°±®¬ ó ß²²«¿´´§
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»:	ðéñïëñîðïð
ß½¬·±²:	Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»:	ïðñïëñîðïð
ß½¬·±²:	Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§
Ù´±¾¿´ ×¼:	Ìðêðêëððëíë
ß½¬·±² Ì§°»:	ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»:	ðéñïëñîðïç
ß½¬·±²:	Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

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Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»	ðìñðïñîððë
ß½¬·±²	ײ Í·¬« Ð¸§-·½¿´ñÝ¸»³·½¿´ Ì®»¿¬³»²¬ ø±¬¸»® ¬¸¿² ÍÊÛ÷
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»	ðîñîìñîððç
ß½¬·±²	Í¬¿ºº Ô»¬¬»® ó Ý±²¬·²«» Î»³»¼·¿¬·±² ÎÛÍÐ ðîîìðç
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»	ïîñïèñîðð
ß½¬·±²	Í¬¿ºº Ô»¬¬»® ó Ý±²¬·²«» Î»³»¼·¿¬·±² ïîïèð
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»	ïïñïçñîðð
ß½¬·±²	Ú·´» ®»ª·»©
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÎÛÍÐÑÒÍÛ
Ü¿¬»	ðìñïëñîðð
ß½¬·±²	Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÎÛÍÐÑÒÍÛ
Ü¿¬»	ðïñïëñîðð
ß½¬·±²	Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	Ñ¬¸»®
Ü¿¬»	ðêñîìñïççè
ß½¬·±²	Ô»¿µ Í¬±°°»¼
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»	ðçñïìñîðð
ß½¬·±²	Ì»½¸²·½¿´ Ý±®®»-°±²¼»²½» ñ ß--·-¬¿²½» ñ Ñ¬¸»® ó Ý±²¬·²«» Î»³»¼·¿¬·±² ðçïìðé
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÎÛÍÐÑÒÍÛ
Ü¿¬»	ðîñðêñîðð
ß½¬·±²	Î»¯«»-¬ º±® Ý´±-«®»
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÎÛÍÐÑÒÍÛ
Ü¿¬»	ðéñïëñîðð
ß½¬·±²	Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÎÛÍÐÑÒÍÛ
Ü¿¬»	ðéñîðñîðð
ß½¬·±²	Ñ¬¸»® É±®µ°´¿²
Ù´±¾¿´ ×¼	Ìðêðêëðëíë
ß½¬·±² Ì§°»	ÛÒÚÑÎÝÛÓÛÒÌ

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Ü¿¬»æ ï îñðèñîðïð
ß½¬·±²æ Ú·´» ®»ª·»© ó ý Î ÝÜÛÛ Ë°´±¿¼ Í·¬» Ú·´» íñï ìñîðïï

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÎÛ ÍÐÑÒÍÛ
Ü¿¬»æ ïðñïëñîðé
ß½¬·±²æ Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÎÛ ÍÐÑÒÍÛ
Ü¿¬»æ ïðñïèñîðïð
ß½¬·±²æ É»´´ Ü»-¬®«½¬·±² Î»°±®¬

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ðëñî ìñîðé
ß½¬·±²æ Í¬¿ºº Ô»¬¬»® ó ý Î ÝÜÛÛ ðëî ìðé

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ðíñî ìñîðè
ß½¬·±²æ Í¬¿ºº Ô»¬¬»® ó ý Î ÝÜÛÛðíî ìðè

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÎÛ ÍÐÑÒÍÛ
Ü¿¬»æ ðïñïëñîðç
ß½¬·±²æ Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ðêñïçñîðç
ß½¬·±²æ Í¬¿ºº Ô»¬¬»® ó ý Î ÝÜÛÛ ðêïçð

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ðêñî îñîðç
ß½¬·±²æ Ò±¬·½» ±º Î»-°±²-·¾·´·¬§ ó ý Î ÝÜÛÛ ðê î îð

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ðèñïéñîðïð
ß½¬·±²æ Í¬¿ºº Ô»¬¬»® ó ý Î ÝÜÛÛ ðèïéïð

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÎÛ ÍÐÑÒÍÛ
Ü¿¬»æ ðîñðêñîðç
ß½¬·±²æ Î»¯«»-¬ º±® Ý´±-«®»

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÎÛ ÍÐÑÒÍÛ
Ü¿¬»æ ðèñï ìñîðç
ß½¬·±²æ É»´´ ×²-¬¿´´¿¬·±² Î»°±®¬

Ù´±¾¿´ ×¼æ Ìðêðêëðëíë
ß½¬·±² Ì§°»æ ÎÛ ÍÐÑÒÍÛ
Ü¿¬»æ ïðñïëñîðè
ß½¬·±²æ Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§

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Ù´±¾¿´ ×Ü¾ Ìðêðêëðëíë
ß½¬·±² Ì§°»¾ ÎÛÍÐÑÒÍÛ
Ü¿¬»¾ ðíñí ïñîðð
ß½¬·±²¾ Ê»´´ ×²-¬¿´´¿¬·±² Ê±®µ°´¿²

Ù´±¾¿´ ×Ü¾ Ìðêðêëðëíë
ß½¬·±² Ì§°»¾ ÛÒÚÑÎ ÝÛÓÛÒÌ
Ü¿¬»¾ ðèñï íñîðð
ß½¬·±²¾ Í¬¿ºº Ô»¬¬»® ó Ý Î·ª Ý± ðèï íðç

Ù´±¾¿´ ×Ü¾ Ìðêðêëðëíë
ß½¬·±² Ì§°»¾ ÛÒÚÑÎ ÝÛÓÛÒÌ
Ü¿¬»¾ ï îñðçñîðïð
ß½¬·±²¾ Ý´±-«®»ñÒ± Ú«®¬¸»® ß½¬·±² Ô»¬¬»® ó Ý Î ÝÛÜÛØ Ý´±-«®»

Î»¹·±²¾ ÍÌßÌÛ
Ù´±¾¿´ ×Ü¾ Ìðêðêëðìëðí
Ô¿¬·¬«¼»¾ íí òç ïéêëðì
Ô±²¹·¬«¼»¾ óï ïéò î ïëçðè
Ý¿-» Ì§°»¾ ÔËÍÌ Ý´»¿²«° Í·¬»
Í¬¿¬«-¾ Ý±³°´»¬»¼ ó Ý¿-» Ý´±-»¼
Í¬¿¬«- Ü¿¬»¾ ðîñîèñîðïé
Ô»¿¼ ß¹»²½§¾ Î×ÊÛÎ Í×ÜÛ ÝÑËÒÌÇ ÔÑÐ
Ý¿-» É±®µ»®¾ ÍÝÐ
Ô±½¿´ ß¹»²½§¾ Î×ÊÛÎ Í×ÜÛ ÝÑËÒÌÇ ÔÑÐ
ÎÞ Ý¿-» Ò«³¾»®¾ Ò±¬ ®»°±®¬»¼
ÔÑÝ Ý¿-» Ò«³¾»®¾ îðè ê îëé
Ú·´» Ô±½¿¬·±²¾ Ô±½¿´ ß¹»²½§
Ð±¬»²¬·¿´ Ó»¼·¿ ß ºº»½¬»¼¾ ß·®
Ð±¬»²¬·¿´ Ý±²¬¿³·²¿²¬- ±º Ý±²½»®²¾ Ù¿-±´·²» ø ßº»½¬»¼ ñ Ø»¿¬·²¹ Ô·«·¼ -¿²¼ Ù¿·²·
Í·¬» Ø·-¬±®§¾ Ò±¬ ®»°±®¬»¼

Ý´·½µ ¸»®» ¬± ¿½½»-- ¬¸» Ý¿´·º±®²·¿ Ù»±Ì®¿½µ»® ®»½±®¼- º±® ¬¸·- º¿½·´·¬§¾

Ý±²¬¿½¬¾
Ù´±¾¿´ ×Ü¾ Ìðêðêëðìëðí
Ý±²¬¿½¬ Ì§°»¾ Ô±½¿´ ß¹»²½§ Ý¿-»©±®µ»®
Ý±²¬¿½¬ Ò¿³»¾ ÍØßÎ ÑÒ ÞÑÎ×ÍÝÑÉÍÕ ÇÛ
Ñ®¹¿²·¦¿¬·±² Ò¿³»¾ Î×ÊÛÎ Í×ÜÛ ÝÑËÒÌÇ ÔÑÐ
ß¼¼®»--¾ íèèð ÔÛÓÑÒ ÍÌ ÍË ÍÌÛ îðð
Ý·¬§¾ Î×ÊÛÎ Í×ÜÛ
Û³¿·´¾ -¾±®·-½±©@®½³¿·´ò½±³
Ð¸±²» Ò«³¾»®¾ çëïèëëèèè

Ù´±¾¿´ ×Ü¾ Ìðêðêëðìëðí
Ý±²¬¿½¬ Ì§°»¾ Î»¹·±²¿´ Þ±¿®¼ Ý¿-»©±®µ»®
Ý±²¬¿½¬ Ò¿³»¾ ÑÎßÒÙ Ñ ÍÑÐ Ý ÑÐ Î ÛÙ ÇÞ ÛÐß ÜÛÚ ÍÛÝ ÌØ
Ñ®¹¿²·¦¿¬·±² Ò¿³»¾ ÍßÒÌß ßÒß ÎÉÏÝÞ øÎÙÒ è÷
ß¼¼®»--¾ íéíé ÓßÍ Ì×Ò Ô ÍÌ ÍË ÍÌÛ ëðð
Ý·¬§¾ Î×ÊÛÎ Í×ÜÛ
Û³¿·´¾ ²±²»ó-±³»ó»¬¼-ò½¿óð½ò»¸¿
Ð¸±²» Ò«³¾»®¾ ëððïèïïìî

Í¬¿¬«- Ø·-¬±®§
Ù´±¾¿´ ×Ü¾ Ìðêðêëðìëðí
Í¬¿¬«-¾ Ý±³°´»¬»¼ ó Ý¿-» Ý´±-»¼

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

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Í¬¿¬«- Ü¿¬»æ	ðîñîèñîððé
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
Í¬¿¬«-æ	Ñ°»² ó Ý¿-» Þ»¹² Ü¿¬»
Í¬¿¬«- Ü¿¬»æ	ðëñïéñîððê
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
Í¬¿¬«-æ	Ñ°»² ó Í·¬» ß--»--³»²¬
Í¬¿¬«- Ü¿¬»æ	ðêñðïñîððê
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
Í¬¿¬«-æ	Ñ°»² ó Í·¬» ß--»--³»²¬
Í¬¿¬«- Ü¿¬»æ	ðêñðèñîððê
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
Í¬¿¬«-æ	Ñ°»² ó Í·¬» ß--»--³»²¬
Í¬¿¬«- Ü¿¬»æ	ðêñðçñîððê
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
Í¬¿¬«-æ	Ñ°»² ó Í·¬» ß--»--³»²¬
Í¬¿¬«- Ü¿¬»æ	ðêñïëñîððê
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
Í¬¿¬«-æ	Ñ°»² ó Í·¬» ß--»--³»²¬
Í¬¿¬«- Ü¿¬»æ	ïïñðèñîððê

Î»¹«´¿¬±®§ ß½¬·ª·¬·»-æ

Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
ß½¬·±² Ì§°»æ	ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»æ	ðîñîéñîððé
ß½¬·±²æ	Ú·´» ®»ª·»© ó ýÎ ÝÜÛÙ Í·¬» Ú·´» ïïñî íñîðïð
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
ß½¬·±² Ì§°»æ	Ñ¬¸»®
Ü¿¬»æ	ðëñîëñîððê
ß½¬·±²æ	Ô»¿µ Ü·-½±ª»®§
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
ß½¬·±² Ì§°»æ	ÎÛÍÐÑÒÍÛ
Ü¿¬»æ	ðèñïèñîðïí
ß½¬·±²æ	Ì¿²µ Î»³±ª¿´ Î»°±®¬ ñ Ë Í Ì Í¿³°´·²¹ Î»°±®¬
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
ß½¬·±² Ì§°»æ	Ñ¬¸»®
Ü¿¬»æ	ðëñîëñîððê
ß½¬·±²æ	Ô»¿µ Î»°±®¬»¼
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
ß½¬·±² Ì§°»æ	ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»æ	ðêñïìñîððê
ß½¬·±²æ	Ò±¬·½» ±º Î»-°±²-·¾·´·¬§
Ù´±¾¿´ ×¼æ	Ìðêðêëðìëðí
ß½¬·±² Ì§°»æ	ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»æ	ðîñîèñîððé
ß½¬·±²æ	Ý´±-«®»ñÒ± Ú«®¬¸»® ß½¬·±² Ô»¬¬»®

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·--¿²½»
Û´»ª¿¬·±²   Í·¬»   Ü¿¬¿¾¿-»ø-÷   ÛÜÎ ×Ü Ò«³¾»® ÛÐß ×Ü Ò«³¾»®

ÓßÐ Ú×ÒÜ×ÒÙÍ

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Ù´±¾¿´ ×¼æ   ÌðêðêëðÌëðí
ß½¬·±² Ì§°»æ   Ñ¬¸»®
Ü¿¬»æ   ðëñïéñîðêð
ß½¬·±²æ   Ô»¿µ Í¬±°°»¼

Ù´±¾¿´ ×¼æ   ÌðêðêëðÌëðí
ß½¬·±² Ì§°»æ   ÎÛÙËÔßÌÑÎÇ ÓÙÓÌ
Ü¿¬»æ   ðëñïéñîðêð
ß½¬·±²æ   Ñ¬¸»® øÉ-» Ü»-½®·°¬·±² Ú·»´¼÷

Ù´±¾¿´ ×¼æ   ÌðêðêëðÌëðí
ß½¬·±² Ì§°»æ   ÎÛÍÐÑÒÍÛ
Ü¿¬»æ   ðèñðìñîðêð
ß½¬·±²æ   Ð®»´·³·²¿®§ Í·¬» ß--»--³»²¬ Î»°±®¬

Ù´±¾¿´ ×¼æ   ÌðêðêëðÌëðí
ß½¬·±² Ì§°»æ   ÎÛÍÐÑÒÍÛ
Ü¿¬»æ   ðèñïìñîðêð
ß½¬·±²æ   Ð®»´·³·²¿®§ Í·¬» ß--»--³»²¬ É±®µ°´¿²

Î×ÊÛÎ ÍÑÚÌ ÝÑÛ ÔÑÝ Ôæ

Î»¹·±²æ   Î×ÊÛÎ ÍÑÚÌ
Ú¿½·´·¬§ ×Üæ   çèðêðç
Ý³ °´±§»»æ   Í¸«®´±©ÔÑÐ
Í·¬» Ý´±-»¼æ   Ç»-
Ý¿-» Ì§°»æ   Ü®·²µ·²¹ É¿¬»® ß¯«·º»® ¿ºº»½¬»¼
Ú¿½·´·¬§ Í¬¿¬«-æ   ½´±-»¼ñ½¿-» ½´±-»¼
Ý¿-»®§°» Ü»½±®¼»æ   ß² ß¯«·º»® «-»¼ º±® Ü®·²µ·²¹ É¿¬»® -«°°´§ ¸¿- ¾»»² ½±²¬¿³·²¿¬»¼ò
Ú·¬¿«- Ü»½±®¼»æ   Ý´±-»¼ñ½¿-» ½´±-»¼

Î»¹·±²æ   Î×ÊÛÎ ÍÑÚÌ
Ú¿½·´·¬§ ×Üæ   èðèêèë
Ý³ °´±§»»æ   Þ±´¬·²¸¿«-ÔÑÐ
Í·¬» Ý´±-»¼æ   Ç»-
Ý¿-» Ì§°»æ   Í±·´ ±²´§
Ú¿½·´·¬§ Í¬¿¬«-æ   ½´±-»¼ñ½¿-» ½´±-»¼
Ý¿-»®§°» Ü»½±®¼»æ   Í±·´ ±²´§ ·- ¿ºº»½¬»¼
Ú·¬¿«- Ü»½±®¼»æ   Ý´±-»¼ñ½¿-» ½´±-»¼

A11
NNW
< 1/8
0.043 mi.
229 ft.

25020 ALESSANDRO BLVD
MORENO VALLEY, CA 92553

Site 9 of 9 in cluster A

EDR Hist Auto   **1015363625**
N/A

Relative:
Higher

Actual:
1570 ft.

ÛÜÎ Ø·-¬±®·½¿´ ß«¬± Í¬¿¬·±²-æ

Ò¿³»æ   ÓÑÎÛÒÑ ÊßÔÔÛÇ ËÒ×ÑÒ éê
Ç»¿®æ   îððë
ß¼¼®»--æ   îëðîð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ

Ò¿³»æ   ÓÑÎÛÒÑ ÊßÔÔÛÇ ËÒ×ÑÒ éê
Ç»¿®æ   îððê
ß¼¼®»--æ   îëðîð ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ

Ò¿³»æ   ÓÑÎÛÒÑ ÊßÔÔÛÇ ËÒ×ÑÒ éê
Ç»¿®æ   îððé

(Continued) 1015363625

ß¼¼®»--æ îëðîð ßÔÛÍ ÍßÒÜ Î Ñ ÞÔÊÜ

Ò¿ ³ »æ ÓÑ Î ÛÒÑ ÊßÔÔÛÇ ËÒ×ÑÒ éê
Ç»¿®æ îððç
ß¼¼®»--æ îëðîð ßÔÛÍ ÍßÒÜ Î Ñ ÞÔÊÜ

Ò¿ ³ »æ ÓÑ Î ÛÒÑ ÊßÔÔÛÇ ËÒ×ÑÒ éê
Ç»¿®æ îðïî
ß¼¼®»--æ îëðîð ßÔÛÍ ÍßÒÜ Î Ñ ÞÔÊÜ

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12 **EDR Hist Cleaner** **1014993540**
SSE **14325 AGAVE ST** **N/A**
< 1/8 **MORENO VALLEY, CA 92553**
0.095 mi.
502 ft.

Relative: ÛÜÎ Ø·-¬±®·½¿´ Ý´»¿²»®-æ
Lower
Ò¿ ³ »æ É ßÔÕÛÎ ÚßÓ×ÔÇ ßÚÚß×Î ÝÔÛßÒ×ÒÙ
Ç»¿®æ îððë
Actual: ß¼¼®»--æ ïìíîë ßÙßÊÛ ÍÌ
1557 ft.

C13 **ARCO #5208** **LUST** **S101589917**
NW **24994 ALESSANDRO BLVD** **CA FID UST** **N/A**
< 1/8 **MORENO VALLEY, CA 92588**
0.096 mi.
507 ft. **Site 1 of 6 in cluster C**

Relative: ÔËÍÌæ
Higher

Î»¹·±²æ	ÍÌßÌÛ
Ù´±¾¿´ ×¼æ	Ìðêðêëêîééç
Ô¿¬·¬«¼»æ	ííòçïéìéèèéçè
Ô±²¹·¬«¼»æ	óïïéòîîêììèííç
Ý¿-» Ì§°»æ	ÔËÍÌ Ý´»¿²«° Í·¬»
Í¬¿¬«-æ	Ý±³ °´»¬»¼ ó Ý¿-» Ý´±-»¼
Í¬¿¬«- Ü¿¬»æ	ïïñðéñîððè
Ô»¿¼ ß¹»²½§æ	Î×ÊÛÎÍ×ÜÛ ÝÑËÒÌÇ ÔÑÝßÔ
Ý¿-» É±®µ»®æ	ÍÝÞ
Ô±½¿´ ß¹»²½§æ	Î×ÊÛÎÍ×ÜÛ ÝÑËÒÌÇ ÔÑÝßÔ
ÎÞ Ý¿-» Ò«³ ¾»®æ	ðèííðíçìê
ÔÑÝ Ý¿-» Ò«³ ¾»®æ	îððîïèìðë
Ú·´» Ô±½¿¬·±²æ	Ô±½¿´ ß¹»²½§
Ð±¬»²¬·¿´ Ó»¼·¿ ßºº»½¬æ	ß¯«·º»® «-»¼ º±® ¼®·²µ·²¹ ©¿¬»® -«°°´§
Ð±¬»²¬·¿´ Ý±²¬¿³ ·²¿²¬- ±º Ý±²½»®²æ	Ù¿-±´·²»
Í·¬» Ø·-¬±®§æ	Ò±¬ ®»°±®¬»¼

Ý´·½µ ¸»®» ¬± ¿½½»-- ¬¸» Ý¿´·º±®²·¿ Ù»±Ì®¿½µ»® ®»½±®¼- º±® ¬¸·- º¿½·´·¬§æ

Ý±²¬¿½¬æ

Ù´±¾¿´ ×¼æ	Ìðêðêëêîééç
Ý±²¬¿½¬ Ì§°»æ	Ô±½¿´ ß¹»²½§ Ý¿»-»©±®µ»®
Ý±²¬¿½¬ Ò¿³ »æ	Ô×ÒÜß ÍÓ×ÌØ ÍÝÑÌÌ
Ñ®¹¿²·¦¿¬·±² Ò¿³ »æ	Î×ÊÛÎÍ×ÜÛ ÝÑËÒÌÇ ÔÑÝßÔ
ß¼¼®»--æ	ìéîð Ó»¿¼±© Ö¿¬»² Í¬ ß
Ý·¬§æ	×²¼·±
Û³¿·´æ	´-³ ·¬¸-½±¬¬à ®½³¿·´òµ¿»½±
Ð¸±²» Ò« ³ ¾»®æ	êêðèêíêééç

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ARCO #5208 (Continued) **S101589917**

Ù´±¾¿´ x¼ Ìðêðëêîéé
Ý±²¬¿½¬ Ì§°»: Î»¹·±²¿´ Ý¿-»©±®µ»®
Ý±²¬¿½¬ Ò¿³»: ÊßÔÛÎ ÎÛ ÓßØÒÉÞËÔÔ
Ñ®¹¿²·¦¿¬·±² Ò¿³»: ÍßÒ ßÒß ÎÛ Ï ÝÞ øÎÛÙÒ è÷
ß¼¼®»--: íéíé ÓßÒ ÍÌ ÍË ÎÌÛ Í Ëxß ÌÛ ëðð
Ý·¬§: ÎxÊÛ ÎÍxÜÛ
Û³¿·´: ª¿¸²©±²à©¿¬»®¾±¿®¼-ò½¿ò¹±ª
Ð¸±²» Ò« ³ ¾»®: çëïéèî ìçð í

Í¬¿¬« - Ø·-¬±®§:
Ù´±¾¿´ x¼ Ìðêðëêîéé
Í¬¿¬«-: Ý± ³ °´»¬»¼ ó Ý¿-» Ý´±-»¼
Í¬¿¬«- Ü¿¬»: ï ïñðéñîððè

Ù´±¾¿´ x¼ Ìðêðëêîéé
Í¬¿¬«-: Ñ°»² ó Ý¿-» Þ»¹·² Ü¿¬»
Í¬¿¬«- Ü¿¬»: ï îñïèñîððï

Ù´±¾¿´ x¼ Ìðêðëêîéé
Í¬¿¬«-: Ñ°»² ó Î»³»¼·¿¬·±²
Í¬¿¬«- Ü¿¬»: ðçñïëñîððí

Ù´±¾¿´ x¼ Ìðêðëêîéé
Í¬¿¬«-: Ñ°»² ó Î»³»¼·¿¬·±²
Í¬¿¬«- Ü¿¬»: ðîñïëñîððë

Ù´±¾¿´ x¼ Ìðêðëêîéé
Í¬¿¬«-: Ñ°»² ó Í·¬» ß--»--³»²¬
Í¬¿¬«- Ü¿¬»: ðéñïðñîððî

Î»¹«´¿¬±®§ ß½¬·ª·¬·»-:
Ù´±¾¿´ x¼ Ìðêðëêîéé
ß½¬·±² Ì§°»: ÎÛÍÐÑÒÍÛ
Ü¿¬»: ïðñïëñîððé
ß½¬·±²: Ó±²·¬±®·²¹ Î»°±®¬ ó Ï«¿®¬»®´§

Ù´±¾¿´ x¼ Ìðêðëêîéé
ß½¬·±² Ì§°»: ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»: ðîñïçñîððè
ß½¬·±²: Ì»½¸²·½¿´ Ý±®®»-°±²¼»²½» ñ ß--·-¬¿²½» ñ Ñ¬¸»® ó ýðîïçîðè

Ù´±¾¿´ x¼ Ìðêðëêîéé
ß½¬·±² Ì§°»: Ñ¬¸»®
Ü¿¬»: ðíñïèñîððî
ß½¬·±²: Ô»¿µ Ü·-½±ª»®§

Ù´±¾¿´ x¼ Ìðêðëêîéé
ß½¬·±² Ì§°»: Ñ¬¸»®
Ü¿¬»: ðíñïèñîððî
ß½¬·±²: Ô»¿µ Î»°±®¬

Ù´±¾¿´ x¼ Ìðêðëêîéé
ß½¬·±² Ì§°»: ÛÒÚÑÎÝÛÓÛÒÌ
Ü¿¬»: ðîñïçñîððè
ß½¬·±²: Ì»½¸²·½¿´ Ý±®®»-°±²¼»²½» ñ ß--·-¬¿²½» ñ Ñ¬¸»® ó ýðîïçîððè

ARCO #5208 (Continued) **S101589917**

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ðéñðïñîððè
ß½¬·±²æ Í¬¿ºº Ô»¬¬»® óýðéðïðè

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»æ ðîñïëñîððë
ß½¬·±²æ Ð« ³ ° ú Ì®»¿¬ øÐú Ì÷ Ù®±«²¼©¿¬»®

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÎÛÓÛÜ×ßÌ×ÑÒ
Ü¿¬»æ ðçñïëñîððí
ß½¬·±²æ Í±·´ Ê¿°±® Û¨¬®¿½¬·±² øÍÊÛ÷

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ Ñ¬¸»®
Ü¿¬»æ ïîñïèñîððï
ß½¬·±²æ Ô»¿µ Í¬±°°»¼

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ðçñïèñîððé
ß½¬·±²æ Ú·´» ®»ª·»©

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÎÛÍÐÑÒÍÛ
Ü¿¬»æ ðïñïëñîððè
ß½¬·±²æ Ó±²·¬±®·²¹ λ°±®¬ ó Ï«¿®¬»®´§

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ðèñïëñîððè
ß½¬·±²æ Ú·´» ®»ª·»©

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ðìñîîñîððè
ß½¬·±²æ Ú·´» ®»ª·»©

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÛÒÚÑ ÎÝÛÓÛÒÌ
Ü¿¬»æ ïïñðéñîððè
ß½¬·±²æ Ý´±-«®»ñÒ± Ú«®¬¸»® ß½¬·±² Ô»¬¬»® óý ÎÝÜÛØ ½´±-«®» ´»¬¬»®

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÎÛÍÐÑÒÍÛ
Ü¿¬»æ ðìñïëñîððè
ß½¬·±²æ Ó±²·¬±®·²¹ λ°±®¬ ó Ï«¿®¬»®´§

Ù´±¾¿´ ×¼æ Ìðêðêëêîééç
ß½¬·±² Ì§°»æ ÎÛÍÐÑÒÍÛ
Ü¿¬»æ ðéñïëñîððè
ß½¬·±²æ Ó±²·¬±®·²¹ λ°±®¬ ó Ï«¿®¬»®´§

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ARCO #5208 (Continued) **S101589917**

Î xÊÛÎ Í xÜÛ ÝÑò ÔË Í Ìæ
Î»¹·±²æ Î xÊÛÎ Í xÜÛ
Ú¿½·´·¬§ xÜæ îðð î ïèìðë
Û ³ °´±§»»æ Í ¸«®´±©òÔÑÐ
Í ·¬» Ý´±-»¼æ Ç»-
Ý¿-» Ì§°»æ Ü®·²µ·²¹ É¿¬»® ß¯«·º»® ¿ºº»½¬»¼
Ú¿½·´·¬§ Í ¬¿¬«-æ ½´±-»¼ñ¿½¬·±² ½±³°´»¬»¼
Ý¿-»¬§°» Ü»½±¼»æ ß² ß¯«·º»® «-»¼ º±® Ü®·²µ·²¹ É¿¬»® -«°°´§ ¸¿- ¾»»² ½±²¬¿³·²¿¬»¼
Ú-¬¿¬«- Ü»½±¼»æ Ý´±-»¼ñß½¬·±² ½±³°´»¬»¼

Ýß ÚxÜ ËÍ Ìæ
Ú¿½·´·¬§ xÜæ í íðððèèí
Î»¹«´¿¬»¼ Þ§æ ËÌÒÕß
Î»¹«´¿¬»¼ xÜæ Ò±¬ ®»°±®¬»¼
Ý±®¬»-» Ý±¼»æ Ò±¬ ®»°±®¬»¼
Í xÝ Ý±¼»æ Ò±¬ ®»°±®¬»¼
Ú¿½·´·¬§ Ð¸±²»æ éïìçîìèìðì
Ó¿·´ Ì±æ Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ ß¼¼®»--æ ïéíïë ÍÌËÜÛÞßÕÛÎ ÎÜ
Ó¿·´·²¹ ß¼¼®»-- îæ Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ Ý·¬§ñÍ¬æ ÓÑ ÎÛÒÑ ÊßÔÔÛÇ çîëèè
Ý±²¬¿½¬æ Ò±¬ ®»°±®¬»¼
Ý±²¬¿½¬ Ð¸±²»æ Ò±¬ ®»°±®¬»¼
ÜËÒÍ Ò«³¾»®æ Ò±¬ ®»°±®¬»¼
ÒÐÜÛÍ Ò«³¾»®æ Ò±¬ ®»°±®¬»¼
ÛÐß xÜæ Ò±¬ ®»°±®¬»¼
Ý±³³»²¬-æ Ò±¬ ®»°±®¬»¼
Í ¬¿¬«-æ ß½¬·ª»

C14 **ARCO #5208** **LUST** **S105799435**
NW **24994 ALESSANDRO BOULEVARD** **N/A**
< 1/8 **MORENO VALLEY, CA 92553**
0.096 mi.
507 ft. **Site 2 of 6 in cluster C**

Relative:
Higher

Actual:
1572 ft.

ÔË Í Ì ÎÛÙ è:
Î»¹·±²æ è
Ý±«²¬§æ Î·ª»®-·¼»
Î»¹·±²¿´ Þ±¿®¼æ Í¿²¬¿ ß²¿ Î»¹·±²
Ú¿½·´·¬§ Í¬¿¬«-æ Ð®»´·³·²¿®§ -·¬» ¿--»--³»²¬ «²¼»®©¿§ -·¬» -«°»®ª·-±®
Ý¿-» Ò«³¾»®æ ðèíïðçìèì
Ô±½¿´ Ý¿-» Ò«³æ îðð î ïèìðë
Ý¿-» Ì§°»æ ß¯«·º»® ¿ºº»½¬»¼
Í «¾-¬¿²½»æ Ù¿-±´·²»
Ï¬§ Ô»¿µ»¼æ Ò±¬ ®»°±®¬»¼
ß¾¿¬» Ó»¬¸±¼æ Ò±¬ ®»°±®¬»¼
Ý®±-- Í¬®»»¬æ ÐÛÎ Î×Í ÞÑËÔÛÊßÎÜ
Û²º Ì§°»æ Ò±¬ ®»°±®¬»¼
Ú«²¼·²¹æ Ò±¬ ®»°±®¬»¼
Ø±© Ü·-½±ª»®»¼æ ÑÓ
Ø±© Í¬±°°»¼æ Ý´±-» Ì¿²µ
Ô»¿µ Ý¿«-»æ ËÒÕ
Ô»¿µ Í±«®½»æ ËÒÕ
Ù´±¾¿´ xÜæ Ìðêðêëèêîéç
Ø±© Í¬±°°»¼ Ü¿¬»æ íñïèñîððî
Û²¬»® Ü¿¬»æ Ò±¬ ®»°±®¬»¼
Ü¿¬» Ý±²º·®³¿¬·±² ±º Ô»¿µ Þ»¹¿²æ Ò±¬ ®»°±®¬»¼

ARCO #5208 (Continued) **S105799435**

Ü¿¬» Ð®»´·³·²¿®§ ß--»-- ³»²¬ Þ»¹¿²: Ò±¬ ®»°±®¬»¼
Ü·-½±ª»®» Ü¿¬»: íñïèñîðð î
Û²º±®½» ³»²¬ Ü¿¬»: Ò±¬ ®»°±®¬»¼
Ý´±-» Ü¿¬»: Ò±¬ ®»°±®¬»¼
Ü¿¬» Ð®»´·³ ß--»-- ³»²¬ É±®µ°´¿² Í«¾³·¬¬»¼: éñïðñîðð î
Ü¿¬» Ð±´´«¬·±² Ý¸¿®¿½¬»®·¦¿¬·±² Þ»¹¿²: Ò±¬ ®»°±®¬»¼
Ü¿¬» Î»³»¼·¿¬·±² Ð´¿² Í«¾³·¬¬»¼: Ò±¬ ®»°±®¬»¼
Ü¿¬» Î»³»¼·¿´ ß½¬·±² Ë²¼»®©¿§: Ò±¬ ®»°±®¬»¼
Ü¿¬» Ð±-¬ Î»³»¼·¿´ ß½¬·±² Ó±²·¬±®·²¹: Ò±¬ ®»°±®¬»¼
Û²¬»® Ü¿¬»: Ò±¬ ®»°±®¬»¼
ÙÉ Ï«¿´·º·»-: ã
Í±·´ Ï«¿´·º·»-: ã
Ñ°»®¿¬±®: Ò±¬ ®»°±®¬»¼
Ú¿½·´·¬§ Ý±²¬¿½¬: Ò±¬ ®»°±®¬»¼
x²¬»®· ³: Ò±¬ ®»°±®¬»¼
Ñª»®-·¹¸¬ Ð®±¹®¿³: ÔËÍÌ
Ô¿¬·¬«¼»: ð
Ô±²¹·¬«¼»: ð
ÓÌÞÛ Ü¿¬»: çñïïñîðð í
ÓÌÞÛ ÙÉ: èíð
ÓÌÞÛ Ý±²½»²¬®¿¬·±²: ð
ÓÌÞÛ Í±·´: ëðç
ÓÌÞÛ Ú«»´: ï
ÓÌÞÛ Ì»-¬»¼: ÓÌÞÛ Ü»¬»½¬»¼ò Í·¬» ¬»-¬»¼ º±® ÓÌÞÛ ú ÓÌÞÛ ¼»¬»½¬»¼
ÓÌÞÛ Ý´¿--: ö
Í¬¿ºº: ÊÖÖ
Í¬¿ºº x²·¬·¿´-: ÍÝÞ
Ô»¿¼ ß¹»²½§: Ô±½¿´ ß¹»²½§
Ô±½¿´ ß¹»²½§: í íððôÔ
Ø§¼® Þ¿-· ²: Ò±¬ ®»°±®¬»¼
Þ»²»º·½·¿´: Ò±¬ ®»°±®¬»¼
Ð®·±®·¬§: Ò±¬ ®»°±®¬»¼
Ý´»¿²«° Ú«²¼ ×Ü: Ò±¬ ®»°±®¬»¼
É±®µ Í«°»®ª·-±®: Ò±¬ ®»°±®¬»¼
Í«³³¿®§: Ò±¬ ®»°±®¬»¼

C15 **MORENO GAS MART** **UST** **U003839052**
NW **24994 ALESSANDRO BLVD** **SWEEPS UST** **N/A**
< 1/8 **MORENO VALLEY, CA 92553**
0.096 mi.
507 ft. **Site 3 of 6 in cluster C**

Relative:
Higher

Actual:
1572 ft.

ËÍÌ:
Ú¿½·´·¬§ xÜ: èððëè
Ð»®³·¬¬·²¹ ß¹»²½§: ÎxÊÛÎÍ×ÜÛ ÝÑËÒÌÇ
Ô¿¬·¬«¼»: ííòçïçðèí
Ô±²¹·¬«¼»: óïïéòîîêïèìè

ÎxÊÛÎÍ×ÜÛ ÝÑËÒÌÇ ÝËÐß ËÍÌ:
Ò¿³»: ÎxÊÛÎÍ×ÜÛ
Î»¹·±²: î

ÍÉÛÛÐÍ ËÍÌ:
Í¬¿¬«-: ß½¬·ª»
Ý±³° Ò«³¾»®: ïçê
Ò«³¾»®: ï
Þ±¿®¼ Ñº Û¯«¿´·¦¿¬·±²: Ò±¬ ®»°±®¬»¼

MORENO GAS MART (Continued) **U003839052**

Î »º»®®¿´ Ü¿¬»æ	ïðóîïóçî
ß½¬·±² Ü¿¬»æ	ïðóîïóçî
Ý®»¿¬»¼ Ü¿¬»æ	ðèóîêóçï
Ñ©²»® Ì¿²µ ×¼æ	ï
Í É Î ÝÞ Ì¿²µ ×¼æ	í íóðððóðððïçêóðððððï
Ì¿²µ Í¬¿¬«-æ	ß
Ý¿°¿½·¬§æ	ï îðð
ß½¬·ª» Ü¿¬»æ	ïðóîïóçî
Ì¿²µ Ë-»æ	ÓÐÊÐ ÚËÛÔ
Í ÌÙæ	Ð
Ý±²¬»²¬-æ	ÎÛÙ ËÒÔÛßÜÛÜ
Ò« ³¾»® Ñº Ì¿²µ-æ	í
Í¬¿¬«-æ	ß½¬·ª»
Ý± ³ ° Ò« ³¾»®æ	ïçê
Ò« ³¾»®æ	ï
Þ±¿®¼ Ñº Û¯«¿´·¦¿¬·±²æ	Ò±¬ ®»°±®¬»¼
Î »º»®®¿´ Ü¿¬»æ	ïðóîïóçî
ß½¬·±² Ü¿¬»æ	ïðóîïóçî
Ý®»¿¬»¼ Ü¿¬»æ	ðèóîêóçï
Ñ©²»® Ì¿²µ ×¼æ	î
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Ì¿²µ Í¬¿¬«-æ	ß
Ý¿°¿½·¬§æ	ï îðð
ß½¬·ª» Ü¿¬»æ	ïðóîïóçî
Ì¿²µ Ë-»æ	ÓÐÊÐ ÚËÛÔ
Í ÌÙæ	Ð
Ý±²¬»²¬-æ	ÎÛÙ ËÒÔÛßÜÛÜ
Ò« ³¾»® Ñº Ì¿²µ-æ	Ò±¬ ®»°±®¬»¼
Í¬¿¬«-æ	ß½¬·ª»
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Ò« ³¾»®æ	ï
Þ±¿®¼ Ñº Û¯«¿´·¦¿¬·±²æ	Ò±¬ ®»°±®¬»¼
Î »º»®®¿´ Ü¿¬»æ	ïðóîïóçî
ß½¬·±² Ü¿¬»æ	ïðóîïóçî
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Í ÌÙæ	Ð
Ý±²¬»²¬-æ	ÎÛÙ ËÒÔÛßÜÛÜ
Ò« ³¾»® Ñº Ì¿²µ-æ	Ò±¬ ®»°±®¬»¼

C16	**ARCO FACILITY NO 05208**	**RCRA-SQG**	**1004677817**
NW	**24994 ALESSANDRO BLVD**	**FINDS**	**CAR000101873**
< 1/8	**MORENO VALLEY, CA 92553**	**ECHO**	
0.096 mi.			
507 ft.	**Site 4 of 6 in cluster C**		

Relative:
Higher

Actual:
1572 ft.

ÎÝÎ ßóÍ ÏÙæ
Ü¿¬» º±®³ ®»½»·ª»¼ ¾§ ¿¹»²½§æðëñîèñîððî
Ú¿½·´·¬§ ²¿³ »æ ß ÎÝÑ ÚßÝ×Ô×ÌÇ ÒÑ ðëîðè
Ú¿½·´·¬§ ¿¼¼®»--æ îìççì ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
ÓÑÎÛÒÑ ÊßÔÔÛÇ ô Ýß çîëëí

ARCO FACILITY NO 05208 (Continued) **1004677817**

ARCO FACILITY NO 05208 (Continued) **1004677817**

ÚˣÒÜ Í≅

Î »¹·--®§ ˣÜ≅ ï ïðð ï î ïèçêç í

Û²ª·®±² ³ »²¬¿´ ˣ²¬»®»--ñˣ²º±® ³ ¿¬·±² Í§-¬» ³
Ý¿´·º±®²·¿ Ø¿¦¿®¼±«- É¿-¬» Ì®¿½µ·²¹ Í§-¬» ³ ó Ü¿¬¿ ³ ¿®¬ øØ É Ì Í óÜßÌ ßÓßÎ Ì÷
º®±³ ¬¸» Ý¿´·º±®²·¿ ©·¬¸ ·²º±® ³ ¿¬·±² ±² ¸¿¦¿®¼±«- ©¿-¬» -¸·° ³ »²¬- º±®
¹»²»®¿¬±®-ô ¬®¿²-°±®¬»®-ô ¿²¼ ¬®»¿¬³ »²¬ ¿²¼ ¼·-°±-¿´ º¿½·´·¬·»-ò
º¿½·´·¬·»-ò

ÎÝÎß ·- ¿ ²¿¬·±²¿´ ·²º±® ³ ¿¬·±² -§-¬» ³ ¬¸¿¬ -«°°±®¬- ¬¸» Î »-±«®½»
Ý±²-»®ª¿¬·±² ¿²¼ Î »½±ª»®§ ß½¬ øÎ Ýß÷ °®±¹® ³ ¬¸®±«¹¸ ¬¸» ¬®¿½µ·²¹ ±º
»ª»²¬- ¿²¼ ¿½¬·ª·¬·»- ®»´¿¬»¼ ¬± º¿½·´·¬·»- ¬¸¿¬ ¹»²»®¿¬»ô ¬®¿²-°±®¬ô
¿²¼ ¬®»¿¬ô -¬±®»ô ±® ¼·-°±-» ±º ¸¿¦¿®¼±«- ©¿-¬»ò ÎÝÎß ¿´´±©- ÎÝÎß
°®±¹®¿³ -¬¿ºº ¬± ¬®¿½µ ¬¸» ²±¬·º·½¿¬·±² ° »®³ ·¬ ½±³ °´·¿²½»ô ¿²¼
½±®®»½¬·ª» ¿½¬·ª·¬·»- ®»¯«·®»¼ «²¼»® ÎÝÎßò

ÛÝØÑ≅

Û²ª·¼≅	ïðð ì êééè ï é
Î »¹·--®§ ˣÜ≅	ï ïðð ï î ïèçêç í
ÜÚ Î Ë Î Ô≅	¸¬¬°æññ»½¸±ò»°¿ò¹±ªñ¼»¬¿·´»¼Á®»°±®¬ã ï ïðð ï î ïèçêç í

17
NNW
< 1/8
0.107 mi.
565 ft.

MORENO VALLEY UNIFIED SCHOOL
13911 PERRIS BLVD
MORENO VALLEY, CA 92388

SWEEPS UST **S101590006**
CA FID UST **N/A**

Relative:
Higher

Actual:
1572 ft.

Í É ÛÛÐ Í ËÍ Ì≅

Í ¬¿¬«-≅	ß½¬·ª»
Ý± ³ ° Ò« ³ ¾»®≅	ï êê ì è
Ò« ³ ¾»®≅	ì
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ß½¬·± ² Ü¿¬»≅	ï ïó ï éóç î
Ý®»¿¬»¼ Ü¿¬»≅	ð íó î íóèç
Ñ©²»® Ì¿²µ ˣ¼≅	ððð é í ê
Í É Î ÝÞ Ì¿²µ ˣ¼≅	í íóððð ó ðð ï êê ì èóððððð ï
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Ì¿²µ Ë-»≅	ÓÊ ÚËÛÔ
Í Ì Ù≅	Ð
Ý±²¬»²¬≅	ÔÛßÜÛÜ
Ò« ³ ¾»® Ñº Ì¿²µ-≅	ì

Í ¬¿¬«-≅	ß½¬·ª»
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ß½¬·± ² Ü¿¬»≅	ï ïó ï éóç î
Ý®»¿¬»¼ Ü¿¬»≅	ð íó î íóèç
Ñ©²»® Ì¿²µ ˣ¼≅	ððð é í ê
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Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ÓßÐ Ú×ÒÜ×ÒÙ Í

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·-¬¿²½»
Û´»ª¿¬·±² Í·¬» Ü¿¬¿¾¿-»ø-÷ ÛÜÎ ×Ü Ò« ³ ¾»®
ÛÐß ×Ü Ò« ³ ¾»®

MORENO VALLEY UNIFIED SCHOOL (Continued) **S101590006**

Ý¿°¿½·¬§æ	êðð
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Í Ì Ùæ	Ð
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Í Ì Ùæ	Ð
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Ý±²¬»²¬æ	ÉßÍ Ì Û Ñ×Ô
Ò« ³ ¾»® Ñº Ì¿²µ-æ	Ò±¬ ®»°±®¬»¼

Ýß Ú×Ü ËÍ Ì:

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Ý±®¬»- Ý±¼»æ	Ò±¬ ®»°±®¬»¼
Í×Ý Ý±¼»æ	Ò±¬ ®»°±®¬»¼
Ú¿½·´·¬§ Ð¸±²»æ	Ò±¬ ®»°±®¬»¼
Ó¿·´ Ì±æ	Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ ß¼¼®»--æ	ï íçï ï ÐÛÎ Î × Í ÐÔÊÜ
Ó¿·´·²¹ ß¼¼®»-- îæ	Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ Ý·¬§ Í¬¿¬» Æ·°æ	ÓÑÎ ÛÒÑ ÊßÔÔÛÇ çî ëèè
Ý±²¬¿½¬æ	Ò±¬ ®»°±®¬»¼
Ý±²¬¿½¬ Ð¸±²»æ	Ò±¬ ®»°±®¬»¼
ÜËÒÍ Ò« ³ ¾»®æ	Ò±¬ ®»°±®¬»¼
ÒÐÜÛÍ Ò« ³ ¾»®æ	Ò±¬ ®»°±®¬»¼
ÛÐß ×Üæ	Ò±¬ ®»°±®¬»¼

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ÓßÐ Ú×ÒÜ×ÒÙ Í

Ó¿° ×Ü Ü·®»½¬·±² Ü·-¬¿²½» Û´»ª¿¬·±²	Í·¬»	Ü¿¬¿¾¿-»ø-÷	ÛÜÎ ×Ü Ò« ³ ¾»® ÛÐß ×Ü Ò« ³ ¾»®
	MORENO VALLEY UNIFIED SCHOOL (Continued)		**S101590006**

Ý± ³ ³ »²¬-æ Í ¬¿¬«-æ
Ò±¬ ®»°±®¬»¼ ß½¬·ª»

C18
NW
< 1/8
0.117 mi.
619 ft.

RITE AID #6231
24991 ALESSANDRO BLVD
MORENO VALLEY, CA 92553

RCRA-LQG **1016954882**
CAL000380285

Site 5 of 6 in cluster C

Relative:
Higher

Actual:
1572 ft.

Î Ý Î ßóÔ Ï Üæ
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ÛÐß ×Üæ Ýß Ôðððí èðî èë
Ó¿·´·²¹ ¿¼¼®»--æ ØËÒÌ ÛÎ ÔÒ
Ýß ÓÐ Ø×ÔÔô Ðß ïéðïï
Ý±²¬¿½¬æ Î ÌÛ ØßÎÜ×ÒÙ ß ÝßßÌ×
Ý±²¬¿½¬ ¿¼¼®»--æ ØËÒÌ ÛÎ ÔÒ
Ýß ÓÐ Ø×ÔÔô Ðß ïéðïï
Ý±²¬¿½¬ ½±«²¬®§æ Ò±¬ ®»°±®¬»¼
Ý±²¬¿½¬ ¬»´»°¸±²»æ øéïé÷ éíðóèîîë
Ý±²¬¿½¬ »³ ¿·´æ Î ÍÛß×Ì à Î×ÌÛß×ÜòÝÑÓ
ÛÐß Î»¹·±²æ ðç
Ý´¿--·º·½¿¬·±²æ Ô¿®¹» Ï«¿²¬·¬§ Ù»²»®¿¬±®
Ü»-½®·°¬·±²æ Ø¿²¼´»®æ ¹»²»®¿¬»- ïôððð µ¹ ±® ³ ±®» ±º ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³ ±²¬¸å ±® ¹»²»®¿¬»- ³ ±®» ¬¸¿² ï µ¹ ±º ¿½«¬» ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³ ±²¬¸å ±® ¹»²»®¿¬»- ³ ±®» ¬¸¿² ïðð µ¹ ±º ¿²§ ®»-·¼«» ±® ½±²¬¿³ ·²¿¬»¼ -±·´ô ©¿-¬» ±® ±¬¸»® ¼»¾®·- ®»-«´¬·²¹ º®±³ ¬¸» ½´»¿²«° ±º ¿ -°·´´ ·²¬± ±® ±² ¿²§ ´¿²¼ ±® ©¿¬»®ô ±º ¿½«¬» ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³ ±²¬¸å ±® ¹»²»®¿¬»- ïðð µ¹ ±º ¿²§ ®»-·¼«» ±® ½±²¬¿³ ·²¿¬»¼ -±·´ô ©¿-¬» ±® ±¬¸»® ¼»¾®·- ®»-«´¬·²¹ º®±³ ¬¸» ½´»¿²«° ±º ¿ -°·´´ ·²¬± ±® ±² ¿²§ ´¿²¼ ±® ©¿¬»®ô ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³ ±²¬¸ ïðð µ¹ ¬¸¿¬ ³ ¿¬»®·¿´ ·¬ ·² ¿²§ ¬·³ »

Ñ©²»®ñÑ°»®¿¬±® Í« ³ ³ ¿®§æ
Ñ©²»®ñ±°»®¿¬±® ²¿³ »æ Î ×Ì Û ßÝÜ Î ÛÐ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--æ Ò±¬ ®»°±®¬»¼
Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ½±«²¬®§æ Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ¬»´»°¸±²»æ Ò±¬ ®»°±®¬»¼
Ô»¹¿´ -¬¿¬«-æ Ð®·ª¿¬»
Ñ©²»®ñÑ°»®¿¬±® Ì§°»æ Ñ°»®¿¬±®
Ñ©²»®ñÑ° -¬¿®¬ ¼¿¬»æ ðèñðìñïççè
Ñ©²»®ñÑ° »²¼ ¼¿¬»æ Ò±¬ ®»°±®¬»¼

Ñ©²»®ñ±°»®¿¬±® ²¿³ »æ ÌØ Î×ÚÌÇ ÐßÇÔÛÍÍ ×ÒÝ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--æ ØËÒÌ ÛÎ ÔÒ
Ýß ÓÐ Ø×ÔÔô Ðß ïéðïï
Ñ©²»®ñ±°»®¿¬±® ½±«²¬®§æ Ò±¬ ®»°±®¬»¼
Ñ©²»®ñ±°»®¿¬±® ¬»´»°¸±²»æ øéïé÷ éêïóîêíí
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RITE AID #6231 (Continued) **1016954882**

Ñ©²»®ñÑ° »²¼ ¼¿¬»æ Ò±¬ ®»°±®¬»¼

Ø¿²¼´»® ß½¬·ª·¬§ Í«³ ³¿®§æ
Ëò Íò ³ °±®¬»® ±º ¸¿¦¿®¼±«- ©¿-¬»æ Ò±
Ó·¨»¼ ©¿-¬» ø¸¿¦ò ¿²¼ ®¿¼·±¿½¬·ª»÷æ Ò±
Î»½§½´»® ±º ¸¿¦¿®¼±«- ©¿-¬»æ Ò±
Ì®¿²-°±®¬»® ±º ¸¿¦¿®¼±«- ©¿-¬»æ Ò±
Ì®»¿¬»®ô -¬±®»® ±® ¼·-°±-»® ±º ØÉæ Ò±
Ë²¼»®¹®±«²¼ ·²¶»½¬·±² ¿½¬·ª·¬§æ Ò±
Ñ²ó-·¬» ¾«®²»® »¨»³ °¬·±²æ Ò±
Ú«®²¿½» »¨»³ °¬·±²æ Ò±
Ë-»¼ ±·´ º«»´ ¾«®²»®æ Ò±
Ë-»¼ ±·´ °®±½»--±®æ Ò±
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Ë-»¼ ±·´ º«»´ ³ ¿®µ»¬»® ¬± ¾«®²»®æ Ò±
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Ë-»¼ ±·´ ¬®¿²-º»® º¿½·´·¬§æ Ò±
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ò Ê¿-¬» ½±¼»æ ïîî
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ò Ê¿-¬» ½±¼»æ ïíï
ò Ê¿-¬» ²¿³ »æ ïíï

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ò Ê¿-¬» ½±¼»æ éçï
ò Ê¿-¬» ²¿³ »æ éçï

ò Ê¿-¬» ½±¼»æ Üððï
ò Ê¿-¬» ²¿³ »æ ×ÙÒ×ÌßÞÔÛ ÉßÍÌÛ

ò Ê¿-¬» ½±¼»æ Üððî
ò Ê¿-¬» ²¿³ »æ ÝÑÎÎÑÍ×ÊÛ ÉßÍÌÛ

ò Ê¿-¬» ½±¼»æ Üððé
ò Ê¿-¬» ²¿³ »æ ÝØÎÑÓ×ËÓ

ò Ê¿-¬» ½±¼»æ Üððç
ò Ê¿-¬» ²¿³ »æ ÓÛÎÝËÎÇ

ò Ê¿-¬» ½±¼»æ Üðïð
ò Ê¿-¬» ²¿³ »æ ÍÛÔÛÒ×ËÓ

RITE AID #6231 (Continued) 1016954882

ò É¿-¬» ½±¼»: Üðïï
ò É¿-¬» ²¿³»: Í×ÔÊÛÎ

ò É¿-¬» ½±¼»: Üðîì
ò É¿-¬» ²¿³»: ÓóÝÎÛÍÑÔ

ò É¿-¬» ½±¼»: Üðîê
ò É¿-¬» ²¿³»: ÝÎÛÍÑÔ

ò É¿-¬» ½±¼»: Ðððï
ò É¿-¬» ²¿³»: îØóïóÞÛÒÆÑÐÇÎßÒóîóÑÒÛô ìóØÇÜÎÑÈÇóíóøíóÑÈÑóïóÐØÛÒÇÔÞËÌÇÔ÷óô ú ÍßÔÌÍô É ØÛÒ ÐÎÛÍÛÒÌ ßÌ ÝÑÒÝÛÒÌÎßÌ×ÑÒÍ ÙÎÛßÌÛÎ ÌØßÒ ðòí û øÑÎ É ßÎÚßÎ×Òô ú ÍßÔÌÍô ÉØÛÒ ÐÎÛÍÛÒÌ ßÌ ÝÑÒÝÛÒÌÎßÌ×ÑÒÍ ÙÎÛßÌÛÎ ÌØßÒ ðòí û

ò É¿-¬» ½±¼»: Ðððé
ò É¿-¬» ²¿³»: ÒÝÑÌ×ÒÛô ú ÍßÔÌÍ øÑÎ ÐÇÎ×Ü×ÒÛô íóøïóÓÛÌØÇÔóîóÐÇÎÎÑÔ×ÜÇÔ÷óô øÍ÷óô ú ÍßÔÌÍ

Ê·±´¿¬·±² Í¬¿¬«-: Ò± ª·±´¿¬·±²- º±«²¼

C19
NW
< 1/8
0.117 mi.
619 ft.

RITE AID NO 6231
24991 ALESSANDRO BLVD
MORENO VALLEY, CA 92553

Site 6 of 6 in cluster C

RCRA-LQG 1016955176
CAR000249144

Relative:
Higher

Actual:
1572 ft.

ÎÝÎß Ô×ÍÌ×ÒÙÍ:
Ü¿¬» º±®³ ®»½»·ª»¼ ¾§ ¿¹»²½§: ðèñðëñîðïì
Ú¿½·´·¬§ ²¿³»: Î×ÌÛ ß×Ü ÒÑ êîíï
Ú¿½·´·¬§ ¿¼¼®»--: îìççï ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ
ÓÑÎÛÒÑ ÊßÔÔÛÇ, Ýß çîëëí
ÛÐß ×Ü: ÝßÎðððîìçïìì
Ó¿·´·²¹ ¿¼¼®»--: íð ØËÒÌÛÎ ÔÒ
ÝßÓÐ Ø×ÔÔ, Ðß ïéðïï
Ý±²¬¿½¬: Í ÌÛÐØßÒ×Û ß ÝßÍß Ì×
Ý±²¬¿½¬ ¿¼¼®»--: íð ØËÒÌÛÎ ÔÒ
ÝßÓÐ Ø×ÔÔ, Ðß ïéðïï
Ý±²¬¿½¬ ½±«²¬®§: ËÍ
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ÛÐß Î»¹·±²: ðç
Ý´¿--·º·½¿¬·±²: Ô¿®¹» Ï«¿²¬·¬§ Ù»²»®¿¬±®
Ü»-½®·°¬·±²: Ø¿²¼´»®æ ¹»²»®¿¬»- ïôððð µ¹ ±® ³±®» ±º ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸å ±® ¹»²»®¿¬»- ³±®» ¬¸¿² ï µ¹ ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸å ±® ¹»²»®¿¬»- ³±®» ¬¸¿² ïðð µ¹ ±º ¿²§ ®»-·¼«»ô ½±²¬¿³·²¿¬»¼ -±·´ô ©¿-¬» ±® ±¬¸»® ¼»¾®·- ®»-«´¬·²¹ º®±³ ¬¸» ½´»¿²«° ±º ¿ -°·´´ô ·²¬± ±® ±² ¿²§ ´¿²¼ ±® ©¿¬»®ô ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸å ±® ¹»²»®¿¬»- ³±®» ¬¸¿² ï µ¹ ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸å ±® ¹»²»®¿¬»- ³±®» ¬¸¿² ïðð µ¹ ±º ¿²§ ®»-·¼«»ô ½±²¬¿³·²¿¬»¼ -±·´ô ©¿-¬» ±® ±¬¸»® ¼»¾®·- ®»-«´¬·²¹ º®±³ ¬¸» ½´»¿²«° ±º ¿ -°·´´ô ·²¬± ±® ±² ¿²§ ´¿²¼ ±® ©¿¬»®ô ±º ¿½«¬»´§ ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³±²¬¸å ±® ¹»²»®¿¬»- ³±®» ¬¸¿² ïðð µ¹ ±º ¿²§ ®»-·¼«»

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Ñ©²»®ñ±°»®¿¬±® ²¿³»: Ð ßÒÜ ß ÜÛÊÛÔÑÐÓÛÒÌ ÔÔÝ
Ñ©²»®ñ±°»®¿¬±® ¿¼¼®»--: çïéë Ò ÓÛÎ×Üß× Ò ÍÌ ÍË×ÌÛ

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RITE AID NO 6231 (Continued) 1016955176

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	Ò±¬ ®»°±®¬»¼
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Ó·¨»¼ ©¿-¬» ø¸¿¦ò ¿²¼ ¼·-¬·´´¿¬»	Ò±
Î»½§½´»® ±º ¸¿¦¿®¼±«- ©¿-¬»	Ò±
Ì®¿²-°±®¬»® ±º ¸¿¦¿®¼±«- ©¿-¬»	Ò±
Ì®»¿¬»®ô -¬±®»® ±® ¼·-°±-»® ±º ØÉ	Ò±
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Ñ²ó-·¬» ¾«®²»® »¨»³ °¬·±²	Ò±
Ú«®²¿½» »¨»³ °¬·±²	Ò±
Ë-»¼ ±·´ º«»´ ¾«®²»®	Ò±
Ë-»¼ ±·´ °®±½»--±®	Ò±
Ë-» ±·´ ®»º·²»®	Ò±
Ë-»¼ ±·´ º«»´ ³ ¿®µ»¬»® ¬± ¾«®²»®	Ò±
Ë-»¼ ±·´ Í°»½·º·½¿¬·±² ³ ¿®µ»¬»®	Ò±
Ë-»¼ ±·´ ¬®¿²-º»® º¿½·´·¬§	Ò±
Ë-»¼ ±·´ ¬®¿²-°±®¬»®	Ò±

ò Ê¿-¬» ½±¼»	ï í ï
ò Ê¿-¬» ²¿³ »	ï í ï
ò Ê¿-¬» ½±¼»	ï ì ï
ò Ê¿-¬» ²¿³ »	ï ì ï
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ò Ê¿-¬» ½±¼»	î í î
ò Ê¿-¬» ²¿³ »	î í î
ò Ê¿-¬» ½±¼»	í ï ï
ò Ê¿-¬» ²¿³ »	í ï ï
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ò Ê¿-¬» ½±¼»	Üðð ï
ò Ê¿-¬» ²¿³ »	xÙÒxÌßÞÔÛ ÉßÍ ÌÛ
ò Ê¿-¬» ½±¼»	Üðð î

RITE AID NO 6231 (Continued) **1016955176**

ò É¿-¬» ²¿³»:	ÝÑÎ ÎÑÍ×ÊÛ ÉßÍ ÌÛ
ò É¿-¬» ½±¼»:	Üððé
ò É¿-¬» ²¿³»:	ÝØÎ ÑÓ×ËÓ
ò É¿-¬» ½±¼»:	Üððç
ò É¿-¬» ²¿³»:	ÓÛÎ ÝËÎ Ç
ò É¿-¬» ½±¼»:	Üðïð
ò É¿-¬» ²¿³»:	ÍÛÔÛÒ×ËÓ
ò É¿-¬» ½±¼»:	Üðïï
ò É¿-¬» ²¿³»:	Í×ÔÊÛÎ
ò É¿-¬» ½±¼»:	Üðîì
ò É¿-¬» ²¿³»:	ÓóÝÎ ÛÍÑÔ
ò É¿-¬» ½±¼»:	Üðîê
ò É¿-¬» ²¿³»:	ÝÎ ÛÍÑÔ
ò É¿-¬» ½±¼»:	Ðððï
ò É¿-¬» ²¿³»:	îØóïóÞÛÒÆÑÐÇÎßÒóîóÑÒÛô ìóØÇÜÎÑÈÇóíóøíóÑÈÑóïóÐØÛÒÇÔÞËÌÇÔ÷óô ú ÍßÔÌÍô ÉØÛÒ ÐÎÛÍÛÒÌ ßÌ ÝÑÒÝÛÒÌÎßÌ×ÑÒÍ ÙÎÛßÌÛÎ ÌØßÒ ðòí û øÎ÷ ÉßÎÚßÎ×Òô ú ÍßÔÌÍô ÉØÛÒ ÐÎÛÍÛÒÌ ßÌ ÝÑÒÝÛÒÌÎßÌ×ÑÒÍ ÙÎÛßÌÛÎ ÌØßÒ ðòí û
ò É¿-¬» ½±¼»:	Ððéë
ò É¿-¬» ²¿³»:	Ò×ÝÑÌ×ÒÛô ú ÍßÔÌÍ øÐÎ ÑÐßÒÛô íóøïóÓÛÌØÇÔóîóÐÇÎÎÑÔ×Ü×ÒÇÔ÷óô øÍ÷óô ú ÍßÔÌÍ
Ê·±´¿¬·±² Í¬¿¬«-:	Ò± ª·±´¿¬·±²- º±«²¼

D20 **M & M CLEANERS III** **DRYCLEANERS** **S113140412**
WNW **24825 ALESSANDRO BLVD STE 4** **HAZNET** **N/A**
1/8-1/4 **MORENO VALLEY, CA 92553**
0.225 mi.
1187 ft. **Site 1 of 2 in cluster D**

Relative:
Higher

Actual:
1575 ft.

ÜÎ ÇÝÔÛßÒÛÎ Í:

ÛÐß ×¼:	Ýßßðððïçêèèé
ÒßÝÍ Ý±¼»:	èïîíîî
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Í×Ý Ü»-½®·°¬·±²:	Ð±©»® Ô¿«²¼®·»-ô Ú¿³·´§ ¿²¼ Ý±³³»®½·¿´
Ý®»¿¬» Ü¿¬»:	ðìñïðñîðïì
Ú¿½·´·¬§ ß½¬·ª»:	Ç»-
×²¿½¬·ª» Ü¿¬»:	Ò±¬ ®»°±®¬»¼
Ú¿½·´·¬§ ß¼¼® î:	Ò±¬ ®»°±®¬»¼
Ñ©²»® Ò¿³»:	ÌØËßÒ ÒÙËÇÛÒ
Ñ©²»® ß¼¼®»-- ï:	ïçèîç ÐßÍ Ñ ÎÑÞÔÛÍ ÜÎ
Ñ©²»® ß¼¼®»-- î:	Ò±¬ ®»°±®¬»¼
Ñ©²»® Ì»´»°¸±²»:	çëïçðëì ïçì
Ý±²¬¿½¬ Ò¿³»:	ÌÎ× ÒÙËÇÛÒ
Ý±²¬¿½¬ ß¼¼®»--:	ïçèîç ÐßÍ Ñ ÎÑÞÔÛÍ ÜÎ
Ý±²¬¿½¬ ß¼¼®»-- î:	Ò±¬ ®»°±®¬»¼
Ý±²¬¿½¬ Ì»´»°¸±²»:	çëïííèèðè
Ó¿·´·²¹ Ò¿³»:	Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ ß¼¼®»-- ï:	îìèîë ßÔÛÍÍßÒÜÎÑ ÞÔÊÜ ÍÌÛ ì
Ó¿·´·²¹ ß¼¼®»-- î:	Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ Ý·¬§:	ÓÑÎÛÒÑ ÊßÔÔÛÇ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

M & M CLEANERS III (Continued) **S113140412**

Ó¿·´·²¹ Í¬¿¬»: Ýß
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Ñ©²»® Ú¿¨: ì
Î»¹·±² Ý±¼»: çëïìèëíéðï

ØßÆÒÛÌ:
»²ª·¼: Íïïíïìðìïî
Ç»¿®: îððê
ÙÛÐßׯÜ: ÝßÔðððíðïéíï
Ý±²¬¿½¬: ßÒÜÎÛÉ ÝØËÒÙ
Ì»´»°¸±²»: çëïçîììííé
Ó¿·´·²¹ Ò¿³»: Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ ß¼¼®»--: îìèîë ßÔÛÍ ÍßÒÜÎÑ ÞÔÊÜ ÍÌÛ ì
Ó¿·´·²¹ Ý·¬§ôͬ¿¬»ôÆ·°: ÓÑÎÛÒÑ ÊßÔÔÛÇ Ýß çîëëíèèëï
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Ì Í Ü Ý±«²¬§: Ò±¬ ®»°±®¬»¼
É¿-¬» Ý±¼»: Ò±¬ ®»°±®¬»¼
Ü·-°±-¿´ Ó»¬¸±¼: Î»½§½´»®
Ì±²-: Ò±¬ ®»°±®¬»¼
Ý¿¬ Ü»½±¼»: Ò±¬ ®»°±®¬»¼
Ó»¬¸ Ü»½±¼»: Î»½§½´»®
Ú¿½·´·¬§ Ý±«²¬§: Î·ª»®-·¼»

»²ª·¼: Íïïíïìðìïî
Ç»¿®: îððê
ÙÛÐßׯÜ: ÝßÔðððíðïéíï
Ý±²¬¿½¬: ßÒÜÎÛÉ ÝØËÒÙ
Ì»´»°¸±²»: çëïçîììííé
Ó¿·´·²¹ Ò¿³»: Ò±¬ ®»°±®¬»¼
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Ó¿·´·²¹ Ý·¬§ôͬ¿¬»ôÆ·°: ÓÑÎÛÒÑ ÊßÔÔÛÇ Ýß çîëëíèèëï
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Ó»¬¸ Ü»½±¼»: Î»½§½´»®
Ú¿½·´·¬§ Ý±«²¬§: Î·ª»®-·¼»

»²ª·¼: Íïïíïìðìïî
Ç»¿®: îððê
ÙÛÐßׯÜ: ÝßÔðððíðïéíï
Ý±²¬¿½¬: ßÒÜÎÛÉ ÝØËÒÙ
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É¿-¬» Ý±¼»: Ø¿´±¹»²¿¬»¼ -±´ª»²¬- ø½¸´±®±º±®³ ô ³»¬¸§´ ½¸´±®·¼» °»®½¸´±®±»¬¸§´»²» »¬½÷
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M & M CLEANERS III (Continued) **S113140412**

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Ý¿¬ Ü»½±¼»æ Ø¿´±¹»²¿¬»¼ -±´ª»²¬- ø½¸´±®±º±® ³ -ô ³»¬¸§´ ½¸´±®·¼»ô °»®½¸´±®±»¬¸§»²»ô »¬½÷
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Ú¿½·´·¬§ Ý±«²¬§æ Î ·ª»®-·¼»

D21 **ORIO CLEANERS** **RCRA-SQG** **1001075620**
WNW **24825 ALESSANDRO BLVD STE 4** **FINDS** **CAR000007088**
1/8-1/4 **MORENO VALLEY, CA 92553** **ECHO**
0.225 mi.
1187 ft. **Site 2 of 2 in cluster D**

Relative:
Higher

Actual:
1575 ft.

Î Ý Î ßóÍ ï Ùæ
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ÓÑ Î ÛÒÑ ÊßÔÔÛÇ ô Ýß ç î ë ë í
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ÛÐß Î »¹·±²æ ðç
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Ü»-½®·°¬·±²æ Ø¿²¼´»® æ ¹»²»®¿¬»- ³ ±®» ¬¸¿² ï ðð µ¹ ¾«¬ ´»-- ¬¸¿² ï ððð µ¹ ±º ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³ ±²¬¸ ¿²¼ ¿½½«³ «´¿¬»- ´»-- ¬¸¿² êððð µ¹ ±º ¸¿¦¿®¼±«- ©¿-¬» ¿¬ ¿²§ ¬·³ »å ±® ¹»²»®¿¬»- ïðð µ¹ ±® ´»-- ±º ¸¿¦¿®¼±«- ©¿-¬» ¼«®·²¹ ¿²§ ½¿´»²¼¿® ³ ±²¬¸ ¿²¼ ¿½½«³ «´¿¬»- ³ ±®» ¬¸¿² ïððð µ¹ ±º ¸¿¦¿®¼±«- ©¿-¬» ¿¬ ¿²§ ¬·³ »

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Ñ©²»®ñ±°»®¿¬±® ¬»´»°¸±²»æ øçðç÷ ç î ì ó î í í é
Ô»¹¿´ -¬¿¬«-æ Ð®·ª¿¬»

ORIO CLEANERS (Continued) **1001075620**

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Ø¿²¼´»® ß½¬·ª·¬·»- Í«³³¿®§æ
Ëò Íò ·³°±®¬»® ±º ¸¿¦¿®¼±«- ©¿-¬»æ Ò±
Ó·¨»¼ ©¿-¬» ø¸¿¦ò ¿²¼ ®¿¼·±¿½¬·ª»÷æ Ò±
Î »½§½´»® ±º ¸¿¦¿®¼±«- ©¿-¬»æ Ò±
Ì®¿²-°±®¬»® ±º ¸¿¦¿®¼±«- ©¿-¬»æ Ò±
Ì®»¿¬»®ô -¬±®»® ±® ¼·-°±-»® ±º ØÉæ Ò±
Ë²¼»®¹®±«²¼ ·²¶»½¬·±² ¿½¬·ª·¬§æ Ò±
Ñ²ó-·¬» ¾«®²»® »¨»³°¬·±²æ Ò±
Ú«®²¿½» »¨»³°¬·±²æ Ò±
Ë-»¼ ±·´ º«»´ ¾«®²»®æ Ò±
Ë-»¼ ±·´ °®±½»--±®æ Ò±
Ë-»® ±·´ ®»º·²»®æ Ò±
Ë-»¼ ±·´ º«»´ ³¿®µ»¬»® ¬± ¾«®²»®æ Ò±
Ë-»¼ ±·´ Í °»½·º·½¿¬·±² ³¿®µ»¬»®æ Ò±
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Ë-»¼ ±·´ ¬®¿²-°±®¬»®æ Ò±

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Ú×ÒÜ Íæ

Î »¹·-¬®§ ×Üæ ïïðððîçðçðìï

Û²ª·®±²³»²¬¿´ Í·¬«¿¬·±² Ì§°»æ Ì®¿²-º»®®»¼ ¬± ÜÌÍÝô Ø¿¦¿®¼±«- É¿-¬» Ì®¿½µ·²¹ Ì®¿¼·²¹ Î ·¹·²¿´ Î »½±®¼ ¿² ¸¿²¼-ó±² ¬®¿²-¿½¬·±²- ¬± ¿ ´·²µ ¿-²ó³¿®µ»¬ ´·½»²-»¼ ¾§ ¿ ®»¹·-¬»®»¼ ´±½¿¬·±² ¿²¼ ¬®»¿¬³»²¬ º±® ¸¿¦¿®¼±«- ©¿-¬»

Ì Ý Ì ß×²º± ·- ¿ ½±³°´¿·² ¸¿-¬»®»¼ ¿ ¼¿¬¿¾¿-» ±º Ì Ý Ì ß ·²º±®³¿¬·±² ¿ ´·-¬ ¿² ¿´´ »²º±®½»³»²¬ ¿½¬·±²- ¬¿µ»² ¾§ ¬¸» ¿¹»²½§ ¿²¼ ¬®¿²-º»®®»¼ ¬± ¸¿¦¿®¼±«- ©¿-¬» Ì Ý Ì ß ¬± ·²½´«¼» ¸»¿¼¯«¿®¬»®- ¿²¼ ®»¹·±²¿´ ±ºº·½»- ·² Ì Ý Ì ßò

ÛÝØÑæ
Ü¿¬»æ ïðòïðéëêîð
Î »¹·-¬®§ ×Üæ ïïðððîçðçðìï
ÜÚ Î ËÎ Ôæ ¸¬¬°æññ»½¸±ò»°¿ò¹±ªñ¼»¬¿·´»¼ó º¿½·´·¬§ó®»°±®¬áº·¼ãïïðððîçðçðìï

22	**MORENO VALLEY REGIONAL LEARNING CENTER**	**ENVIROSTOR**	**S108407586**
North	**NEC PERRIS BOULEVARD & BAY AVENUE**	**SCH**	**N/A**
1/4-1/2	**MORENO VALLEY, CA 92553**		
0.290 mi.			
1529 ft.			

Relative:
Higher

Actual:
1580 ft.

ÛÒÊ×ÎÑÍÌÑÎæ
Ú¿½·´·¬§ ×Üæ êðððððëðî
Í¬¿¬«-æ Ò± Ú«®¬¸»® ß½¬·±²
Í¬¿¬«- Ü¿¬»æ ðëñïïñîððé
Í·¬» Ý±¼»æ ìðìéç

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·--¿²½»
Û´»ª¿¬·±²

ÓßÐ Ú×ÒÜ×ÒÙ Í

Í·¬»

Ü¿¬¿¾¿-»ø-÷

ÛÜÎ ×Ü Ò« ³ ¾»®
ÛÐß ×Ü Ò« ³ ¾»®

MORENO VALLEY REGIONAL LEARNING CENTER (Continued) **S108407586**

Í·¬» Ì§°»æ Í½¸±±´ ײª»-¬·¹¿¬·±²
Í·¬» Ì§°» Ü»¬¿·´æ Í½¸±±´
߽®»-æ Ììîê
ÒÐÔæ ÒÑ
Ϊ±¹®¿³ ß½¬·ª»æ ÍÓÞÎÐ
Ô»¿¼ ߹»²½§æ ÍÓÞÎÐ
Ю±¶»½¬ Ó¿²¿¹»®æ Ò±¬ λ°±®¬»¼
Í«°»®ª·-±®æ Í¸¿®±² Ø¿´´¿¼¿§
Ü·ª·-·±² Þ®¿²½¸æ Í±«¬¸»®² Ý¿´·º±®²·¿ Í½¸±±´- ú Þ®±©²º·»´¼- Ñ«¬®»¿½¸
ߧ»-æ êï
Í»²¿¬»æ íï
Í°»½·¿´ Ю±¹®¿³æ Ò±¬ λ°±®¬»¼
Î»-¬®·½¬»¼ Ë-»æ ÒÑ
Í·¬» Ó¹³¬ ̧°»æ ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
Ú«²¼·²¹æ Í½¸±±´ Ü·-¬®·½¬
Ô¿¬·¬«¼»æ íííçìïìí
Ô±²¹·¬«¼»æ óïïé îëì
ßÐÒæ ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
Ю±¹®¿³ Ì§°»æ ßÍÞÎ×ÍÝ×Ò ÎÛÓ ÍÐÛ Ýß ÍÝØÑÑÔÍ ßÝÌ ßÍÜ
Ю±¹®¿³ ÍÝ×ÐÛ ÍÐßÝÛ ÓÛÙßÍ ÝÞÜæ Ò±¬ λ°±®¬»¼
Ì±¬¿´ Ö±¾ Ë«³æ Ò±¬ λ°±®¬»¼
Ú±®³»® ÍÛÛÍ ÝÙÛÍ Û«³æ ÒÑ
Í«°»®ª·-±® Ó¿·´ Í¬±°æ Ò±¬ λ°±®¬»¼
Í«°»®ª·-±® Ó¿·´æ ìðìéîç
Í«°»®ª·-±® Ð¸±²» Ò«³æ Û±«²¬§ Ó·²»®¿´ Ý±«²¬§
Í«°»®ª·-±® Ð¸±²» Û¨¬æ êðððèð
Í«°»®ª·-±® Û³¿·´æ Ò±¬ λ°±®¬»¼

Ý±²¬¿½¬ ×²º±æ

Ý±²¬¿½¬ Ò¿³»æ ÐÎÑÖÛÝÌ ÓßÒßÙÛÎ
Ý±²¬¿½¬ Ñ®¹¿²·¦¿¬·±²æ Ò±¬ λ°±®¬»¼
Ý±²¬¿½¬ ß¼¼®»-- Í¬®»»¬æ Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ý±²¬¿½¬ Ý·¬§æ Ý§°®»--
Ý±²¬¿½¬ Í¬¿¬»æ Ò±¬ λ°±®¬»¼

Ý±²¬¿½¬ Ò¿³»æ ÐÎÑÖÛÝÌ ÓßÒßÙÛÎ
Ý±²¬¿½¬ Ñ®¹¿²·¦¿¬·±²æ Ò±¬ λ°±®¬»¼
Ý±²¬¿½¬ ß¼¼®»-- Í¬®»»¬æ Ýß ÍÝØÑÑÔÍ ÍÐÛÝ×ßÔ×ÍÌ
Ý±²¬¿½¬ Ý·¬§æ êîìêëðêîðé
Ý±²¬¿½¬ Í¬¿¬»æ Ю±¶»½¬ Ó¿²¿¹»®

Ý±²¬¿½¬ Ò¿³»æ ÐÎÑÖÛÝÌ ÓßÒßÙÛÎ
Ý±²¬¿½¬ Ñ®¹¿²·¦¿¬·±²æ Ò±¬ λ°±®¬»¼
Ý±²¬¿½¬ ß¼¼®»-- Í¬®»»¬æ Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ý±²¬¿½¬ Ý·¬§æ êìíçíîéçéð
Ý±²¬¿½¬ Í¬¿¬»æ Ì»´»°¸±²» Ò«³¾»® ±º Ý±²¬¿½¬

Ý±²¬¿½¬ Ò¿³»æ ÐÎÑÖÛÝÌ ÓßÒßÙÛÎ
Ý±²¬¿½¬ Ñ®¹¿²·¦¿¬·±²æ Ò±¬ λ°±®¬»¼
Ý±²¬¿½¬ ß¼¼®»-- Í¬®»»¬æ Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ý±²¬¿½¬ Ý·¬§æ êçëîéîðéé
Ý±²¬¿½¬ Í¬¿¬»æ ÜÌÍÝ Ð®±¹®¿³ Í«°»®ª·-±® Í«°»®ª·-·²¹ ¬¸» Ö±¾ Ó¿²¿¹»® ±º Ü»°¿®¬³»²¬ Û²ª·®±²³»²¬¿´ Ì»½¸²·½¿´ Í«°»®ª·-±®

Ú«¬«®» Ý±²¬¿½¬ Ò¿³»æ Ò±¬ λ°±®¬»¼
Ú«¬«®» Ý±²¬¿½¬ Ñ®¹¿²·¦¿¬·±²æ Ò±¬ λ°±®¬»¼
Ú«¬«®» Ý±²¬¿½¬ ß¼¼®»-- Í¬®»»¬æ Ò±¬ λ°±®¬»¼
Ú«¬«®» Ý±²¬¿½¬ Ý·¬§æ Ò±¬ λ°±®¬»¼
Í«°»®ª·-±® Ý±²¬¿½¬ Ò¿³»æ Ò±¬ λ°±®¬»¼

MORENO VALLEY REGIONAL LEARNING CENTER (Continued) **S108407586**

Í½¸»¼«´» Í«¾ ß®»¿ Ò¿ ³»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü±½« ³ »²¬ Ì§°»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü«» Ü¿¬»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Î»ª·-»¼ Ü¿¬»æ Ò±¬ ®»°±®¬»¼

ÍÝØæ

Ú¿½·´·¬§ ×Üæ êðððëðî
Í·¬» Ì§°»æ Í½¸±´ ײ-¬·¬«¬·±²
Í·¬» Ì§°» Ü»¬¿·´æ Í½¸±´
Í·¬» Ó¹³¬ Ì»¨¬æ ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
ß½®»-æ ìòîê
Ò¿¬·±²¿´ Ð®·±®·¬·»- Ôï-¬æ ÒÑ
Ý´»¿²«° Ñª»®-·¹¸¬ ß¹»²½·»-æ ÍÓÞÎÐ
Ô»¿¼ ß¹»²½§æ ÍÓÞÎÐ
Ô»¿¼ ß¹»²½§ Ü»-½®·°¬·±²æ ÜÌÍÝ ó Í·¬» Ý´»¿²«° Ð®±¹®¿³
Ð®±¶»½¬ Ó¿²¿¹»®æ Ò±¬ ®»°±®¬»¼
Í«°»®ª·-±®æ Í¸¿«²¿ Ø¿¼¼¿¼
Ü·ª·-·±² Þ®¿²½¸æ Í±«¬¸»®² Ý¿´·º±®²·¿ Í½¸±±´- ú Þ®±©²º·»´¼- Ñ«¬®»¿½¸
Í·¬» Ý±¼»æ ìðìéîç
ß--»³¾´§æ êï
Í»²¿¬»æ íï
Í°»½·¿´ Ð®±¹®¿³ Í¬¿¬«-æ Ò± Ú«²¼·²¹ ß¹®»»³»²¬
Í·¬» Í¬¿¬«-æ ðëñîì ïñîððé
Í·¬» Ô¿-¬ Ë°¼¿¬»¼æ Í½¸±±´ Ü·-¬®·½¬
Ú«²¼·²¹æ ííçîïì
Ô±½¿´ ß¹»²½§æ ðï ïéðî îëì
ÝßÒÌæ ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
Ð¿-¬ Ë-»æ ßÙÎ×ÝËÔÌËÎßÔ ó ÎÑÉ ÝÎÑÐÍ ß ÙÎ ×ÝËÔÌËÎßÔ ßÎÛß
Ð±¬»²¬·¿´ ÝÑÝæ Ë²µ²±©² ݸ»³·½¿´
Ý±²º·®³»¼ ÝÑÝæ Ë²µ²±©² ݸ»³·½¿´
Ð±¬»²¬·¿´ Ó»¼·¿æ ÍÑ×Ô
ß´·¿- Ò¿³»æ ìðìéîç
ß´·¿- Ì§°»æ Ð®±¶»½¬ Ý±¼» øÍ·¬» Ý±¼»÷
ß´·¿- Ò¿³»æ êðððëðî
ß´·¿- Ì§°»æ Û²ª·®±Í¬±® ×Ü Ò« ³¾»®

Ý±³°´»¬»¼ ײº±æ
Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉÐÜ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½« ³»²¬ Ì§°»æ Û²ª·®±²³»²¬¿´ Ñª»®-·¹¸¬ ß¹®»»³»²¬
Ý±³°´»¬»¼ Ü¿¬»æ ïïñïïñîððê
Ý±³³»²¬-æ Ò±¬ ®»°±®¬»¼

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉÐÜ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½« ³»²¬ Ì§°»æ Ý±-¬ λ½±ª»®§ ß½½±«²¬ Ú±®³
Ý±³°´»¬»¼ Ü¿¬»æ ðêñðéñîððé
Ý±³°´»¬»¼ Ý±³³»²¬-æ Ð®±¶»½¬ Ý±³°´»¬·±²ò

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉÐÜ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½« ³»²¬ Ì§°»æ Ð®»´·³·²¿®§ Û²¼¿²¹»®³»²¬ ß--»--³»²¬ λ°±®¬
Ý±³°´»¬»¼ Ü¿¬»æ ðíñðèñîððé
Ý±³°´»¬»¼ Ý±³³»²¬-æ ÌÓ ¿°°®±ª»¼ ¬¸» ®»°±®¬ò

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

MORENO VALLEY REGIONAL LEARNING CENTER (Continued) **S108407586**

Ý±³°´»¬»¼ ß®»¿ Ò¿³»: ÐÎ ÑÖÛÝÌ ÉxÜÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»: Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»: Ð®»´·³·²¿®§ Û²¼¿²¹»®³»²¬ ß--»--³»²¬ Î»°±®¬
Ý±³°´»¬»¼ Ü¿¬»: ðëñîïñîðð é
Ý±³³»²¬-: ÜÌ ÍÝ ·--«»¼ ¿ þÒ± Ú«®¬¸»® ß½¬·±² ¼»¬»®³·²¿¬·±² ¾¿-»¼ ±² ¬¸» °®»´·³·²¿®§ »²¼¿²¹»®³»²¬ ¿--»--³»²¬ ®»°±®¬ò

Ú«¬«®» ß®»¿ Ò¿³»: Ò±¬ ®»°±®¬»¼
Ú«¬«®» Í«¾ ß®»¿ Ò¿³»: Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü±½«³»²¬ Ì§°»: Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü«» Ü¿¬»: Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» ß®»¿ Ò¿³»: Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Í«¾ ß®»¿ Ò¿³»: Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü±½«³»²¬ Ì§°»: Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü«» Ü¿¬»: Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Î»ª·-»¼ Ü¿¬»: Ò±¬ ®»°±®¬»¼

E23
WNW
1/4-1/2
0.361 mi.
1907 ft.

FIRESTONE STORE #2259 **LUST** **S103464029**
24673 ALESSANDRO BLVD **N/A**
MORENO VALLEY, CA 92553

Site 1 of 2 in cluster E

Relative:
Higher

Actual:
1576 ft.

ÔËÍÌ:
Î»¹·±²: ÍÌßÌÛ
Ù´±¾¿´ ×¼: Ìðêðêëðððëïé
Ô¿¬·¬«¼»: íííòçïêèðéîèçìèëì
Ô±²¹·¬«¼»: óïïéòîîîêëëëéíèìç
Ý¿-» Ì§°»: ÔËÍÌ Ý´»¿²«° Í·¬»
Í¬¿¬«-: Ý±³°´»¬»¼ ó Ý¿-» Ý´±-»¼
Í¬¿¬«- Ü¿¬»: ïïñðìñïççè
Ô»¿¼ ß¹»²½§: Î×ÊÛÎÍ×ÜÛ ÝÑËÒÌÇ ÔÑÐ
Ý¿-» É±®µ»®: ËÒÕ
Ô±½¿´ ß¹»²½§: Î×ÊÛÎÍ×ÜÛ ÝÑËÒÌÇ ÔÑÐ
ÎÞ Ý¿-» Ò«³¾»®: ðèíííðíìè
ÔÑÝ Ý¿-» Ò«³¾»®: çèðïç
Ú·´» Ô±½¿¬·±²: Ô±½¿´ ß¹»²½§ É¿®»¸±«-»
Ð±¬»²¬·¿´ Ó»¼·¿ ßºº»½¬: Í±·´
Ð±¬»²¬·¿´ Ý±²¬¿³·²¿²¬- ±º Ý±²½»®²: É¿-¬» Ñ·´ ñ Ó±¬±® ñ Ø§¼®¿«´·½ ñ Ô«¾®·½¿²¬
Í·¬» Ø·-¬±®§: Ò±¬ ®»°±®¬»¼

Ý´·½µ ¸»®» ¬± ¿½½»-- ¬¸» Ý¿´·º±®²·¿ Ù»±Ì®¿½µ»® ®»½±®¼- º±® ¬¸·- º¿½·´·¬§:

Ý±²¬¿½¬:
Ù´±¾¿´ ×¼: Ìðêðêëðððëïé
Ý±²¬¿½¬ Ì§°»: Ô±½¿´ ß¹»²½§ Ý¿-»©±®µ»®
Ý±²¬¿½¬ Ò¿³»: ËÒÕ
Ñ®¹¿²·¦¿¬·±² Ò¿³»: Î×ÊÛÎÍ×ÜÛ ÝÑËÒÌÇ ÔÑÐ
ß¼¼®»--: ìðèð ÔÛÓÑÒ ÍÌ ÍÌØ ÚÔÑÑÎ
Ý·¬§: Î×ÊÛÎÍ×ÜÛ
Û³¿·´: Ò±¬ ®»°±®¬»¼
Ð¸±²» Ò«³¾»®: Ò±¬ ®»°±®¬»¼

Ù´±¾¿´ ×¼: Ìðêðêëðððëïé
Ý±²¬¿½¬ Ì§°»: Î»¹·±²¿´ Þ±¿®¼ Ý¿-»©±®µ»®
Ý±²¬¿½¬ Ò¿³»: ÌÑÓ ÛÜÜ×ÒÙÌÑÒ
Ñ®¹¿²·¦¿¬·±² Ò¿³»: ÍßÒÌß ßÒß ÎÉÏÝÞ øÎÛÙ×ÑÒ è÷
ß¼¼®»--: íéíé ÓßÒ ÍÌÎÛÛÌô ÍË×ÌÛ ëðð

ÓßÐ ÚÝÒÜÝÒÙ Í

Ó¿° ÝÜ
Ü·®»½¬·±²
Ü·-¬¿²½»
Û´»ª¿¬·±² Í·¬»
Ü¿¿¾¿-»Ø-÷
ÛÜ Î ÝÜ Ò« ³ ¾»®
ÛÐß ÝÜ Ò« ³ ¾»®

FIRESTONE STORE #2259 (Continued) S103464029

Ý·¬§æ
Û ³ ¿·´æ
Ð¸±²» Ò« ³ ¾»®æ

Î ÝÊÛ Î ÍÝÜÛ
¬ ³ ¾»µ»ó»µ¿²» ³ à ©¿¬»®¾±¿®¼-ò½¿ò¹±ª
çëï í îðîðé

Í¬¿¬«- Ø·-¬±®§æ
Ù´±¾¿´ Ý¼æ
Í¬¿¬«-æ
Í¬¿¬«- Ü¿¬»æ

Ìðêðêëðëïé
Ý± ³ °´»¬»¼ ó Ý¿-» Ý´±-»¼
ï ïñðìñïçç è

Ù´±¾¿´ Ý¼æ
Í¬¿¬«-æ
Í¬¿¬«- Ü¿¬»æ

Ìðêðêëðëïé
Ñ°»² ó Ý¿-» Þ»¹·² Ü¿¬»
ðîñïðñïçç è

Ù´±¾¿´ Ý¼æ
Í¬¿¬«-æ
Í¬¿¬«- Ü¿¬»æ

Ìðêðêëðëïé
Ñ°»² ó Í·¬» ß--»-- ³ »²¬
ðîñïðñïçç è

Î »¹«´¿¬±®§ ß½¬·ª·¬·»-æ
Ù´±¾¿´ Ý¼æ
ß½¬·±² Ì§°»æ
Ü¿¬»æ
ß½¬·±²æ

Ìðêðêëðëïé
ÛÒÚÑ Î ÝÛÓÛÒÌ
ï ïñðìñïçç è
Ý´±-«®»ñÒ± Ú«®¬¸»® ß½¬·±² Ô»¬¬»® ó ý Î ·ª Ý± Ý´±-»

Ù´±¾¿´ Ý¼æ
ß½¬·±² Ì§°»æ
Ü¿¬»æ
ß½¬·±²æ

Ìðêðêëðëïé
Ñ¬¸»®
ðîñïðñïçç è
Ô»¿µ Ü·-½±ª»®§

Ù´±¾¿´ Ý¼æ
ß½¬·±² Ì§°»æ
Ü¿¬»æ
ß½¬·±²æ

Ìðêðêëðëïé
Ñ¬¸»®
ðîñïí ïñïçç è
Ô»¿µ Î »°±®¬»¼

Ù´±¾¿´ Ý¼æ
ß½¬·±² Ì§°»æ
Ü¿¬»æ
ß½¬·±²æ

Ìðêðêëðëïé
ÛÒÚÑ Î ÝÛÓÛÒÌ
ï ïñðíñïçç è
Ú·´» ®»ª·»© ó ý Î ÝÜÛØ Ë°´±¿¼ Í·¬» Ú·´» íñï ïñîðïë

Ù´±¾¿´ Ý¼æ
ß½¬·±² Ì§°»æ
Ü¿¬»æ
ß½¬·±²æ

Ìðêðêëðëïé
ÛÒÚÑ Î ÝÛÓÛÒÌ
ï ïñðìñïçç è
Ý´±-«®»ñÒ± Ú«®¬¸»® ß½¬·±²

Ù´±¾¿´ Ý¼æ
ß½¬·±² Ì§°»æ
Ü¿¬»æ
ß½¬·±²æ

Ìðêðêëðëïé
Ñ¬¸»®
ðîñï íñïçç è
Ô»¿µ Í¬±°°»¼

Î ÝÊÛ Î ÍÝÜÛ ÝÑÒ ÔËÍ Ìæ
Î »¹·±²æ
Ú¿½·´·¬§ ÝÜæ
Û ³ °´±§»»æ
Í·¬» Ý´±-»¼æ
Ý¿-» Ì§°»æ
Ú¿½·´·¬§ Í¬¿¬«-æ

Î ÝÊÛ Î ÍÝÜÛ
çèðï ïç
Þ±´·²¹¸±«-»ôÛÑÑÐ
Ç»-
Í±·´ ±²´§
½´±-»¼ñ½¿-» ½± ³ °´»¬»¼

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

FIRESTONE STORE #2259 (Continued) **S103464029**

Ý¿-»¬§°» Ü»½±¼»: Í±´ ±²´§ ·- · ³ °¿½¬»¼
Ú-¬¿¬«- Ü»½±¼»: Ý´±-»¼ñß½¬·±² ½± ³ °´»¬»¼

E24	**FIRESTONE STORES #27T2**	**LUST**	**S101590034**
WNW	**24673 ALESSANDRO BLVD**	**SWEEPS UST**	**N/A**
1/4-1/2	**MORENO VALLEY, CA 92388**	**CA FID UST**	
0.361 mi.		**HIST CORTESE**	
1907 ft.	**Site 2 of 2 in cluster E**		

Relative:
Higher

Actual:
1576 ft.

ÔË Í Ì ÎÛÙ è:

Î»¹·±²:	è
Ý±«²¬§:	Î·ª»®-·¼»
Î»¹·±²¿´ Þ±¿®¼:	Í¿²¬¿ ß²¿ Î»¹·±²
Ú¿½·´·¬§ Í¬¿¬«-:	Ý¿-» Ý´±-»¼
Ý¿-» Ò«³¾»®:	ðèííðíïíèÌ
Ô±½¿´ Ý¿-» Ò«³:	çèðïïç
Ý¿-» Ì§°»:	Í±´ ±²´§
Í«¾-¬¿²½»:	É¿-¬» Ñ·´
Ï¬§ Ô»¿µ»¼:	Ò±¬ ®»°±®¬»¼
ß¾¿¬» Ó»¬¸±¼:	Ò±¬ ®»°±®¬»¼
Ý®±-- Í¬®»»¬:	ÐÛÎ ÎÌ× Í
Û²º Ì§°»:	ÝÔÑ Í
Ú«²¼·²¹:	Ò±¬ ®»°±®¬»¼
Ø±© Ü·-½±ª»®»¼:	Ò±¬ ®»°±®¬»¼
Ø±© Í¬±°°»¼:	Ò±¬ ®»°±®¬»¼
Ô»¿µ Ý¿«-»:	Ò±¬ ®»°±®¬»¼
Ô»¿µ Í±«®½»:	Ò±¬ ®»°±®¬»¼
Ù´±¾¿´ xÜ:	Ìðêðêëðëïé
Ø±© Í¬±°°»¼ Ü¿¬»:	Ò±¬ ®»°±®¬»¼
Û²¬»®» ® Ü¿¬»:	íñí ïñïççè
Ü¿¬» Ý±²º·®³»¼ ±º Ô»¿µ Þ»¹·²²·²¹:	îñï ïðñïççè
Ü¿¬» Ð®»´·³· ²¿®§ ß--»-- ³ »²¬ Þ»¹¿²:	Ò±¬ ®»°±®¬»¼
Ü·-½±ª»®» Ü¿¬»:	îñï ïðñïççè
Û²º±®½»³»²¬ Ü¿¬»:	Ò±¬ ®»°±®¬»¼
Ý´±-» Ü¿¬»:	ï ïñìñïççè
Ü¿¬» Ð®»´·³· ²¿®§ ß--»-- ³ »²¬ É±®µ°´¿² Í«¾³·¬¬»¼:	Ò±¬ ®»°±®¬»¼
Ü¿¬» Ð±´´«¬·±² Ý¸¿®¿½¬»®·¦¿¬·±² Þ»¹¿²:	Ò±¬ ®»°±®¬»¼
Ü¿¬» Î»³»¼·¿¬·±² Ð´¿² Í«¾³·¬¬»¼:	Ò±¬ ®»°±®¬»¼
Ü¿¬» Î»³»¼·¿´ ß½¬·±² Ë²¼»®©¿§:	Ò±¬ ®»°±®¬»¼
Ü¿¬» Ð±-¬ Î»³»¼·¿´ ß½¬·±² Ó±²·¬±®·²¹:	Ò±¬ ®»°±®¬»¼
Û²¬»® Ü¿¬»:	íñí ïñïççè
ÙÉ Ï«¿´·º·»-:	Ò±¬ ®»°±®¬»¼
Í±´ Ï«¿´·º·»-:	Ò±¬ ®»°±®¬»¼
Ñ°»®¿¬±®:	Ò±¬ ®»°±®¬»¼
Ú¿½·´·¬§ Ý±²¬¿½¬:	Ò±¬ ®»°±®¬»¼
Í«°»®ª·-±®:	ÔË Í Ì
Ô±²¹·¬«¼»:	í íòçïéîîêí
Ô¿¬·¬«¼»:	óïïéòîéí ìèè
ÓÌÞÛ Ü¿¬»:	Ò±¬ ®»°±®¬»¼
Ó¿¨ ÓÌÞÛ ÙÉ:	Ò±¬ ®»°±®¬»¼
ÓÌÞÛ Ý±²½»²¬®¿¬·±²:	ð
Ó¿¨ ÓÌÞÛ Í±·´:	Ò±¬ ®»°±®¬»¼
ÓÌÞÛ Ú«»´:	ð
ÓÌÞÛ Ì»-¬»¼:	Ò±¬ Î»¯«·®»¼ ¬± ¾» Ì»-¬»¼ò
ÓÌÞÛ Ý´¿--:	ö
Í¬¿ºº:	ÌÓÛ
Í¬¿ºº ×²·¬·¿´-:	ËÒÕ

FIRESTONE STORES #27T2 (Continued) S101590034

Ô»¿¼ ß¹»²½§: Ô±½¿´ ß¹»²½§
Ô±½¿´ ß¹»²½§: í íðððÔ
Ø§¼® Þ¿-·² ý: Í ßÒ ÖßÝxÒÌÑ øèóë÷
Þ»²»º·½·¿´: Ò±¬ ®»°±®¬»¼
Ð®·±®·§: Ò±¬ ®»°±®¬»¼
Ý´»¿²«° Ú«²¼ xÜ: Ò±¬ ®»°±®¬»¼
É±®µ Í«-°»²¼»¼: Ò±¬ ®»°±®¬»¼
Í«³ ³ ¿®§: Ò±¬ ®»°±®¬»¼

Í ÉÛÛÐ Ë Í Ì:
Í¬¿¬«-: ß½¬·ª»
Ý± ³ ° Ò« ³¾»®: ïèííï
Ò« ³¾»®: ï
Þ±¿®¼ Ñº Û¯«¿´·¦¿¬·±²: ììóðïèðìé
Î »º»®®¿´ Ü¿¬»: ïðóîçóçî
ß½¬·±² Ü¿¬»: ïðóîçóçî
Ý®»¿¬»¼ Ü¿¬»: ðîóîçóèè
Ñ©²»® Ì¿²µ xÜ: ðððëðï
Í É Î ÝÞ Ì¿²µ xÜ: í íóððððóðïèí í ïóððððððï
Ì¿²µ Í¬¿¬«-: ß
Ý¿°¿½·¬§: ëëð
ß½¬·ª» Ü¿¬»: ïðóîçóçî
Ì¿²µ Ë-»: ÑxÔ
Í ÌÙ: É
Ý±²¬»²¬: Éß Í ÌÛ ÑxÔ
Ò« ³¾»® Ñº Ì¿²µ-: ï

Ýß ÚxÜ Ë Í Ì:
Ú¿½·´·¬§ xÜ: í íðîêìç
Î »¹«´¿¬»¼ Þ§: ËÌÒÕß
Î »¹«´¿¬»¼ xÜ: ððïèí í ï
Ý±®¬»»-» Ý±¼»: Ò±¬ ®»°±®¬»¼
Í xÝ Ý±¼»: Ò±¬ ®»°±®¬»¼
Ú¿½·´·¬§ Ð¸±²»: éï ìêëêêê í ï
Ó¿·´ Ì±: Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ ß¼¼®»--: ï îðð ÚxÎ Û Í ÌÑÒÛ ÐÕÇ
Ó¿·´·²¹ ß¼¼®»-- î: Ò±¬ ®»°±®¬»¼
Ó¿·´·²¹ Ý·¬§ô Í¬ÐÆ·°: ÓÑ ÎÛÒÑ Êßß ÔÔÛÇ çî ëèè
Ý±²¬¿½¬: Ò±¬ ®»°±®¬»¼
Ý±²¬¿½¬ Ð¸±²»: Ò±¬ ®»°±®¬»¼
ÜËÒ- Ò« ³¾»®: Ò±¬ ®»°±®¬»¼
ÒÐÜÛÍ Ò« ³¾»®: Ò±¬ ®»°±®¬»¼
ÛÐß xÜ: Ò±¬ ®»°±®¬»¼
Ý± ³ ³ »²¬-: Ò±¬ ®»°±®¬»¼
Í¬¿¬«-: ß½¬·ª»

ØxÍ Ì ÝÑÎ ÎÛÝ Ì:
Î »¹·±²: ÝÑÎ ÎÛÝ Ì
Ú¿½·´·¬§ Ý±«²¬§ ß¹»²½§: í í
Î »¹ ß§: ÔÌÒÕß
Î »¹ xÜ: ðèí í ðí ï í è Ì

Ó¿° ×Ü Ü·®»½¬·±² Ü·-¬¿²½» Û´»ª¿¬·±²	Í·¬»	Ü¿¬¿¾¿-»ø-÷	ÛÜÎ ×Ü Ò«³¾»® ÛÐß ×Ü Ò«³¾»®
25 NW 1/4-1/2 0.368 mi. 1945 ft.	**BAY AVENUE ELEMENTARY SCHOOL** **24801 BAY AVENUE** **MORENO VALLEY, CA 92553**	**ENVIROSTOR** **SCH**	**S105628794** **N/A**

Relative:
Higher

Actual:
1584 ft.

ÛÒÊ×ÎÑÍÌÑÎæ

Ú¿½·´·¬§ ×Üæ	í í è î ð ð ï ð
Í¬¿¬«-æ	Ò± Ú«®¬¸»® ß½¬·±²
Í¬¿¬«- Ü¿¬»æ	ðèñïçñî ð ð í
Í·¬» Ý±¼»æ	ì ð ì í ð è
Í·¬» Ì§°»æ	Í½¸±±´ ×²ª»-¬·¹¿¬·±²
Í·¬» Ì§°» Ü»¬¿·´»¼æ	Í½¸±±´
ß½®»-æ	è
ÒÐÔæ	ÒÑ
Î»¹«´¿¬±®§ ß¹»²½·»-æ	ÜÌ Í Ý
Ô»¿¼ ß¹»²½§æ	ÜÌ Í Ý
Ð®±¹®¿³ Ó¿²¿¹»®æ	Ò±¬ ®»°±®¬»¼
Í«°»®ª·-±®æ	Ö¿ª·» Ø·²±¶±-¿
Ü·ª·-·±² Þ®¿²½¸æ	Í±«¬¸»®² Ý¿´·º±®²·¿ Í½¸±±´- ú Þ®©²º·»´¼- Ñ«¬®»¿½¸
ß--»³¾´§æ	êï
Í»²¿¬»æ	í ï
Í°»½·¿´ Ð®±¹®¿³æ	Ò±¬ ®»°±®¬»¼
Î»-¬®·½¬»¼ Ë-»æ	ÒÑ
Í·¬» Ó¹³¬ Î»¯æ	ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
Ú«²¼·²¹æ	Í½¸±±´ Ü·-¬®·½¬
Ô¿¬·¬«¼»æ	í í ðçïèí é
Ô±²¹·¬«¼»æ	ó ï ïéðî ïèï
ßÐÒæ	ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
Ð¿-¬ Ë-»æ	ö ÛÜËÝßÌ×ÑÒßÔ ÍÛÎÊ×ÝÛÍ ßÙÎ×ÝËÔÌËÎßÔ ó ÎÑÉ ÝÎÑÐÍ
Ð±¬»²¬·¿´ ÝÑÝæ	ÜÜÜ ÜÜÛ ÜÜÌ
Ý±²º·®³»¼ ÝÑÝæ	íððððêóÒÑ íððððéóÒÑ íððððèóÒÑ
Ð±¬»²¬·¿´ Ü»-½®·°¬·±²æ	Í Ñ×
ß´·¿- Ò¿³»æ	ßÕßæ ÎßÓÑÒß ÛÔÛÓ ÍÝØÑÑÔ
ß´·¿- Ì§°»æ	ß´¬»®²¿¬» Ò¿³»
ß´·¿- Ò¿³»æ	ÞßÇ ßÊÛÒËÛ ÛÔÛÓÛÒÌßÎÇ ÍÝØÑÑÔ
ß´·¿- Ì§°»æ	ß´¬»®²¿¬» Ò¿³»
ß´·¿- Ò¿³»æ	ÓÑÎÛÒÑ ÊßÔÔÛÇ ËÒ×Ú×ÛÜ ÍÝØÑÑÔ Ü×ÍÌ×ÎÝÌ
ß´·¿- Ì§°»æ	ß´¬»®²¿¬» Ò¿³»
ß´·¿- Ò¿³»æ	ÓÑÎÛÒÑ ÊßÔÔÛÇ Ë Í Üóîßç ÞßÇ ßÊÛÒËÛ ÛÔÛÓ ÍÝØÑÑÔ
ß´·¿- Ì§°»æ	ß´¬»®²¿¬» Ò¿³»
ß´·¿- Ò¿³»æ	ì ð ì í ð è
ß´·¿- Ì§°»æ	Ð®±¶»½¬ Ý±¼» øÍ·¬» Ý±¼»÷
ß´·¿- Ò¿³»æ	í í è î ð ð ï ð
ß´·¿- Ì§°»æ	Û²ª·®±-¬±® ×Ü Ò«³¾»®

Ý±³°´»¬»¼ ×²º±æ

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ	ÐÎÑÖÛÝÌ ÉÙÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ	Í·¬» ×²-°»½¬·±²-ñÊ·-·¬ øÒ±² ÔËÎ÷
Ý±³°´»¬»¼ Ü¿¬»æ	ðíñïï ïïñî ð ð î
Ý±³³»²¬-æ	Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ	ÐÎÑÖÛÝÌ ÉÙÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ	Ý±-¬ Î»½±ª»®§ Ý´±-»±«¬ Ó»³±
Ý±³°´»¬»¼ Ü¿¬»æ	ðçñðèñî ð ð í
Ý±³³»²¬-æ	Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ	ÐÎÑÖÛÝÌ ÉÙÛ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ÓßÐ ÚxÒÜxÒÙ Í

Ó¿° xÜ
Ü·®»½¬·±²
Ü·--¿²½»
Û´»ª¿¬·±² Í·¬» | Ü¿¬¿¾¿-»ø-÷ | ÛÜÎ xÜ Ò« ³ ¾»® / ÛÐß xÜ Ò« ³ ¾»®

BAY AVENUE ELEMENTARY SCHOOL (Continued) **S105628794**

Ý±³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ Ò±¬ ®»°±®¬»¼
Ý±³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ Ð®»´·³ ·²¿®§ Û²¼¿²¹ »®³ »²¬ ß--»-- ³ »²¬ Î »°±®¬
Ý±³ °´»¬»¼ Ü¿¬»æ ðèñïçñîðð í
Ý±³ ³ »²¬-æ Ò±¬ ®»°±®¬»¼

Ý±³ °´»¬»¼ ß®»¿ Ò¿ ³ »æ ÐÎ ÑÖÛÝÌ ÉxÜÛ
Ý±³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ Ò±¬ ®»°±®¬»¼
Ý±³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ Ì»½¸²·½¿´ Î »°±®¬
Ý±³ °´»¬»¼ Ü¿¬»æ ðëñïðñîððî
Ý±³ ³ »²¬-æ Ò±¬ ®»°±®¬»¼

Ý±³ °´»¬»¼ ß®»¿ Ò¿ ³ »æ ÐÎ ÑÖÛÝÌ ÉxÜÛ
Ý±³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ Ò±¬ ®»°±®¬»¼
Ý±³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ ö É±®µ°´¿²
Ý±³ °´»¬»¼ Ü¿¬»æ ïîñîìñîððî
Ý±³ ³ »²¬-æ Ò±¬ ®»°±®¬»¼

Ý±³ °´»¬»¼ ß®»¿ Ò¿ ³ »æ ÐÎ ÑÖÛÝÌ ÉxÜÛ
Ý±³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ Ò±¬ ®»°±®¬»¼
Ý±³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ Û²ª·®±² ³ »²¬¿´ Ñª»®-·¹ ¸¬ ß¹®»» ³ »²¬
Ý±³ °´»¬»¼ Ü¿¬»æ ðïñí ïñîððî
Ý±³ ³ »²¬-æ Ò±¬ ®»°±®¬»¼

Ú«¬«®» ß®»¿ Ò¿ ³ »æ Ò±¬ ®»°±®¬»¼
Ú«¬«®» Í«¾ ß®»¿ Ò¿ ³ »æ Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü±½« ³ »²¬ Ì§°»æ Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü«» Ü¿¬»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´»¼ ß®»¿ Ò¿ ³ »æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´»¼ Í«¾ ß®»¿ Ò¿ ³ »æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´»¼ Ü±½« ³ »²¬ Ì§°»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´»¼ Ü«» Ü¿¬»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´»¼ Î »ª·-»¼ Ü¿¬»æ Ò±¬ ®»°±®¬»¼

ÍÝØæ

Ú¿½·´·¬§ xÜæ íèîððïð
Í·¬» Ì§°»æ Í½¸±±´ ×²ª»-¬·¹¿¬·±²
Í·¬» Ì§°» Ü»¬¿·´æ Í½¸±±´
Í·¬» Ó¹³ ¬ Î »¯æ ÒÑÒÛ ÍÐÛÝxÚxÛÜ
ß½®»-æ è
Ò¿¬·±²¿´ Ð®·±®·¬·»- Ô·-¬æ ÒÑ
Ý´»¿² «° Ñª»®-·¹ ¸¬ ß¹»²½§æ ÜÌ ÍÝ
Ô»¿¼ ß¹»²½§æ ÜÌ ÍÝ
Ô»¿¼ ß¹»²½§ Ü»-½®·°¬·±²æ ö ÜÌ ÍÝ
Ð®±¶»½¬ Ó¿²¿¹»®æ Ò±¬ ®»°±®¬»¼
Í«°»®ª·-±®æ Ö¿ª·» Ø»²®·¯«»¦
Ü·ª·-·±² Þ®¿²½¸æ Í±«¬¸»®² Ý¿´·º±®²·¿ Í½¸±±´- ú Þ®±©²º·»´¼- Ñ«¬®»¿½¸
Í·¬» Ý±¼»æ ìðì íðè
ß--»³ ¾´§æ êï
Í»²¿¬»æ íí
Í°»½·¿´ Ð®±¹ ®¿³ Ý±¼»æ Ò±¬ ®»°±®¬»¼
Í¬¿¬«-æ Ò± Ú«®¬¸»® ß½¬·±²
Í¬¿¬«- Ü¿¬»æ ðèñïçñîððí
Î »-°±²-·¾´» Ë²·¬æ ÒÑ
Ú«²¼·²¹æ Í½¸±±´ Ü·-¬®·½¬
Ô¿¬·¬«¼»æ í íðçïèíé
Ô±²¹·¬«¼»æ óïïéêðî ïëï

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Ó¿° ˣÜ
Ü·®»½¬·±²
Ü·--¿²½»
Û´»ª¿¬·±²   Í·¬»   Ü¿¬¿¾¿-»ø-÷   ÛÜÎ ×Ü Ò« ³ ¾»®
ÛÐß ×Ü Ò« ³ ¾»®

ÓßÐ ÚײÜ×ÒÙÍ

BAY AVENUE ELEMENTARY SCHOOL (Continued) **S105628794**

ßÐÒæ	ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
Ð¿-¬ Ë-»æ	ö ÛÜËÝßÌ×ÑÒßÔ ÍÛÎÊ×ÝÛÍ ßÙÎ×ÝËÔÌËÎßÔ ö ÎÑÉ ÝÎÑÐÍ
Ð±¬»²¬·¿´ ÝÑÝæ	ÜÜÜö ÜÜÛö ÜÜÌ
Ý±²º·® ³ »¼ ÝÑÝæ	íðððêóÒÑö íððððéóÒÑö íðððèóÒÑ
Ð±¬»²¬·¿´ Ü»-½®·°¬·±²æ	ÍÑ×Ô
ß´·¿- Ò¿ ³ »æ	ßÕßæ ÎßÓÑÒß ÛÔÛÓ ÍÝØÑÑÔ
ß´·¿- Ì§°»æ	ß´¬»®²¿¬» Ò¿ ³ »
ß´·¿- Ò¿ ³ »æ	ÞßÇ ßÊÛÒËÛ ÛÔÛÓÛÒÌßÎÇ ÍÝØÑÑÔ
ß´·¿- Ì§°»æ	ß´¬»®²¿¬» Ò¿ ³ »
ß´·¿- Ò¿ ³ »æ	ÓÑÎÛÒÑ ÊßÔÔÛÇ ËÒ×Ú×ÛÜ ÍÝØÑÑÔ Ü×ÍÌÎ×ÝÌ
ß´·¿- Ì§°»æ	ß´¬»®²¿¬» Ò¿ ³ »
ß´·¿- Ò¿ ³ »æ	ÓÑÎÛÒÑ ÊßÔÔÛÇ ËÍÜóÞßÇ ßÊÛÒËÛ ÛÔÛÓ ÍÝØÑÑÔ
ß´·¿- Ì§°»æ	ß´¬»®²¿¬» Ò¿ ³ »
ß´·¿- Ò¿ ³ »æ	ìðì íðè
ß´·¿- Ì§°»æ	Ð®±¶»½¬ Ý±¼» øÍ·¬» Ý±¼»÷
ß´·¿- Ò¿ ³ »æ	í íèîððïð
ß´·¿- Ì§°»æ	Û²ª·®±-¬±® ×Ü Ò« ³ ¾»®

Ý± ³ °´»¬»¼ ×²º±æ

Ý± ³ °´»¬»¼ ß®»¿ Ò¿ ³ »æ	ÐÎÑÖÛÝÌ É×ÜÛ
Ý± ³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ	Í·¬» ×²-°»½¬·±²ñÊ·-·¬ øÒ±²² ÔËÍÌ÷
Ý± ³ °´»¬»¼ Ü¿¬»æ	ðíñïï ìñîððî
Ý± ³ ³ »²¬-æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ ß®»¿ Ò¿ ³ »æ	ÐÎÑÖÛÝÌ É×ÜÛ
Ý± ³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ	Ý±--»½¬·ª» ß½¬·±² Ó» ³ ±
Ý± ³ °´»¬»¼ Ü¿¬»æ	ðçñðèñîððí
Ý± ³ ³ »²¬-æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ ß®»¿ Ò¿ ³ »æ	ÐÎÑÖÛÝÌ É×ÜÛ
Ý± ³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ	Ð®»´· ³ ·²¿®§ Û²¼¿²¹»®³»²¬ ß--»-- ³ »²¬ Î»°±®¬
Ý± ³ °´»¬»¼ Ü¿¬»æ	ðèñïçñîððí
Ý± ³ ³ »²¬-æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ ß®»¿ Ò¿ ³ »æ	ÐÎÑÖÛÝÌ É×ÜÛ
Ý± ³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ	Ì»½¸²·½¿´ Î»°±®¬
Ý± ³ °´»¬»¼ Ü¿¬»æ	ðëñïðñîððî
Ý± ³ ³ »²¬-æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ ß®»¿ Ò¿ ³ »æ	ÐÎÑÖÛÝÌ É×ÜÛ
Ý± ³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ	ö É±®µ°´¿²
Ý± ³ °´»¬»¼ Ü¿¬»æ	ïîñîìñîððî
Ý± ³ ³ »²¬-æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ ß®»¿ Ò¿ ³ »æ	ÐÎÑÖÛÝÌ É×ÜÛ
Ý± ³ °´»¬»¼ Í«¾ ß®»¿ Ò¿ ³ »æ	Ò±¬ ®»°±®¬»¼
Ý± ³ °´»¬»¼ Ü±½« ³ »²¬ Ì§°»æ	Û²ª·®±² ³ »²¬¿´ Ñª»®-·¹¸¬ ß¹®»» ³ »²¬
Ý± ³ °´»¬»¼ Ü¿¬»æ	ðïñïïñîððî
Ý± ³ ³ »²¬-æ	Ò±¬ ®»°±®¬»¼
Ú«¬«®» ß®»¿ Ò¿ ³ »æ	Ò±¬ ®»°±®¬»¼
Ú«¬«®» Í«¾ ß®»¿ Ò¿ ³ »æ	Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü±½« ³ »²¬ Ì§°»æ	Ò±¬ ®»°±®¬»¼

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

BAY AVENUE ELEMENTARY SCHOOL (Continued) **S105628794**

Ú«¬«®» Ü«» Ü¿¬»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Í«¾ ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü±½« ³»²¬ Ì§°»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü«» Ü¿¬»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Î»ª·-»¼ Ü¿¬»æ	Ò±¬ ®»°±®¬»¼

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26 **PROPOSED ALTERNATIVE SCHOOL SITE** **ENVIROSTOR** **S108407566**
SW **SEC CACTUS AVENUE AND INDIAN STREET** **SCH** **N/A**
1/2-1 **MORENO VALLEY, CA 92553**
0.549 mi.
2898 ft.

Relative:
Lower

Actual:
1553 ft.

ÛÒÊxÎÑÍÌÑÎæ

Ú¿½·´·¬§ xÜæ	êðððððëêí
Í¬¿¬«-æ	Ò± Ú«®¬¸»® ß½¬·±²
Í¬¿¬«- Ü¿¬»æ	ïîñðìñîððé
Í·¬» Ý±¼»æ	ìðìéíë
Í·¬» Ì§°»æ	Í½¸±±´ Ûª¿´«¿¬·±²
Í·¬» Ì§°» Ü»¬¿·´»¼æ	Í½¸±±´
ß½®»-æ	èòïç
ÒÐÔæ	ÒÑ
Î»¹«´¿¬±®§ ß¹»²½·»-æ	ÍÓÞÎÐ
Ô»¿¼ ß¹»²½§æ	ÍÓÞÎÐ
Ð®±¶»½¬ Ó¿²¿¹»®æ	ß-´¿³ Í¸¿®»»
Í«°»®ª·-±®æ	Í¸¿¸·® Ø¿¼¼¿¼
Ü·ª·-·±² Ò¿³»æ	Í±«¬¸»®² Ý¿´·º±®²·¿ Í½¸±±´- ú Þ®±©²º·»´¼- Ñ«¬®»¿½¸
ß--»³¾´§æ	êï
Í»²¿¬»æ	íï
Í°»½·¿´ Ð®±¹®¿³æ	Ò±¬ ®»°±®¬»¼
Î»-¬®·½¬»¼ Ë-»æ	ÒÑ
Í·¬» Ó¹³¬ò Î»¯æ	ÒÑÒÛ ÍÐÛÝxÚxÛÜ
Ú«²¼·²¹æ	Í½¸±±´ Ü·-¬®·½¬
Ô¿¬·¬«¼»æ	íí òçðçí
Ô±²¹·¬«¼»æ	óïïéòîíìì
ßÐÒæ	ÒÑÒÛ ÍÐÛÝxÚxÛÜ
Ð¿-¬ Ë-»æ	ßÙÎxÝËÔÌËÎßÔ ó ÎÑÉ ÝÎÑÐÍ ÌÛ ÐÛÜÍ ÛÒÊÛÎ ÌÛ ÐÛÜÍ, ßÙÎxÝËÔÌËÎßÔ ó ÍÌ ÑÝ Ó ßÎ Ï ÌÛÎ ÍÑ ÌÛÎ ÔÑÝßÔ ÍÑ ÌÛÎ, ÛÜÍ Ûó Ò ÜÑÝËÓ ÛÒÌ ÐÑÎ ÛÒÝ ÔÑÝ Ð
Ð±¬»²¬·¿´ ÝÑÝæ	ß®-»²·½ Þ»²¦±¿ ¬Ü ÜÜ ÜÜÛ ÜÜÌ Ô»¿¼ ÌÐØó¼·»-»´ ÌÐØó¹¿-±´·²» ÌÐØó³±¬±® ±·´ ÌÐØó±·´ Ì±¨¿°¸»²» ÈÊÎ
Ý±²º·®³»¼ ÝÑÝæ	íðëèðóÒÑ íðîíóÒÑ íðîèóÒÑ íðïëóÒÑ íðïìóÒÑ íðìëóÒÑ íððíóÒÑ íððîóÒÑ íððíóÒÑ íððëóÒÑ íððèóÒÑ íðïïóÒÑ íðîëïóÒÑ íðîèîóÒÑ íðçíóÒÑ
Ð±¬»²¬·¿´ Ü»-½®·°¬·±²æ	ÍÑÔ ÍÛ
ß´·¿- Ò¿³»æ	ìðìéíë
ß´·¿- Ì§°»æ	Ð®±¶»½¬ Ý±¼» øÍ·¬» Ý±¼»÷
ß´·¿- Ò¿³»æ	êðððððëêí
ß´·¿- Ì§°»æ	Û²ª·®±-¬±® xÜ Ò« ³¾»®

Ý±³°´»¬»¼ ×²º±æ

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ	ÐÎÑÖÛÝÌ ÉxÜÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½« ³»²¬ Ì§°»æ	Û²ª·®±²³»²¬¿´ Ñª»®-·¹¸¬ ß¹®»»³»²¬
Ý±³°´»¬»¼ Ü¿¬»æ	ðíñïëñîððé
Ý±³ ³»²¬-æ	Í·¹²»¼ ß¹®»»³»²¬ ®»½»·ª»¼ º®±³ ¬¸» Ü·-¬®·½¬ò
Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ	ÐÎÑÖÛÝÌ ÉxÜÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼

PROPOSED ALTERNATIVE SCHOOL SITE (Continued) **S108407566**

Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ Ý±-¬ Î»½±ª»®§ Ý´»¿²«¬ Ó»³±
Ý±³°´»¬»¼ Ü¿¬»æ ïîñðìñîððé
Ý±³³»²¬-æ Ð®±¶»½¬ ½´±-» ±«¬ Ý±-¬ Î»½±ª»®§ Ë²·¬ Ó»³±®¿²¼«³ ò

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉÎÜÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ Ð®»´·³·²¿®§ Û²¼¿²¹»®³»²¬ ß--»--³»²¬ É±®µ°´¿²
Ý±³°´»¬»¼ Ü¿¬»æ ðêîî ïîñðé
Ý±³³»²¬-æ ÐÛß É±®µ°´¿² ¿°°®±ª»¼ -»²¬ ¬± ¬¸» ¼·-¬®·½¬ ±² Ö«²» îïô îððé

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉÎÜÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ Ð¸¿-» ï
Ý±³°´»¬»¼ Ü¿¬»æ ðíñðèñîððé
Ý±³³»²¬-æ Î»½»·ª»¼ Ð¸¿-» × ®»°±®¬ ¿- ¾¿½µ¹®±«²¼ ·²º±®³¿¬·±² º±® ²»© ÐÛß

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉÎÜÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ Ð®»´·³·²¿®§ Û²¼¿²¹»®³»²¬ ß--»--³»²¬ Î»°±®¬
Ý±³°´»¬»¼ Ü¿¬»æ ïîñðìñîððé
Ý±³³»²¬-æ ÐÛß ¿°°®±ª»¼ -»²¬ ¬± ¬¸» ÎÐ

Ú«¬«®» ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ú«¬«®» Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü±½«³»²¬ Ì§°»æ Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü«» Ü¿¬»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü±½«³»²¬ Ì§°»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü«» Ü¿¬»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Î»ª·-»¼ Ü¿¬»æ Ò±¬ ®»°±®¬»¼

ÍÝØæ

Ú¿½·´·¬§ ×Üæ êðððððëê
Í·¬» Ì§°»æ Í½¸±±´ ×²ª»-¬·¹¿¬·±²
Í·¬» Ì§°» Ü»¬¿·´æ Í½¸±±´
Í·¬» Ó¿²¿¹»³»²¬ Î»¯«·®»³»²¬ ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
ß½®»-æ èòïç
Ò¿¬·±²¿´ Ð®·±®·¬§ Ô·-¬æ ÒÑ
Ý´»¿²«° Ñª»®-·¹¸¬ ß¹»²½§æ ÍÓÞÎÐ
Ô±¿¼ Ô¿²¼ ±® Ý±²¬®¿½¬æ ÍÓÞÎÐ
Ô±¿¼ Ô¿²¼ ±® Ý±²¬®¿½¬ Ü»-½®·°¬·±²æ ÜÌÍÝ Í·¬» Ý±¼» Ð®±¹®¿³ ß
Ð®±¶»½¬ Ó¿²¿¹»®æ ß-¸´»§ Í«¾·®¿²¿³
ß--·-¬¿²¬ Ü·®»½¬±®æ Í¸¿¸·¼ Ú¿®«¯·
Ü·-¬®·½¬ Þ®¿²½¸æ Í½¸±±´ Ñ®¹¿²·¦¿¬·±² Ý±¼» ê Í½¸±±´ Ð®±¹®¿³- Ò±®¬¸»®²
Í½¸±±´ Ý±¼»æ ìðìéé
ß--»³¾´§æ êï
Í»²¿¬»æ íï
Í°»½·¿´ Ð®±¹®¿³ Ý±¼»æ Ò±¬ ®»°±®¬»¼
Í¬¿¬«-æ Ò± Ú«®¬¸»® ß½¬·±²
Í¬¿¬«- Ü¿¬»æ ïîñðìñîððé
Î»-¬®·½¬»¼ Ë-» Ñ®¼»®æ ÒÑ
Ú«²¼·²¹æ Í½¸±±´ Ü·-¬®·½¬
Ô¿¬·¬«¼»æ íìòðçðèì
Ô±²¹·¬«¼»æ óïïéòîìïï
ßÐÒæ ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

ÓßÐ Ú×ÒÜ×ÒÙ Í

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·--¿²½»
Û´»ª¿¬·±² Í·¬»
Ü¿¬¿¾¿-»ø-÷
ÛÜ Î ×Ü Ò« ³¾»®
ÛÐß ×Ü Ò« ³¾»®

PROPOSED ALTERNATIVE SCHOOL SITE (Continued) S108407566

Ð¿-¬ Ë-»æ ßÙ Î ×ÝËÔ ÌËÎ ßÔ ó ÎÑÉ ÝÎÑÐ Íô ÛÒÙ×ÒÛ ÌÛ Í ÌÒÙÎ ÛÐß×Îô Û ÏË×ÐÓÛÒÌ ÎÛÒÌ Í ÎËÓÛÒÌ ÎÛÐß×Îô ÓßÝØ×ÒÛ ÍØÑÐ

Ð±¬»²¬·¿´ ÝÑÝæ ß®-»²·½ô Þ»²¦»²»ô Ý¸´±®¼¿²»ô ÜÜÜô ÜÜÛô ÜÜÌô Ü×Ò ÑÍ»¾ô ÌÐØ¼·»-»´

ÌÐØ¹¿-ô ÌÐØ×ÔÛÜÌ ÌÐØ×ÓÑÎ ÌÎ Î Ñ×Ôô Ý±¾¿´¬ô Ò·½µ»´ ô Ì±¨¿°¸»²»ô È§´»²»-

Ò±¬ ®»°±®¬»¼

Ý±²º·®³»¼ ÝÑÝæ íðëèðëÒÑ íððîìÒÑ íððîëÒÑ íðïëìÒÑ íðìéÒÑ íððïÒÑ
íððíÒÑ íððìÒÑ íððèÒÑ íððéÒÑ íððèÒÑ íððïíÒÑ
íððîëðïÒÑ íððîëðîÒÑ íðëçíÒÑ

Ð±¬»²¬·¿´ Ü»-½®·°¬·±²æ Í Ñ×Ôô Í Ê

ß´·¿- Ò¿³»æ ìðìéíë
ß´·¿- Ì§°»æ Ð®±¶»½¬ Ý±¼» ø Í·¬» Ý±¼»÷
ß´·¿- Ò¿³»æ êðððððëí
ß´·¿- Ì§°»æ Û²ª·®± ×Ü Ò« ³¾»®

Ý±³°´»¬·±² ×²º±

Ý±³°´»¬·±² ß®»¿ Ò¿³»æ ÐÎ ÑÖÛÝÌ ÉØÛ
Ý±³°´»¬·±² Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬·±² Ü±½« ³»²¬ Ì§°»æ Û²ª·®±²³»²¬¿´ Ñª»®-·¹¸¬ ß¹®»»³»²¬
Ý±³°´»¬·±² Ü¿¬»æ ðííïëîððé
Ý±³ ³»²¬-æ Í·¹²»¼ ß¹®»»³»²¬ -»²¬ ¬± Ü·-¬®·½¬

Ý±³°´»¬·±² ß®»¿ Ò¿³»æ ÐÎ ÑÖÛÝÌ ÉØÛ
Ý±³°´»¬·±² Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬·±² Ü±½« ³»²¬ Ì§°»æ Ý±--¬ Î»½±ª»®§ Ý´±-»±«¬ Ó» ³±
Ý±³°´»¬·±² Ü¿¬»æ ïîîðìîððé
Ý±³ ³»²¬-æ Ð®±¶»½¬ ½´±-»» ±«¬ Ý±--¬ Î»½±ª»®§ Ý´±-»±«¬ Ó» ³±®¿²¼«³ ô

Ý±³°´»¬·±² ß®»¿ Ò¿³»æ ÐÎ ÑÖÛÝÌ ÉØÛ
Ý±³°´»¬·±² Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬·±² Ü±½« ³»²¬ Ì§°»æ Ð®»´·³·²¿®§ Û²¼¿²¹»®³»²¬ ß--»--³»²¬ É±®µ°´¿²
Ý±³°´»¬·±² Ü¿¬»æ ðêñîìîððé
Ý±³ ³»²¬-æ ÐÛß É±®µ°´¿² ¿°°®±ª»¼ -»²¬ ¬± ¬¸» ¼·-¬®·½¬ ±² ïïô îððé

Ý±³°´»¬·±² ß®»¿ Ò¿³»æ ÐÎ ÑÖÛÝÌ ÉØÛ
Ý±³°´»¬·±² Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬·±² Ü±½« ³»²¬ Ì§°»æ Ð¸¿-» ×
Ý±³°´»¬·±² Ü¿¬»æ ðíîèîðîððé
Ý±³ ³»²¬-æ Î»½»·ª»¼ Ð¸¿-» × ®»°±®¬ ¿- ¿¬¬¿½¸³»²¬ ¬± »´»½¬®±²·½ ½±®®»-°±²¼»²½» º®±³ ¬¸» ÐÛß

Ý±³°´»¬·±² ß®»¿ Ò¿³»æ ÐÎ ÑÖÛÝÌ ÉØÛ
Ý±³°´»¬·±² Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬·±² Ü±½« ³»²¬ Ì§°»æ Ð®»´·³·²¿®§ Û²¼¿²¹»®³»²¬ ß--»--³»²¬ Î»°±®¬
Ý±³°´»¬·±² Ü¿¬»æ ðïîðîðîððé
Ý±³ ³»²¬-æ ÐÛß ¿°°®±ª»¼ -»²¬ ¬± ¬¸» ÎÐ

Ú«¬«®» ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ú«¬«®» Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü±½« ³»²¬ Ì§°»æ Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü«» Ü¿¬»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü±½« ³»²¬ Ì§°»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü«» Ü¿¬»æ Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Î»ª·-»¼ Ü¿¬»æ Ò±¬ ®»°±®¬»¼

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Óß Ð Ú×ÒÜ×ÒÙ Í

Ó¿° ×Ü Ü·®»½¬·±² Ü·-¬¿²½» Ú´»ª¿¬·±²	Í·¬»	Ü¿¬¿¾¿-»ø-÷	ÛÜÎ ×Ü Ò«³¾»® ÛÐß ×Ü Ò«³¾»®
27 SSW 1/2-1 0.569 mi. 3003 ft.	**BADGER SPRINGS MIDDLE SCHOOL EXPANSION** **24750 DELPHINIUM AVENUE** **MORENO VALLEY, CA 92553**	**ENVIROSTOR** **SCH**	**S105089230** **N/A**

Relative:
Lower

Actual:
1549 ft.

ÛÒÊ×ÎÑÍÌÑÎæ
Ú¿½·´·¬§ ×Üæ êðððððèîê
Í¬¿¬«-æ Ò± Ú«®¬¸»® ß½¬·±²
Í¬¿¬«- Ü¿¬»æ ðêñîìñîððè
Í·¬» Ý±¼»æ ìðìééè
Í·¬» Ì§°»æ Í½¸±±´ ×²ª»-¬·¹¿¬·±²
Í·¬» Ì§°» Ü»¬¿·´»¼æ Í½¸±±´
ß½®»-æ ðòî ï
ÒÐÔæ ÒÑ
Î»¹«´¿¬±®§ ß¹»²½·»-æ ÍÓÞÎÐ
Ô»¿¼ ß¹»²½§æ ÍÓÞÎÐ
Ð®±¹®¿³ Ó¿²¿¹»®æ Ò±¬ ®»°±®¬»¼
Í«°»®ª·-±®æ Í¸¿²·¸ Ø¿¼¼¿¼
Ü·ª·-·±² Þ®¿²½¸æ Í±«¬¸»®² Ý¿´·º±®²·¿ Í½¸±±´- ú Þ®©²º·»´¼- Ñ«¬®»¿½¸
ß--»³¾´§æ êï
Í»²¿¬»æ íï
Í°»½·¿´ Ð®±¹®¿³æ Ò±¬ ®»°±®¬»¼
Î»-¬®·½¬»¼ Ë-»æ ÒÑ
Í·¬» Ó¹³¬ò Î»¯æ ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
Ú«²¼·²¹æ Í½¸±±´ Ü·-¬®·½¬
Ô¿¬·¬«¼»æ íííçðê ìí
Ô±²¹·¬«¼»æ óïïéòîíïìè
ßÐÒæ ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
Ð¿-¬ Ë-»æ ßÙÎ×ÝËÔÌËÎßÔ ó ÎÑÉ ÝÎÑÐÍô ÍÝØÑÑÔ ó ÛÔÛÓÛÒÌßÎÇ
Ð±¬»²¬·¿´ ÝÑÝæ ß®-»²·½ Ý¸´±®¼¿²» ÜÜÜ ÜÜÛ ÜÜÌ Û²¼®·² Ì±¨¿°¸»²» ß®-»²·½ Ý¸´±®¼¿²» ÜÜÜ ÜÜÛ ÜÜÌ Ì±¨¿°¸»²»
Ý±²º·®³»¼ ÝÑÝæ Ò±¬ ®»°±®¬»¼
Ð±¬»²¬·¿´ Ü»-½®·°¬·±²æ ÍÑ×Ô ÍÑ×Ô
ß´·¿- Ò¿³»æ ìðìééè
ß´·¿- Ì§°»æ Ð®±¶»½¬ Ý±¼» øÍ·¬» Ý±¼»÷
ß´·¿- Ò¿³»æ êðððððèîê
ß´·¿- Ì§°»æ Û²ª·®±-¬±® ×Ü Ò«³¾»®

Ý±³°´»¬»¼ ×²º±æ
Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉØÑÔÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ Û²ª·®±²³»²¬¿´ Ñª»®-·¹¸¬ ß¹®»»³»²¬
Ý±³°´»¬»¼ Ü¿¬»æ ðíñïðñîððè
Ý±³³»²¬-æ ß¹®»»³»²¬ ©¿- ¬»®³·²¿¬»¼ ¾»½¿«-» Í·¬» ©¿- ¼»¬»®³·²»¼ ¬± ¸¿ª» ²± ½±²¬¿³·²¿¬·±² Ò±¬ ®»°±®¬»¼

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉØÑÔÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ Ý±-¬ Î»½±ª»®§ Ý´±-»±«¬ Ó»³±
Ý±³°´»¬»¼ Ü¿¬»æ ðêñîéñîððè
Ý±³³»²¬-æ Ò±¬ ®»°±®¬»¼

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉØÑÔÛ
Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ Ð®»´·³·²¿®§ Û²¼¿²¹»®³»²¬ ß--»--³»²¬ É±®µ°´¿²
Ý±³°´»¬»¼ Ü¿¬»æ ðíñîðñîððè
Ý±³³»²¬-æ ÜÌÍÝ ½±²½«®®»¼ ©·¬¸ ¬¸» °®±°±-»¼ -¿³°´·²¹ °´¿²ò

Ý±³°´»¬»¼ ß®»¿ Ò¿³»æ ÐÎÑÖÛÝÌ ÉØÑÔÛ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·--¿²½»
Û´»ª¿¬·±²

ÓßÐ Ú×ÒÜ×ÒÙ Í

Í·¬»

Ü¿¬¿¾¿-»ø-÷

ÛÜÎ ×Ü Ò« ³ ¾»®
ÛÐß ×Ü Ò« ³ ¾»®

BADGER SPRINGS MIDDLE SCHOOL EXPANSION (Continued) **S105089230**

Ý±³°´»¬»¼ Í«¾ ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Ý±³°´»¬»¼ Ü±½«³»²¬ Ì§°»æ	Ð®»´·³·²¿®§ Û²¼¿²¹»®³»²¬ ß--»--³»²¬ Î»°±®¬
Ý±³°´»¬»¼ Ü¿¬»æ	ðêñîìñîððè
Ý±³³»²¬-æ	ÐÛß Î»°±®¬ ¿°°®±ª»¼ ©·¬¸ Ò± Ú«®¬¸»® ß½¬·±² ¼»¬»®³·²¿¬·±²
Ú«¬«®» ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Ú«¬«®» Í«¾ ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü±½«³»²¬ Ì§°»æ	Ò±¬ ®»°±®¬»¼
Ú«¬«®» Ü«» Ü¿¬»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Í«¾ ß®»¿ Ò¿³»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü±½«³»²¬ Ì§°»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Ü«» Ü¿¬»æ	Ò±¬ ®»°±®¬»¼
Í½¸»¼«´» Î»ª·-»¼ Ü¿¬»æ	Ò±¬ ®»°±®¬»¼

ÍÝØæ

Ú¿½·´·¬§ ×Üæ	êðððððèîê
Í·¬» Ì§°»æ	Í½¸±±´ ×²ª»-¬·¹¿¬·±²
Í·¬» Ì§°» Ü»¬¿·´æ	Í½¸±±´
Í·¬» Ó¹³¬ò Î»º ò×	ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
ß½®»-æ	ðòî ï
Ò¿¬·²¿´ Ð®·±®·¬·»- Ô·-¬æ	ÒÑ
Ý»¿-» ¿²¼ Ñª»®-·¹¸¬ ß²²«¿´æ	ÍÓÞÎÐ
Ô»¿¼ ß¹»²½§æ	ÍÓÞÎÐ
Ô»¿¼ ß¹»²½§ Ü»-½®·°¬·±²æ	ÜÌÍÝ ò Í·¬» Ý´»¿²«° Ð®±¹®¿³ ³
Ð®±¶»½¬ Ó¿²¿¹»®æ	Ò±¬ ®»°±®¬»¼
Í«°»®ª·-±®æ	Í¸¿® ©¸·¬» Ð®±¹®¿³
Ü·ª·-·±² Þ®¿²½¸æ	Í±«¬¸»®² Ý¿´·º±®²·¿ Í½¸±±´- ú Þ®±©²º·»´¼- Ñ«¬®»¿½¸
Í·¬» Ý±¼»æ	ìðìéèè
ß--»³¾´§æ	êï
Í»²¿¬»æ	íï
Í°»½·¿´ Ð®±¹®¿³æ	ïî
Í¬¿¬«-æ	ÒÑ
Í¬¿¬«- Ü¿¬»æ	Í½¸±±´ Ü·-¬®·½¬
Î»-¬®·½¬»¼ Ë-»æ	ïíçðêï
Ú«²¼·²¹æ	Ò±¬ ®»°±®¬»¼
Ô¿¬·¬«¼»æ	ííòçêîïï
Ô±²¹·¬«¼»æ	óïïéòîíïïè
ßÐÒæ	ÒÑÒÛ ÍÐÛÝ×Ú×ÛÜ
Ð¿-¬ Ë-»æ	ßÙÎ×ÝËÔÌËÎßÔ ó ÎÑÉ ÝÎÑÐÍô ÍÝØÑÑÔÍ ó ÛÔÛÓÛÒÌßÎÇ
Ð±¬»²¬·¿´ ÝÑÝæ	ßÎÍÛÒ×Ýô ÝØÔÑÎÜßÒÛô ÜÜÜô ÜÜÛô ÜÜÌô ÌÑÈßÐØÛÒÛô ß®-»²·½ô Ý¸´±®¼¿²»ô ÜÜÜô ÜÜÛô ÜÜÌô Ì±¨¿°¸»²»

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

Count: 2 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MORENO VALLEY	S109149568	PROPOSED ALESSANDRO ADMINISTRATION	ALESSANDRO BOULEVARD/CHARA STR	92553	ENVIROSTOR, SCH
MORENO VALLEY	S106568096	INDIAN MIDDLE SCHOOL	INDIAN AVENUE / IRIS AVENUE	92551	ENVIROSTOR, SCH

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Ì± ³¿·²¬¿·² ½«®®»²½§ ±º ¬¸» º±´´±©·²¹ º»¼»®¿´ ¿²¼ -¬¿¬» ¼¿¬¿¾¿-»-ò ÛÜÎ ½±²¬¿½¬- ¬¸» ¿°°®±°®·¿¬» ¹±ª»®²³»²¬¿´ ¿¹»²½§ ±² ¿ ³±²¬¸´§ ±® ¯«¿®¬»®´§ ¾¿-·-ò

Number of Days to Update: Ð®±ª·¼»- ½±²º·® ³¿¬·±² ¬¸¿¬ ÛÜÎ ·- ®»°±®¬·²¹ ®»½±®¼- ¬¸¿¬ ¸¿ª» ¾»»² «°¼¿¬»¼ ©·¬¸·² çð ¼¿§- º®± ³ ¬¸» ¼¿¬» ¬¸» ¹±ª»®²³»²¬ ¿¹»²½§ ³¿¼» ¬¸» ·²º±®³¿¬·±² ¿ª¿·´¿¾´» ¬± ¬¸» °«¾´·½ò

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

ÒÐÔæ Ò¿¬·±²¿´ Ð®·±®·¬§ Ô·-¬

Ò¿¬·±²¿´ Ð®·±®·¬·»- Ô·-¬ ø Í«°»®º«²¼÷ò Ì¸» ÒÐÔ ·- ¿ -«¾-»¬ ±º ÝÛÎÝÔ ¿²¼ ·²½´«¼»- ±ª»® ïôîðð -·¬»- º±® °®·±®·¬§ ½´»¿²«° «²¼»® ¬¸» Í«°»®º«²¼ Ð®±¹®¿³ò ÒÐÔ -·¬»- ³¿§ »²½±³°¿-- ®»´¿¬»¼ °®±°»®¬·»-ò ß- -«½¸ô ÛÜÎ °®±ª·¼»- °±´§¹±² ½±ª»®¿¹» º±® ïôðð ÒÐÔ -·¬» ¾±«²¼¿®·»- °®±¼«½»¼ ¾§ ÛÐßž- Û²ª·®±²³»²¬¿´ Ð¸±¬±¹®¿°¸·½ ײ¬»®°®»¬¿¬·±² Ý»²¬»® øÛÐ×Ý÷ ¿²¼ ®»¹·±²¿´ ÛÐß ±ºº·½»-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðíñðéñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðìñðëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬-æ ðìñïëñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïð

Í±«®½»æ ÛÐß
Ì»´»°¸±²»æ Òñß
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñðëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðìñïèñîðïê
Ü¿¬¿ λ´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÒÐÔ Í·¬» Þ±«²¼¿®·»-

Í±«®½»-æ

ÛÐßž- Û²ª·®±²³»²¬¿´ Ð¸±¬±¹®¿°¸·½ ײ¬»®°®»¬¿¬·±² Ý»²¬»® øÛÐ×Ý÷
Ì»´»°¸±²»æ îðîóëêìóéííí

ÛÐß λ¹·±² ï
Ì»´»°¸±²» êïéóçèðóïïìí

ÛÐß λ¹·±² í
Ì»´»°¸±²» îïëóèïìóëìïè

ÛÐß λ¹·±² ì
Ì»´»°¸±²» ìðìóëêîóèêðí

ÛÐß λ¹·±² ë
Ì»´»°¸±²» íïîóèèêóêèêê

ÛÐß λ¹·±² ïð
Ì»´»°¸±²» îðêóëëíóèëêè

ÛÐß λ¹·±² ê
Ì»´»°¸±²»æ îïìóêëëóêêëç

ÛÐß λ¹·±² é
Ì»´»°¸±²»æ çïíóëëïóéîêë

ÛÐß λ¹·±² è
Ì»´»°¸±²»æ íðíóíïîóêééì

ÛÐß λ¹·±² ç
Ì»´»°¸±²»æ ìïëóçìéóìîìê

Ð®±°±-»¼ ÒÐÔæ Ð®±°±-»¼ Ò¿¬·±²¿´ Ð®·±®·¬§ Ô·-¬ Í·¬»-

ß -·¬» ¬¸¿¬ ¸¿- ¾»»² °®±°±-»¼ º±® ´·-¬·²¹ ±² ¬¸» Ò¿¬·±²¿´ Ð®·±®·¬·»- Ô·-¬ ¬¸®±«¹¸ ¬¸» ·--«¿²½» ±º ¿ °®±°±-»¼ ®«´» ·² ¬¸» Ú»¼»®¿´ λ¹·-¬»®ò ÛÐß ¬¸»² ¿½½»°¬- °«¾´·½ ½±³³»²¬- ±² ¬¸» -·¬»ô ®»-°±²¼- ¬± ¬¸» ½±³³»²¬-ô ¿²¼ °´¿½»- ±² ¬¸» ÒÐÔ ¬¸±-» -·¬»- ¬¸¿¬ ½±²¬·²«» ¬± ³»»¬ ¬¸» ®»¯«·®»³»²¬- º±® ´·-¬·²¹ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðíñðéñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðìñðëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬-æ ðìñïëñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïð

Í±«®½»æ ÛÐß
Ì»´»°¸±²»æ Òñß
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñðëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðìñïèñîðïê
Ü¿¬» λ´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÒÐÔ Ô×ÛÒÍæ Ú»¼»®¿´ Í«°»®º«²¼ Ô·»²-

Ú»¼»®¿´ Í«°»®º«²¼ Ô·»²-ò Ë²¼»® ¬¸» ¿«¬¸±®·¬§ ¹®¿²¬»¼ ¬¸» ËÍÛÐß ¾§ ÝÛÎÝÔß ±º ïçèðô ¬¸» ËÍÛÐß ¸¿- ¬¸» ¿«¬¸±®·¬§ ¬± º·´» ´·»²- ¿¹¿·²-¬ ®»¿´ °®±°»®¬§ ·² ±®¼»® ¬± ®»½±ª»® ®»³»¼·¿´ ¿½¬·±² »¨°»²¼·¬«®»- ±® ©¸»² ¬¸» °®±°»®¬§ ±©²»® ®»½»·ª»- ¾»²»º·¬- º®±³ ®»³»¼·¿´ ¿½¬·±²ò ËÍÛÐß ½±³°·´»- ¿ ´·-¬·²¹ ±º º·´»¼ ²±¬·½»- ±º Í«°»®º«²¼ Ô·»²-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ïðñïëñïççï
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñðîñïççì
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬-æ ðíñíðñïççì
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ëê

Í±«®½»æ ÛÐß
Ì»´»°¸±²»æ îðîóëêìóìîêé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïï
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïïñîèñîðïï
Ü¿¬» λ´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» д¿²²»¼

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Ü»´·-¬»¼ ÒÐÔ® Ò¿¬·±²¿´ Ð®·±®·¬§ Ô·-¬ Ü»´»¬·±²-

Ì¸» Ò¿¬·±²¿´ Ñ·´ ¿²¼ Ø¿¦¿®¼±«- Í«¾-¬¿²½»- Ð±´´«¬·±² Ý±²¬·²¹»²½§ Ð´¿² øÒÝÐ÷ »-¬¿¾´·-¸»- ¬¸» ½®·¬»®·¿ ¬¸¿¬ ¬¸» ÛÐß «-»- ¬± ¼»´»¬» -·¬»- º®±³ ¬¸» ÒÐÔò ײ ¿½½±®¼¿²½» ©·¬¸ ìð ÝÚÎ íððòìîëò»÷ô -·¬»- ³¿§ ¾» ¼»´»¬»¼ º®±³ ¬¸» ÒÐÔ ©¸»®» ²± º«®¬¸»® ®»-°±²-» ·- ¿°°®±°®·¿¬»ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðîñðéñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðìñðëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬-æ ðìñïëñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïð
Í±«®½»æ ÛÐß
Ì»´»°¸±²»æ Òñß
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñðëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðìñïèñîðïê
Ü¿¬¿ λ´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

Federal CERCLIS list

ÚÛÜÛÎßÔ ÚßÝ×Ô×ÌÇæ Ú»¼»®¿´ Ú¿½·´·¬§ Í·¬» ײº±®³¿¬·±² ´·-¬·²¹

ß ´·-¬·²¹ ±º Ò¿¬·±²¿´ Ð®·±®·¬§ Ô·-¬ øÒÐÔ÷ ¿²¼ Þ¿-» λ¿´·¹²³»²¬ ¿²¼ Ý´±-«®» øÞÎßÝ÷ -·¬»- º±«²¼ ·² ¬¸» Ý±³°®»¸»²-·ª» Û²ª·®±²³»²¬¿´ λ-°±²-»ô ݱ³°»²-¿¬·±² ¿²¼ Ô·¿¾·´·¬§ ײº±®³¿¬·±² Í§-¬»³ øÝÛÎÝÔ×Í÷ Ü¿¬¿¾¿-»ò ©¸»®» ÛÐß Ú»¼»®¿´ Ú¿½·´·¬·»- λ-¬±®¿¬·±² ¿²¼ λ«-» Ѻº·½» ·- ·²ª±´ª»¼ ·² ½´»¿²«° ¿½¬·ª·¬·»-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ïïñïïñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñðëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬-æ ðëñîðñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïïë
Í±«®½»æ Û²ª·®±²³»²¬¿´ Ю±¬»½¬·±² ß¹»²½§
Ì»´»°¸±²»æ éðíóêðíóðêçë
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñðèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñîèñîðïê
Ü¿¬¿ λ´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÍÛÓÍæ Í«°»®º«²¼ Û²¬»®°®·-» Ó¿²¿¹»³»²¬ Í§-¬»³

ÍÛÓÍ øÍ«°»®º«²¼ Û²¬»®°®·-» Ó¿²¿¹»³»²¬ Í§-¬»³÷ ¬®¿½µ- ¸¿¦¿®¼±«- ©¿-¬» -·¬»-ô °±¬»²¬·¿´´§ ¸¿¦¿®¼±«- ©¿-¬» -·¬»-ô ¿²¼ ®»³»¼·¿´ ¿½¬·ª·¬·»- °»®º±®³»¼ ·² -«°°±®¬ ±º ÛÐßŽ- Í«°»®º«²¼ Ю±¹®¿³ ¿½®±-- ¬¸» ˲·¬»¼ ͬ¿¬»-ò ̸» ´·-¬ ©¿- º±®³»®´§ µ²±©² ¿- ÝÛÎÝÔ×Íô ®»²¿³»¼ ¬± ÍÛÓÍ ¾§ ¬¸» ÛÐß ·² ïðïë ̸» ´·-¬ ½±²¬¿·²- ¼¿¬¿ ±² °±¬»²¬·¿´´§ ¸¿¦¿®¼±«- ©¿-¬» -·¬»- ¬¸¿¬ ¸¿ª» ¾»»² ®»°±®¬»¼ ¬± ¬¸» ËÍÛÐß ¾§ -¬¿¬»-ô ³«²·½·°¿´·¬·»-ô °®·ª¿¬» ½±³°¿²·»- ¿²¼ °®·ª¿¬» °»®-±²-ô °«®-«¿²¬ ¬± Í»½¬·±² ïðí ±º ÝÛÎÝÔßò ̸·- ¼¿¬¿-»¬ ¿´-± ½±²¬¿·²- -·¬»- ©¸·½¸ ¿®» »·¬¸»® °®±°±-»¼ ¬± ±® ±² ¬¸» Ò¿¬·±²¿´ Ю·±®·¬·»- Ô·-¬ øÒÐÔ÷ ¿²¼ ¬¸» -·¬»- ©¸·½¸ ¿®» ·² ¬¸» -½®»»²·²¹ ¿²¼ ¿--»--³»²¬ °¸¿-» º±® °±--·¾´» ·²½´«-·±² ±² ¬¸» ÒÐÔò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðîñîíñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñîìñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬-æ ðìñîèñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íð
Í±«®½»æ ÛÐß
Ì»´»°¸±²»æ èððóìîìóçíìê
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñðëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñïèñîðïê
Ü¿¬¿ λ´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

Federal CERCLIS NFRAP site list

ÍÛÓÍóßÎÝØ×ÊÛæ Í«°»®º«²¼ Û²¬»®°®·-» Ó¿²¿¹»³»²¬ Í§-¬»³ ß®½¸·ª»

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

[illegible]

[illegible]

Federal RCRA CORRACTS facilities list

[illegible]

[illegible]

Federal RCRA non-CORRACTS TSD facilities list

[illegible]

[illegible]

Federal RCRA generators list

[illegible]

[illegible]

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal institutional controls / engineering controls registries

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ÛÎÒÍ Û³»®¹»²½§ Î»-°±²-» Ò±¬·º·½¿¬·±² Í§-¬»³
Û³»®¹»²½§ Î»-°±²-» Ò±¬·º·½¿¬·±² Í§-¬»³ò ÛÎÒÍ ®»½±®¼- ¿²¼ -¬±®»- ·²º±®³¿¬·±² ±² ®»°±®¬»¼ ®»´»¿-»- ±º ±·´ ¿²¼ ¸¿¦¿®¼±«- -«¾-¬¿²½»-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²ðíñîèñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñíðñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ðèñîðñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ëï

Í±«®½» Ò¿¬·±²¿´ Î»-°±²-» Ý»²¬»®ô Ë²·¬»¼ Í¬¿¬»- Ý±¿-¬ Ù«¿®¼
Ì»´»°¸±²» îðîóîêéóîêéë
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðéñíïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðéñïíñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ ß²²«¿´´§

State- and tribal - equivalent NPL

ÎÛÍÐÑÒÍÛ Í¬¿¬» Î»-°±²-» Í·¬»-
×¼»²¬·º·»- ½±²º·®³»¼ ®»´»¿-» -·¬»- ©¸»®» ÜÌÍÝ ·- ·²ª±´ª»¼ ·² ®»³»¼·¿¬·±² ±® ¿½¬·±²- ¸¿ª» ¾»»² ½±³°´»¬»¼ò
Ì¸»-» ½±²º·®³»¼ ®»´»¿-» -·¬»- ¿®» ¹»²»®¿´´§ ¸·¹¸ó°®±º·´» -·¬»- ¿²¼ ¸·¹¸ °±¬»²¬·¿´ ®·-µò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²ðíñðéñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñðçñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ðìñïíñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ìè

Í±«®½» Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ì»´»°¸±²» çïêóíîíóíìðð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðêñðìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ Ï«¿®¬»®´§

State- and tribal - equivalent CERCLIS

ÛÒÊ×ÎÑÍÌÑÎ Û²ª·®±Í¬±® Ü¿¬¿¾¿-»
Ì¸» Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´ù- øÜÌÍÝù-÷ Í·¬» Ó·¬·¹¿¬·±² ¿²¼ Þ®±©²º·»´¼- Î»«-» Ð®±¹®¿³ù- øÍÓÞÎÐù-÷
Û²ª·®±Í¬±® ¼¿¬¿¾¿-» ·¼»²¬·º·»- -·¬»- ¬¸¿¬ ¸¿ª» µ²±©² ½±²¬¿³·²¿¬·±² ±® -·¬»- º±® ©¸·½¸ ¬¸»®» ³¿§ ¾» ®»¿-±²- ¬± ·²ª»-¬·¹¿¬» º«®¬¸»®ò Ì¸» ¼¿¬¿¾¿-» ·²½´«¼»- ¬¸» º±´´±©·²¹ -·¬» ¬§°»-æ Ú»¼»®¿´ Í«°»®º«²¼ -·¬»- øÒ¿¬·±²¿´ Ð®·±®·¬·»- Ô·-¬ øÒÐÔ÷å Í¬¿¬» Î»-°±²-»ô ·²½´«¼·²¹ Ó·´·¬¿®§ Ú¿½·´·¬·»- ¿²¼ Í¬¿¬» Í«°»®º«²¼å Ê±´«²¬¿®§ Ý´»¿²«°å ¿²¼ Í½¸±±´ -·¬»-ò Ì¸» ¼¿¬¿¾¿-» °®±ª·¼»- ·²º±®³¿¬·±² ·²½´«¼·²¹ ¬¸» ²¿³»ô ¬§°»ô -¬¿¬«-ô ´±½¿¬·±²ô ¿²¼ ©¸»¬¸»® ³·¬·¹¿¬·±² ·- ²»½»--¿®§ ·² ½¿-»- ©¸»®» ±²-·¬» ©±®µ ·- ²»»¼»¼ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²ðíñðéñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñðçñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ðìñïíñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ìè

Í±«®½» Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ì»´»°¸±²» çïêóíîíóíìðð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðêñðìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ Ï«¿®¬»®´§

State and tribal landfill and/or solid waste disposal site lists

ÍÉÚñÔÚ øÍÉ×Í÷ Í±´·¼ É¿-¬» ×²º±®³¿¬·±² Í§-¬»³
ß½¬·ª»ô Ý´±-»¼ ¿²¼ ×²¿½¬·ª» Ô¿²¼º·´´-ò ÍÉÚñÔÚ ®»½±®¼- ¬§°·½¿´´§ ½±²¬¿·² ¿² ·²ª»²¬±®§ ±º -±´·¼ ©¿-¬» ¼·-°±-¿´ º¿½·´·¬·»- ±® ´¿²¼º·´´- ·² ¿ °¿®¬·½«´¿® -¬¿¬»ò Ü»°»²¼·²¹ ±² ¬¸» -¬¿¬»ô ¬¸»-» ³¿§ ¾» ¿½¬·ª» ±® ·²¿½¬·ª» º¿½·´·¬·»- ±® ±°»² ¼«³°- ¬¸¿¬ º¿·´»¼ ¬± ³»»¬ ¬¸» ÎÝÎß Í«¾¬·¬´» Ü Ý®·¬»®·¿ º±® ¼·-°±-¿´ -·¬»-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²ðîñïëñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðîñïêñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ðíñîðñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» íí

Í±«®½» Ü»°¿®¬³»²¬ ±º Î»-±«®½»- Î»½§½´·²¹ ¿²¼ Î»½±ª»®§
Ì»´»°¸±²» çïêóíîïóêïîð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðëñïéñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðèñîçñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ Ï«¿®¬»®´§

State and tribal leaking storage tank lists

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÔËÍÌ® Ù»±¬®¿½µ»®¿- Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Ú«»´ Ì¿²µ Î»°±®¬

Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ ×²½·¼»²¬ Î»°±®¬- ÔËÍÌ ®»½±®¼- ½±²¬¿·² ¿² ·²ª»²¬±®§ ±º ®»°±®¬»¼ ´»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ ·²½·¼»²¬- ò Ò±¬ ¿´´ -¬¿¬»- ³¿·²¬¿·² ¬¸»-» ®»½±®¼- ¿²¼ ¬¸» ·²º±®³¿¬·±² -¬±®»¼ ª¿®·»- ¾§ -¬¿¬»ò Ú±® ³±®» ·²º±®³¿¬·±² ¿ ¿ °¿®¬·½«´¿® ´»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»ô °´»¿-» ½±²¬¿½¬ ¬¸» ¿°°®±°®·¿¬» ®»¹«´¿¬±®§ ¿¹»²½§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðíñïìñîðïê — Í±«®½» æ Í¬¿¬» É¿¬»® Î»-±«®½»- Ý±²¬®±´ Þ±¿®¼

DUPLICATED?

Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ æ ðíñïêñîðïê — Ì»´»°¸±²»æ ¨»® ¨¨¨

Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñïêñîðïê — Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñïêñîðïê

Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ êï — Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîéñîðïê

Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÔËÍÌ ÎÛÙ ëæ Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ü¿¬¿¾¿-»

Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ´±½¿¬·±²- ·² ß´¿³»¼¿ô ß´°·²»ô ß³¿¼±®ô Þ«¬¬»ô Ý±´«-¿ô Ý±²¬®¿ Ý±-¬¿ô Ý¿´¿ª»®¿-ô Û´ Ü±®¿¼±ô Ú®»-²±ô Ù´»²²ô Ø«³¾±´¼¬ô Ô¿µ»ô Ô¿--»²ô Ó¿¼»®¿ô Ó»²¼±½·²±ô Ó±¼±½ô Ò¿°¿ô Ò»ª¿¼¿ô Ð´¿½»®ô Ð´«³¿-ô Í¿½®¿³»²¬±ô Í¿² Ö±¿¯«·²ô Í¸¿-¬¿ô Í±´¿²±ô Í±²±³¿ô Í«¬¬»®ô Ì»¸¿³¿ô Ì®·²·¬§ô Ç±´±ô Ç«¾¿ ½±«²¬·»-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðçñðîñîððè — Í±«®½» æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ý»²¬®¿´ Ê¿´´»§ Î»¹·±² øëù

Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ æ ðçñðçñîððè — Ì»´»°¸±²»æ çïêóìêìóìêìë

Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðéñîéñîððè — Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðéñðïñîðïï

Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ç — Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïðñïìñîðïï

Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÔËÍÌ ÎÛÙ ìæ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ô»¿µ Ô±¹

Ô±- ß²¹»´»-ô Ê»²¬«®¿ ½±«²¬·»-ò Ú±® ³±®» ·²º±®³¿¬·±² ±² ¿ °¿®¬·½«´¿® -·¬»ô °´»¿-» ½±²¬¿½¬ ¬¸» ¿°°®±°®·¿¬» ®»¹«´¿¬±®§ ¿¹»²½§ò ÔËÍÌ ¼¿¬¿¾¿-»ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðçñðéñîððì — Í±«®½» æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ô±- ß²¹»´»- Î»¹·±² øìù

Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ æ ðçñðéñîððì — Ì»´»°¸±²»æ îïíóëéêóêéïð

Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïðñïîñîððì — Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðçñðêñîðïï

Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íë — Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïîñïçñîðïï

Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÔËÍÌ ÎÛÙ íæ Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ü¿¬¿¾¿-»

Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ ´±½¿¬·±²- ·² Ó±²¬»®»§ô Í¿² Þ»²·¬±ô Í¿² Ô«·- Ñ¾·-°±ô Í¿²¬¿ Þ¿®¾¿®¿ô Í¿²¬¿ Ý®«¦ ½±«²¬·»-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðëñïçñîððí — Í±«®½» æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ý»²¬®¿´ Ý±¿-¬ Î»¹·±² øíù

Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ æ ðëñïçñîððí — Ì»´»°¸±²»æ èðëóëìîóìêíé

Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðêñðëñîððí — Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðéñïèñîðïï

Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïé — Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïïñðïñîðïï

Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÔËÍÌ ÎÛÙ îæ Ú«»´ Ô»¿µ Ô·-¬

Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ ´±½¿¬·±²- ·² ß´¿³»¼¿ô Ý±²¬®¿ Ý±-¬¿ô Ó¿®·²ô Ò¿°¿ô Í¿² Ú®¿²½·-½±ô Í¿² Ó¿¬»±ô Í¿²¬¿ Ý´¿®¿ô Í±´¿²±ô Í±²±³¿ ½±«²¬·»-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðçñíðñîððì — Í±«®½» æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Í¿² Ú®¿²½·-½± Þ¿§ Î»¹·±² øîù

Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ æ ïðñîðñîððì — Ì»´»°¸±²»æ ëïðóêîîóîìíí

Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïïñïçñîððì — Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðçñïçñîðïï

Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íð — Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðïñðîñîðïî

Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÔËÍÌ ÎÛÙ ïæ ß½¬·ª» Ì±¨·½ Í·¬» ×²ª»-¬·¹¿¬·±²

Ü»´ Ò±®¬» ¿²¼ Ø«³¾±´¼¬ Ý±«²¬·»-ò Ú±® ³±®» ·²º±®³¿¬·±² ±² ¿ °¿®¬·½«´¿® -·¬»ô °´»¿-» ½±²¬¿½¬ ¬¸» ¿°°®±°®·¿¬» ®»¹«´¿¬±®§ ¿¹»²½§ò ÔËÍÌ ¼¿¬¿¾¿-»ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðîñðïñîððï — Í±«®½» æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ò±®¬¸ Ý±¿-¬ øïù

Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ æ ðîñîèñîððï — Ì»´»°¸±²»æ éðéóëéêóîîîð

Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðíñïëñîððï — Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðèñïèñîðïï

Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïè — Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïïñïíñîðïï

Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÔË Í Ì Î ÛÙ êÊ® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ý¿» Ô·¬·²¹
Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ´±½¿¬·±² ×²§±ô Õ»®²ô Ô± ß²¹»´»ô Ó±²±ô Í¿² Þ»®²¿®¼·²± ½±«²¬·»

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðêñðéñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðêñðéñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðêñîçñîðïë
Ò« ³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ îî

Í±«®½»æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ê·½¬±®ª·´´» Þ®¿²½¸ Ñºº·½» øê÷
Ì»´»°¸±²»æ éêðóîìïóêëèí
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðçñïïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïîñîêñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

ÔË Í Ì Î ÛÙ é® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ý¿» Ô·¬·²¹
Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ´±½¿¬·±² ×³°»®·¿´ô Î·ª»®·¼»ô Í¿² Ü·»¹± Í¿²¬¿ Þ¿®¾¿®¿ ½±«²¬·»

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðïñîêñîðïí
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñîêñîðïí
Ü¿¬» Ó¿¼» Ì»´»±´»¼»¿» Î»°±®¬æ ðíñîìñîðïí
Ò« ³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ îé

Í±«®½»æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ý±´±®¿¼± Î·ª»® Þ¿·² Î»¹·±² øé÷
Ì»´»°¸±²»æ éêðóíìêóéìçï
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðèñðìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïïñïìñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

ÔË Í Ì Î ÛÙ è® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ
Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Í¿²¬¿ ß²¿ Î»¹·±² øè÷ Ú±® ³±®» ·²º±®³¿¬·±²ô °´»¿» ®»º»®
¬± ¬¸» Í¬¿¬» É¿¬»® Î»±«®½» Ý±²¬®±´ Þ±¿®¼ù ÔËÍÌ ´·¬·²¹ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðîñïìñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñïëñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðíñîèñîðïë
Ò« ³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ ìï

Í±«®½»æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Í¿²¬¿ ß²¿ Î»¹·±² øè÷
Ì»´»°¸±²»æ çðçóéèîóìïíð
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïïñîèñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

ÔË Í Ì Î ÛÙ êÔ® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ý¿» Ô·¬·²¹
Ú±® ³±®» ·²º±®³¿¬·±²ô °´»¿» ®»º»® ¬± ¬¸» Í¬¿¬» É¿¬»® Î»±«®½» Ý±²¬®±´ Þ±¿®¼ù ÔËÍÌ ´·¬·²¹ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðçñðçñîðïí
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðçñïðñîðïí
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ïðñðéñîðïí
Ò« ³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ îé

Í±«®½»æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ô± ß²¹»´» Î»¹·±² øê÷
Ì»´»°¸±²»æ ëíðóëìïóëêëî
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðçñïïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïîñîêñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

ÔË Í Ì Î ÛÙ ç® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Î»°±®¬
Ñ®¿²¹» Ý±«²¬§ô Î·ª»®·¼»ô Í¿² Ü·»¹± ½±«²¬·»ò Ú±® ³±®» ·²º±®³¿¬·±²ô °´»¿» ®»º»® ¬± ¬¸» Í¬¿¬» É¿¬»® Î»±«®½»
Ý±²¬®±´ Þ±¿®¼ù ÔËÍÌ ´·¬·²¹ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðíñðîñîðïð
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñïîñîðïð
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðëñîðñîðïð
Ò« ³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ îè

Í±«®½»æ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Í¿² Ü·»¹± Î»¹·±² øç÷
Ì»´»°¸±²»æ èëèóìêéóîçèî
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðçñîêñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðïñðçñîðïé
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

×ÒÜ×ßÒ ÔË Í Ì Î ïæ Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ ±² ×²¼·¿² Ô¿²¼
ÔË Í Ì ±² ×²¼·¿² ´¿²¼ ·² Ý±´±®¿¼±ô Ó±²¬¿²¿ô Ò±®¬¸ Ü¿µ±¬¿ô Í±«¬¸ Ü¿µ±¬¿ô Ë¬¿¸ ¿²¼ É§±³·²¹ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ïïñîìñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïîñðìñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðïñîçñîðïê
Ò« ³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ ìí

Í±«®½»æ ÛÐß Î»¹·±² ì
Ì»´»°¸±²»æ ìðìóëêîóèêéî
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîéñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Í»³·óß²²«¿´´§

×ÒÜ×ßÒ ÔË Í Ì Î ïðæ Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ ±² ×²¼·¿² Ô¿²¼
ß´¿µ¿ô ×¼¿¸±ô Ñ®»¹±² ¿²¼ É¿¸·²¹¬±²ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ïðñîéñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïðñîçñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðïñðìñîðïê
Ò« ³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ êé

Í±«®½»æ ÛÐß Î»¹·±² ïð
Ì»´»°¸±²»æ îðêóëëíóîèëé
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîçñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ˣÒÜˣßÒ ÔËÍÌ Î ïð® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ×²¼·¿² Ô¿²¼
ÔËÍÌ- ±² ×²¼·¿² ´¿²¼ ·² ß´¿-µ¿ô ×¼¿¸±ô Ñ®»¹±² ¿²¼ É¿-¸·²¹¬±²ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®-·±²® ðïñðéñîðïê · Í±«®½»® ÛÐß Î»¹·±² ïð
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ® ðïñðèñîðïê · Ì»´»°¸±²»® îðêóëëíóïèëé
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-® ðîñïèñîðïê · Ô¿-¬ ÛÜÎ Ý±²¬¿½¬® ðìñîçñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»® ìï · Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬® ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§® Ï«¿®¬»®´§

ˣÒÜˣßÒ ÔËÍÌ Î ç® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ×²¼·¿² Ô¿²¼
ÔËÍÌ- ±² ×²¼·¿² ´¿²¼ ·² ß®·¦±²¿ô Ý¿´·º±®²·¿ô Ò»© Ó»¨·½± ¿²¼ Ò»ª¿¼¿

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®-·±²® ðïñðèñîðïë · Í±«®½»® ÛÐß Î»¹·±² ç
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ® ðïñðèñîðïë · Ì»´»°¸±²»® ìïëóçéîóíîéî
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-® ðîñðçñîðïë · Ô¿-¬ ÛÜÎ Ý±²¬¿½¬® ðìñîéñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»® íî · Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬® ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§® Ï«¿®¬»®´§

ˣÒÜˣßÒ ÔËÍÌ Î ë® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ×²¼·¿² Ô¿²¼
Ô»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ- ´±½¿¬»¼ ±² ×²¼·¿² Ô¿²¼ ·² Ó·½¸·¹¿²ô Ó·²²»-±¬¿ ¿²¼ É·-½±²-·²ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®-·±²® ïïñðìñîðïë · Í±«®½»® ÛÐßô Î»¹·±² ë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ® ïïñïíñîðïë · Ì»´»°¸±²»® íïîóèèêóéëìç
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-® ðïñðìñîðïê · Ô¿-¬ ÛÜÎ Ý±²¬¿½¬® ðìñîéñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»® ëî · Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬® ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§® Ê¿®·»-

ˣÒÜˣßÒ ÔËÍÌ Î é® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ×²¼·¿² Ô¿²¼
ÔËÍÌ- ±² ×²¼·¿² ´¿²¼ ·² ×±©¿ô Õ¿²-¿-ô ¿²¼ Ò»¾®¿-µ¿

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®-·±²® ðíñíðñîðïê · Í±«®½»® ÛÐß Î»¹·±² é
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ® ðìñðèñîðïê · Ì»´»°¸±²»® çïíóëëïóéðð
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-® ðêñîïñîðïê · Ô¿-¬ ÛÜÎ Ý±²¬¿½¬® ðìñîçñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»® ëë · Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬® ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§® Ê¿®·»-

ˣÒÜˣßÒ ÔËÍÌ Î è® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ×²¼·¿² Ô¿²¼
ÔËÍÌ- ±² ×²¼·¿² ´¿²¼ ·² Ý±´±®¿¼±ô Ó±²¬¿²¿ô Ò±®¬¸ Ü¿µ±¬¿ô Í±«¬¸ Ü¿µ±¬¿ô Ë¬¿¸ ¿²¼ É§±³·²¹ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®-·±²® ïðñïî ïñîðïë · Í±«®½»® ÛÐß Î»¹·±² è
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ® ïðñî ïñîðïë · Ì»´»°¸±²»® íðíóíïîóêíéï
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-® ðïñïèñîðïê · Ô¿-¬ ÛÜÎ Ý±²¬¿½¬® ðìñîéñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»® ïïè · Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬® ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§® Ï«¿®¬»®´§

ˣÒÜˣßÒ ÔËÍÌ Î ê® Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ×²¼·¿² Ô¿²¼
ÔËÍÌ- ±² ×²¼·¿² ´¿²¼ ·² Ò»© Ó»¨·½± ¿²¼ Ñµ´¿¸±³¿ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®-·±²® ðèñîðñîðïë · Í±«®½»® ÛÐß Î»¹·±² ê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ® ïðñïéñîðïë · Ì»´»°¸±²»® îïìóêëêóêçé
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-® ðîñïèñîðïê · Ô¿-¬ ÛÜÎ Ý±²¬¿½¬® ðìñîçñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»® ïïï · Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬® ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§® Ê¿®·»-

ÍÔˣÝ® Í¬¿¬» ©·¼» ÍÔˣÝ Ý¿-»-
Ì¸» ÍÔˣÝ øÍ°·´´- Ô»¿µ- ×²ª»-¬·¹¿¬·±²- ¿²¼ Ý´»¿²«°-÷ ®»½±®¼ ¬®¿½µ- ¿½¬·ª» ¿²¼ ²±²¿½¬·ª» -·¬»- ©¸»®» ¬¸» ×Ü»°¿®¬³»²¬ ©¿- ·²ª±´ª»¼ ·² ¬¸» ½´»¿²«°ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®-·±²® ðíñïìñîðïê · Í±«®½»® Í¬¿¬» É¿¬»® Î»-±«®½»- Ý±²¬®±´ Þ±¿®¼
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ® ðíñïëñîðïê · Ì»´»°¸±²»® èêêóìèðóíîè
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-® ðëñïêñîðïê · Ô¿-¬ ÛÜÎ Ý±²¬¿½¬® ðíñïêñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»® êï · Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬® ðéñðêñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§® Ê¿®·»-

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÍÔ×Ý ÎÛÙ ï⁄ ß½¬·ª» Ì±¨·½ Í·¬» ×²ª»-¬·¹¿¬·±²-
Ì¸» ÍÔ×Ý øÍ°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±²- ¿²¼ Ý´»¿²«°÷ °®±¹®¿³ ·- ¼»-·¹²»¼ ¬± °®±¬»½¬ ¿²¼ ®»-¬±®» ©¿¬»® ¯«¿´·¬§
°®±³ -°·´´-ô ´»¿µ-ô ¿²¼ -·³·´¿® ¼·-½¸¿®¹»-·

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²⁄ ðìñðíñîðîí
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ⁄ ðìñðéñîðîí
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-⁄ ðìñîëñîðîí
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»⁄ ïè

Í±«®½»⁄ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ô Ò±®¬¸ Ý±¿-¬ Î»¹·±² øï÷
Ì»´»°¸±²»⁄ éðéóëéêóîîî
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬⁄ ðèñðïñîðîí
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬⁄ ïïñïìñîðîí
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§⁄ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÍÔ×Ý ÎÛÙ î⁄ Í°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±² ú Ý´»¿²«° Ý±-¬ Î»½±ª»®§ Ô·-¬·²¹
Ì¸» ÍÔ×Ý øÍ°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±²- ¿²¼ Ý´»¿²«°÷ °®±¹®¿³ ·- ¼»-·¹²»¼ ¬± °®±¬»½¬ ¿²¼ ®»-¬±®» ©¿¬»® ¯«¿´·¬§
°®±³ -°·´´-ô ´»¿µ-ô ¿²¼ -·³·´¿® ¼·-½¸¿®¹»-·

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²⁄ ðçñíðñîðïì
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ⁄ ïðñîðñîðïì
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-⁄ ïïñïçñîðïì
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»⁄ íð

Í±«®½»⁄ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Í¿² Ú®¿²½·-½± Þ¿§ Î»¹·±² øî÷
Ì»´»°¸±²»⁄ ëïðóêîîóîíéé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬⁄ ðçñïçñîðïï
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬⁄ ðïñðïñîðïî
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§⁄ Ï«¿®¬»®´§

ÍÔ×Ý ÎÛÙ í⁄ Í°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±² ú Ý´»¿²«° Ý±-¬ Î»½±ª»®§ Ô·-¬·²¹
Ì¸» ÍÔ×Ý øÍ°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±²- ¿²¼ Ý´»¿²«°÷ °®±¹®¿³ ·- ¼»-·¹²»¼ ¬± °®±¬»½¬ ¿²¼ ®»-¬±®» ©¿¬»® ¯«¿´·¬§
°®±³ -°·´´-ô ´»¿µ-ô ¿²¼ -·³·´¿® ¼·-½¸¿®¹»-·

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²⁄ ðëñïèñîððê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ⁄ ðëñïèñîððê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-⁄ ðêñïëñîððê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»⁄ îè

Í±«®½»⁄ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ý»²¬®¿´ Ý±¿-¬ Î»¹·±² øí÷
Ì»´»°¸±²»⁄ èðëóëìçóíïìé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬⁄ ðéñïèñîðïï
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬⁄ ïðñíïñîðïï
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§⁄ Í»³·óß²²«¿´´§

ÍÔ×Ý ÎÛÙ ì⁄ Í°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±² ú Ý´»¿²«° Ý±-¬ Î»½±ª»®§ Ô·-¬·²¹
Ì¸» ÍÔ×Ý øÍ°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±²- ¿²¼ Ý´»¿²«°÷ °®±¹®¿³ ·- ¼»-·¹²»¼ ¬± °®±¬»½¬ ¿²¼ ®»-¬±®» ©¿¬»® ¯«¿´·¬§
°®±³ -°·´´-ô ´»¿µ-ô ¿²¼ -·³·´¿® ¼·-½¸¿®¹»-·

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²⁄ ïïñïéñîðïð
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ⁄ ïïñïèñîðïð
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-⁄ ðïñðìñîðïï
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»⁄ ìé

Í±«®½»⁄ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ô±- ß²¹»´»- Î»¹·±² øì÷
Ì»´»°¸±²»⁄ îïíóëéêóêêðð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬⁄ ðéñïèñîðïï
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬⁄ ïðñïéñîðïï
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§⁄ Ê¿®·»-

ÍÔ×Ý ÎÛÙ ë⁄ Í°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±² ú Ý´»¿²«° Ý±-¬ Î»½±ª»®§ Ô·-¬·²¹
Ì¸» ÍÔ×Ý øÍ°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±²- ¿²¼ Ý´»¿²«°÷ °®±¹®¿³ ·- ¼»-·¹²»¼ ¬± °®±¬»½¬ ¿²¼ ®»-¬±®» ©¿¬»® ¯«¿´·¬§
°®±³ -°·´´-ô ´»¿µ-ô ¿²¼ -·³·´¿® ¼·-½¸¿®¹»-·

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²⁄ ðìñðïñîððë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ⁄ ðìñðëñîððë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-⁄ ðìñîïñîððë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»⁄ ïê

Í±«®½»⁄ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ý»²¬®¿´ Ê¿´´»§ Î»¹·±² øë÷
Ì»´»°¸±²»⁄ çïêóìêìóíîçï
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬⁄ ðçñïîñîðïï
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬⁄ ïîñîêñîðïï
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§⁄ Í»³·óß²²«¿´´§

ÍÔ×Ý ÎÛÙ êÞ⁄ Í°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±² ú Ý´»¿²«° Ý±-¬ Î»½±ª»®§ Ô·-¬·²¹
Ì¸» ÍÔ×Ý øÍ°·´´-ô Ô»¿µ-ô ×²ª»-¬·¹¿¬·±²- ¿²¼ Ý´»¿²«°÷ °®±¹®¿³ ·- ¼»-·¹²»¼ ¬± °®±¬»½¬ ¿²¼ ®»-¬±®» ©¿¬»® ¯«¿´·¬§
°®±³ -°·´´-ô ´»¿µ-ô ¿²¼ -·³·´¿® ¼·-½¸¿®¹»-·

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²⁄ ðëñîìñîððë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ⁄ ðëñîëñîððë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-⁄ ðêñïêñîððë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»⁄ îî

Í±«®½»⁄ Ý¿´·º±®²·¿ Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ Ê·½¬±®ª·´´» Þ®¿²½¸
Ì»´»°¸±²»⁄ êïçóîìïóêìèí
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬⁄ ðçñïîñîðïï
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬⁄ ïîñîêñîðïï
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§⁄ Í»³·óß²²«¿´´§

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal registered storage tank lists

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ß Í Ì ß¾±ª»¹®±«²¼ Ð»¬®±´»«³ Í¬±®¿¹» Ì¿²µ Ú¿½·´·¬·»-
ß ´·-¬·²¹ ±º ¿¾±ª»¹®±«²¼ -¬±®¿¹» ¬¿²µ °»¬®±´»«³ -¬±®¿¹» ¬¿²µ ´±½¿¬·±²-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðèñðïñîððç
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðçñïðñîððç
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïðñðïñîððç
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ îï
Í±«®½»æ Ý¿´·º±®²·¿ Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±² ß¹»²½§
Ì»´»°¸±²»æ çïêóíîéóëðçî
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñïïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñïïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ì«®»¹«´¿®´§

ݮܫßÒ Ë Í Ì Îé Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ײ¼·¿² Ô¿²¼
Ì ¸» ײ¼·¿² Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ øËÍÌ÷ ¼¿¬¿¾¿-» °®±ª·¼»- ´±½¿¬·±²- ±º «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ- ±² ײ¼·¿² ´¿²¼ ·² ÛÐß Î»¹·±² é øß®·¦±²¿ô Ý¿´·º±®²·¿ô Ø¿©¿·· ¿²¼ Ò»ª¿¼¿÷ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðçñîìñîðïì
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïïñîëñîðïì
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðîñïçñîðïë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ êë
Í±«®½»æ ÛÐß Î»¹·±² é
Ì»´»°¸±²»æ ìïëóçéîóíìéé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðîñîìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñðêñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ݮܫßÒ Ë Í Ì Îê Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ײ¼·¿² Ô¿²¼
Ì ¸» ײ¼·¿² Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ øËÍÌ÷ ¼¿¬¿¾¿-» °®±ª·¼»- ´±½¿¬·±²- ±º «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ- ±² ײ¼·¿² ´¿²¼ ·² ÛÐß Î»¹·±² ê øÔ±«·-·¿²¿ô ß®µ¿²-¿-ô Ñµ´¿¸±³¿ô Ò»© Ó»¨·½±ô Ì»¨¿- ¿²¼ êë Ì®·¾»-÷ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðèñîðñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïðñíðñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðîñïèñîðïë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïïï
Í±«®½»æ ÛÐß Î»¹·±² ê
Ì»´»°¸±²»æ îïìóêêëóêëèç
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîçñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Í»³·ó߲²«¿´´§

ݮܫßÒ Ë Í Ì Îë Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ײ¼·¿² Ô¿²¼
Ì ¸» ײ¼·¿² Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ øËÍÌ÷ ¼¿¬¿¾¿-» °®±ª·¼»- ´±½¿¬·±²- ±º «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ- ±² ײ¼·¿² ´¿²¼ ·² ÛÐß Î»¹·±² ë øÓ·½¸·¹¿²ô Ó·²²»-±¬¿ ¿²¼ É·-½±²-·² ¿²¼ Ì®·¾¿´ Ò¿¬·±²-÷ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ïïñðèñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïïñïîñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðïñðìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ëî
Í±«®½»æ ÛÐß Î»¹·±² ë
Ì»´»°¸±²»æ íïîóèèêóêïêê
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ݮܫßÒ Ë Í Ì Îï Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ײ¼·¿² Ô¿²¼
Ì ¸» ײ¼·¿² Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ øËÍÌ÷ ¼¿¬¿¾¿-» °®±ª·¼»- ´±½¿¬·±²- ±º «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ- ±² ײ¼·¿² ´¿²¼ ·² ÛÐß Î»¹·±² ï øÝ±²²»½¬·½«¬ô Ó¿·²»ô Ó¿--¿½¸«-»¬¬-ô Ò»© Ø¿³°-¸·®»ô Î¸±¼» ×-´¿²¼ô Ê»®³±²¬ ¿²¼ ïð Ì®·¾¿´ Ò¿¬·±²-÷ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ïðñîðñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïðñîçñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðïñïèñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ èê
Í±«®½»æ ÛÐß Î»¹·±²ô ï
Ì»´»°¸±²»æ êïéóçïèóïïïï
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîçñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ݮܫßÒ Ë Í Ì Îì Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ- ±² ײ¼·¿² Ô¿²¼
Ì ¸» ײ¼·¿² Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ øËÍÌ÷ ¼¿¬¿¾¿-» °®±ª·¼»- ´±½¿¬·±²- ±º «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ- ±² ײ¼·¿² ´¿²¼ ·² ÛÐß Î»¹·±² ì øß´¿¾¿³¿ô Ú´±®·¼¿ô Ù»±®¹·¿ô Õ»²¬«½µ§ô Ó·--·--·°°·ô Ò±®¬¸ Ý¿®±´·²¿ô Í±«¬¸ Ý¿®±´·²¿ô Ì»²²»--»» ¿²¼ Ì®·¾¿´ Ò¿¬·±²-÷

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ïïñîïñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïîñðïñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðïñðìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íì
Í±«®½»æ ÛÐß Î»¹·±² ì
Ì»´»°¸±²»æ ìðìóëêîóçìîì
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîçñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Í»³·ó߲²«¿´´§

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

[illegible]

[illegible]

[illegible]

State and tribal voluntary cleanup sites

[illegible]

[illegible]

[illegible]

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal Brownfields sites

[illegible]

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

[illegible]

Local Lists of Landfill / Solid Waste Disposal Sites

[illegible]

[illegible]

[illegible]

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðîñîðñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðîñî íñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðëñïêñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» èí
Í±«®½»æ ײ¼¿¼¿ Ü»°¿®¬³»²¬ Þ±¿®¼
Ì»´»°¸±²»æ çïêóíìïóêìíî
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñï íñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñîîñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÝÒÜßÒ Ñݧ Î»°±®¬ ±² Ý¿´·º±®²·¿ Ü«³° Í»½¬·±² ¼¿¬¿¾¿-»
Ô±½¿¬·±² ±º Ô»²¼ ¼« Ì·¬»

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ïîñíïñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ïîñîðñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðïñîîñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ëî
Í±«®½»æ Ý²¿®´»² Ü»°¿®¬³»²¬ ß¹»²½§
Ì»´»°¸±²»æ éðíóíðèóìîìë
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîêñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÜÛÞÎ ÍÎ ÎÛÌÑ ç Ì±®®»- Ó¿¬»²¿´ Ì»-»®ª¿¬·±² Ü« ³ ·» Ô±½¿¬·±²-
ß ·-¬ ±º ´·²¼ ¼« ³ -·¬»- ¬¸» Ì±®®»- Ó¿¬»²¿´ Î»-»®ª¿¬·±² Ý±®®»½¬·±² ¿²¼ ¼·--»³·²¿¬·±² ·²º±®³¿¬·±²
Ý±«²¬§ ¿²¼ ²±²¸»®¿¼ Ý±«²¬§ Ý±¼»

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðïñïîñîðïç
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðëñðéñîðïç
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðçñîïñîðïç
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ïíé
Í±«®½»æ ÛÐßô Î»¹·±² ç
Ì»´»°¸±²»æ ìïëçìéóìîîç
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïîñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÑÜ× Ñ°»² Ü« ³ Ë²ª»²¬±®§
ß² ±°»² ¼« ³ ·- ¼»º·²»¼ ¿- ¿ ¼·-°±-¿´ º¿½·´·¬§ ¬¸¿¬ ¼±»- ²±¬ ½±³°´§ ©·¬¸ ¬¸» ®»¯«·®»³»²¬- ±º Ü·¬·¬´» îëè ±º Ü·¬·¬´» îëè
Í«¾¬·¬´» Ü Ý®·¬»®·¿

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðêñíðñïçèë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðèñðçñîððì
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðçñïéñîððì
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» íç
Í±«®½»æ Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±² ß¹»²½§
Ì»´»°¸±²»æ èððóìïìóïìîê
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðêñðçñîððì
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ Òñß
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

Local Lists of Hazardous waste / Contaminated Sites

ËÍ ØÍ ÝÜÔ Ý´¿²¼»-¬·²» Ü®«¹ Ô¿¾-
ß ´·-¬·²¹ ±º ½´¿²¼»-¬·²» ¼®«¹ ´¿¾ ´±½¿¬·±²- ·²½´«¼»¼ ·² ¬¸» ÜÛß Ò¿¬·±²¿´ Ý´¿²¼»-¬·²» Ô¿¾±®¿¬±®§
Î»¹·-¬®§

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðçñïêñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ïîñîíñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðîñïêñîðïë
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» éê
Í±«®½»æ Ü®«¹ Û²º±®½»³»²¬ ß¼³·²·-¬®¿¬·±²
Ì»´»°¸±²»æ îðîóíðéóîððð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðêñïîñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñîïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ØÍ Ì Ý§ß Í«°»®º«²¼ Þ¿²¼ ²»¼ ß½¬·±² Ü·-¬®·½¬
Ì¸» Ý»²¬»®- ¿²¼ ´»¹¿´ ¾¿-·- º±® ¬¸» ¿½¬·±² ±º ³»¬¸¿³°¸»¬¿³·²» ïçÿ Ý±²¬®±´
ÛÐß ®»»² ¿´´ ´·-¬- ·² ¬¸» Ý±«²¬§ ¿²¼ ³¿¬»®·¿´- ¸¿ª» ¾»»² ®»³±ª»¼ ¾§ ¬¸» Ý±²¬®±´ ±º Ý±«²¬§ ¿²¼ Ý¿´·º±®²·¿
-¬¿¬» ¿¹»²½·»- ¿²¼ -¿³°´»- ÛÐß ÍÎÎ ÍÎ

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðèñðèñîððé
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðèñðîñîððê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðèñïìñîððê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ïî
Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ì»´»°¸±²»æ çïêóíîíóíìðð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðïñïíñîðïç
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðëñîéñîðïç
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÍÝØ Í½¸±±´ Ð®±°»®¬§ Û ª¿´«¿¬·±² Ð®±¹®¿³
Ì¸·- ½¿¬»¹±®§ ½±²¬¿·²- °®±°±-»¼ ¿²¼ »¨·-¬·²¹ -½¸±±´ -·¬»- ¬¸¿¬ ¿®» ¾»·²¹ »ª¿´«¿¬»¼ ¾§ ÜÌÍÝ º±® ®»´»¿-»-
³¿¬»®·¿´- ¬¸¿¬ ³¿§ °±-» ¿ ¬¸®»¿¬ ¬± °«¾´·½ ¸»¿´¬¸ ±® ¬¸» »²ª·®±²³»²¬ ¿²¼ ¬¸¿¬ ¸¿ª» ¾»»² ·¼»²¬·º·»¼ ¬¸®±«¹¸
½¸»³·½¿´ ®»´»¿-»- ¿²¼ ¿®» ¾»·²¹ ³±²·¬±®»¼ º±® ½´»¿²«° ¾§ ¬¸» ¼»°¿®¬³»²¬

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±²æ ðîñðïñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñðíñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðíñîîñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìè

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ì»´»°¸±²»æ çïêóíîîóìðð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñðìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÝÜÔæ Ý´¿²¼»-¬·²» Ü®«¹ Ô¿¾-
ß ´·-¬ ±º ¼®«¹ ´¿¾ ´±½¿¬·±²- Ô·-¬ ±º ¿´´ ½´¿²¼»-¬·²» ¼®«¹ ´¿¾ ´±½¿¬·±²- ·² ¬¸» ¿®»¿ ®»°±®¬»¼ ¾§ ¬¸» ¼»°¿®¬³»²¬ ©·´´ ¾» ½±²-·¼»®»¼ ¿- ¸¿¦¿®¼±«- ·² ¼»½±²¬¿³·²¿¬·±² ¿´·¹²³»²¬ ·²ª»-¬·¹¿¬·±²-
®»¯«·®»- ±® ¼»¬»®³·²»¼ ¾§ ¬¸» ¼»°¿®¬³»²¬ ±º ½±²-«´¬ ©·¬¸

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðçñíðñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñïçñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðíñïïñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ êí

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ì»´»°¸±²»æ çïêóîëëóêëëð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñîëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÌÑÈ×Ý Ð×ÌÍæ Ì±¨·½ Ð·¬- Ý´»¿²«° ß½¬ Í·¬»-
Ì±¨·½ Ð×ÌÍ Ý´»¿² «° ß½¬ Í·¬»- ·¼»²¬·º·»¼ ¾§ ¬¸» Í¬¿¬» É¿¬»® Î»-±«®½»- Ý±²¬®±´ Þ±¿®¼ ¿²¼ ¬¸» Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼-
¸¿- ²±¬ §»¬ ¾»»² ½±²¬®±´´»¼

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðéñðïñïççë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðèñíðñïççë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðçñîêñïççë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ îé

Í±«®½»æ Í¬¿¬» É¿¬»® Î»-±«®½»- Ý±²¬®±´ Þ±¿®¼
Ì»´»°¸±²»æ çïêóîîéóìíêì
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðïñîêñïçç
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðìñïéñïçç
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ËÍ ÝÜÔæ Ý´¿²¼»-¬·²» Ü®«¹ Ô¿¾-
ß ´·-¬ ±º ½´¿²¼»-¬·²» ¼®«¹ ´¿¾ ´±½¿¬·±²- Ì¸» Ëò Íò Ü»°¿®¬³»²¬ ±º Ö«-¬·½» øþ¬¸» Ü»°¿®¬³»²¬þ÷ °®±ª·¼»- ¬¸·- ©»¾ -·¬»
©»¾ -·¬» ¿- ¿ °«¾´·½ -»®ª·½» Ý±²¬¿·²- ¿¼¼®»--»- ±º -±³» ´±½¿¬·±²- ©¸»®» ´¿© »²º±®½»³»²¬ ¿¹»²½·»- ®»°±®¬»¼ ¬¸»§
º±«²¼ ½¸»³·½¿´- ±® ±¬¸»® ·¬»³- ¬¸¿¬ ·²¼·½¿¬»¼ ¬¸» °®»-»²½» ±º »·¬¸»® ½´¿²¼»-¬·²» ¼®«¹ ´¿¾±®¿¬±®·»- ±® ¼«³°-·¬»-ò
×² ³±-¬ ½¿-»-ô ¬¸» -±«®½» ±º ¬¸» »²¬®·»- ·- ²±¬ ¬¸» Ü»°¿®¬³»²¬ ô ¿²¼ ¬¸» Ü»°¿®¬³»²¬ ¸¿- ²±¬ ª»®·º·»¼ ¬¸» »²¬®§ ¿²¼ ¼±»- ²±¬ ¹«¿®¿²¬»» ·¬- ¿½½«®¿½§ò
Ó»³¾»®- ±º ¬¸» °«¾´·½ ³«-¬ ª»®·º§ ¬¸» ¿½½«®¿½§ ±º ¿´´ »²¬®·»- ¾§ô º±® »¨¿³°´»ô ½±²¬¿½¬·²¹ ´±½¿´ ´¿© »²º±®½»³»²¬ ¿²¼ ´±½¿´ ¸»¿´¬¸ ¼»°¿®¬³»²¬-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðçñïéñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïïñîìñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðîñïèñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ éê

Í±«®½»æ Ü®«¹ Û²º±®½»³»²¬ ß¼³·²·-¬®¿¬·±²
Ì»´»°¸±²»æ îðîóíðéóïððð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñðçñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

Local Lists of Registered Storage Tanks

ÝÉÛÛÐ ËÍÌæ ÝÉÛÛÐ ËÍÌ Ô·-¬
Ý¿´·º±®²·¿ Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±² ß¹»²½§ ¿²¼ Ð«¾´·½ Í¿º»¬§ ¾§ ¬¸» ÝÉ ÎÝÞ ·² ¬¸» »´»½¬®±²·½ -«¾³·¬¬¿´ ±º ·²º±®³¿¬·±² ½±²½»®²·²¹ ¬¸» ¿¼³·²·-¬®¿¬·±² ±º ·²º±®³¿¬·±²
³¿²¿¹»³»²¬ ¿¹»²½·»- ©·¬¸ ·² ¬¸» ½±²¬®±´ ±º ¬¸»·® º¿½·´·¬·»-ò
Ì¸» ¼¿¬¿ ¿®» ¬¸» °®±¼«½¬ ±º ¬¸» ¼»°¿®¬³»²¬ ¿²¼ ¿®» ¬¸» ÝÉÛÛÐ ·²ª»²¬±®§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðêñðïñïççì
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðéñðéñîððë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðèñïïñîððë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íë

Í±«®½»æ Í¿² Ú®¿²½·-½± Ð«¾´·½ É±®µ- Ý±²¬®±´ Þ±¿®¼
Ì»´»°¸±²»æ Òñß
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðêñðíñîððë
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ Òñß
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ËÍÌ ÓÛÌÛÎÝÑÒæ Ó»¬®±°±´·¬¿² Ý±«²¬§ ËÍÌ Ü¿¬¿
ß ´·-¬ ±º «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ ´±½¿¬·±²- ·² Ó»¬®±°±´·¬¿² Ý±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ïïñðïñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïïñðíñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïïñïéñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïê

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ð«¾´·½ Ø»¿´¬¸
Ì»´»°¸±²»æ éðéóìêìóîêêê
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñîèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñïîñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

1.o

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

[illegible]

[illegible]

Local Land Records

[illegible]

[illegible]

[illegible]

Records of Emergency Release Reports

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Other Ascertainable Records

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

[illegible]

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Î ÑÜæ Î »½±®¼- Ñº Ü»½·--·±²

Î »½±®¼ ±º Ü»½·--·±²ò Î ÑÜ ¼±½«³»²¬- ³ ¿²¼¿¬» ¿ °»® ³ ¿²»²¬ ®» ³ »¼§ ¿¬ ¿² ÒÐÔ øÍ«°»®º«²¼÷ -·¬» ½±²¬¿·²·²¹ ¬»½¸²·½¿´ ¿²¼ ¸»¿´¬¸ ·²º±® ³ ¿¬·±² ¿¾±«¬ ¬¸» ½´»¿²«°ò

Ü¿¬» ±º Ù±ª»®² ³ »²¬ Ê»®-·±²æ ïïñîëñîðïí | Í±«®½»æ ÛÐß
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïîñïîñîðïí | Ì»´»°¸±²»æ éðíóìïêóðîîí
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î »°±®¬-æ ðîñîîñîðïì | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñðèñîðïê
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ éì | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîðñîðïê
| Ü¿¬¿ Î »´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Î ÓÐæ Î ·-µ Ó¿²¿¹» ³ »²¬ Ð´¿²-

É ¸»² Ý±²¹®»-- °¿--»¼ ¬¸» Ý´»¿² ß·® ß ³ »²¼³ »²¬- ±º ïççðô ·¬ ®»¯«·®»¼ ÛÐß ¬± °«¾´·-¸ ®»¹«´¿¬·±²- ¬¸¿¬ ¾®·²¹ ½¸» ³ ·½¿´ ¿½½·¼»²¬ °®»ª»²¬·±² ¬± ¬¸» º±®»º®±²¬ ±º ²¿¬·±²¿´ »²ª·®±² ³ »²¬¿´ °®·±®·¬·»-...

Ü¿¬» ±º Ù±ª»®² ³ »²¬ Ê»®-·±²æ ðèñðïñîðïë | Í±«®½»æ Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±² ß¹»²½§
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðèñîêñîðïë | Ì»´»°¸±²»æ îðîóëêìóèðèð
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î »°±®¬-æ ïïñðíñîðïë | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîèñîðïê
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ êç | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
| Ü¿¬¿ Î »´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

Î ßßÌ Íæ Î Ý Î ß ß¼³ ·²·-¬®¿¬·ª» ß½¬·±² Ì®¿½µ·²¹ Í§-¬» ³

Î Ý Î ß ß¼³ ·²·-¬®¿¬·ª» ß½¬·±² Ì®¿½µ·²¹ Í§-¬» ³ò Î ßßÌ Í ½±²¬¿·²- ®»½±®¼- ¾¿-»¼ ±² »²º±®½» ³ »²¬ ¿½¬·±²- ·--«»¼ «²¼»® ¬¸» Î Ý Î ß...

Ü¿¬» ±º Ù±ª»®² ³ »²¬ Ê»®-·±²æ ðìñïéñïççë | Í±«®½»æ ÛÐß
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðéñðíñïççë | Ì»´»°¸±²»æ îðîóëêìóìïðì
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î »°±®¬-æ ðèñéðéñïççë | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðêñðîñîððè
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íë | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðçñðïñîððè
| Ü¿¬¿ Î »´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

Ð Î Ðæ Ð±¬»²¬·¿´´§ Î »-°±²-·¾´» Ð¿®¬·»-

ß ´·-¬ ±º ª»®·º·»¼ Ð±¬»²¬·¿´´§ Î »-°±²-·¾´» Ð¿®¬·»-

Ü¿¬» ±º Ù±ª»®² ³ »²¬ Ê»®-·±²æ ïðñîëñîðïí | Í±«®½»æ ÛÐß
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïðñïéñîðïì | Ì»´»°¸±²»æ îðîóëêìóêðîí
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î »°±®¬-æ ïðñîðñîðïì | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñïïñîðïê
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ í | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñîîñîðïê
| Ü¿¬¿ Î »´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÐßÜÍæ ÐÝÞ ß½¬·ª·¬§ Ü¿¬¿¾¿-» Í§-¬» ³

ÐÝÞ ß½¬·ª·¬§ Ü¿¬¿¾¿-» Í§-¬»³ò ÐßÜÍ ·¼»²¬·º·»- ¹»²»®¿¬±®-ô ¬®¿²-°±®¬»®-ô ½±³ ³ »®½·¿´ -¬±®»®- ¿²¼ñ±® ¾®±µ»®- ¿²¼ ¼·-°±-»®- ±º ÐÝÞ'-...

Ü¿¬» ±º Ù±ª»®² ³ »²¬ Ê»®-·±²æ ðéñðïñîðïì | Í±«®½»æ ÛÐß
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïðñïëñîðïì | Ì»´»°¸±²»æ îðîóëêêóðëðð
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î »°±®¬-æ ïïñïéñîðïì | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïîñîðïê
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íí | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñîëñîðïê
| Ü¿¬¿ Î »´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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[illegible]

[illegible]

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±²æ ðìñðëñîðïï Í±«®½»æ ß ³»®·½¿² Ö±«®²¿´ ±º Ð«¾·½ Ø»¿´¬¸
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïðñîéñîðïð Ì»´»°¸±²»æ éðíóíðëóêìëï
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïîñðîñîðïð Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ïîñðîñîðïðç
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íê Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ Òñß
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

Ëá ß×Î Í øßÚ Í÷æ ß»®±³»¬®·½ ×²º±®³¿¬·±² Î»¬®·»ª¿´ Í§-¬»³ Ú¿½·´·¬§ Í«¾-§-¬»³ øßÚ Í÷
Ì¸» ¼¿¬¿ ·- «-»¼ ¬± ¬®¿½µ ¬¸» ¿³±«²¬ ±º ½»®¬¿·² ¿·® °±´´«¬¿²¬- ®»´»¿-»¼ ¾§ ·²¼«-¬®·¿´ °´¿²¬- ¿²¼ ±¬¸»® º¿½·´·¬·»-ò Ì¸·- ¼¿¬¿ ¾¿-» ½±²¬¿·²- ½±³°´·¿²½» ·²º±®³¿¬·±² ±² ¿·® °±´´«¬·±² °±·²¬ -±«®½»- ®»¹«´¿¬»¼ ¾§ ¬¸» ËòÍò ÛÐß ¿²¼ñ±® ¬¸» ¬¿¬» ¿²¼ ´±½¿´ ¿·® ®»¹«´¿¬±®§ ¿¹»²½·»-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ïðñîðñîðïë Í±«®½»æ ÛÐß
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïðñîéñîðïë Ì»´»°¸±²»æ îðîóëêìóîçê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðïñðìñîðïë Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñîìñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ êç Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñïìñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Ëá ß×Î Í ÓÒÎÛÍÑÎÝ ß·® Ú¿½·´·¬§ Í§-¬»³ Ü¿¬¿
ß ´·-¬·²¹ ±º ³¿¶±® -±«®½» ¿²¼ ³·²±® -±«®½»-

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ïðñîðñîðïë Í±«®½»æ ÛÐß
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïðñîéñîðïë Ì»´»°¸±²»æ îðîóëêìóîçê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðïñðìñîðïë Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñîìñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ êç Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñïìñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Ëá ÓÒÛÌÎ Ó·²»- Ó¿-¬»® ×²¼»¨ Ú·´»
Ý±²¬¿·²- ¿´´ ³·²» ·¼»²¬·º·½¿¬·±² ²«³¾»®- ·--«»¼ º±® ³·²»- ¿½¬·ª» ±® ±°»²»¼ -·²½» ïçéïò Ì¸» ¼¿¬¿ ¿´-± ·²½´«¼»- ·²º±®³¿¬·±² -«°°´·»¼ ¾§ ·²¼«-¬®§ ½±²¬®¿½¬±®-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðîñðçñîðïê Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ô¿¾±®ô Ó·²» Í¿º»¬§ ¿²¼ Ø»¿´¬¸ ß¼³·²·-¬®¿¬·±²
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñðèñîðïê Ì»´»°¸±²»æ íðíóîíïóëçëç
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðìñðèñîðïê Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñðèñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íï Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîðñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Í»³·ß²²«¿´´§

Ëá ÓÒÛÌ ÎÎ Ú»¼»®¿´ ´»¿¼ ³·²» ·²º±®³¿¬·±² ¾¿-»¼ ±² ¬¸» ËÍÙÍ Ó·²»®¿´ Ó·²»- Ü¿¬¿ Í§-¬»³
Ì¸·- º·´» ½±²¬¿·²- ¿ º»¼»®¿´ ´»¿¼ ³·²» ·²º±®³¿¬·±² ¾¿-»¼ ±² ¬¸» ËÍÙÍ Ó·²»®¿´ Ó·²»- Ü¿¬¿ Í§-¬»³ ©¸·½¸ ±º ¬¸» ËÍÙÍ Ó·²»®¿´ Î»-±«®½» Ü¿¬¿ Í§-¬»³ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ïîñëðñîðð è Í±«®½»æ ËÍÙÍ
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñîçñîðð è Ì»´»°¸±²»æ éðíóêìèóêëëç
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðìñïèñîðð è Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñðèñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìç Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîðñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

Ëá ÓÒÛÌ Íæ ß½¬·ª» ¿²¼ Ó·²»- Ð´¿² Ü¿¬¿ Ó»¿-«®»³»²¬
ß½¬·ª» ·² ¬¸» Ó»¿-«®»³»²¬ -±«®½»- ¬¸¿¬ ·²½´«¼» ÛÐß ¬± Ó»¿-«®»³»²¬ ±º ¬¸» ËÍÙÍ ¿²¼ ±¬¸»® ¬¸»³ÛÎÍ Òò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðìñïëñîðïï Í±«®½»æ ËÍÙÍ
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðêñðèñîðïï Ì»´»°¸±²»æ éðíóêìèóêëëç
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðçñïìñîðïï Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñðèñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ çé Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîðñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÚxÒÜ Í¿ Ú¿½·´·¬§ x²¼»¨ Í§¬»³ñÚ¿½·´·¬§ Î»¹·¬®§ Í§¬»³

Ú¿½·´·¬§ x²¼»¨ Í§¬»³ò ÚxÒÜ Í ½±²¬¿·² ¾¿±¬¸ º¿½·´·¬§ ·²º±®³¿¬·±² ¿²¼ ´ò·²µ ±¬¸»® ±«®½» ¬¸¿¬ ½±²¬¿·² ³±» ¼»¬¿·´ò ÛÜÎ ·²½´«¼» ¬¸» º±´´©·²¹ ÚxÒÜ Í ¼¿¬¿¾¿» ·² ¬¸· ®»°±®¬æ ÐÝÍ ¿Ð»®³·¬ Ý±³°´·¿²½» Í§¬»³ò÷ ßx Î Í øß»®±³»¬®·½ x²º±®³¿¬·±² Î»¬®·»ª¿´ Í§¬»³÷ ÜÑÝÕÛÌ øÛÐß Ü±½µ»¬ ¼¿¬¿÷ ÚÚ ÍÎÍ ø»¼»®¿´ Ú¿½·´·¬§ Í·¬» Î»½±®¼ ·² ¿¼¼·¬·±² ¬± ¬¸» º¿½·´·¬§ ®»°±®¬ ¼¿¬¿¾¿» ¬¸¿¬ ´·²µ ¬± ¬¸» ÚxÒÜ Í ¼¿¬¿¾¿»ò ÛÜÎ ¿´± ·²½´«¼» ÍÛÜÍ ¼¿¬¿ ·²¬»®½¸¿²¹»¿¾´» ¬¸» ¿½½» ÚÚ¼»®¿´ øÚ»¼»®¿´ Ú¿½·´·¬§ Î»¹·¬»®÷ ¿²¼ ¬¸» »®ª·½» ¿²¼ ÐßÜ Í øÐÝÞ ß½¬·ª·¬§ Ü¿¬¿ Í§¬»³÷

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðéñîðñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðçñðçñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ïïñðíñîðïë
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ ëë

Í±«®½»æ ÛÐß
Ì»´»°¸±²»æ øîïë÷ èìéóëíéï
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðíñðèñîðïë
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîðñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ËÈÑæ Ë²¼»®¹®±«²¼ Ñ¬¸»® ¿²¼ Ì¿µ

ß ´·¬·²¹ ±º ²±¬±®·±« ±°»² ¼«³° ¬± ¾» ·² ®»¯«·®»¼

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ïðñîëñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñîçñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðìñðèñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ êé

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ü»º»²»
Ì»´»°¸±²»æ ëéïóêïêóìðìé
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñðìñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

ÜÑÝÕÛÌ ØßÉÝæ Ø¿¦¿®¼±« É¿¬» Ý±³°´·¿²½» Ü±½µ»¬ Ô·¬·²¹

ß ½±³°´·¿²½» ¬±±´ ¬¸¿¬ Ú»¼»®¿´ ß¹»²½·» Ø¿¦¿®¼±« É¿¬» Ý±³°´·¿²½» Ü±½µ»¬ Ú¿½·´·¬·»

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðíñðïñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñðìñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðìñðèñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ íí

Í±«®½»æ Ûµ¿·´ Ð®±¼«½¬ ßª»²«»
Ì»´»°¸±²»æ îðîóëêçóìêë
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðêñðïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñïíñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

Ýß ÞÑÒÜ ÛÈÐò ÐÔßÒæ Þ±²¼ Û¨°»²¼·¬«®» Ð´¿²

Ü»°¿®¬³»²¬ ±º Ø»¿´¬¸ Í»®ª·½» ¼»¬¿·´»¼ ·² «¾»¯«»²¬ »¨°»²¼·¬«®» °´¿² ¿²¼ ¿°°®±°®·¿¬» ±º Ø¿¦¿®¼±« Í«¾¬¿²½» Ý±²¬®±´ ß½¬·±² ¿²¼ Ð±´´«¬·±² «½¸ ¿ ·¬»

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðïñðïñïççè
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðéñîéñïççì
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðèñðîñïççì
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ ê

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ø»¿´¬¸ Í»®ª·½»
Ì»´»°¸±²»æ çïêóîëëóîïïè
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðëñïïñïççì
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ÒñßÜ
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÝÑÎ ÌÛÍÌÍæ Ý±®®»½¬·ª» ß½¬·±² Ú¿½·´·¬§ Î»°±®¬

Ì¸» ±º ²±¬ ¬¸» ·²°«¬ ¾§ ¿ »¯«»²½» ¬¸» Ú»¼»®¿´ Ú¿½·´·¬§ Î»±«®½» Ý±²»®ª¿¬·±² ¿²¼ Ú¿½·´·¬§ ¬¸» ·²¬»®»¬ Ú»¼»®¿´ Ü»°¿®¬³»²¬ ±º Ü»º»²» Ý±®®»½¬·ª» ß½¬·±² Ú¿½·´·¬§ Î»°±®¬

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðîñîðñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñîìñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðíñîíñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ íð

Í±«®½»æ ÝßÔ ÛÐßñÜÌÍÝ ±º Ø»¿´¬¸ »®ª·½» ¿²¼ ¿¹»²½·»
Ì»´»°¸±²»æ çïêóíîíóíìðð
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñïíñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ËÎÇÝÔßÎÑÛÎ Íæ Ý»²»®¿´ Ú¿½·´·¬·»

ß ´·¬ ±º ¬¸» ´±½¿´ º¿½·´·¬·» ¬¸¿¬ ¿®» ÛÐß ·² ³¿²¿¹»³»²¬ Ì¸» ¼»¬¿·´»¼ ¿¬¬»²¬·±² ©·¬¸ ¬¸» ÛÐß Î»°±®¬ ¿²¼ ¼¿¬¿ »®ª·½» ´·¬·²¹ ¿²¼ °®»»²¬»¼ ¾§ ¬¸» ¿¹»²½§ ¿²¼ ´·¬ ±º ¬¸» º¿½·´·¬·» ±º ¬¸» ¿³» ¼¿¬¿¾¿» ¿²¼ ·²º±®³¿¬·±² ¿²¼ ¬¸» ¬¿¬»³»²¬

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±²æ ðîñðèñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñîíñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðíñïçñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ íé

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾¬¿²½» Ý±²¬®±´
Ì»´»°¸±²»æ çïêóíîíóíìðð
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðêñðèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñîíñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ ß²²«¿´´§

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÛÓ×æ Û³·--·±²- ײª»²¬±®§ Ü¿¬¿
Ì±¨·½- ¿²¼ ½®·¬»®·¿ °±´´«¬¿²¬ »³·--·±²- ¼¿¬¿ ½±´´»½¬»¼ ¾§ ¬¸» ß Î Þ ¿²¼ ´±½¿´ ¿·® °±´´«¬·±² ¿¹»²½·»-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ïîñíïñîðïì
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñîîñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñðçñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìè

Í±«®½»æ Ý¿´·º±®²·¿ ß·® Î»-±«®½»- Þ±¿®¼
Ì»´»°¸±²»æ çïêóíîîóçççð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñîîñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñðìñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÛÒÚæ Û²º±®½»³»²¬ ß½¬·±² Ô·-¬·²¹
ß´´ ²±´·´·¬¿®§ ±º Ê¿®·±«- ×²¼«-¬®·»- ¼±½«³»²¬ Ñ®¿´ ì ±º ³±¼»® Ý±´ ¼¬¿´ ¼·-°±-¿´ ¿²¼ Ì³·-·ª±¿´ Û¨·¬-
Ê±´¿¬·±² Ü¨°»»¬ ¬¸» ¼§³»²¬ Ô¿-¬ Û²º±®½»³»²¬ ¿²¼ Í¬¿¬» Û²º±®½»³»²¬ Ò»¬©±®µ

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðïñîêñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñîçñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðíñîîñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ëí

Í±«®½»æ Í¬¿¬» É¿¬»® Î»-±«®½»- Ý±²¬®±´ Þ±¿®¼
Ì»´»°¸±²»æ çïêóìïëóçëíç
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñîíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

Ú·²¿²½·¿´ ß--«®¿²½» ïæ Ú·²¿²½·¿´ ß--«®¿²½» ײº±®³¿¬·±² Ô·-¬·²¹
Ú·²¿²½·¿´ ß--«®¿²½» ·²º±®³¿¬·±²

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðïñîèñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñîçñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðíñîîñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ëí

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ì»´»°¸±²»æ çïêóîëëóíêîè
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîîñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬» Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

Ú·²¿²½·¿´ ß--«®¿²½» îæ Ú·²¿²½·¿´ ß--«®¿²½» ײº±®³¿¬·±² Ô·-¬·²¹
ß´´ ±º ¬¸» ¿ ½±--±®¬»¼ ±º ³±¼»® ¾§ ¸·´»-¬ ¬±©»²-¼ Ú·²¿²½·¿´ ¿--«®¿²½» ·- ¿ ´»¹¿´ ±º ¬¸» »²ª·®±²³»²¬ ³»¿-«®»- ¬± »²-«®» ¬¸» ±©²»® ±º ¬¸» ¼ ¬¸» ¿²¼ ±°»®¿¬±®- ¿®» ¿¾´» ¬± ¸¿²¼´» ¬¸» ®»-°±²-·¾·´·¬·»- ±º ¬¸» º¿½·´·¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðîñïéñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñïçñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðìñïìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìè

Í±«®½»æ Ý¿´·º±®²·¿ Û²»®¹§ Ý±³³·--·±² Þ±¿®¼
Ì»´»°¸±²»æ çïêóìïìóîèëê
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñðìñîðïê
Ü¿¬» Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

ØßÆÒÛÌæ Ú¿½·´·¬§ ¿²¼ Ó¿²·º»-¬ Ü¿¬¿
Ú¿½·´·¬§ ¿²¼ Ó¿²·º»-¬ Ü¿¬¿ò Ì¸» ¼¿¬¿ ·- »¨¬®¿½¬»¼ º®±³ ¬¸» ½±°·»- ±º ¸¿¦¿®¼±«- ©¿-¬» ³¿²·º»-¬- -«¾³·¬¬»¼ ¬± ÜÌÍÝò Ì¸» ¿²²«¿´ ª±´«³» ±º ¸¿¦¿®¼±«- ©¿-¬» ·- -¬¿¬»¼ ·² ¬±²- ¿²¼ ²«³¾»® ±º ³¿²·º»-¬-ò Ì¸» ¼¿¬¿ ·- ¿ª¿·´¿¾´» º±® ïççí ¬¸®±«¹¸ îððé ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ïîñíïñîðïì
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðéñðïñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïïñïîñîðïë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïéì

Í±«®½»æ Ý¿´·º±®²·¿ Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±² ß¹»²½§
Ì»´»°¸±²»æ çïêóîëëóïïíê
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñîéñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Ø×ÍÌ ÝÑÎÌÛÍÛæ Ø¿¦¿®¼±«- Í«¾-¬¿²½» Í·¬»- Ô·-¬
Ì¸» ±®·¹·²¿´ ´·-¬ ·- ²±© ½¿´´»¼ ¬¸» Í¬¿¬» Ý±²-±´·¼¿¬»¼ Ý¿-» Û«²¼ Ô·-¬ò Ì¸» ½±³°·´»¼ Ý±®¬»-» Ô·-¬ ·- ¿ ¼¿¬¿ ¾¿-» ±º ¿´´ ¸¿¦¿®¼±«- ©¿-¬» ¿²¼ -«¾-¬¿²½»- -·¬»- ¿²¼ -·¬»- ·²½´«¼»¼ ¬¸» ´·-¬ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðìñðïñîððï
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñîîñîððç
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðìñðèñîððç
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ éê

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ì±¨·½ Í«¾-¬¿²½»- Ý±²¬®±´
Ì»´»°¸±²»æ çïêóíîïóìèðð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðïñîîñîððç
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ Òñß
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

[illegible]

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÐÎÑÝ® Ý»®¬·º·»¼ Ð®±½»--±®- Ü¿¬¿¾¿-»
ß´·-¬·²¹ ±º ½»®¬·º·»¼ °®±½»--±®-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ðíñïëñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñïêñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñðçñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ëì

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ý±²-»®ª¿¬·±²
Ì»´»°¸±²»æ çïêóíîíóîíèí
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñïëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîéñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÒÑÌ×ÚÇ êëæ Ð®±°±-·¬·±² êë Î»½±®¼-
Ô·-¬·²¹ ±º ¿´´ Ð®±°±-·¬·±² êë ·²½·¼»²¬- ®»°±®¬»¼ ¬± ½±«²¬·»- ¾§ ¬¸» Í¬¿¬» É¿¬»® Î»-±«®½»- Ý±²¬®±´ Þ±¿®¼ ¿²¼ ¬¸»
Î»¹·±²¿´ É¿¬»® Ï«¿´·¬§ Ý±²¬®±´ Þ±¿®¼ò Ì¸·- ¼¿¬¿¾¿-» ·- ²± ´±²¹»® «°¼¿¬»¼ ¾§ ¬¸» ®»°±®¬·²¹ ¿¹»²½§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ðçñïðñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñðèñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðîñïï ïñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íè

Í±«®½»æ Í¬¿¬» É¿¬»® Î»-±«®½»- Ý±²¬®±´ Þ±¿®¼
Ì»´»°¸±²»æ çïêóìëóíìè
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñðìñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

Ë×Ýæ Ë×Ý Ô·-¬·²¹
ß´·-¬·²¹ ±º ©»´´- ·²ª»²¬±®·»¼ ·² «²¼»®¹®±«²¼ ©»´´-ò ·² ¬¸» Ý¿´·º±®²·¿ Ñ·´ ¿²¼ Ù¿- É»´´- ¼¿¬¿¾¿-»ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ðêñïîñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðçñïëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïðñïíñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ îè

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ý±²-»®ª¿¬·±²
Ì»´»°¸±²»æ çïêóìëóíìè
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñïëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîéñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÉßÍÌÛÉßÌÛÎ Ð×ÌÍæ Ñ·´ É¿¬»®©¿·» Ð·¬- Ô·-¬·²¹

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ðìñïëñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðìñïéñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðêñîíñîðïë
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ êé

Í±«®½»æ ÎÉ ÏÝÞò Ý»²¬®¿´ Ê¿´´»§ Î»¹·±²
Ì»´»°¸±²»æ ëëçóìëêóëëéé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðìñïëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÉÜÍæ Ê¿´´»§ Ü«-¬ Í±«®½»- Í§-¬»³
Í·¬»- ©¸±-» ·²º±®³¿¬·±² ·- ·²½´«¼»¼ ·² ¬¸» Ê¿´´»§ Ü«-¬ Í±«®½»- Í§-¬»³ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ðéñïîñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðèñðîñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðçñîéñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ëê

Í±«®½»æ Ý¿´·º±®²·¿ Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±² ß¹»²½§
Ì»´»°¸±²»æ çïêóíîìóçèéé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðéñïëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ïðñíðñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÛÝØÑæ Û²º±®½»³»²¬ ú Ý±³°´·¿²½» Ø·-¬±®§ ×²º±®³¿¬·±²
ÛÝØÑ °®±ª·¼»- ·²¬»¹®¿¬»¼ ½±³°´·¿²½» ¿²¼ »²º±®½»³»²¬ ·²º±®³¿¬·±² º±® ¿¾±«¬ èððôððð ®»¹«´¿¬»¼ º¿½·´·¬·»- ²¿¬·±²©·¼»ò

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² Òñß
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ Òñß
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬- Òñß
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» Òñß

Í±«®½» ÛÜÎ Î ô ײ½ò
Ì»´»°¸±²» Òñß
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ Òñß
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ Òñß
Ü¿¬¿ λ´»¿-» Ú®»¯«»²½§ Ê¿®·»-

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

ΠÌß ÔÚ ï λ½±ª»®»¼ Ù±ª»®²³»²¬ ß®½¸·ª» ͱ´·¼ É¿-¬» Ú¿½·´·¬·»- Ô·-¬

Ì ¸» ÛÜÎ Î »½±ª»®»¼ Ù±ª»®²³»²¬ ß®½¸·ª» Ô¿²¼º·´´ ¼¿¬¿¾¿-» °®±ª·¼»- ¿ ´·-¬ ±º ´¿²¼º·´´- ¼»®·ª»¼ º®±³ ¸·-¬±®·½¿´ ¼¿¬¿¾¿-»- ¿²¼ ®»°±®¬- ³¿§ ²±¬ ´±²¹»® ¾» ¿ª¿·´¿¾´» º®±³ ¬¸» ͬ¿¬» ±º Ð»²²-§´ª¿²·¿ ®»¹«´¿¬±®§ ¿¹»²½§ ¾»½¿«-» ±º ¬¸» ÜÛÐ Ô¿²¼º·´´ ©»¾-·¬» ¿²¼ λ½±®¼- ¬± Ý¿´·º±®²·¿ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±² Òñß
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðéñðïñîðï í
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬- ðïñïíñîðïì
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ïçê

Í±«®½» Ü»°¿®¬³»²¬ ±º Û²ª·®±²³»²¬ λ¹«´¿¬·±² ¿²¼ λ½±®¼
Ì»´»°¸±²» Òñß
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðêñðïñîðï î
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ Òñß
Ü¿¬¿ λ´»¿-» Ú®»¯«»²½§ Ê¿®·»-

ΠÌß ÔËÍÌ λ½±ª»®»¼ Ù±ª»®²³»²¬ ß®½¸·ª» Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ ͬ±®¿¹» Ì¿²µ

Ì ¸» ÛÜÎ Î »½±ª»®»¼ Ù±ª»®²³»²¬ ß®½¸·ª» Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ ͬ±®¿¹» Ì¿²µ ¼¿¬¿¾¿-» °®±ª·¼»- ¿ ´·-¬ ±º ÔËÍÌ ·²½·¼»²¬- ¼»®·ª»¼ º®±³ ¸·-¬±®·½¿´ ¼¿¬¿¾¿-»- ¿²¼ ®»°±®¬- ³¿§ ²±¬ ´±²¹»® ¾» ¿ª¿·´¿¾´» º®±³ ¬¸» ͬ¿¬» ±º Ð»²²-§´ª¿²·¿ ®»¹«´¿¬±®§ ¿¹»²½§ ¾»½¿«-» ±º ¬¸» Ì¿²µ É¿¬» Ü»°¿®¬³»²¬ ݱ²-»®ª¿¬·±² Þ±¿®¼ ·² ݿ´·º±®²·¿ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±² Òñß
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðéñðïñîðï í
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬- ïîñîðñîðï í
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ïèî

Í±«®½» Í¬¿¬» É¿¬»® λ-±«®½» ݱ²¬®±´ Þ±¿®¼
Ì»´»°¸±²» Òñß
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðêñðïñîðï î
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ Òñß
Ü¿¬¿ λ´»¿-» Ú®»¯«»²½§ Ê¿®·»-

COUNTY RECORDS

ßÔßÓÛÜß ÝÑËÒÌÇ

Ý±²¬¿³·²¿¬»¼ Í·¬»-

ß ´·-¬ ±º ½±²¬¿³·²¿¬»¼ -·¬»- ±ª»®-»»² ¾§ ¬¸» Ì±¨·½ λ´»¿-» Ю±¹®¿³ øÑ°»®¿¬·±² ¿²¼ Ó¿·²¬»²¿²½»÷ ¿²¼ ¬¸» Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Ú«»´ Ì¿²µ Ю±¹®¿³ ø«²¼»®¹®±«²¼ ¬¿²µ »²º±®½»³»²¬ ¿¬ ¬¸» ËÍÌ -·¬»-÷ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±² ðîñîî ñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðîñîì ñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬- ðíñîí ñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ìï

Í±«®½» ß´¿³»¼¿ ݱ«²¬§ Û²ª·®±²³»²¬¿´ Ø»¿´¬¸ Í»®ª·½»-
Ì»´»°¸±²» ëïðóëêéóêéðð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðìñïî ñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðéñîëñîðïê
Ü¿¬¿ λ´»¿-» Ú®»¯«»²½§ Í»³·óß²²«¿´´§

˲¼»®¹®±«²¼ Ì¿²µ-
˲¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² ß´¿³»¼¿ ½±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·±² ðïñïî ñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðïñïì ñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² λ°±®¬- ðîñðîñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ìé

Í±«®½» ß´¿³»¼¿ ݱ«²¬§ Û²ª·®±²³»²¬¿´ Ø»¿´¬¸ Í»®ª·½»-
Ì»´»°¸±²» ëïðóëêéóêéðð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðìñïî ñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðéñîëñîðïê
Ü¿¬¿ λ´»¿-» Ú®»¯«»²½§ Í»³·óß²²«¿´´§

ßÓßÜÑÎ ÝÑËÒÌÇ

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÝËÐß Ú¿½·´·¬§ Ô·¬
Ý«°¿ Ú¿½·´·¬§ Ô·¬

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±²æ ðíñîïñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñîîñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ ìí

Í±«®½»æ ß³¿¼±® Ý±«²¬§ Û²ª·®±²³»²¬¿´ Ø»¿´¬¸
Ì»´»°¸±²»æ îðçóîîíóêìíç
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðíñîïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñðîñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

ÞËÌÌÛ ÝÑËÒÌÇ

ÝËÐß Ú¿½·´·¬§ Ô·¬·²¹
Ý«°¿ º¿½·´·¬§ ´·¬·²¹

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±²æ ðìñïçñîðïê
Ü¿¬» Ü¿¬¿ Ý®®·ª»¼ ¿¬ ÛÜÎæ ðìñîîñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ íè

Í±«®½»æ Ð«¾´·½ Ø»¿´¬¸ Ü»°¿®¬³»²¬
Ì»´»°¸±²»æ ëíðëèíèéïç
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðëñîíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñîëñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÝßÔßÊÛÎßÍ ÝÑËÒÌÇ

ÝËÐß Ú¿½·´·¬§ Ô·¬·²¹
Ý«°¿ Ú¿½·´·¬§ Ô·¬·²¹

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±²æ ðîñðîñîðïê
Ü¿¬» Ü¿¬¿ Ý®®·ª»¼ ¿¬ ÛÜÎæ ðîñðíñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðîñîîñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ ïè

Í±«®½»æ Ý¿´¿ª»®¿ Ý±«²¬§ Û²ª·®±²³»²¬¿´
Ì»´»°¸±²»æ îðçóéëìóêíçç
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðíñîèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñïïñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÝÑÔËÍß ÝÑËÒÌÇ

ÝËÐß Ú¿½·´·¬§ Ô·¬
Ý«°¿ º¿½·´·¬§ ´·¬

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±²æ ðîñïîñîðïê
Ü¿¬» Ü¿¬¿ Ý®®·ª»¼ ¿¬ ÛÜÎæ ðîñïíñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðìñðìñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ íé

Í±«®½»æ Ø»¿´¬¸ ú Ø«³¿² Í»®ª·½»
Ì»´»°¸±²»æ ëíðóìëèóðïçê
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðëñîíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðíñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

ÝÑÒÌÎß ÝÑÍÌß ÝÑËÒÌÇ

Í·¬» Ô·¬
Ô·¬ ·²½´«¼» ·¬» º®±³ ¬¸» «²·¯«» °®±¹®¿³ ®»¹«´¿¬»¼ ¾§ ÝÝÝ ØÓÜ ·²½´«¼·²¹ «²¼»®¹®±«²¼ ¬±®¿¹» ¬¿²µô ¸¿¦¿®¼±« ©¿¬» ¹»²»®¿¬±® ¿²¼ ¾«·²» °´¿² ¬¿¬»³»²¬ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±²æ ðîñîïñîðïê
Ü¿¬» Ü¿¬¿ Ý®®·ª»¼ ¿¬ ÛÜÎæ ðîñîêñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðìñðëñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ íè

Í±«®½»æ Ý±²¬®¿ Ý±¬¿ Ý±«²¬§ Ø»¿´¬¸ Ü»°¿®¬³»²¬
Ì»´»°¸±²»æ çîëóêìêóîîèê
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðëñðíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Í»³·ó ß²²«¿´´§

ÜÛÔ ÒÑÎÌÛ ÝÑËÒÌÇ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÝËÐß Ú¿½·´·¬§ Ô·¬
Ý«°¿ Ú¿½·´·¬§ ´·¬

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®··±²æ ðïñîîñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñðëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðíñðéñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ íï

Í±«®½»æ Ü»´ Ò±®¬» Ý±«²¬§ Û²ª·®±² ³»²¬¿´ Ø»¿´¬¸ Ü·ª··±²
Ì»´»°¸±²»æ éðéóìêóðì îê
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïçñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

ÛÔ ÜÑÎßÜÑ ÝÑËÒÌÇæ

ÝËÐß Ú¿½·´·¬§ Ô·¬
ÝËÐß º¿½·´·¬§ ´·¬·

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®··±²æ ðîñîîñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñîìñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðìñðíñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ ïé

Í±«®½»æ Ûß Ü±®¿¼± Ý±«²¬§ Û²ª·®±² ³»²¬¿´ Ó¿²¿¹»³»²¬
Ì»´»°¸±²»æ ëíðêîïïóêêîïí
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðëñðîñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

ÚÎÛÍÒÑ ÝÑËÒÌÇæ

ÝËÐß Î»±«®½» Ô·¬
Ý»®¬·º·»¼ Ë²·º·»¼ Ð®±¹®¿³ ß¹»²½·» ÝËÐß ¿®» ®»°±²·¾´» º±® ·³°´»³»²¬·²¹ ¿ «²·º·»¼ ¸¿¦¿®¼±« ³¿¬»®·¿´ ¿²¼ ¸¿¦¿®¼±«
©¿¬» ³¿²¿¹»³»²¬ ®»¹«´¿¬±®§ °®±¹®¿³ò Ì¸» ¿¹»²½§ °®±ª·¼» ±ª»®·¹¸¬ ±º ¬¸» ¬»½¸²·½¿´ ¸¿¦¿®¼±« ³¿¬»®·¿´ ¿²¼ ¸¿¦¿®¼±« ©¿¬» ³¿²¿¹»³»²¬ °®±¹®¿³ò
±°»®¿¬» «²¼»® ¬¸» «²·º·»¼ °®±¹®¿³ ·² ¬¸»·® ¶«®·¼·½¬·±²ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®··±²æ ðìñðìñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðìñðêñîðïê
Ü¿¬» Ó¿¼» Ê»®··±²æ ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ îè

Í±«®½»æ Ü»°¬ ±º Ý± ³ ³ «²·¬§ Ø»¿´¬¸
Ì»´»°¸±²»æ ëëçóìëéóíéï
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðìñðìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñïèñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Í»³·óß²²«¿´´§

ØËÓÞÑÔÜÌ ÝÑËÒÌÇæ

ÝËÐß Ú¿½·´·¬§ Ô·¬
ÝËÐß º¿½·´·¬§ ´·¬·

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®··±²æ ðíñïëñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñîïñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ ìì

Í±«®½»æ Ø« ³ ¾±´¼¬ Ý±«²¬§ Û²ª·®±² ³»²¬¿´ Ø»¿´¬¸
Ì»´»°¸±²»æ Òñß
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðëñîíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

×ÓÐÛÎ×ßÔ ÝÑËÒÌÇæ

ÝËÐß Ú¿½·´·¬§ Ô·¬
Ý«°¿ º¿½·´·¬§ ´·¬·

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®··±²æ ðïñïëñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñïéñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬æ ðîñîìñîðïê
Ò«³¾»® ±º Ü¿§ ¬± Ë°¼¿¬»æ îê

Í±«®½»æ Í¿² Ü·»¹± Þ±¿®¼ Ú·» Ñºº·½»
Ì»´»°¸±²»æ éêðóíìçóéééé
Ô¿¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðèñîðïê
Ü¿¬¿ Î»´»¿» Ú®»¯«»²½§æ Ê¿®·»

×ÒÇÑ ÝÑËÒÌÇæ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÝËÐß Ú¿½·´·¬§ Ô·-¬
Ý«°¿ °¿½·´·¬§ ´·-¬ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·-·±²æ ðçñïðñîðï í | Í±«®½»æ ×²§± Ý±«²¬§ Û²ª·®±² ³»²¬¿´ Ø»¿´¬¸ Í»®ª·½»-
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðçñïïñîðï í | Ì»´»°¸±²»æ éêðóèééóèóðî íè
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïðñïïñîðï í | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñî íñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ í í | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÕÛÎÒ ÝÑËÒÌÇæ

Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Í·¬»- ú Ì¿²µ Ô·-¬·²¹
Õ»®² Ý±«²¬§ Í·¬»- ¿²¼ Ì¿²µ- Ô·-¬·²¹ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·-·±²æ ðíñðïñîðïê | Í±«®½»æ Õ»®² Ý±«²¬§ Û²ª·®±² ³»²¬¿´ Ø»¿´¬¸ Í»®ª·½»- Ü»°¿®¬³»²¬
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñðìñîðïê | Ì»´»°¸±²»æ êêïóèêîóèéðð
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñðçñîðïê | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñî íñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ êé | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñî îñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

Õ×ÒÙÍ ÝÑËÒÌÇæ

ÝËÐß Ú¿½·´·¬§ Ô·-¬
ß ´·-¬·²¹ ±º ¿´´ ¬¸» ½±²¬®±´´»¼ ¿²¼ ®»¹«´¿¬»¼ ¾«-·²»--»- ¿²¼ ·²¼«-¬®·»- ¬¸¿¬ ¸¿²¼´» ¸¿¦¿®¼±«- ³¿¬»®·¿´- ¿²¼ ¸¿ª» ¿ ½±²¬·²«·²¹ °±¬»²¬·¿´ º±® Û²ª·®±² ³»²¬¿´ ½±²¬¿³·²¿¬·±²ò
¿- ©»´´ ¿- ±¬¸»® ¾«-·²»--»- ¬¸¿¬ ¿®» ·² ½±³°´·¿²½» ©·¬¸ ¬¸» Û²ª·®±² ³»²¬¿´ Ø»¿´¬¸ Ü»°¿®¬³»²¬ò
°»®³·¬-ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·-·±²æ ðîñîíñîðïê | Í±«®½»æ Õ·²¹- Ý±«²¬§ Ü»°¿®¬³»²¬ ±º Ð«¾´·½ Ø»¿´¬¸
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñîëñîðïê | Ì»´»°¸±²»æ ëëçóèëìóìïïí
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðìñðïñîðïê | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñî íñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íê | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÔßÕÛ ÝÑËÒÌÇæ

ÝËÐß Ú¿½·´·¬§ Ô·-¬
Ý«°¿ °¿½·´·¬§ ´·-¬

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·-·±²æ ðîñðçñîðïê | Í±«®½»æ Ô¿µ» Ý±«²¬§ Û²ª·®±² ³»²¬¿´ Ø»¿´¬¸
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñïïñîðïê | Ì»´»°¸±²»æ éðéóîêíóïïìì
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðìñðïñîðïê | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïèñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìç | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÔÑÍ ßÒÙÛÔÛÍ ÝÑËÒÌÇæ

Í¿² Ù¿¾®·»´ Ê¿´´»§ ß®»¿- ±º Ý±²½»®²
Í¿² Ù¿¾®·»´ Ê¿´´»§ ¿®»¿- ©¸»®» ÊÑÝ ½±²¬¿³·²¿¬·±² ·- ¿¬ ¬¸» ÓÝÔ ¿- ´»-- ¬¸¿² ç ÛÐß ±º½»®ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·-·±²æ ðíñíðñîððç | Í±«®½»æ ÛÐß Î»¹·±² ç
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñíïñîððç | Ì»´»°¸±²»æ ìïëóçéîóíðìé
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïðñîíñîððç | Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîïñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ îðê | Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ØÓ Í® Í¬®»»¬ Ò« ³ ¾»® Ô·-¬
x²¼«-¬®·¿´ É¿-¬» ¿²¼ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Í·¬»-ò

Ü¿¬» ±º Ùï±ª»®² ³ »²¬ Ê»®·-·±²ª ðíñíðñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðìñðïñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-ª ðëñðçñîðïê
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»ª íè

Í±«®½»ª Ü»°¿®¬ ³ »²¬ ±º Ð«¾´·½ É±®µ-
Ì»´»°¸±²»ª êîêóìëèóíìé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ª ðìñðïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ª ðéñîëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ª Í» ³ ·óß²²«¿´´§

Ô·-¬ ±º Í±´·¼ É¿-¬» Ú¿½·´·¬·»-
Í±´·¼ É¿-¬» Ú¿½·´·¬·»- ·² Ô±- ß²¹»´»- Ý±«²¬§ò

Ü¿¬» ±º Ùï±ª»®² ³ »²¬ Ê»®·-·±²ª ðïñïçñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðìñîðñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-ª ðíñîîñîðïê
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»ª êî

Í±«®½»ª Ô¿ Ý±«²¬§ Ü»°¿®¬ ³ »²¬ ±º Ð«¾´·½ É±®µ-
Ì»´»°¸±²»ª èïèóìëèóêèè
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ª ðìñîðñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ª ðèñðïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ª Ê¿®·»-

Ý·¬§ ±º Ô±- ß²¹»´»- Ô¿²¼º·´´-
Ô¿²¼º·´´- ±©²»¼ ¿²¼ ³ ¿·²¬¿·²»¼ ¾§ ¬¸» Ý·¬§ ±º Ô±- ß²¹»´»-ò

Ü¿¬» ±º Ùï±ª»®² ³ »²¬ Ê»®·-·±²ª ðíñðïñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðìñîêñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-ª ðíñîîñîðïê
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»ª ëê

Í±«®½»ª Û²¹·²»»®·²¹ ú Ý±²-¬®«½¬·±² Ü·ª·-·±²
Ì»´»°¸±²»ª îïíóìëéóëèèç
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ª ðìñîèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ª ðèñðïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ª Ê¿®·»-

Í·¬» Ó·¬·¹¿¬·±² Ô·-¬
x²¼«-¬®·¿´ -·¬»- ¬¸¿¬ ¸¿ª» ¸¿¼ -±³ » -±®¬ ±º ±°»®¿¬·±² ¬¸¿¬ ½±³ °´¿·²¬-ò

Ü¿¬» ±º Ùï±ª»®² ³ »²¬ Ê»®·-·±²ª ðíñïëñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñîçñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-ª ðìñïðñîðïë
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»ª ìð

Í±«®½»ª Ý±³ ³ «²·¬§ Ø»¿´¬¸ Í»®ª·½»-
Ì»´»°¸±²»ª íîìçéëèêðê
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ª ðíñîèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ª ðèñðïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ª ß²²«¿´´§

Ý·¬§ ±º Û´ Í»¹«²¼± Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ
Ë²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² Û´ Í»¹«²¼± ½·¬§ò

Ü¿¬» ±º Ùï±ª»®² ³ »²¬ Ê»®·-·±²ª ðíñîðñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðìñîçñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-ª ðëñîïñîðïë
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»ª íì

Í±«®½»ª Ý·¬§ ±º Û´ Í»¹«²¼± Ú·®» Ü»°¿®¬ ³ »²¬
Ì»´»°¸±²»ª íïðóëîìóîîëê
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ª ðìñîïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ª ðéñðíñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ª Í» ³ ·óß²²«¿´´§

Ý·¬§ ±º Ô±²¹ Þ»¿½¸ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ
Ë²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² ¬¸» ½·¬§ ±º Ô±²¹ Þ»¿½¸ò

Ü¿¬» ±º Ùï±ª»®² ³ »²¬ Ê»®·-·±²ª ïïñïìñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ïïñïëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-ª ïïñïéñîðïë
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»ª íì

Í±«®½»ª Ý·¬§ ±º Ô±²¹ Þ»¿½¸ Ú·®» Ü»°¿®¬ ³ »²¬
Ì»´»°¸±²»ª ëêîóëéðóîëêí
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ª ðïñíïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ª ðëñðçñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ª ß²²«¿´´§

Ý·¬§ ±º Ì±®®¿²½» Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ
Ë²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² ¬¸» ½·¬§ ±º Ì±®®¿²½»ò

Ü¿¬» ±º Ùï±ª»®² ³ »²¬ Ê»®·-·±²ª ðïñïìñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðïñïëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-ª ðîñðèñîðïê
Ò« ³ ¾»® ±º Ü¿§- ¬± Ë°¼¿¬»ª îì

Í±«®½»ª Ý·¬§ ±º Ì±®®¿²½» Ú·®» Ü»°¿®¬ ³ »²¬
Ì»´»°¸±²»ª íïðóêïèóîçéí
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ª ðïñïíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ª ðìñîëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ª Í» ³ ·óß²²«¿´´§

ÓßÜÛ ÎßÍÛÌÇ

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÝËÐß Ú¿½·´·¬§ Ô·-¬

ß ´·-¬·²¹ ±º -·¬»- ·²½´«¼»¼ ·² ¬¸» ½±«²¬§Ž- Ý»®¬·º·»¼ Ë²·º·»¼ Ð®±¹®¿³ ß¹»²½§ ¼¿¬¿¾¿-»ò Ý¿´·º±®²·¿Ž- Í»½®»¬¿®§ º±® Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±² »-¬¿¾´·-¸»¼ ¬¸» «²·º·»¼ ¸¿¦¿®¼±«- ³¿¬»®·¿´- ¿²¼ ¸¿¦¿®¼±«- ©¿-¬» ®»¹«´¿¬±®§ °®±¹®¿³ ¿- ®»¯«·®»¼ ¾§ ½¸¿°¬»® êòï ±º ¬¸» Ý¿´·º±®²·¿ Ø»¿´¬¸ ¿²¼ Í¿º»¬§ Ý±¼»ò Ì¸» Ë²·º·»¼ Ð®±¹®¿³ ½±²-±´·¼¿¬»-ô ½±±®¼·²¿¬»-ô ¿²¼ ³¿µ»- ½±²-·-¬»²¬ ¬¸» ¿¼³·²·-¬®¿¬·ª»ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±² ðíñðîñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñðéñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ëè

Í±«®½» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ðëñðìñîðïê
Ì»´»°¸±²»æ ëëçóêéëóéèîí
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðëñîíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ Ê¿®·»-

ÓßÎ×Ò ÝÑËÒÌÇ

Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ô·-¬
Ý«®®»²¬ ±° ¬·¬´» ÔÍÌ ¿²¼ Ó¿®· Ý±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±² ïðñðèñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ïðñðçñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ïðñïëñîðïë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» é

Í±«®½»æ Ð«¾´·½ É±®µ- Ü»°¿®¬³»²¬ É¿¬»® Ó¿²¿¹»³»²¬
Ì»´»°¸±²»æ ìïëóìçççéêê
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðìñïèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðéñïèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Í»³·óß²²«¿´´§

ÓÛÎÝÛÜ ÝÑËÒÌÇ

ÝËÐß Ú¿½·´·¬§ Ô·-¬
ÝËÐß º¿½·´·¬§ ´·-¬ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±² ðîñîêñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñðïñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» êì

Í±«®½»æ Ó»®½»¼ Ý±«²¬§ Û²ª·®±²³»²¬¿´ Ø»¿´¬¸
Ì»´»°¸±²»æ îðçóíèïóïïðçí
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðëñîîñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÓÑÒÑ ÝÑËÒÌÇ

ÝËÐß Ú¿½·´·¬§ Ô·-¬
ÝËÐß Ú¿½·´·¬§ Ô·-¬

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±² ðíñðéñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñðèñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ëè

Í±«®½»æ Ó±²± Ý±«²¬§ Ø»¿´¬¸ Ü»°¿®¬³»²¬
Ì»´»°¸±²»æ éêðóçíìóîëèî
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðíñðéñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðêñîðñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÓÑÒÌÛÎÛÇ ÝÑËÒÌÇ

ÝËÐß Ú¿½·´·¬§ Ô·-¬·²¹
ÝËÐß Ð®±¹®¿³ º¿½·´·¬·»- ·² ¬¸» Ó±²¬»®»§ Ý±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±² ðíñïëñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñïêñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬- ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ìé

Í±«®½»æ Ó±²¬»®»§ Ý±«²¬§ Ø»¿´¬¸ Ü»°¿®¬³»²¬
Ì»´»°¸±²»æ èíïóéëêóïìçé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðëñîïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÒßÐß ÝÑËÒÌÇ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Í·¬»- É·¬¸ Î»°±®¬»¼ Ý±²¬¿³·²¿¬·±²
ß´·-¬·²¹ ±º ´»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² Ò¿°¿ ½±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ïîñðëñîðïï   Í±«®½»æ Ò¿°¿ Ý±«²¬§ Ü»°¿®¬³»²¬ ±º Û²ª·®±²³»²¬¿´ Ó¿²¿¹»³»²¬
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ïîñðêñîðïï   Ì»´»°¸±²»æ éðéóîëíóìêç
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðîñðéñîðïî   Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðîñîçñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ êí   Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñïíñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

Ý´±-»¼ ¿²¼ Ñ°»®¿¬·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Í·¬»-
Ë²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² Ò¿°¿ ½±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðïñïëñîðïè   Í±«®½»æ Ò¿°¿ Ý±«²¬§ Ü»°¿®¬³»²¬ ±º Û²ª·®±²³»²¬¿´ Ó¿²¿¹»³»²¬
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðïñïëñîðïè   Ì»´»°¸±²»æ éðéóîëíóìêç
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðîñîèñîðïè   Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðîñîçñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ îí   Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñïíñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÒÛÊßÜß ÝÑËÒÌÇ

ÝËÐß Ú¿½·´·¬§ Ô·-¬
ÝËÐß º¿½·´·¬§ ´·-¬ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðïñîéñîðïê   Í±«®½»æ Ý± ³ ³«²·¬§ Ü»ª»´±° ³»²¬ ß¹»²½§
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñðìñîðïê   Ì»´»°¸±²»æ ëíðóîêëóïìéé
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðîñîîñîðïê   Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîçñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïè   Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÑÎßÒÙÛ ÝÑËÒÌÇ

Ô·-¬ ±º ×²¼«-¬®·¿´ Í·¬» Ý´»¿²«°-
Ð»¬®±´»«³ ¿²¼ ²±²°»¬®±´»«³ -°·´´-ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðîñðïñîðïê   Í±«®½»æ Ø»¿´¬¸ Ý¿®» ß¹»²½§
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñïîñîðïê   Ì»´»°¸±²»æ éïìóèìíóèìðð
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðìñðïñîðïê   Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñðçñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìç   Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñîîñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Ô·-¬ ±º Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ý´»¿²«°-
Ñ®¿²¹» Ý±«²¬§ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ý´»¿²«°- øÔËÍÌ÷ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðîñðïñîðïê   Í±«®½»æ Ø»¿´¬¸ Ý¿®» ß¹»²½§
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñïîñîðïê   Ì»´»°¸±²»æ éïìóèìíóèìðð
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðìñðïñîðïê   Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñðçñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìç   Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñîîñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

Ô·-¬ ±º Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ú¿½·´·¬·»-
Ñ®¿²¹» Ý±«²¬§ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Ú¿½·´·¬·»- øËÍÌ÷ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðîñðïñîðïê   Í±«®½»æ Ø»¿´¬¸ Ý¿®» ß¹»²½§
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñïíñîðïê   Ì»´»°¸±²»æ éïìóèìíóèìðð
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðìñðïñîðïê   Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñïïñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ëï   Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñîîñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÐÔßÝÛÎ ÝÑËÒÌÇ

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðîñîîñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñðìñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðëñðçñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» êê

Í±«®½» Ü»°¿®¬ ³»²¬ ±º Ûª¿´«¿¬ ³»²¬ ¿´ Ø»¿´¬¸
Ì»´»° ¸±²» ìðèóçïèóïçéí
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðëñîíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ Ê¿®·»-

Øÿ Í Ì ÔË Í Ì ó Ú«»´ Ô»¿µ Í·¬» ß½¬·ª·¬§ Î»°±®¬
ß ´·-¬·²¹ ±º °»² ¿²¼ ½´±-»¼ ´»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ- ¿²¼ -´·¬»- ´·-¬»¼ ·² ¬¸» ®»°±®¬ ±º ¬¸» ½±«²¬§ò
Ô»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ ½¿-»- ¿²¼ ¬¸» Ü»°¿®¬ ³»²¬ ±º Ûª¿´«¿¬ ³»²¬ ¿´ Ø»¿´¬¸ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðíñçñîðïë
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñíðñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðìñîîñîðïë
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» îî

Í±«®½» Í¿²¬¿ Ý´¿®¿ Ê¿´´»§ É¿¬»® Ü·-¬®·½¬
Ì»´»° ¸±²» ìðèóîêëóîêðð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðíñîîñîðïç
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðêñîîñîðïç
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÔÑÐ Ô·-¬·²¹
ß ´·-¬·²¹ ±º ´»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ·² Í¿²¬¿ Ý´¿®¿ ½±«²¬§ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðíñðíñîðïì
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñðëñîðïì
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðíñïèñîðïì
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ïí

Í±«®½» Ü»°¿®¬ ³»²¬ ±º Ûª¿´«¿¬ ³»²¬ ¿´ Ø»¿´¬¸
Ì»´»° ¸±²» ìðèóçïèóíìïé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðîñîçñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðêñïíñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ ß²²«¿´´§

Ø¿¦¿®¼±«- Ó¿¬»®·¿´ Ú¿½·´·¬·»-
Ø¿¦¿®¼±«- ³¿¬»®·¿´ º¿½·´·¬·»- ·² ¬¸» ½±«²¬§ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðîñðëñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðîñïðñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðìñðîñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ëï

Í±«®½» Ý·¬§ ±º Í¿² Ú®¿²½·-½± Ü»°¿®¬ ³»²¬
Ì»´»° ¸±²» ìðèóëíëóéêèì
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðëñîíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðèñîíñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ ß²²«¿´´§

ÍßÒÌß ÝÎËÆ ÝÑËÒÌÇ

ÝËÐß Ú¿½·´·¬§ Ô·-¬
ÝËÐß º¿½·´·¬§ ´·-¬·²¹ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðîñîêñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñðïñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðëñðìñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» êì

Í±«®½» Í¿²¬¿ Ý®«¦ Ý±«²¬§ Û²ª·®±²³»²¬¿´ Ø»¿´¬¸
Ì»´»° ¸±²» èíïóìëìóîéêî
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðëñîíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ Ê¿®·»-

ÍßÒ ÓßÌÛÑ ÝÑËÒÌÇ

ÝËÐß Ú¿½·´·¬§ Ô·-¬
Ý«®®»²¬ ÝËÐß Ú¿½·´·¬§ Ô·-¬ò

Ü¿¬» ±º Ù±ª»®² ³»²¬ Ê»®·±² ðíñïèñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎ ðíñîïñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬ ðëñðìñîðïê
Ò« ³¾»® ±º Ü¿§- ¬± Ë°¼¿¬» ìì

Í±«®½» Í¿² Ó¿¬»± Ý±«²¬§ Û²ª·®±²³»²¬¿´ Ø»¿´¬¸
Ì»´»° ¸±²» êëðóíêíóïçîï
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬ ðëñîíñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§ Ê¿®·»-

ÍÑÔßÒÑ ÝÑËÒÌÇ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ-
ß´·-¬·²¹ ±º ´»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² Í±´¿²± ½±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðíñïìñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñîîñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñðçñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìè

Í±«®½»æ Í±´¿²± Ý±«²¬§ Ü»°¿®¬³»²¬ ±º Û²ª·®±²³»²¬¿´ Ó¿²¿¹»³»²¬
Ì»´»°¸±²»æ éðéóéèìóêééð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñïìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîéñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ-
Ë²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² Í±´¿²± ½±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðíñïìñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñîîñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìì

Í±«®½»æ Í±´¿²± Ý±«²¬§ Ü»°¿®¬³»²¬ ±º Û²ª·®±²³»²¬¿´ Ó¿²¿¹»³»²¬
Ì»´»°¸±²»æ éðéóéèìóêééð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñïìñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîéñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÍÑÒÑÓß ÝÑËÒÌÇæ

Ý«°¿ Ú¿½·´·¬§ Ô·-¬
Ý«°¿ Ú¿½·´·¬§ ´·-¬

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðìñðëñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðìñðèñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ îê

Í±«®½»æ Ý±«²¬§ ±º Í±²±³¿ Ú·®» ú Û³»®¹»²½§ Í»®ª·½»- Ü»°¿®¬³»²¬
Ì»´»°¸±²»æ éðéóëêëóïïéì
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñîèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñïïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

Ô»¿µ·²¹ Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ Í·¬»-
ß´·-¬·²¹ ±º ´»¿µ·²¹ «²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² Í±²±³¿ ½±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðìñðïñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðìñðèñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñðçñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íì

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ø»¿´¬¸ Í»®ª·½»-
Ì»´»°¸±²»æ éðéóëêëóêëêë
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðíñîëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñïïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ï«¿®¬»®´§

ÍÌßÒÝÑËÍ ÝÑËÒÌÇæ

Ë²¼»®¹®±«²¼ Í¬±®¿¹» Ì¿²µ-
Ë²¼»®¹®±«²¼ -¬±®¿¹» ¬¿²µ -·¬»- ´±½¿¬»¼ ·² Í¬¿²·-´¿«- ½±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðíñïìñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñïëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñðìñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ëð

Í±«®½»æ Í¬¿²·-´¿«- Ý±«²¬§ Ü»°¿®¬³»²¬ ±º ß¹®·½«´¬«®»
Ì»´»°¸±²»æ ëíðóèèîóíóêëèð
Ü¿¬» ÛÜÎ Ý±²¬¿½¬æ ðíñðèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðêñîîñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Í»³·ß²²«¿´´§

ÌÛÑÔËÓÒÛ ÝÑËÒÌÇæ

ÝËÐß Ú¿½·´·¬§ Ô·-¬
Ý«°¿ º¿½·´·¬§ ´·-¬

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®-·±²æ ðíñðèñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðíñïïñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðëñðçñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ëç

Í±«®½»æ Ü·ª·-·±² ±º Û²ª·®±²³»²¬¿´ Ø»¿´¬¸
Ì»´»°¸±²»æ îðçóëííóëêíí
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïïñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñèñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

ÊÛÒÌËÎß ÝÑËÒÌÇæ

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ÝËÐß Ú¿½·´·¬§ Ô·-¬
ÝËÐß º¿½·´·¬§ ´·-¬·²¹ º±® Ç«¾¿ Ý±«²¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ðîñðïñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñðëñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðîñîîñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ïé

Í±«®½»æ Ç«¾¿ Ý±«²¬§ Û²ª·®±²³»²¬¿´ Ø»¿´¬¸ Ü»°¿®¬³»²¬
Ì»´»°¸±²»æ ëíðóéìçóíìéëí
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñîçñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ê¿®·»-

OTHER DATABASE(S)

Ü»°»²¼·²¹ ±² ¬¸» ¹»±¹®¿°¸·½ ¿®»¿ ½±ª»®»¼ ¾§ ¬¸·- ®»°±®¬ô ¬¸» ¼¿¬¿ °®±ª·¼»¼ ·² ¬¸»-» -°»½·¿´¬§ ¼¿¬¿¾¿-»- ½¿² ±® ½¿²²±¬ ¾» ½±²-·¼»®»¼ ½±ª»®»¼ ¾§ ¬¸» ¿¼¼®»--ò Ú±® ¬¸» °«®°±-» ±º ¬¸» ÍÛÉÝÎ ÌÍ ãççÛ ³¿°° ´·²» ¬± °®±ª·¼» ¹®»¿¬»® ½±²²»½¬·±² º±® ¬¸» -°»½·¿´¬§ ¼¿¬¿¾¿-»- ¬¸¿¬ ¿®» ·²½´«¼»¼ ·² ¬¸·- ®»°±®¬ò

ÝÌ ÓßÒÚÛÍÌæ Ø¿¦¿®¼±«- É¿-¬» Ó¿²·º»-¬ Ü¿¬¿
Ú¿½·´·¬§ ´·-¬ ±º ¸¿¦¿®¼±«- ©¿-¬» ¹»²»®¿¬±®- ¿²¼ ¬®¿²-°±®¬»®- ±º ¸¿¦¿®¼±«- ©¿-¬» ©¸·½¸ ¸¿ª» ¾»»² ·²ª±´ª»¼ ·² ¿ ¬®¿²-¿½¬·±² ±º ©¿-¬»ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ðéñíðñîðïì
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðèñïçñîðïì
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ïðñðíñîðïì
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìë

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Û²»®¹§ ú Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±²
Ì»´»°¸±²»æ èêðóìîìóíìíé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñïçñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñîçñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ Ò± Ë°¼¿¬» Ð´¿²²»¼

ÒÖ ÓßÒÚÛÍÌæ Ó¿²·º»-¬ Ü¿¬¿¾¿-»
Ø¿¦¿®¼±«- ©¿-¬» ³¿²·º»-¬ ·²º±®³¿¬·±²ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ïîñíïñîðïí
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðéñïéñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðèñïîñîðïë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ îê

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±²
Ì»´»°¸±²»æ Òñß
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïîñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðéñîëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

ÒÇ ÓßÒÚÛÍÌæ Ú¿½·´·¬§ ¿²¼ Ó¿²·º»-¬ Ü¿¬¿
Ó¿²·º»-¬ ·- ¿ ¼±½«³»²¬ ¬¸¿¬ ´·-¬- ¿²¼ ¬®¿½µ- ¸¿¦¿®¼±«- ©¿-¬» º®±³ ¬¸» ¹»²»®¿¬±® ¬¸®±«¹¸ ¬®¿²-°±®¬»®- ¬± ¿ ÌÍÜ º¿½·´·¬§ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ðîñðïñîðïê
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðîñðîñîðïê
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðíñïîñîðïê
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ ìè

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Û²ª·®±²³»²¬¿´ Ý±²-»®ª¿¬·±²
Ì»´»°¸±²»æ ëïèóìðîóèëëï
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñðëñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñïëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Ðß ÓßÒÚÛÍÌæ Ó¿²·º»-¬ Ì®¿½µ·²¹ Ü¿¬¿
Ø¿¦¿®¼±«- ©¿-¬» ³¿²·º»-¬ ·²º±®³¿¬·±²ò

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ïîñíïñîðïì
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðéñîìñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðèñîèñîðïë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ íë

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Û²ª·®±²³»²¬¿´ Ð®±¬»½¬·±²
Ì»´»°¸±²»æ éïéóéèíóèççð
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðìñïèñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðèñðïñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Î× ÓßÒÚÛÍÌæ Ó¿²·º»-¬ ·²º±®³¿¬·±²
Ø¿¦¿®¼±«- ©¿-¬» ³¿²·º»-¬ ·²º±®³¿¬·±²

Ü¿¬» ±º Ù±ª»®²³»²¬ Ê»®·-·±²æ ïîñíïñîðïí
Ü¿¬» Ü¿¬¿ ß®®·ª»¼ ¿¬ ÛÜÎæ ðêñïçñîðïë
Ü¿¬» Ó¿¼» ß½¬·ª» ·² Î»°±®¬-æ ðéñïëñîðïë
Ò«³¾»® ±º Ü¿§- ¬± Ë°¼¿¬»æ îê

Í±«®½»æ Ü»°¿®¬³»²¬ ±º Û²ª·®±²³»²¬¿´ Ó¿²¿¹»³»²¬
Ì»´»°¸±²»æ ìðïóîîîóîéçé
Ô¿-¬ ÛÜÎ Ý±²¬¿½¬æ ðëñîêñîðïê
Ò»¨¬ Í½¸»¼«´»¼ ÛÜÎ Ý±²¬¿½¬æ ðçñðëñîðïê
Ü¿¬¿ Î»´»¿-» Ú®»¯«»²½§æ ß²²«¿´´§

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

ÒÑÌ ÎÛÐÑÎÌÛÜ
ÒÑÌ ÎÛÐÑÎÌÛÜ
ÓÑÎÛÒÑ ÊßÔÔÛÇô Ýß çîëëí

TARGET PROPERTY COORDINATES

Ô¿¬·¬«¼» øÒ±®¬¸÷æ	33.915492 - 33• 54’ 55.77’’
Ô±²¹·¬«¼» øÉ»-¬÷æ	117.224571 - 117• 13’ 28.46’’
Ë²·ª»®-¿´ Ì®¿²ª»®-» Ó»®½¿¬±®æ	Æ±²» ïï
ËÌÓ È øÓ»¬»®-÷æ	ìéçîìðòí
ËÌÓ Ç øÓ»¬»®-÷æ	íéëîêïìòë
Û´»ª¿¬·±²æ	ïëêì º¬ò ¿¾±ª» -»¿ ´»ª»´

USGS TOPOGRAPHIC MAP

Ì¿®¹»¬ Ð®±°»®¬§ Ó¿°æ	ëêìïííê ÍËÒÒÇÓÛßÜô Ýß
Ê»®-·±² Ü¿¬»æ	îðïî

ÛÜÎ ·- Ù»±Ý¸»½µ Ð¸§-·½¿´ Í»¬¬·²¹ Í±«®½» ß¼¼»²¼«³ ·- ¼»-·¹²»¼ ¬± ¿--·-¬ ¬¸» °®±º»--·±²¿´ ·² »ª¿´«¿¬·²¹ ¬¸» °®±º»--·±²¿´ ·² »ª¿´«¿¬·²¹ ¸±© ¿²¼ ©¸»®» ½±²¬¿³·²¿²¬- ³·¹¸¬ ³·¹®¿¬» ·² ¬¸» »ª»²¬ ±º ¿ ®»´»¿-» ±º ¿ ½±²¬¿³·²¿²¬ ·²¬± ¬¸» »²ª·®±²³»²¬ò

ß--»--·²¹ ¬¸» ·³°¿½¬ ±º ½±²¬¿³·²¿¬·±² ½¿² ¾» ¿·¼»¼ ¾§ ¿² ¿²¿´§-·- ±º ¬¸» º±´´±©·²¹æ

ïò Ù®±«²¼©¿¬»® º´±© ¼·®»½¬·±² ¿²¼
îò Ù®±«²¼©¿¬»® º´±© ª»´±½·¬§ò

Ù®±«²¼©¿¬»® º´±© ¼·®»½¬·±² ³¿§ ¾» ·³°¿½¬»¼ ¾§ -«®º¿½» ¬±°±¹®¿°¸§ô ¸§¼®±´±¹§ô ¸§¼®±¹»±´±¹§ô ½¸¿®¿½¬»®·-¬·½- ±º ¬¸» -±·´ô ¿²¼ ²»¿®¾§ ©»´´-ò Ù®±«²¼©¿¬»® º´±© ª»´±½·¬§ ·- ¹»²»®¿´´§ ·³°¿½¬»¼ ¾§ ¬¸» ²¿¬«®» ±º ¬¸» ¹»±´±¹·½ -¬®¿¬¿ò

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Ù®±«²¼©¿¬»® º´±© ¼·®»½¬·±² ¿¬ ¿ °¿®¬·½«´¿® -·¬» ·- ¾»-¬ ¼»¬»®³·²»¼ ¾§ ¿ ¯«¿´·º·»¼ »²ª·®±²³»²¬¿´ °®±º»--·±²¿´ «-·²¹ -·¬»ó-°»½·º·½ ©»´´ ¼¿¬¿ò ×º -«½¸ ¼¿¬¿ ·- ²±¬ ®»¿¼·´§ ¿ª¿·´¿¾´»ô ¹»²»®¿´ ·²º±®³¿¬·±² ®»¹¿®¼·²¹ ¬¸» ½±²¬±«®- ±º ¬¸» ®»¹·±² ³¿§ ¾» «-»º«´ò ß³±²¹ ¬¸» º¿½¬±®- ·²º´«»²½·²¹ ¹®±«²¼©¿¬»® º´±© ¼·®»½¬·±² ¿®» ¬¸» ®»´¿¬·ª» »´»ª¿¬·±² ±º ¬¸» ´¿²¼ ¿²¼ °®±¨·³·¬§ ¬± ¾±¼·»- ±º ©¿¬»®ò

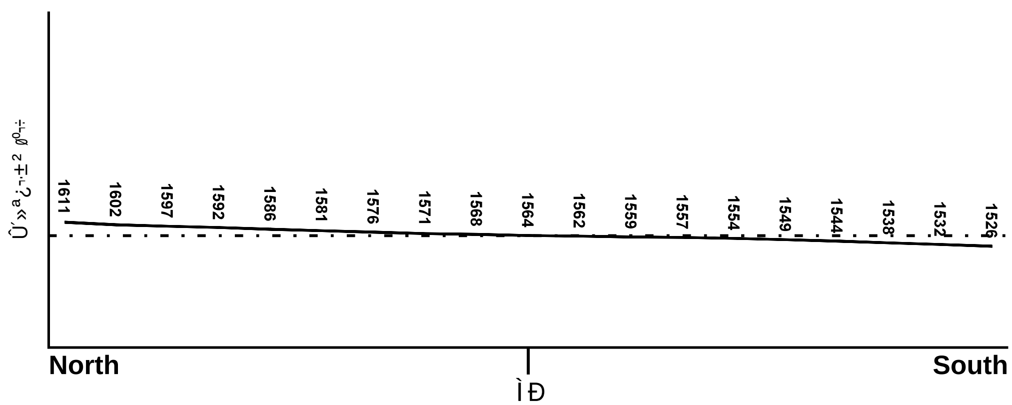
TOPOGRAPHIC INFORMATION

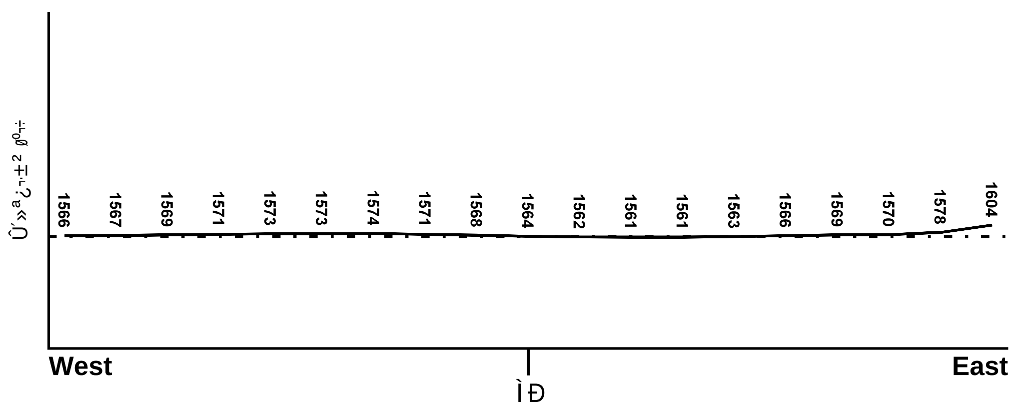
Í«®º¿½» ¬±°±¹®¿°¸§ ³¿§ ¾» ·²¼·½¿¬·ª» ±º ¬¸» ¼·®»½¬·±² ±º -«®º·½·¿´ ¹®±«²¼©¿¬»® º´±©ò Ì¸·- ·²º±®³¿¬·±² ½¿² ¾» «-»¼ ¬± ¿--·-¬ ¬¸» »²ª·®±²³»²¬¿´ °®±º»--·±²¿´ ·² º±®³·²¹ ¿² ±°·²·±² ¿¾±«¬ ¬¸» ·³°¿½¬ ±º ²»¿®¾§ ½±²¬¿³·²¿¬·±² ±² ¬¸» ¬¿®¹»¬ °®±°»®¬§ò

TARGET PROPERTY TOPOGRAPHY

Ù»²»®¿´ Ì±°±¹®¿°¸·½ Ù®¿¼·»²¬æ Ù»²»®¿´ ÍÛ

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 1564 ft.

Í±«®½»æ Ì±°±¹®¿°¸§ ¸¿- ¾»»² ¼»¬»®³·²»¼ º®±³ ¬¸» ËÍÙÍ éòë\' Ü·¹·¬¿´ Û´»ª¿¬·±² Ó±¼»´ ¿²¼ -¸±«´¼ ¾» »ª¿´«¿¬»¼ ±² ¿ ®»´¿¬·ª» ø²±¬ ¿¾-±´«¬»÷ ¾¿-·-ò Î»´¿¬·ª» »´»ª¿¬·±² ·²º±®³¿¬·±² ¾»¬©»»² -·¬»- ±º ½´±-» °®±¨·³·¬§ -¸±«´¼ ¾» º·»´¼ ª»®·º·»¼ò

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

[illegible]

[illegible]

FEMA FLOOD ZONE

[illegible]

NATIONAL WETLAND INVENTORY

[illegible]

HYDROGEOLOGIC INFORMATION

[illegible]

Site-Specific Hydrogeological Data*:

[illegible]

AQUIFLOW®

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Ù®±«²¼©¿¬»® º´±© ª»´±½·¬§ ·²º±®³¿¬·±² º±® ¿ °¿®¬·½«´¿® ·¬» · ¾»¬ ¼»¬»®³·²»¼ ¾§ ¿ ¯«¿´·º·»¼ »²ª·®±²³»²¬¿´ °®±º»·±²¿´ «·²¹ ·¬»-°»½·º·½ ©»´´ ¼¿¬¿ò ×º «½¸ ¼¿¬¿ · ²±¬ ®»¿¼·´§ ¿ª¿·´¿¾´»ô ¹»±´±¹·½ ·²º±®³¿¬·±² ½¿² ¾» «»¼ ¬± ¹¿·² ·²·¹¸¬ ·²¬± ¬¸» «¾«®º¿½» ®»´¿¬·ª» ¬± ½±²¼«½¬·ª·¬§ ¿²¼ ¬®¿²³··ª·¬§ ·«»ò

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Ù»±´±¹·½ ·²º±®³¿¬·±² ½¿² ¾» «»¼ ¾§ ¬¸» »²ª·®±²³»²¬¿´ °®±º»·±²¿´ ·² ¿»·²¹ ¬¸» ®»´¿¬·ª» ³±¾·´·¬§ ±º ¿ °±¬»²¬·¿´ ±«®½» ±º ½±²¬¿³·²¿¬·±² ¬± ¬¸» ½±²½»®²»¼ °®±°»®¬§ò

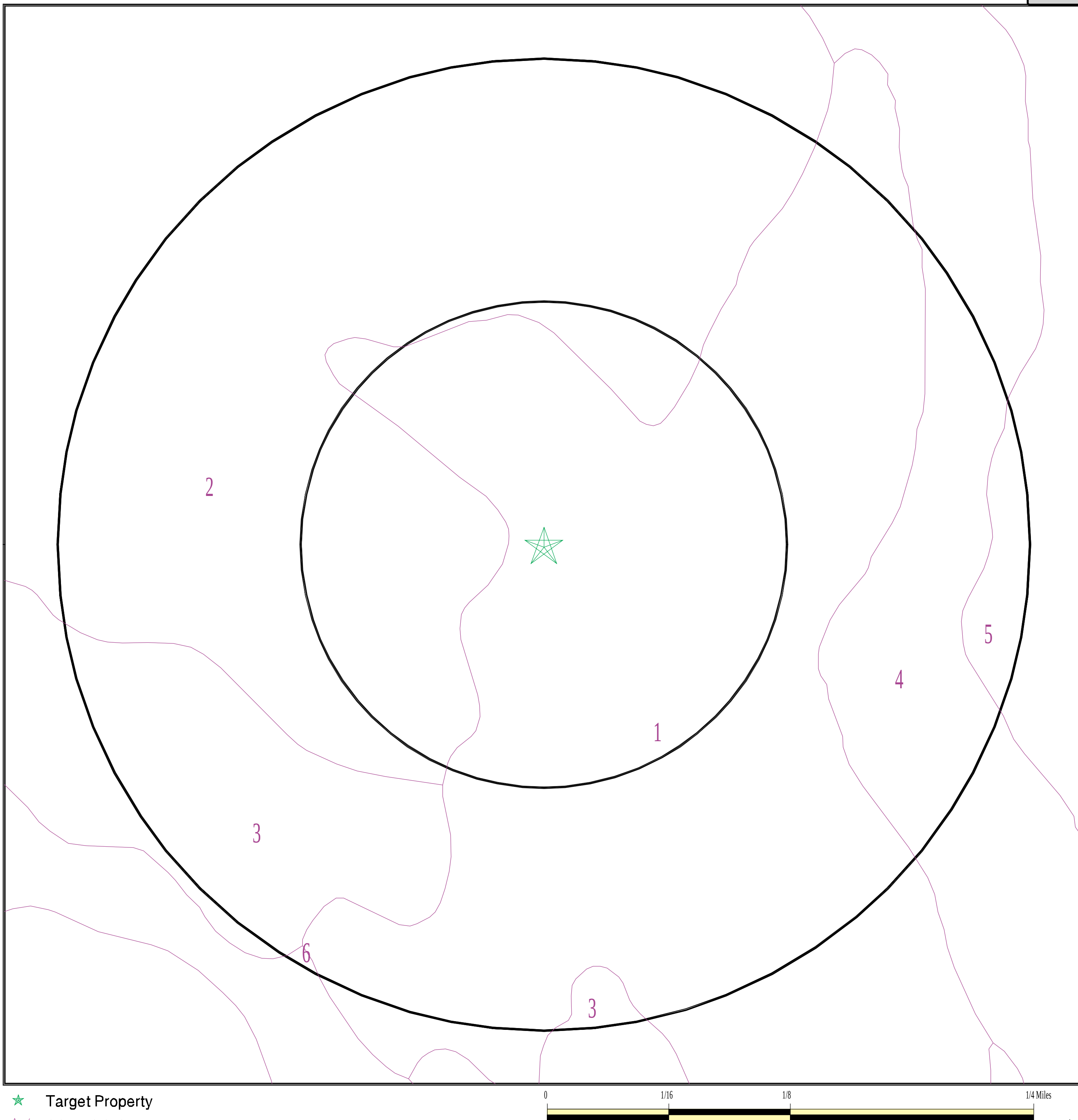
ROCK STRATIGRAPHIC UNIT | **GEOLOGIC AGE IDENTIFICATION**

Û®¿æ	Ó»±¦±·½	Ý¿¬»¹±®§æ Ð´«¬±²·½ ¿²¼ ×²¬®«·ª» Î±½µ
Í§¬»³æ	Ý®»¬¿½»±«	
Í»®·»æ	Ý®»¬¿½»±« ¹®¿²·¬·½ ®±½µ	
Ý±¼»æ	Õ¹ ø¼»½®·°¬·±² ¿ª¿·´¿¾´» ·² ß¬¬¿½¸³»²¬÷	

Ù»±´±¹·½ ß¹» ¿²¼ Î±½µ Í¬®¿¬·¹®¿°¸·½ Ë²·¬ Í±«®½»æ ÐòÙò Í½¸®«¾»²ô ÎòÛò ß®²¼¬ ¿²¼ ÉòÖò Þ¿©·»½ô Ù»±´±¹§ ±º ¬¸» Ý±²¬»®³·²±« ËòÍò æ ïæîôëððôððð ·²·¬» ½±·²¼·½ »¼·¬·±² ¿ ¼·¹·¬·¦»¼ »¼·¬·±² ±º ¬¸» ïççì ÐòÞò Õ·²¹ ¿²¼ ØòÓò Þ»·µ³¿² Ó¿°ô ËÍÙÍ Ü·¹·¬¿´ Ü¿¬¿ Í»®·» ÜÜÍ ó ïïô øïççì÷ò

SSURGO SOIL MAP - 04629924.2r

1.o



Target Property
SSURGO Soil
Water

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

SITE NAME:	Not Reported	CLIENT:	Hillmann Environmental Co.
ADDRESS:	Not Reported	CONTACT:	Kristine Savona
	Moreno Valley CA 92553	INQUIRY #:	04629924.2r
LAT/LONG:	33.915492 / 117.224571	DATE:	May 25, 2016 7:13 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

Ì ¸» Ëò Íò Ü»°¿®¬³»²¬ ±º ß¹®·½«´¬«®»ľ- øËÍÜß÷ Í±·´ Ý±²-»®ª¿¬·±² Í»®ª·½» øÍÝÍ÷ ´»¿¼- ¬¸» Ò¿¬·±²¿´ Ý±±°»®¿¬·ª» Í±·´ Í«®ª»§ øÒÝÍÍ÷ ¿²¼ ·- ®»-°±²-·¾´» º±® ½±´´»½¬·²¹ô -¬±®·²¹ô ³¿·²¬¿·²·²¹ ¿²¼ ¼·-¬®·¾«¬·²¹ -±·´ -«®ª»§ ·²º±®³¿¬·±² º±® °®·ª¿¬»ô º»¼»®¿´ô -¬¿¬» ¿²¼ ´±½¿´ »²¬·¬·»-ò ß -±·´ ³¿° ·² ¿ -±·´ -«®ª»§ ·- ¿ ®»°®»-»²¬¿¬·±² ±º -±·´ °¿¬¬»®²- ·² ¿ ´¿²¼-½¿°»ò Ì¸» º±´´±©·²¹ ·²º±®³¿¬·±² ·- ¾¿-»¼ ±² Í±·´ Ý±²-»®ª¿¬·±² Í»®ª·½» ÍÍËÎÙÑ ¼¿¬¿ò

Soil Map ID: 1

Í±·´ Ý±³°±²»²¬ Ò¿³»æ	ÛÈÛÌÛÎ
Í±·´ Í«®º¿½» Ì»¨¬«®»æ	-¿²¼§ ´±¿³
Ø§¼®±´±¹·½ Ù®±«°æ	Ý´¿-- Þ ó Ó±¼»®¿¬» ·²º·´¬®¿¬·±² ®¿¬»-ò Ü»»° ¿²¼ ³±¼»®¿¬»´§ ¼»»°ô ³±¼»®¿¬»´§ ©»´´ ¿²¼ ©»´´ ¼®¿·²»¼ -±·´- ©·¬¸ ³±¼»®¿¬»´§ ½±¿®-» ¬»¨¬«®»-ò
Í±·´ Ü®¿·²¿¹» Ý´¿--æ	É»´´ ¼®¿·²»¼
Ø§¼®·½ Í¬¿¬«-æ Ò±¬ ¸§¼®·½	
Ý±®®±-·±² Ð±¬»²¬·¿´ ó Ë²½±¿¬»¼ Í¬»»´æ	Ø·¹¸
Ü»°¬¸ ¬± Þ»¼®±½µ Ó·²æ	â ð ·²½¸»-
Ü»°¬¸ ¬± É¿¬»®¬¿¾´» Ó·²æ	â ð ·²½¸»-

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		Soil Reaction (pH)
ï	ð ·²½¸»-	ïê ·²½¸»-	-¿²¼§ ´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ Í±·´-ò	ÝÑßÎÍÛóÙÎß×ÒÛÜ ÍÑ×ÔÍô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ïì Ó·²æ ì	Ó¿¨æ éòí Ó·²æ êòê
î	ïê ·²½¸»-	íé ·²½¸»-	-¿²¼§ ½´¿§ ´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ô Ý´¿§»§ Í±·´-ò	Ú×ÒÛóÙÎß×ÒÛÜ ÍÑ×ÔÍô Í·´¬- ¿²¼ Ý´¿§- ø´·¯«·¼ ´·³·¬ ´»-- ¬¸¿² ëð û÷ô Ô»¿² Ý´¿§	Ó¿¨æ ì Ó·²æ ïòì	Ó¿¨æ éòè Ó·²æ êòê
í	íé ·²½¸»-	ëð ·²½¸»-	·²¼«®¿¬»¼	Ò±¬ ®»°±®¬»¼	Ò±¬ ®»°±®¬»¼	Ó¿¨æ ðòðï Ó·²æ ð	Ó¿¨æ Ó·²æ
ì	ëð ·²½¸»-	ëç ·²½¸»-	-¬®¿¬·º·»¼ -¿²¼§ ´±¿³ ¬± -¸¿´´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ Í±·´-ò	Ú×ÒÛóÙÎß×ÒÛÜ ÍÑ×ÔÍô Í·´¬- ¿²¼ Ý´¿§- ø´·¯«·¼ ´·³·¬ ´»-- ¬¸¿² ëð û÷ô -·´¬ò	Ó¿¨æ ì Ó·²æ ïòì	Ó¿¨æ èòì Ó·²æ éòì

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Í±·´ Ý±³°±²»²¬ Ò¿³»æ	Ù Î ÛÛÒÚ×ÛÔÜ
Í±·´ Í«®º¿½» Ì»¨¬«®»æ	-¿²¼§ ´±¿³
Ø§¼®±´±¹·½ Ù®±«°æ	Ý´¿-- Þ ó Ó±¼»®¿¬» ·²º·´¬®¿¬·±² ®¿¬»-ò Ü»»° ¿²¼ ³±¼»®¿¬»´§ ¼»»°ô ³±¼»®¿¬»´§ ©»´´ ¿²¼ ©»´´ ¼®¿·²»¼ -±·´- ©·¬¸ ³±¼»®¿¬»´§ ½±¿®-» ¬»¨¬«®»-ò
Í±·´ Ü®¿·²¿¹» Ý´¿--æ	É»´´ ¼®¿·²»¼
Ø§¼®·½ Í¬¿¬«-æ Ò±¬ ¸§¼®·½	
Ý±®®±-·±² Ð±¬»²¬·¿´ ó Ë²½±¿¬»¼ Í¬»»´æ	Ô±©
Ü»°¬¸ ¬± Þ»¼®±½µ Ó·²æ	â ð ·²½¸»-
Ü»°¬¸ ¬± É¿¬»®¬¿¾´» Ó·²æ	â ð ·²½¸»-

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
ï	ð ·²½¸»-	îë ·²½¸»-	-¿²¼§ ´±¿³	Ù®¿²«´¿® ³¿¬»®·¿´- øíë °½¬ò ±® ´»-- °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ ±® Ý´¿§»§ Ù®¿ª»´ ¿²¼ Í¿²¼ò	ÝÑßÎ Í ÛÙÎßÒ×ÛÜ ÍÑ×ÔÍô Í¿²¼-ô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ìî Ó·²æ ïì	Ó¿¨æ éòè Ó·²æ êòï
î	îë ·²½¸»-	ìî ·²½¸»-	º·²» -¿²¼§ ´±¿³	Ù®¿²«´¿® ³¿¬»®·¿´- øíë °½¬ò ±® ´»-- °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ ±® Ý´¿§»§ Ù®¿ª»´ ¿²¼ Í¿²¼ò	ÝÑßÎ Í ÛÙÎßÒ×ÛÜ ÍÑ×ÔÍô Í¿²¼-ô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ìî Ó·²æ ïì	Ó¿¨æ éòè Ó·²æ êòï
í	ìî ·²½¸»-	ëç ·²½¸»-	´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ Í±·´-ò	Ú×ÒÛóÙÎßÒ×ÛÜ ÍÑ×ÔÍô Í·´¬- ¿²¼ Ý´¿§- ø´·¯«·¼ ´·³·¬ ´»-- ¬¸¿² ëð÷ô -·´¬ò	Ó¿¨æ ïì Ó·²æ ì	Ó¿¨æ éòè Ó·²æ êòï
ì	ëç ·²½¸»-	éî ·²½¸»-	-¬®¿¬·º·»¼ ´±¿³§ -¿²¼ ¬± -¿²¼§ ´±¿³	Ù®¿²«´¿® ³¿¬»®·¿´- øíë °½¬ò ±® ´»-- °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ ±® Ý´¿§»§ Ù®¿ª»´ ¿²¼ Í¿²¼ò	ÝÑßÎ Í ÛÙÎßÒ×ÛÜ ÍÑ×ÔÍô Í¿²¼-ô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ìî Ó·²æ ïì	Ó¿¨æ èòì Ó·²æ êòê

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 3

Í±·´ Ý±³ °±²»²¬ Ò¿³»æ ØßÒÚÑ Î Ü

Í±·´ Í«®º¿½» Ì»¨¬«®»æ º·²» -¿²¼§ ´±¿³

Ø§¼®±´±¹·½ Ù®±«°æ Ý´¿-- Þ ó Ó±¼»®¿¬» ·²º·´¬®¿¬·±² ®¿¬»-ò Ü»»° ¿²¼ ³±¼»®¿¬»´§ ¼»»°ô ³±¼»®¿¬»´§ ©»´´ ¿²¼ ©»´´ ¼®¿·²»¼ -±·´- ©·¬¸ ³±¼»®¿¬»´§ ½±¿®-» ¬»¨¬«®»-ò

Í±·´ Ü®¿·²¿¹» Ý´¿--æ É»´´ ¼®¿·²»¼

Ø§¼®·½ Í¬¿¬«-æ Ò±¬ ¸§¼®·½

Ý±®®±-·±² Ð±¬»²¬·¿´ ó Ë²½±¿¬»¼ Í¬»»´æ Ô±©

Ü»°¬¸ ¬± Þ»¼®±½µ Ó·²æ â ð ·²½¸»-

Ü»°¬¸ ¬± É¿¬»®¬¿¾´» Ó·²æ â ð ·²½¸»-

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
ï	ð ·²½¸»-	é ·²½¸»-	º·²» -¿²¼§ ´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ Í±·´-ò	ÝÑßÎ Í Û ÙÎ ßÇÒÛÜ Í Ñ×ÔÍô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ìî Ó·²æ ïì	Ó¿¨æ éòè Ó·²æ ëòê
î	é ·²½¸»-	ìð ·²½¸»-	º·²» -¿²¼§ ´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ Í±·´-ò	ÝÑßÎ Í Û ÙÎ ßÇÒÛÜ Í Ñ×ÔÍô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ìî Ó·²æ ïì	Ó¿¨æ éòè Ó·²æ ëòê
í	ìð ·²½¸»-	ëç ·²½¸»-	-¬®¿¬·º·»¼ ´±¿³§ -¿²¼ ¬± ½±¿®-» -¿²¼§ ´±¿³	Ù®¿²«´¿® ³¿¬»®·¿´- øíë °½¬ò ±® ´»-- °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ô ±® Ý´¿§»§ Ù®¿ª»´ ¿²¼ Í¿²¼ò	ÝÑßÎ Í Û ÙÎ ßÇÒÛÜ Í Ñ×ÔÍô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ïìï Ó·²æ ìî	Ó¿¨æ éòè Ó·²æ ëòê

Soil Map ID: 4

Í±·´ Ý±³ °±²»²¬ Ò¿³»æ ÐßÝØßÐÐß

Í±·´ Í«®º¿½» Ì»¨¬«®»æ º·²» -¿²¼§ ´±¿³

Ø§¼®±´±¹·½ Ù®±«°æ Ý´¿-- Þ ó Ó±¼»®¿¬» ·²º·´¬®¿¬·±² ®¿¬»-ò Ü»»° ¿²¼ ³±¼»®¿¬»´§ ¼»»°ô ³±¼»®¿¬»´§ ©»´´ ¿²¼ ©»´´ ¼®¿·²»¼ -±·´- ©·¬¸ ³±¼»®¿¬»´§ ½±¿®-» ¬»¨¬«®»-ò

Í±·´ Ü®¿·²¿¹» Ý´¿--æ É»´´ ¼®¿·²»¼

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Ø§¼®·½ Í¬¿¬«-æ Ò±¬ ¸§¼®·½

Ý±®®±-·±² Ð±¬»²¬·¿´ ó Ë²½±¿¬»¼ Í¬»»´æ Ô±©

Ü»°¬¸ ¬± Þ»¼®±½µ Ó·²æ â ð ·²½¸»-

Ü»°¬¸ ¬± É¿¬»®¬¿¾´» Ó·²æ â ð ·²½¸»-

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
ï	ð ·²½¸»-	îð ·²½¸»-	º·²» -¿²¼§ ´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ Í·´¬§ Í±·´-ò	ÝÑßÎ Í ÙÎßÒËÔßÎ ÍÑ×ÔÍ Í¿²¼- Í¿²¼§ Þ·¬¸ º·²»- Í·´¬§ Í¿²¼ò	Ó¿¨æ ïì Ó·²æ ì	Ó¿¨æ éòè Ó·²æ êòï
î	îð ·²½¸»-	ìð ·²½¸»-	´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ Í·´¬§ Í±·´-ò	Ú×ÒÛóÙÎßÒËÔßÎ ÍÑ×ÔÍ Í·´¬- ¿²¼ Ý´¿§- øÔ·¯«·¼ ´·³·¬ ´»-- ¬¸¿² ëð û÷ Ô»¿² Ý´¿§	Ó¿¨æ ïì Ó·²æ ì	Ó¿¨æ éòè Ó·²æ êòê
í	ìð ·²½¸»-	êî ·²½¸»-	º·²» -¿²¼§ ´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ Í·´¬§ Í±·´-ò	ÝÑßÎ Í ÙÎßÒËÔßÎ ÍÑ×ÔÍ Í¿²¼- Í¿²¼§ Þ·¬¸ º·²»- Í·´¬§ Í¿²¼ò	Ó¿¨æ ïì Ó·²æ ì	Ó¿¨æ èòì Ó·²æ êòê

Soil Map ID: 5

Í±·´ Ý±³°±²»²¬ Ò¿³»æ ÛÈÛÌÛÎ

Í±·´ Í«®º¿½» Ì»¨¬«®»æ -¿²¼§ ´±¿³

Ø§¼®±´±¹·½ Ù®±«°æ Ý´¿-- Þ ó Ó±¼»®¿¬» ·²º·´¬®¿¬·±² ®¿¬»-ò Ü»»° ¿²¼ ³±¼»®¿¬»´§ ¼»»° ³±¼»®¿¬»´§ ©»´´ ¿²¼ ©»´´ ¼®¿·²»¼ -±·´- ©·¬¸ ³±¼»®¿¬»´§ ½±¿®-» ¬»¨¬«®»-ò

Í±·´ Ü®¿·²¿¹» Ý´¿--æ É»´´ ¼®¿·²»¼

Ø§¼®·½ Í¬¿¬«-æ Ò±¬ ¸§¼®·½

Ý±®®±-·±² Ð±¬»²¬·¿´ ó Ë²½±¿¬»¼ Í¬»»´æ Ø·¹¸

Ü»°¬¸ ¬± Þ»¼®±½µ Ó·²æ â ð ·²½¸»-

Ü»°¬¸ ¬± É¿¬»®¬¿¾´» Ó·²æ â ð ·²½¸»-

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
ï	ð ·²½¸»-	ïê ·²½¸»-	-¿²¼§ ´±¿ ³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³ ±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ Í·´¬§ Í±·´-ò	ÝÑß Î ÍÛóÙ Î ßײÛÜ Í ÑÔ Í Í ¿²¼- Í ¿²¼- ©·¬¸ º·²»- Í ·´¬§ Í ¿²¼ò	Ó¿¨ æ ïì Ó·²æ ì	Ó¿¨ æ éòí Ó·²æ êòê
î	ïê ·²½¸»-	íé ·²½¸»-	-¿²¼§ ½´¿§ ´±¿ ³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³ ±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ Ý´¿§»§	ÚóÒ ÛóÙ Î ßײÛÜ Í ÑÔ Í Í ·´¬- ¿²¼ Ý´¿§- ø´·¯«·¼ ´·³·¬ ´»-- ¬¸¿² ëð û ÷ Ô»¿² Ý´¿§	Ó¿¨ æ ì Ó·²æ ïòì	Ó¿¨ æ éòè Ó·²æ êòê
í	íé ·²½¸»-	ëð ·²½¸»-	·²¼«®¿¬»¼	Ò±¬ ®»°±®¬»¼	Ò±¬ ®»°±®¬»¼	Ó¿¨ æ ðòðï Ó·²æ ð	Ó¿¨ æ Ó·²æ
ì	ëð ·²½¸»-	ëç ·²½¸»-	-®¿¬·º·»¼ -¿²¼§ ´±¿ ³ ¬± -·´¬ ´±¿ ³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³ ±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ Í·´¬§ Í±·´-ò	ÚóÒ ÛóÙ Î ßײÛÜ Í ÑÔ Í Í ·´¬- ¿²¼ Ý´¿§- ø´·¯«·¼ ´·³·¬ ´»-- ¬¸¿² ëð û ÷ -·´¬	Ó¿¨ æ ì Ó·²æ ïòì	Ó¿¨ æ èòì Ó·²æ éòì

Soil Map ID: 6

Í±·´ Ý±³°±²»²¬ Ò¿³»æ ØßÒÚÑÎÜ

Í±·´ Í«®º¿½» Ì»¨¬«®»æ ½±¿®-» -¿²¼§ ´±¿³

Ø§¼®±´±¹·½ Ù®±«°æ Ý´¿-- ß ó Ø·¹¸ ·²º·´¬®¿¬·±² ®¿¬»-ò Í±·´- ¿®» ¼»»° ¿²¼ ©»´´ ¼®¿·²»¼ ¬± »¨½»--·ª»´§ ¼®¿·²»¼ -¿²¼- ±® ¹®¿ª»´-ò

Í±·´ Ü®¿·²¿¹» Ý´¿--æ É»´´ ¼®¿·²»¼

Ø§¼®·½ Í¬¿¬«-æ Ò±¬ ¸§¼®·½

Ý±®®±-·±² Ð±¬»²¬·¿´ ó Ë²½±¿¬»¼ Í¬»»´æ Ô±©

Ü»°¬¸ ¬± Þ»¼®±½µ Ó·²æ â ð ·²½¸»-

Ü»°¬¸ ¬± É¿¬»®¬¿¾´» Ó·²æ â ð ·²½¸»-

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
ï	ð ·²½¸»-	é ·²½¸»-	½±¿®-» -¿²¼§ ´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ Í±·´-ò	ÝÑßÎ ÍÛóÙÎßÒËÔßÎ ÍÑ×ÔÍô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ìî Ó·²æ ïì	Ó¿¨æ éòè Ó·²æ ëòê
î	é ·²½¸»-	ìð ·²½¸»-	º·²» -¿²¼§ ´±¿³	Í·´¬óÝ´¿§ Ó¿¬»®·¿´- ø³±®» ¬¸¿² íë °½¬ò °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ Í±·´-ò	ÝÑßÎ ÍÛóÙÎßÒËÔßÎ ÍÑ×ÔÍô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ìî Ó·²æ ïì	Ó¿¨æ éòè Ó·²æ ëòê
í	ìð ·²½¸»-	ëç ·²½¸»-	-¬®¿¬·º·»¼ ´±¿³§ -¿²¼ ¬± ½±¿®-» -¿²¼§ ´±¿³	Ù®¿²«´¿® ³¿¬»®·¿´- øíë °½¬ò ±® ´»-- °¿--·²¹ Ò±ò îðð÷ô Í·´¬§ô Ú®¿ª»´´§ô Ù®¿ª»´ ¿²¼ Í¿²¼ò	ÝÑßÎ ÍÛóÙÎßÒËÔßÎ ÍÑ×ÔÍô Í¿²¼- ©·¬¸ º·²»-ô Í·´¬§ Í¿²¼ò	Ó¿¨æ ïìï Ó·²æ ìî	Ó¿¨æ éòè Ó·²æ ëòê

LOCAL / REGIONAL WATER AGENCY RECORDS

ÛÜÎ Ô±½¿´/Î»¹·±²¿´ É¿¬»® ß¹»²½§ ®»½±®¼- °®±ª·¼» ©¿¬»® ©»´´ ·²º±®³¿¬·±² ¬± ¿--·-¬ ¬¸» »²ª·®±²³»²¬¿´ °®±º»--·±²¿´ ·² ¿--»--·²¹ -±«®½»- ¬¸¿¬ ³¿§ ·³°¿½¬ ¹®±«²¼©¿¬»® º´±© ¼·®»½¬·±²ô ¿²¼ ·² º±®»½¿-¬·²¹ ¬¸» -°»»¼ ¿¬ ©¸·½¸ ½±²¬¿³·²¿¬·±² ³¿§ ¬®¿ª»´ò

WELL SEARCH DISTANCE INFORMATION

ÜßÌßÞßÍÛ	ÍÛßÎÝØ Ü×ÍÌßÒÝÛ ø³·´»-÷
Ú»¼»®¿´ ËÍÙÍ	ïòððð
Ú»¼»®¿´ ÚÎÜÍ ÐÉÍ	Ò»¿®»-¬ ÐÉÍ ©·¬¸·² ðòððï ³·´»-
Í¬¿¬» Ü¿¬¿¾¿-»	ïòððð

FEDERAL USGS WELL INFORMATION

ÓßÐ ×Ü	ÉÛÔÔ ×Ü	ÔÑÝßÌ×ÑÒ ÚÎÑÓ ÌÐ
Ò± É»´´- Ú±«²¼		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

ÓßÐ ×Ü	ÉÛÔÔ ×Ü	ÔÑÝßÌ×ÑÒ ÚÎÑÓ ÌÐ

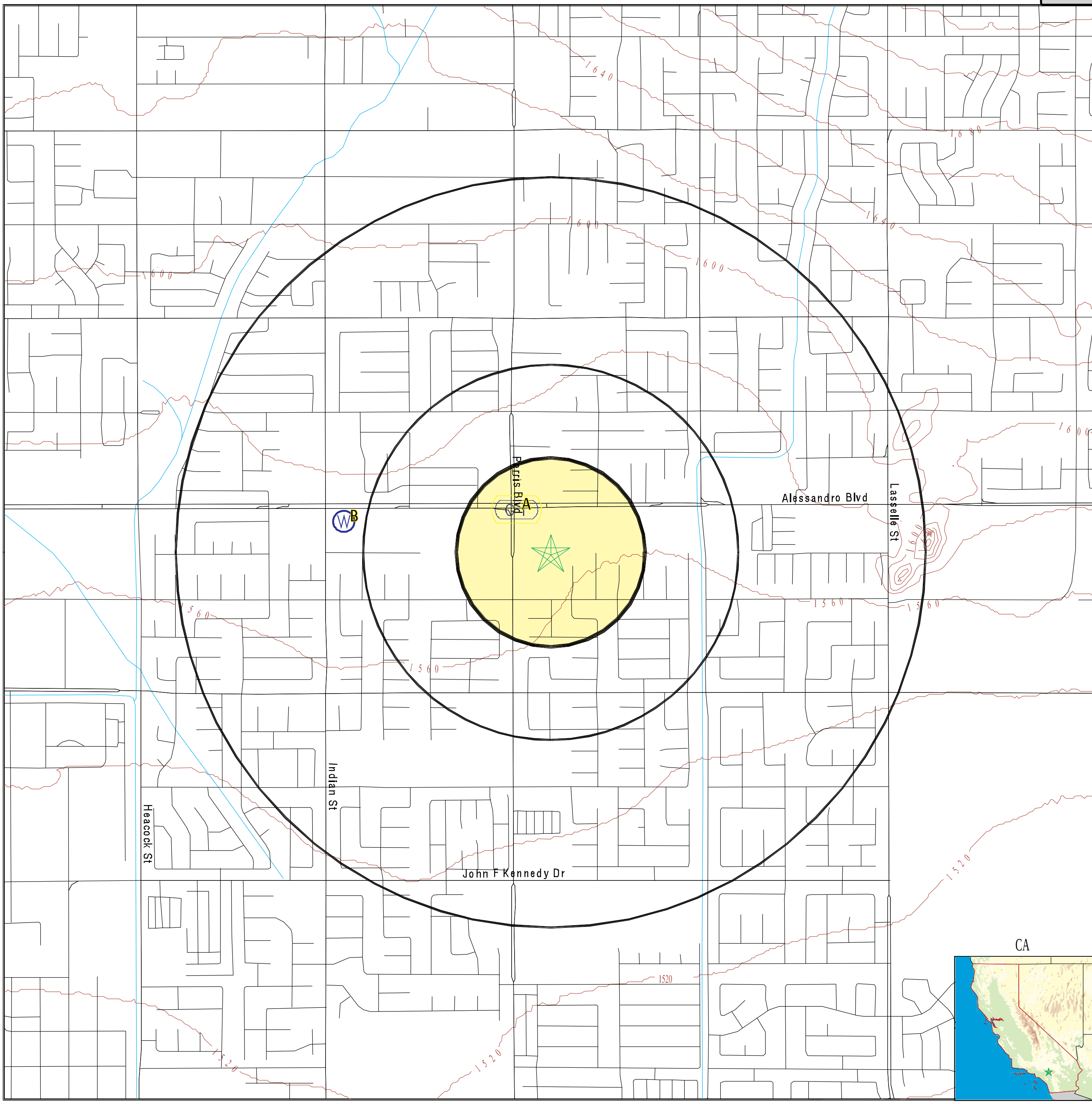
Ò± ÐÉÍ Í§-¬»³ Ú±«²¼

Ò±¬»æ ÐÉÍ Í§-¬»³ ´±½¿¬·±² ·- ²±¬ ¿´©¿§- ¬¸» -¿³» ¿- ©»´´ ´±½¿¬·±²ò

STATE DATABASE WELL INFORMATION

ÓßÐ ×Ü	ÉÛÔÔ ×Ü	ÔÑÝßÌ×ÑÒ ÚÎÑÓ ÌÐ
Þí	í ì çè	ïñî ó ï Ó·´» É»-¬
Þì	í ì çé	ïñî ó ï Ó·´» É»-¬

PHYSICAL SETTING SOURCE MAP - 04629924.2r



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

SITE NAME:	Not Reported
ADDRESS:	Not Reported
	Moreno Valley CA 92553
LAT/LONG:	33.915492 / 117.224571

CLIENT:	Hillmann Environmental Co.
CONTACT:	Kristine Savona
INQUIRY #:	04629924.2r
DATE:	May 25, 2016 7:13 pm

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ó¿° ×Ü
Ü·®»½¬·±²
Ü·-¬¿²½»
Û´»ª¿¬·±² Ü¿¬¿¾¿-» ÛÜÎ ×Ü Ò«³¾»®

A1
NW
1/8 - 1/4 Mile
Higher

Í·¬» ×Ü:	çèðêðç	**AQUIFLOW**	**50186**
Ù®±«²¼©¿¬»® Ú´±©:	Ò±¬ Î»°±®¬»¼		
Í¸¿´´±© É¿¬»® Ü»°¬¸:	Ò±¬ Î»°±®¬»¼		
Ü»»° É¿¬»® Ü»°¬¸:	Ò±¬ Î»°±®¬»¼		
ß ª»®¿¹» É¿¬»® Ü»°¬¸:	ëð º¬		
Ü¿¬»:	ïîñîîñïççè		

A2
NW
1/8 - 1/4 Mile
Higher

Í·¬» ×Ü:	ðèííðííîííì	**AQUIFLOW**	**50185**
Ù®±«²¼©¿¬»® Ú´±©:	Ò±¬ Î»°±®¬»¼		
Í¸¿´´±© É¿¬»® Ü»°¬¸:	Ò±¬ Î»°±®¬»¼		
Ü»»° É¿¬»® Ü»°¬¸:	Ò±¬ Î»°±®¬»¼		
ß ª»®¿¹» É¿¬»® Ü»°¬¸:	ëð º¬		
Ü¿¬»:	ïîñîîñïççè		

B3
West
1/2 - 1 Mile
Higher **CA WELLS** **3498**

Water System Information:

Ð®·³» Í¬¿¬·±² Ý±¼»:	ðííñðí Éóðêðð í	Ë-»® ×Ü:	ÉßÌ
ÚÎÜÍ Ò«³¾»®:	ííïððïððð î	Ý±«²¬§:	Î·ª»®-·¼»
Ü·--®·½¬ Ò«³¾»®:	ïì	Í¬¿¬·±² Ì§°»:	ÉÛÔÔñßÓÞÒÌñÓÝÔñÓ×ÒÌ ßÕÛÑñÍÌÝ ÜÐÎÍÇ
É¿¬»® Ì§°»:	É»´´ñÙ®±«²¼©¿¬»®	É»´´ Í¬¿¬«-:	ß½¬·ª» Î¿©
Í±«®½» Ô¿¬ñÔ±²¹:	ííëèðððð ïïéïìðð	Ð®»½·-·±²:	Ë²¼»º·²»¼
Í±«®½» Ò¿³»:	ÉÛÔÔ ðî		
Í§-¬»³ Ò«³¾»®:	ííïððïð		
Í§-¬»³ Ò¿³»:	Ó±®»²± Ê¿´´»§ Ó«¬«¿´ ÉÝ		
Ñ®¹¿²·¦¿¬·±² Ì¸¿¬ Ñª»®-»»- Í§-¬»³:			
	îììçë Ú·® ßª»²«»		
	Ó±®»²± Ê¿´´»§ ÝßçîëëíÎ		
Ð±° Í»®ª»¼:	íðð	Ý±²²»½¬·±²-:	èëð
ß®»¿ Í»®ª»¼:	ÎÛÍ×ÜÛÒÌ×ßÔ ú ÊßÝßÌ×ÑÒ		

B4
West
1/2 - 1 Mile
Higher **CA WELLS** **3497**

Water System Information:

Ð®·³» Í¬¿¬·±² Ý±¼»:	ðííñðí Éóðêðð í	Ë-»® ×Ü:	ÉßÌ
ÚÎÜÍ Ò«³¾»®:	ííïððïðððï	Ý±«²¬§:	Î·ª»®-·¼»
Ü·--®·½¬ Ò«³¾»®:	ïì	Í¬¿¬·±² Ì§°»:	ÉÛÔÔñßÓÞÒÌñÓÝÔñÓ×ÒÌ ßÕÛÑñÍÌÝ ÜÐÎÍÇ
É¿¬»® Ì§°»:	É»´´ñÙ®±«²¼©¿¬»®	É»´´ Í¬¿¬«-:	ß¾¿²¼±²»¼
Í±«®½» Ô¿¬ñÔ±²¹:	ííëèðððð ïïéïìðð	Ð®»½·-·±²:	Ë²¼»º·²»¼
Í±«®½» Ò¿³»:	ÉÛÔÔ ðï ó ßÞßÒÜÑÒÛÜ		
Í§-¬»³ Ò«³¾»®:	ííïððïð		
Í§-¬»³ Ò¿³»:	Ó±®»²± Ê¿´´»§ Ó«¬«¿´ ÉÝ		
Ñ®¹¿²·¦¿¬·±² Ì¸¿¬ Ñª»®-»»- Í§-¬»³:			
	îììçë Ú·® ßª»²«»		
	Ó±®»²± Ê¿´´»§ ÝßçîëëíÎ		
Ð±° Í»®ª»¼:	íðð	Ý±²²»½¬·±²-:	èëð
ß®»¿ Í»®ª»¼:	ÎÛÍ×ÜÛÒÌ×ßÔ ú ÊßÝßÌ×ÑÒ		

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Í¬¿¬» Ü¿¬¿¾¿-»ã ÝßÎ¿¼±²

Î¿¼±² Ì»-¬ Î»-«´¬-

Æ·°½±¼»	Ò« ³ Ì»-¬-	â ì °Ý·ñÔ
ÁÁÁÁÁÁ	ÁÁÁÁÁÁÁÁ	ÁÁÁÁÁÁÁÁ
çîëëí	ïí	ð

Ú»¼»®¿´ ÛÐß Î¿¼±² Æ±²» º±® ÎÊÊÛÎ ÍÜÛ Ý±«²¬§ã î

Ò±¬»ã Æ±²» ï ·²¼±±® ¿ª»®¿¹» ´»ª»´ â ì °Ý·ñÔò
ã Æ±²» î ·²¼±±® ¿ª»®¿¹» ´»ª»´ âã î °Ý·ñÔ ¿²¼ äã ì °Ý·ñÔò
ã Æ±²» í ·²¼±±® ¿ª»®¿¹» ´»ª»´ ä î °Ý·ñÔò

Ú»¼»®¿´ ß®»¿ Î¿¼±² ×²º±®³¿¬·±² º±® ÎÊÊÛÎ ÍÜÛ ÝÑËÒÌÇô Ýß

Ò« ³¾»® ±º -·¬»- ¬»-¬»¼ã ïî

ß®»¿	ßª»®¿¹» ß½¬·ª·¬§	û äì °Ý·ñÔ	û ìóîð °Ý·ñÔ	û âîð °Ý·ñÔ
Ô·ª·²¹ ß®»¿ ó ï-¬ Ú´±±®	ðòïïé °Ý·ñÔ	ïðð û	ð û	ð û
Ô·ª·²¹ ß®»¿ ó î²¼ Ú´±±®	ðòìëð °Ý·ñÔ	ïðð û	ð û	ð û
Þ¿-»³»²¬	ïòéðð °Ý·ñÔ	ïðð û	ð û	ð û

Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

HYDROLOGIC INFORMATION

HYDROGEOLOGIC INFORMATION

GEOLOGIC INFORMATION

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

ÚÛÜÛÎßÔ ÉßÌÛÎ ÉÛÔÔÍ

ÐÉÍæ Ð«¾´·½ É¿¬»® Í§-¬»³-
Í±«®½»æ ÛÐßñÑºº·½» ±º Ü®·²µ·²¹ É¿¬»®
Ì»´»°¸±²»æ îðîóëêìóíéëð
Ð«¾´·½ É¿¬»® Í§-¬»³ ¼¿¬¿ º®±³ ¬¸» Ú»¼»®¿´ Î»°±®¬·²¹ Ü¿¬¿ Í§-¬»³ò ß ÐÉÍ ·- ¿²§ ©¿¬»® -§-¬»³ ©¸·½¸ °®±ª·¼»- ©¿¬»® ¬± ¿¬ ´»¿-¬ îë °»±°´» º±® ¿¬ ´»¿-¬ êð ¼¿§- ¿²²«¿´´§ò ÐÉÍ- °®±ª·¼» ©¿¬»® º®±³ ©»´´-ô ®·ª»®- ¿²¼ ±¬¸»® -±«®½»-ò

ÐÉÍ ÛÒÚæ Ð«¾´·½ É¿¬»® Í§-¬»³ Ê·±´¿¬·±² ¿²¼ Û²º±®½»³»²¬ Ü¿¬¿
Í±«®½»æ ÛÐßñÑºº·½» ±º Ü®·²µ·²¹ É¿¬»®
Ì»´»°¸±²»æ îðîóëêìóíéëð
Ê·±´¿¬·±² ¿²¼ Û²º±®½»³»²¬ ¼¿¬¿ º±® Ð«¾´·½ É¿¬»® Í§-¬»³ º®±³ ¬¸» Í¿º» Ü®·²µ·²¹ É¿¬»® ×²º±®³¿¬·±² Í§-¬»³ øÍÜÉ×Í÷ ¿º¬»® ß«¹«-¬ ïççëò Ð®·±® ¬± ß«¹«-¬ ïççëô ¬¸» ¼¿¬¿ ½¿³» º®±³ ¬¸» Ú»¼»®¿´ Î»°±®¬·²¹ Ü¿¬¿ Í§-¬»³ øÚÎÜÍ÷ò

ËÍÙÍ É¿¬»® É»´´-æ ËÍÙÍ Ò¿¬·±²¿´ É¿¬»® ×²º±®³¿¬·±² Í§-¬»³ øÒÉ×Í÷
Ì¸·- ¼¿¬¿¾¿-» ½±²¬¿·²- ¼»-½®·°¬·ª» ·²º±®³¿¬·±² ±² -·¬»- ©¸»®» ¬¸» ËÍÙÍ ½±´´»½¬- ±® ¸¿- ½±´´»½¬»¼ ¸§¼®±´±¹·½ ¼¿¬¿ò ËÍÙÍ -·¬»- ¿®» »-¬¿¾´·-¸»¼ ¿¬ ´±½¿¬·±²- ©¸»®» ¿ -«®º¿½» ©¿¬»® ±® ¹®±«²¼©¿¬»® -¿³°´» ·- ½±´´»½¬»¼ò

ÍÌßÌÛ ÎÛÝÑÎÜÍ

É¿¬»® É»´´ Ü¿¬¿¾¿-»
Í±«®½»æ Ü»°¿®¬³»²¬ ±º É¿¬»® Î»-±«®½»-
Ì»´»°¸±²»æ çïêóêëëóïçêè

Ý¿´·º±®²·¿ Ü®·²µ·²¹ É¿¬»® Ï«¿´·¬§ Ü¿¬¿¾¿-»
Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ð«¾´·½ Ø»¿´¬¸
Ì»´»°¸±²»æ çïêóíîíóíîïç
Ì¸» ¼¿¬¿¾¿-» ·²½´«¼»- ¿´´ ¼®·²µ·²¹ ©¿¬»® ½±³°±«²¼- -¿³°´»¼ ¾§ ¬¸» Ý¿´·º±®²·¿ Ü»°¿®¬³»²¬ ±º Ð«¾´·½ Ø»¿´¬¸ -·²½» ïçèìò Ì¸» ©¿¬»® ¼¿¬¿ ·- ¬¸» ®»-«´¬ ±º ©¿¬»® -¿³°´»- ¬¿µ»² ¾§ ©¿¬»® -§-¬»³- ·² ¬¸» -¬¿¬»ò

OTHER STATE DATABASE INFORMATION

Ý¿´·º±®²·¿ Ñ·´ ¿²¼ Ù¿- É»´´ Ô±½¿¬·±²-
Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ý±²-»®ª¿¬·±²
Ì»´»°¸±²»æ çïêóíîíóïéç
Ñ·´ ¿²¼ Ù¿- ©»´´ ´±½¿¬·±²- ·² ¬¸» -¬¿¬»ò

ÎßÜÑÒ

Í¬¿¬» Ü¿¬¿¾¿-»æ Ýß Î¿¼±²
Í±«®½»æ Ü»°¿®¬³»²¬ ±º Ø»¿´¬¸ Í»®ª·½»-
Ì»´»°¸±²»æ çïêóíîóíîè
Î¿¼±² Ü¿¬¿¾¿-» º±® Ý¿´·º±®²·¿

ß®»¿ Î¿¼±² ×²º±®³¿¬·±²
Í±«®½»æ ËÍÙÍ
Ì»´»°¸±²»æ éðíóêìèóêìîð
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Attachment: Appendix D - Phase I Report (2340 : PA16-0039 Plot Plan)

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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STREET AND ADDRESS INFORMATION

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APPENDIX F

OTHER DOCUMENTS
(where applicable)

HILLMANN
CONSULTING

May 25, 2016

State of California
Regional Water Quality Control Board – Santa Ana Region (8)
3737 Main Street, Suite #500
Riverside, CA 92501-3339
Phone (951) 782-4130
Fax (951) 781-6288
FileReview8@waterboards.ca.gov

RE: Environmental Files:

No address assigned, vacant land
APNs 484-020-006, 484-020-018, 484-020-020, and 484-020-025
Moreno Valley, CA 92553

Dear RWQCB:

Hillmann Consulting, LLC is conducting an environmental investigation of the above referenced property. Under the Freedom of Information Act, we are requesting any information your office has regarding this property. If any records are located, we would like to obtain copies or schedule a file review. If no records are available, please contact me to confirm. Thank you.

Sincerely,

Kristine Savona
Office Manager
Hillmann Consulting, LLC
ksavona@hillmanngroup.com

Kristine Savona

From: Edwards, Mary@Waterboards <Mary.Edwards@waterboards.ca.gov> on behalf of WB-RB8-FileReview8 <FileReview8@waterboards.ca.gov>
Sent: Wednesday, May 25, 2016 3:47 PM
To: Scott Alburn
Cc: Kristine Savona
Subject: RE: FileReview8@waterboards.ca.gov

Hi Scott,

For APNs 484-020-006, 484-020-018, 484-020-020, and 484-020-025 we don?t use APN numbers to file or track our files. We only use facility names and/or physical numbers to locate files. If you can provide an address or facility name I can check our site database or files to see if we have anything that you are requesting. If you have any questions you can call me at 951 782 4499.

Thanks,
Mary

From: Scott Alburn [mailto:salburn@hillmanngroup.com]
Sent: Wednesday, May 25, 2016 1:34 PM
To: WB-RB8-FileReview8
Cc: Kristine Savona
Subject: FileReview8@waterboards.ca.gov

Good Afternoon!

Please see the attached file in regards to a public records request.

Best,

Scott Alburn
Environmental Technician

Hillmann Consulting, LLC
1745 W. Orangewood Ave., Suite 110
Orange, CA 92686
Office: (714) 634-9500

salburn@hillmanngroup.com
www.HillmannConsulting.com

HILLMANN
CONSULTING

May 25, 2016

Moreno Valley Fire Department
Phone (951) 486-6780
mvfd@moval.org

RE: Records of Violations/Environmental Concerns:

No address assigned
APNs 484-020-006, 484-020-018, 484-020-020, and 484-020-025
Moreno Valley, CA 92553

Dear Chief Ahmad:

Hillmann Consulting, LLC is conducting an environmental investigation of the above referenced property. Under the Freedom of Information Act, we would like to request any information your office has regarding underground storage tanks (USTs), hazardous materials or other environmental concerns for this property. If any records are located, we would like to obtain copies or schedule a file review. If no records are available or this property is not within your jurisdiction, please contact me to confirm. Thank you for your assistance.

Sincerely,

Kristine Savona
Office Manager
Hillmann Consulting, LLC
ksavona@hillmanngroup.com

Your Property. Our Priority.
1745 W. Orangewood Avenue, Suite 110, Orange, CA 92868
Telephone (714) 634-9500 Fax: (714) 634-9507
www.HillmannConsulting.com

Request Confirmation

Request Information

Tracking Number : *EPA-R9-2016-007011*

Requester Name : Ms. Kristine Savona

Date Submitted : 05/25/2016

Request Status : Submitted

Description :

Vacant land, no assigned address: 484-020-006, 484-020-018, 484-020-020, 484-020-025, Moreno Valley, CA 92553. Dear Sir/Madam: Hillmann Consulting, LLC is conducting an environmental investigation of the above referenced property. Under the Freedom of Information Act, we would like to request any information your office has regarding underground storage tanks (USTs), hazardous materials or other environmental concerns for this property. If any records are located, we would like to obtain copies or schedule a file review. If no records are available, please contact me to confirm. Thank you for your assistance.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

MAY 3 1 2016

Kristine Savona
Hillmann Consulting
1745 West Orangewood Avenue
Orange, California 92868

Re: Freedom of Information Act Request No. EPA-R9-2016-007011

Dear Kristine Savona:

This is in response to your Freedom of Information Act request regarding:

> Vacant land, no assigned address: 484-020-006, 484-020-018, 484-020-020, 484-020-025 in Moreno Valley, California

In order to make public access easier and reduce any potential fee for requests, responsive, releasable documents and invoice (if applicable) have been uploaded to EPA's FOIAOnline system, https://foiaonline.regulations.gov/foia/action/public/home. To access the documents, reference your FOIA request as EPA-R9-2016-007011.

I wish to advise you that Region 9 has no additional records responsive to your request.

You may appeal this no records determination to the National Freedom of Information Officer, U.S. EPA, FOIA and Privacy Branch, 1200 Pennsylvania Avenue, N.W. (2822T), Washington, DC 20460 (U.S. Postal Service Only), FAX: (202) 566-2147, E-mail: hq.foia@epa.gov. Only items mailed through the United States Postal Service may be delivered to 1200 Pennsylvania Avenue, NW. If you are submitting your appeal via hand delivery, courier service or overnight delivery, you must address your correspondence to 1301 Constitution Avenue, N.W., Room 6416J, Washington, DC 20004. Your appeal must be made in writing, and it must be submitted no later than 30 calendar days from the date of this letter. The Agency will not consider appeals received after the 30 calendar day limit. The appeal may include as much or as little related information as you wish, as long as it clearly identifies the determination being appealed (including the assigned FOIA request number - EPA-R9-2016-007011). For quickest possible handling, the appeal letter and its envelope should be marked "Freedom of Information Act Appeal."

The Land Division's RCRA Records Center is maintained by Toeroek Associates Inc., under contract to EPA Region 9. If you have any questions regarding the enclosed documents, please contact Ward Danner of Toeroek Associates Incorporated at 415-947-4596.

Sincerely,

Jeff Scott

Jeff Scott, Director
Land Division

FOIA Contact Information for State Offices
Region IX

Arizona

Rebecca Reed
Arizona Department of Environmental Quality
1110 W. Washington St.
Phoenix, AZ 85007
Phone: (602) 771-4380

California

California EPA
Department of Toxic Substances Control
1001 I Street
P.O. Box 806
Sacramento, CA 95812-0806
Phone: (916) 322-0476

Hawaii

Hawaii Department of Health
Solid and Hazardous Waste Branch
919 Ala Moana Boulevard, Room #212
Honolulu, HI 96814
Phone: (808) 586-4226

Nevada

Julie Maurer
Department of Conservation & Natural Resources
Division of Environmental Protection
Bureau of Waste Management
901 South Stewart Street, Suite 4001
Carson City, NV 89701
Phone: (775) 687-9459

Guam

GUAM EPA
P.O. Box 22439 GMF
Barrigada, GU 96921
Phone: +1 (671) 475-1658

HILLMANN
CONSULTING

May 25, 2016

State of California
Department of Toxic Substances Control
Region 4 – Cypress Regional Office
5796 Corporate Avenue
Cypress, CA 90630-4732
Phone (714) 484-5337
Fax (714) 484-5318
PubReqAct@dtsc.ca.gov

RE: DTSC Files:

No address assigned, vacant land
APNs 484-020-006, 484-020-018, 484-020-020, and 484-020-025
Moreno Valley, CA 92553

Dear Sir/Madam:

Hillmann Consulting, LLC is conducting an environmental investigation of the above referenced property. Under the Freedom of Information Act, we are requesting any information your office has regarding this property. If any records are located, we would like to obtain copies or schedule a file review. If no records are available, please contact me to confirm. Thank you.

Sincerely,

Kristine Savona
Office Manager
Hillmann Consulting, LLC
ksavona@hillmanngroup.com

Department of Toxic Substances Control

Matthew Rodriquez
Secretary for
Environmental Protection

Barbara A. Lee, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Edmund G. Brown Jr.
Governor

May 27, 2016

Ms. Kristine Savona
Hillmann Consulting
1745 W. Orangewood Avenue, Suite 110
Orange, California 92868

No address assigned, vacant land
APNs 484-020-006, 484-020-018, 484-020-020, and 484-020-025
Moreno Valley, CA 92553

PR 1-052516-04

Dear Ms. Savona:

We have received your Public Records Act Request for records from the Department of Toxic Substances Control.

After a thorough review of our files we have found that no such records exist at this office pertaining to the sites/facilities referenced above.

We would like to inform you about Envirostor, a database that provides information and documents on over 5,000 DTSC cleanup sites. EnviroStor can be accessed at: http://www.envirostor.dtsc.ca.gov/public. Also, a computer is available in the Central Files of each DTSC Regional Office for use by community members to view EnviroStor.

If you have any questions, would like further information regarding your request or would like an appointment to visit Sacramento's Central Files, please contact me at (916) 255-3758.

Sincerely,

Jan Papararo

Jan Papararo
Regional Records Coordinator

HILLMANN
CONSULTING

May 25, 2016

Riverside County Department of Environmental Health
4065 County Circle Drive, Room 104
Riverside, CA 92503
Phone (951) 358-5055
Fax (951) 358-5342
cersadmin@rivcoeh.org

RE: Environmental Files:

No address assigned, vacant land
APNs 484-020-006, 484-020-018, 484-020-020, and 484-020-025
Moreno Valley, CA 92553

Dear Sir/Madam:

Hillmann Consulting, LLC is conducting an environmental investigation of the above referenced property. Under the Freedom of Information Act, we are requesting any information your office has regarding this property. If any records are located, we would like to obtain copies or schedule a file review. If no records are available, please contact me to confirm. Thank you.

Sincerely,

Kristine Savona
Office Manager
Hillmann Consulting, LLC
ksavona@hillmanngroup.com

APPENDIX G

PROJECT PERSONNEL QUALIFICATIONS

HILLMANN CONSULTING

Christine Beaver

Senior Project Manager

EDUCATION:

B.S. Environmental Science and Resource Management, Lehigh University

CERTIFICATIONS:

40-hr OSHA HAZWOPER Certificate

NYS AHERA Asbestos Inspector License

NYS Mold Assessor License

NYS Erosion & Sediment Control Qualified Inspector

YEARS OF EXPERIENCE:

With Hillmann: 2 years

Total: 20 years

PROFESSIONAL EXPERIENCE:

Ms. Beaver is an Environmental Scientist with 20 years of professional experience conducting Phase I Environmental Site Assessments and Phase II Environmental Investigations, including Remedial Investigations of New York State Brownfields Cleanup Program sites. Ms. Beaver also conducts third party due diligence reviews nationwide.

New York State Brownfields Cleanup Program Remedial Investigation Work Plans:

- Former Chappaqua Coal/Humble Fuel Oil Site, Chappaqua, New York
- Former Glenwood Power Station Site, Yonkers, New York
- Former Sun Chemical Corporation (East and West Sites), Yonkers, New York
- Former Henry B. Nevins Shipyard site, Bronx, New York

Storm Water Pollution Prevention Plan Inspections:

- New York City Police Academy, Queens, New York
- Long Beach Public Schools, Long Beach, New York

Spill Prevention Control and Countermeasure Plans:

- Con Edison LNG Plant, Astoria, New York
- Con Edison, 74th Street Generating Station, New York, New York
- Village of Great Neck Wastewater Treatment Plant, Great Neck, New York

Community Air Monitoring Plans:

- East New York Affordable/Supportive Housing, Brooklyn, New York
- New York City Police Academy, Queens, New York

Ms. Beaver has also accomplished over 500 Environmental Site Assessments including:

Office Buildings:

- 2 Court Square, Long Island City, New York
- 424 West 33rd Street, New York, New York
- 1095 Avenue of the Americas, New York, New York
- 11 Madison Avenue, New York, New York
- 100 Wall Street, New York, New York
- 21 & 31 Penn Plaza, New York, New York
- 1375 Broadway, New York, New York
- 86 Trinity Place, New York, New York

Residential Complex:

- Cadman Towers, Brooklyn, New York
- Maria Estella Houses II, Bronx, New York
- Esperanza Village, Bronx, New York
- Castleton Park, Staten Island, New York
- Vista Ridge, Farmingville, New York

Hotels:

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- Mansfield Hotel, New York, New York
- Buckingham Hotel, New York, New York
- Club Quarters Downtown, New York, New York
- Crosby Street Hotel, New York, New York
- Residence Inn, Central Islip, New York
- The Manhattan at Times Square Hotel, New York, New York

Retail:
- Wick Shopping Plaza, Edison, New Jersey
- Centereach Shopping Center, Centereach, New York
- CVS, Huntington and Huntington Station, New York
- Essex Green Shopping Center, West Orange, New Jersey
- The Mall at Bay Plaza, Baychester Avenue, Bronx, New York

Real Estate Portfolios:
- Various sites in Manhattan, Brooklyn, and the Bronx New York, for Notias Construction, Richmac Funding, Mid-Bronx Desperadoes Housing, Exact Capital, and Bethpage Federal Credit Union

Educational Facilities:
- New York City School Construction Authority, Various Public Schools, Manhattan, Brooklyn, and Queens, New York
- Long Island University, C.W. Post Campus, Brookdale, New York

Industrial:
- Northrop Grumman, Bethpage, New York

Transportation Corridors and Acquisitions:
- New York City Transit Authority, Second Avenue Subway, New York, New York
- New York State Department of Transportation, Staten Island Expressway, Staten Island, New York
- New York State Department of Transportation, Route 25A, Selden, New York
- New York State Department of Transportation, Gowanus Expressway, Brooklyn, New York
- Long Island Railroad, Copiague Station, Copiague, New York
- Long Island Railroad, Speonk Station, Speonk, New York
- Long Island Railroad, Morris Park Yard, Queens, New York

Public Utility
- Con Edison, Various Proposed Substation Acquisition Sites, Manhattan and Brooklyn, New York
- Long Island Power Authority/Keyspan, Various Proposed Substation Acquisition Sites, Bohemia and Calverton, New York
- Long Island Power Authority/Keyspan, Pulaski Road Substation, Huntington Station, New York

Wastewater Treatment Plants:
- City of Long Beach, New York
- Village of Great Neck, New York

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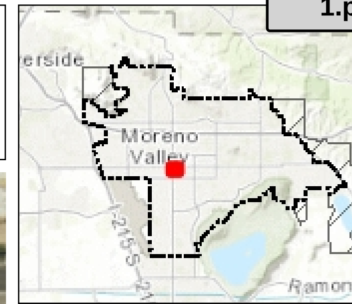
CONSULTING

- Village of Cedarhurst, New York
- Village of Lawrence, New York

Hospitals:
- Beth Israel Medical Center, New York, New York
- Maimonides Medical Center, Brooklyn, New York
- Brookhaven Memorial Hospital, Patchogue, New York

MORENO VALLEY
WHERE DREAMS SOAR

Aerial Photograph



Legend

Public Facilities

- Public Facilities
- Fire Stations

Parcels

City Boundary

Sphere of Influence

Notes

631.0 | 0 | 315.48 | 631.0 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

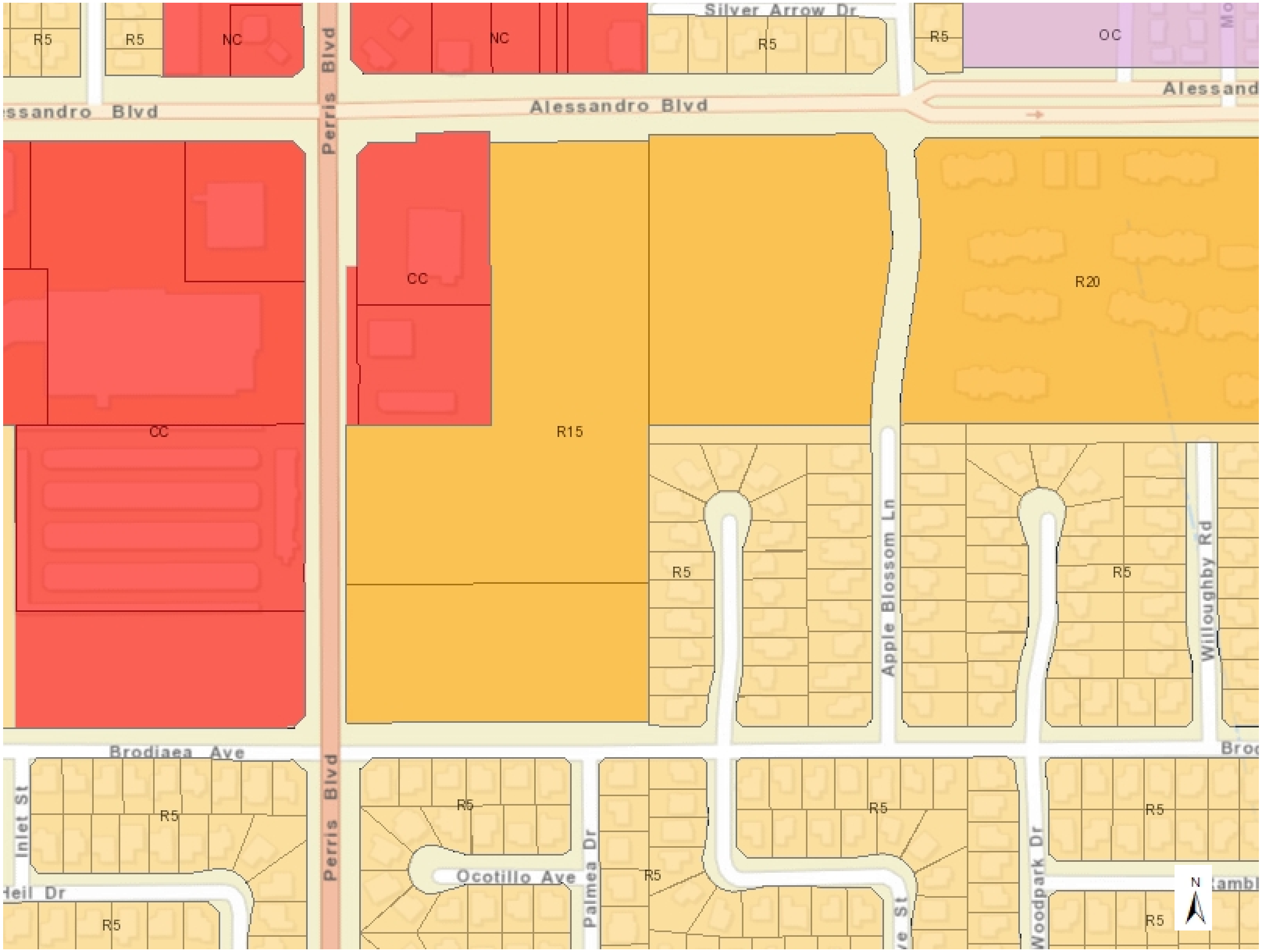
Print Date: 10/28/2016

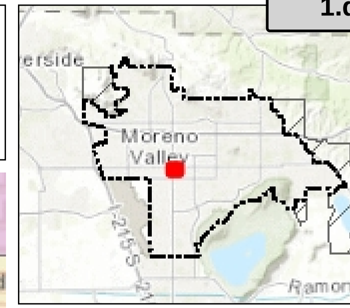
DISCLAIMER: The information shown on this map was compiled from the City of Moreno Valley GIS and Riverside County GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map.

Attachment: Aerial Photograph (2340 : PA16-0039 Plot Plan)

MORENO VALLEY
WHERE DREAMS SOAR

Zoning Map





Legend

Zoning

- Commercial
- Industrial/Business Park
- Public Facilities
- Office
- Planned Development
- Large Lot Residential
- Residential Agriculture 2 DU/AC
- Residential 2 DU/AC
- Suburban Residential
- Multi-family
- Open Space/Park

Master Plan of Trails

- Bridge
- Improved
- Multiuse
- Proposed
- Regional
- State

- Parcels
- City Boundary
- Sphere of Influence

Notes

631.0 0 315.48 631.0 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Print Date: 10/28/2016

DISCLAIMER: The information shown on this map was compiled from the City of Moreno Valley GIS and Riverside County GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map.

Attachment: Zoning Map (2340 : PA16-0039 Plot Plan)

PRELIMINARY GRADING PLAN

VILLA ANNETTE, MORENO VALLEY, CA

GENERAL NOTES

1. NUMBER OF UNITS:
   272 APARTMENT UNITS (1 & 2 STORIES) AND A RECREATION BUILDING.
2. ALL INTERNAL DRIVES TO BE PRIVATELY OWNED AND MAINTAINED.
3. A PROPERTY OWNER ASSOCIATION WILL BE REQUIRED TO MAINTAIN ALL COMMON FACILITIES, VISIBLE FRONT YARDS AND REVERSE FRONTAGE AREAS NOT ACCEPTED BY THE CITY'S SPECIAL DISTRICTS.
4. A PROPERTY OWNER ASSOCIATION WILL BE REQUIRED TO MAINTAIN THE PRIVATE DRIVES, COMMON AREA AMENITIES AND COMMON LANDSCAPING AREAS.
5. ALL UNITS TO BE FIRE SPRINKLERED.

ZONING

EXISTING CURRENT: R-15 RESIDENTIAL

LOT SUMMARY

GROSS ACREAGE = 19.86 ACRES
NET ACREAGE = 19.86 ACRES
DISTURBED ACREAGE = 19.86 ACRES

LAND USE SUMMARY

43 BUILDINGS
272 DWELLING UNITS
512 PARKING STALLS
1 RECREATIONAL BUILDING W/ POOL

FLOOD ZONE

THE SUBJET TRACT IS NOT WITHIN THE 500 YEAR FLOOD PLAIN, ZONE X, FEMA FLOOD INSURANCE PANEL NO. 761 of 3805

ASSESSOR'S PARCEL NUMBER

APN: 484-020-006
APN: 484-020-018
APN: 484-020-025

PROPERTY ADDRESS

ALESSANDRO BLVD,
MORENO VALLEY, CALIFORNIA

UTILITIES

ELECTRICITY:
MORENO VALLEY ELECTRIC UTILITY: 1(877)811-8700
SOUTHERN CALIFORNIA EDISON: 1(800) 684-8123
NATURAL GAS:
THE GAS COMPANY 1(800) 427-2200
TELEPHONE:
AT&T: 1(800) 310-2355
TRASH SERVICE:
WASTE MANAGEMENT OF INLAND VALLEY 1(800) 423-9986
WATER:
EASTERN MUNICIPAL WATER DISTRICT 1(951) 928-3777
SEWER:
EASTERN MUNICIPAL WATER DISTRICT 1(951) 928-3777

SCHOOL

MORENO VALLEY UNIFIED SCHOOL DISTRICT

THOMAS BROTHERS GUIDE

PAGE 717 G-6, 2006 EDITION

EARTHWORK QUANTITIES

DESCRIPTION	CUT (C.Y)	FILL (C.Y.)
MASS EXCAVATION	19,500	19,500

IMPORT/~~EXPORT:~~ 0 CY
MAX CUT: 5.0 FT
MAX FILL: 3.3 FT

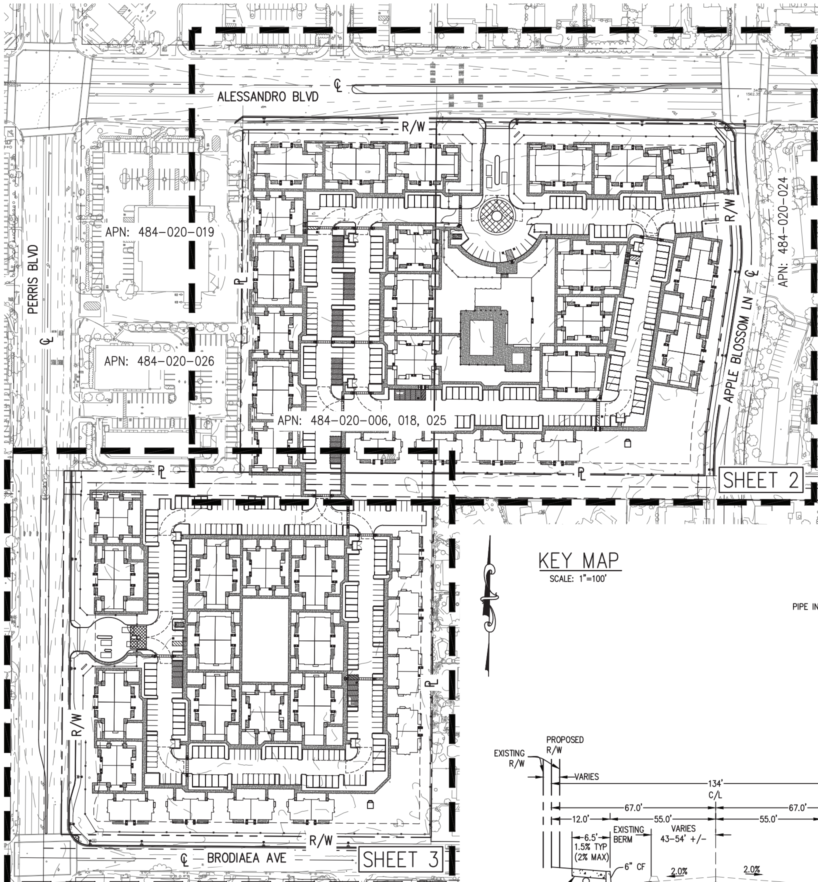
LEGAL DESCRIPTION

PARCEL 1:
LOT 3 IN BLOCK 122 OF MAP NO. 1 BEAR VALLEY AND ALESSANDRO DEVELOPMENT CO., IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 11, PAGES(3) 10 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAN BERNARDINO COUNTY.
EXCEPTING THEREFROM THAT PORTION DESCRIBED AS FOLLOWS:
BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 3; THENCE ALONG THE NORTH LINE OF SAID LOT 3 NORTH 89°33'40" WEST A DISTANCE OF 133.53 FEET; THENCE SOUTH 0°25'36" WEST A DISTANCE OF 25.00 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE EAST AND HAVING A RADIUS OF 500 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 4°25'56" A DISTANCE OF 38.68 FEET; THENCE SOUTH 4°00'20" EAST A DISTANCE OF 130.38 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE WEST AND HAVING A RADIUS OF 300 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 12°46'07" A DISTANCE OF 66.86 FEET; THENCE SOUTH 08°45'47" WEST A DISTANCE OF 244.76 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE EAST AND HAVING A RADIUS OF 500 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 8°20'11" A DISTANCE OF 72.25 FEET; THENCE SOUTH 0°25'36" WEST A DISTANCE OF 25.00 FEET TO THE SOUTH LINE OF SAID LOT 3, SAID POINT LYING 165.00 FEET FROM THE SOUTHEAST CORNER OF SAID LOT 3; THENCE ALONG SAID SOUTH LINE SOUTH 89°33'26" EAST A DISTANCE OF 165.00 FEET TO SAID SOUTHEAST CORNER; THENCE ALONG THE EAST LINE OF SAID LOT 3 NORTH 0°25'36" EAST A DISTANCE OF 599.99 FEET TO THE POINT OF BEGINNING SAID LAND IS ALSO SHOWN AS PARCEL 1 OF LOT LINE ADJUSTMENT NO. 902 AND CERTIFICATE OF COMPLIANCE RECORDED AUGUST 02, 2001 AS INSTRUMENT NO. 2001-364622 OF OFFICIAL RECORDS.

PARCEL 2:
LOT 5 AND THE EAST ½ OF LOT 4 BLOCK 122 OF BEAR VALLEY AND ALESSANDRO DEVELOPMENT COMPANY, IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 11, PAGE(S) 10 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAN BERNARDINO COUNTY.

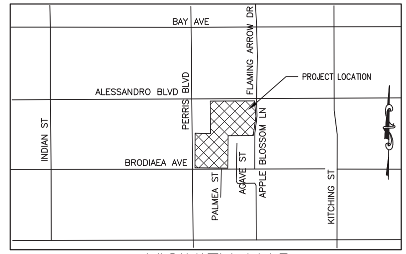
EXCEPT ALL OIL, GAS AND OTHER HYDROCARBONS UNDER AND IN SAID LAND AS RESERVED BY MARY H. TRAUTWEIN, ET AL., IN DEED RECORDED OCTOBER 28, 1959 IN BOOK 2570, PAGE 564 OF OFFICIAL RECORDS.

10/28/16



KEY MAP

SCALE: 1"=100'



VICINITY MAP

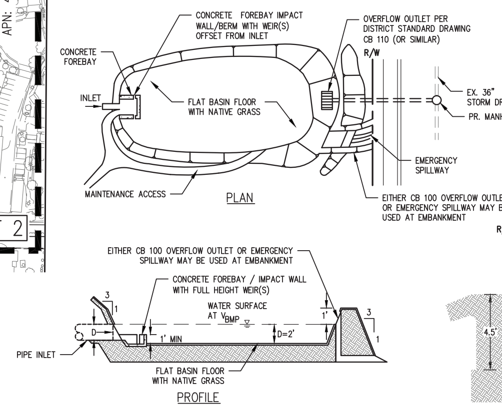
N.T.S.

NO.	REVISIONS	BY	DATE
1			
2			
3			

LEGEND:

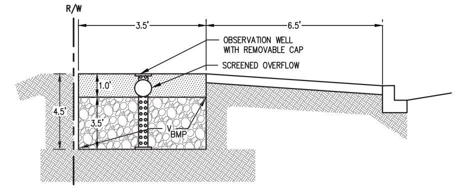
FINISHED SURFACE	FS	INVERT ELEVATION	INV
FINISHED GRADE	FG	GRADE BREAK	GB
CURB FACE	CF	TOP OF CURB	TC
FLOW LINE	FL	TOP OF GRATE	TG
HIGH POINT	HP	TOP OF WALL	TW
LOW POINT	LP	TOP OF FOOTING	TF

PROPERTY LINE/ROW
CENTERLINE
EXISTING CONCRETE STORM DRAIN
EXISTING SEWER MAIN — S —
EXISTING SEWER MANHOLE
EXISTING WATER MAIN — W —
EXISTING GAS LINE — GAS —
EXISTING ELECTRIC — E —
EXISTING STREET LIGHTS
ELEVATION OF EXISTING +1544.00
PROPOSED ELEVATION 1500.00
EXISTING CONTOUR 1544
PROPOSED BUILDINGS
PROPOSED CONTOUR 1544
PROPOSED C&G
DAYLIGHT LINE — // — // — // —
SURFACE FLOW DIRECTION
PROPOSED STORM DRAIN — SD — SD —
STORM INLET
HEADWALL
RIPRAP



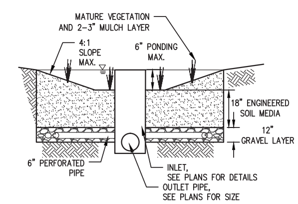
INFILTRATION BASIN

NTS



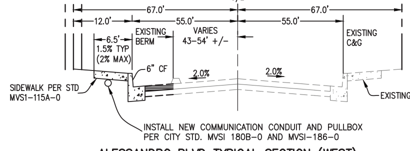
INFILTRATION TRENCH

NTS



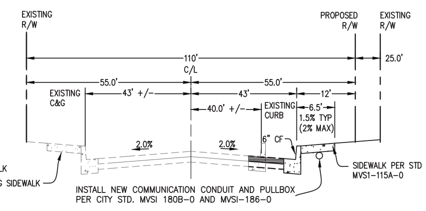
LID BASIN

NTS



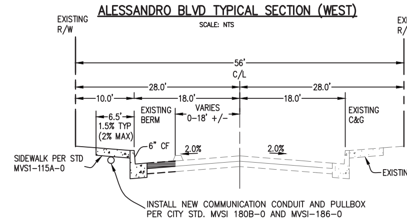
ALESSANDRO BLVD TYPICAL SECTION (WEST)

SCALE: NTS



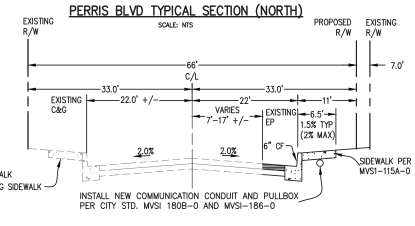
PERRIS BLVD TYPICAL SECTION (NORTH)

SCALE: NTS



APPLE BLOSSOM LANE TYPICAL SECTION (NORTH)

SCALE: NTS



BRODIAEA AVENUE TYPICAL SECTION (WEST)

SCALE: NTS

APPLICANT / DEVELOPER

VILLA ANNETTE LP
940 CALLE NEGOCIO, SUITE 200
SAN CLEMENTE, CA 92673
CONTACT: WES ALSTON
P.O. BOX 14679 LONG BEACH, CA 90853
PH: (951) 212-8468

SHEET INDEX

COVER SHEET	SHEET 1
PRELIMINARY GRADING PLAN	SHEET 2
PRELIMINARY GRADING PLAN	SHEET 3

CIVIL ENGINEER

CIVIL LANDWORKS CORP.
110 COPPERWOOD WAY, SUITE P
OCEANSIDE, CA 92058
(760) 908-8745

DAVID V. CARON 10-28-16

REGISTERED PROFESSIONAL ENGINEER
DAVID V. CARON
No.C070066
EXP.09/30/18
CIVIL
STATE OF CALIFORNIA

Civil Landworks

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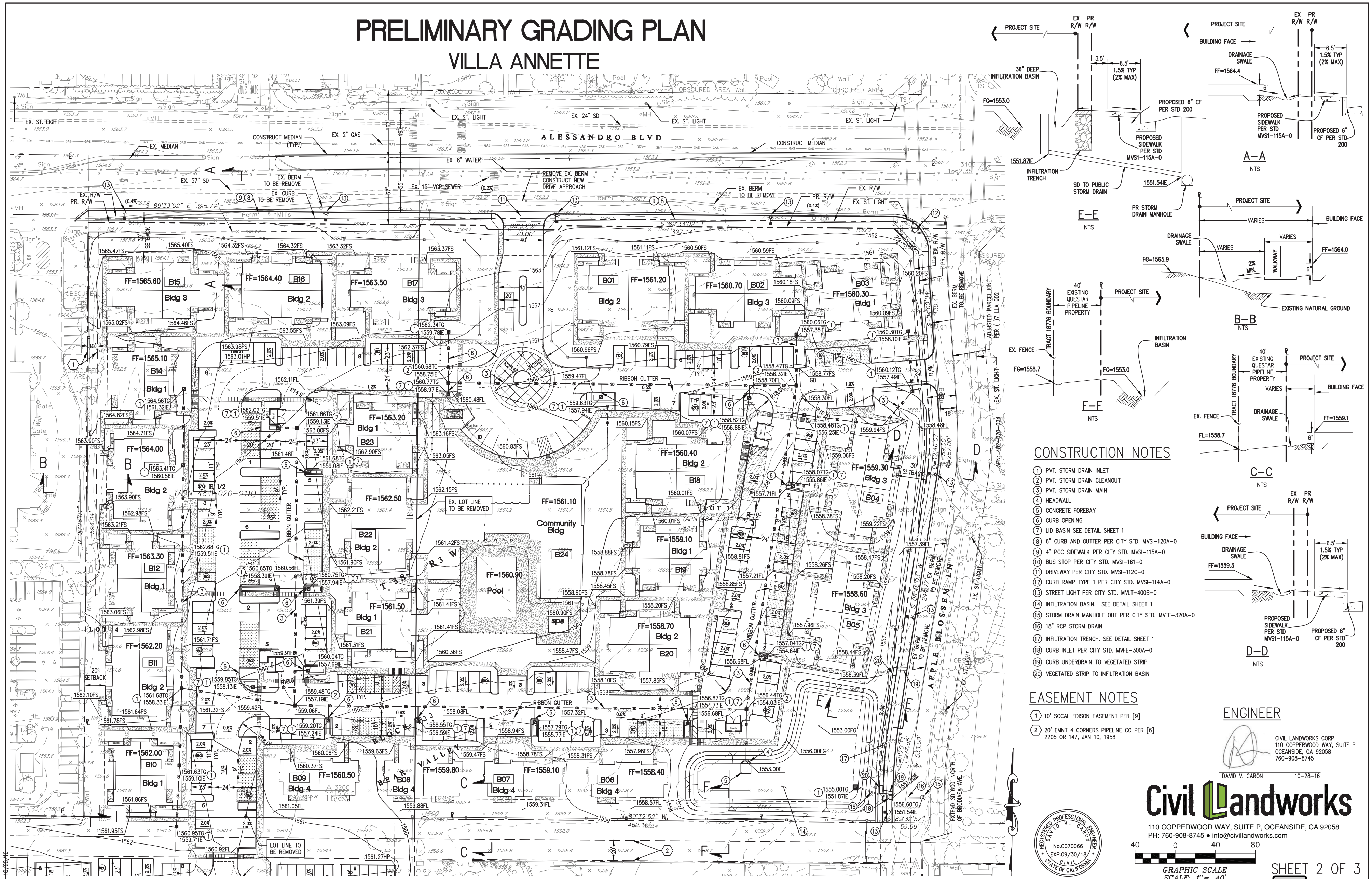
PH: 760-908-8745 • info@civillandworks.com

SHEET 1 OF 3

1.r

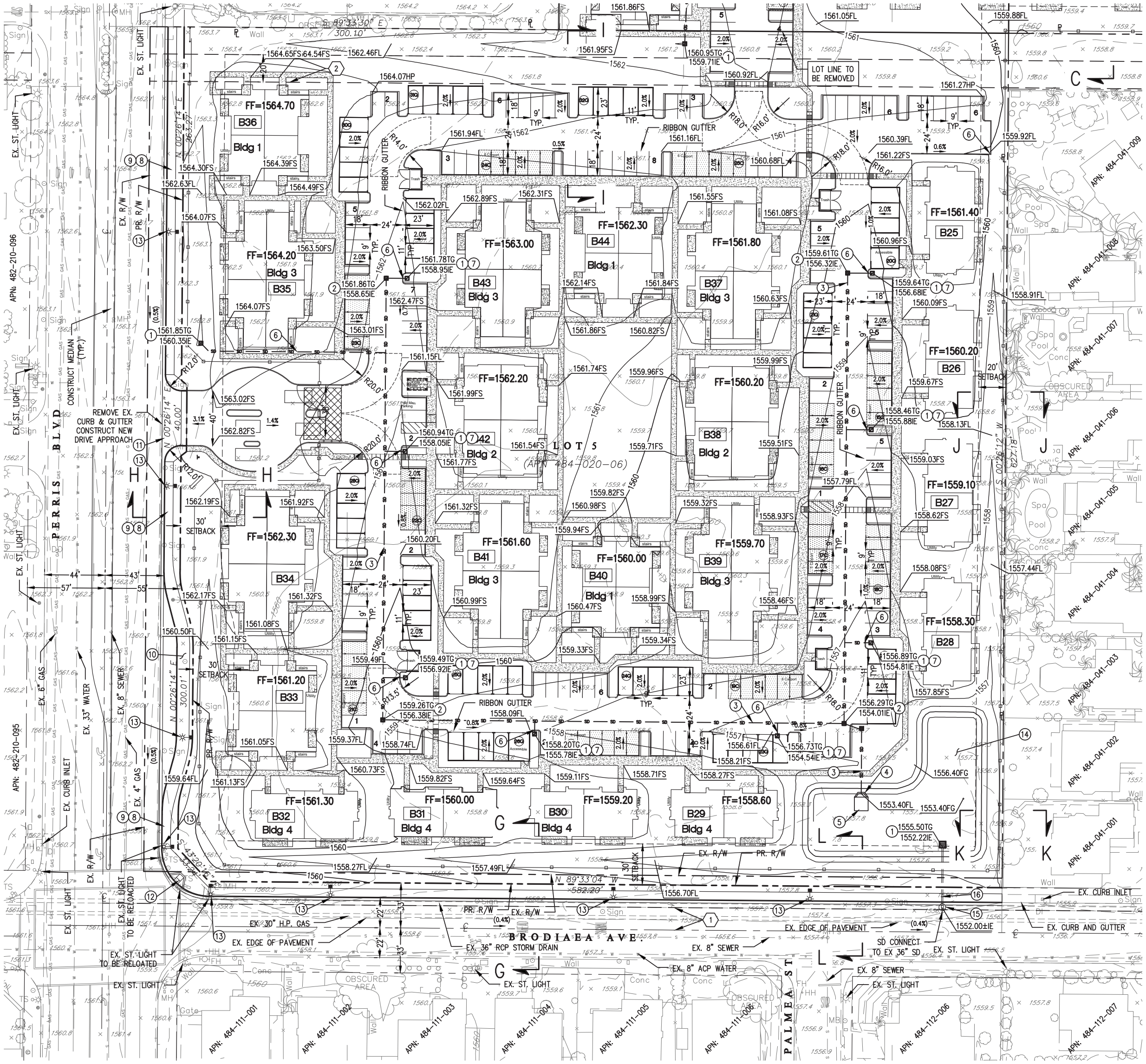
Attachment: Preliminary Grading [Revision 1] (2340 : PA16-0039 Plot Plan)



1.r

Attachment: Preliminary Grading [Revision 1] (2340 : PA16-0039 Plot Plan)

PRELIMINARY GRADING PLAN
VILLA ANNETTE

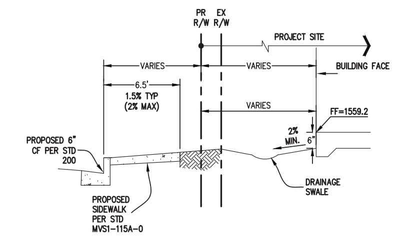


CONSTRUCTION NOTES

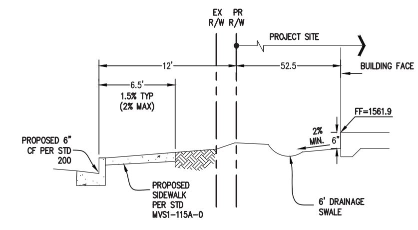
1. PVT. STORM DRAIN INLET
2. PVT. STORM DRAIN CLEANOUT
3. PVT. STORM DRAIN MAIN
4. HEADWALL
5. CONCRETE FOREBAY
6. CURB OPENING
7. LID BASIN SEE DETAIL SHEET 1
8. 6" CURB AND GUTTER PER CITY STD. MVSI-120A-0
9. 4" PCC SIDEWALK PER CITY STD. MVSI-115A-0
10. BUS STOP PER CITY STD. MVSI-161-0
11. DRIVEWAY PER CITY STD. MVSI-112C-0
12. CURB RAMP TYPE 1 PER CITY STD. MVSI-114A-0
13. STREET LIGHT PER CITY STD. MVLT-400B-0
14. INFILTRATION BASIN. SEE DETAIL SHEET 1
15. STORM DRAIN MANHOLE OUT PER CITY STD. MVFE-320A-0
16. 18" RCP STORM DRAIN

EASEMENT NOTES

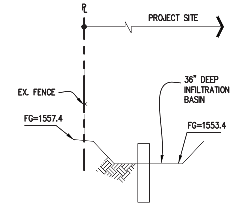
1. 10' SOCAL EDISON EASEMENT PER [9]
2. 20' EMNT 4 CORNERS PIPELINE CO PER [6] 2205 OR 147, JAN 10, 1958



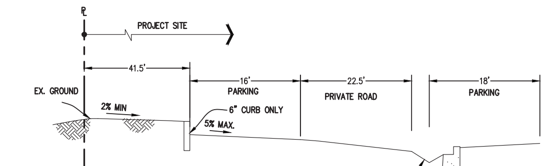
G–G
NTS



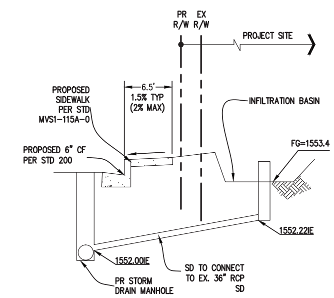
H–H
NTS



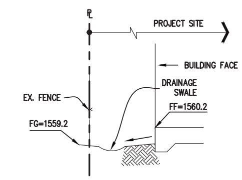
K–K
NTS



I–I
NTS



L–L
NTS



J–J
NTS

40 0 40 80
GRAPHIC SCALE
SCALE: 1" = 40'

Civil Landworks
110 COPPERWOOD WAY, SUITE P, OCEANSIDE, CA 92058
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ENGINEER

REGISTERED PROFESSIONAL ENGINEER
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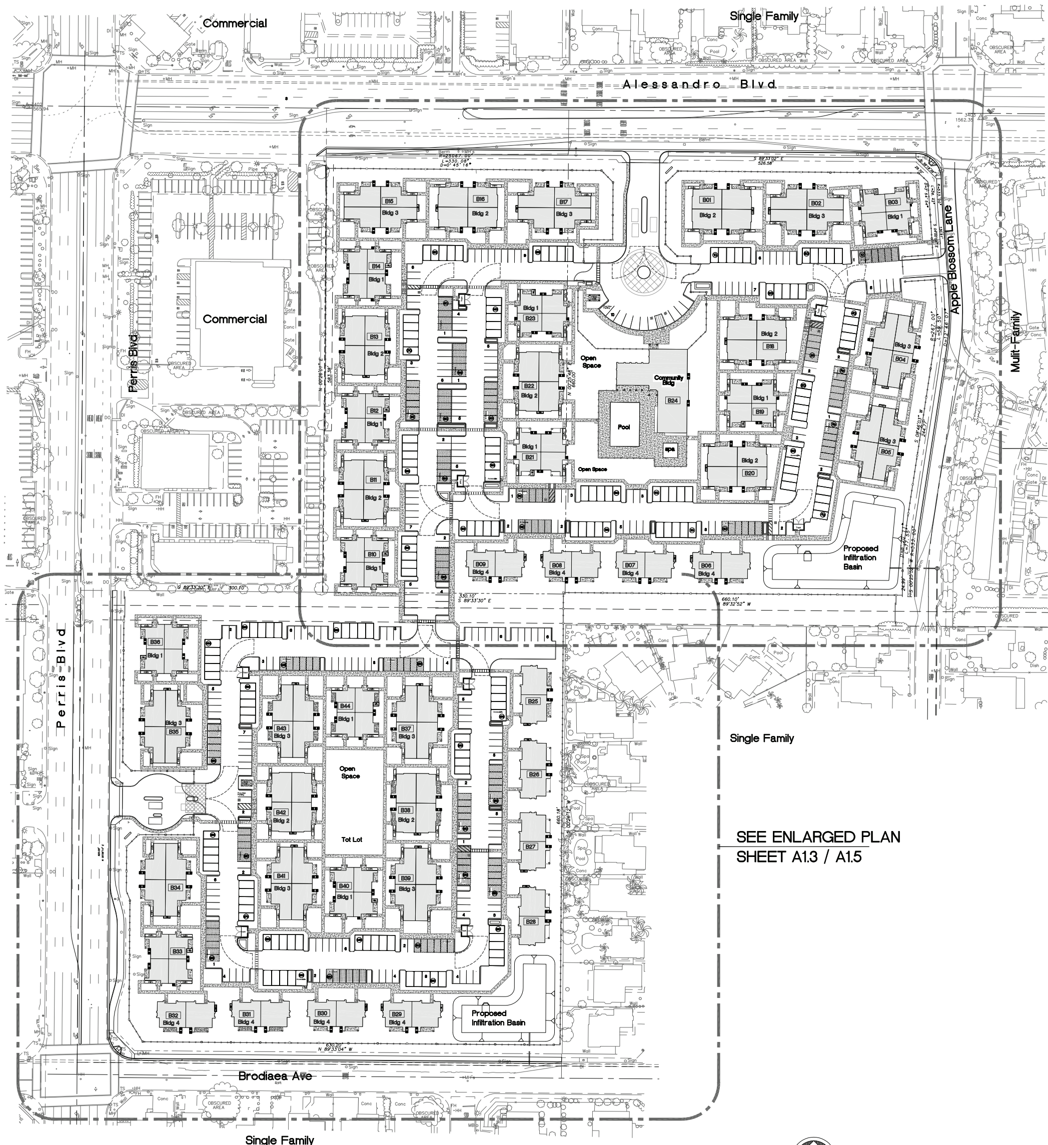
DAVID V. CARON 10-24-16

SHEET 3 OF 3

10/28/16

1.r



OVERALL SITE PLAN

1"=80'-0"

PROJECT DATA

Use: Multi Family Apartments

Owner: Latco SC, Inc
940 Calle Negocio, Suite 200
San Clemente, CA. 92673

Contact: Wes Alston
P.O. Box 14679
Long Beach, CA. 90853

Address: Alessandro Blvd
Moreno Valley, Ca.

Site Area: Gross Acreage = 19.86Acres
Net Acreage = 19.86 Acres
Disturbed Acreage = 19.86 Acres

A.P.N.: 484-020-006 , 018, & 020

Existing Zone: R-15

Number of Stories: 1 and 2 Story

Building Occupancy: R2 , A3/B & U

Construction Type: VB / Sprinklered

Density: = 272 D.U. / 19.86 AC
= 13.97 D.U. / AC

Utilities

Electricity:
Moreno Valley Electric utility: 1(877) 811-8700
Southern California Edison: 1(800)684-8123
(turn on/off)

Natural Gas:
The Gas Company 1(800)427-2200

Utilities

Telephone:
AT&T 1(800)310-2355

Trash Service
Waste management of Inland Valley
1(800) 423-9986

Trash Service
Waste management of Inland Valley
1(800) 423-9986

Water
Eastern Municipal
Water District

Sewer
Edgemont Community Service District
1(951) 653-5120

School District
Moreno Valley Unified School District
xxxx

BUILDING MIX:

Building Type 1
2 story = 1BR / 1BA
(11 bldgs) x 8 = 88 D.U.

Building Type 2
2 story = 2BR/2BA
(9 bldgs) x 8 = 72 D.U.

Building Type 3
2 story = 2BR/2BA
(11 bldgs) x 8 = 88 D.U.

Building Type 4
1 story = 3BR/2BA
(12 bldgs) x 2 = 24 D.U.

Total Dwelling Units = 272

BUILDING AREA

BUILDING TYPE 1 AREA:

2 Story Building
First Floor Units
Unit A1 = 1br/1ba
Living = 796 sf
Patio = 122 sf
Entry = 47 sf
Wh/sto = 17 sf
Total = 982 sf x (4) = 3,928sf

Second Floor Units
Unit A2 = 1br/1ba
Living = 796 sf
Deck = 75 sf
Entry = 47 sf
Wh/sto = 17 sf
Total = 935 sf x (4) = 3,740sf

Total Area Building Type 1 = 7,668 sf

BUILDING TYPE 2 AREA:

2 Story Building
First Floor Units
Unit B1 = 2br/2ba
Living = 1098 sf
Patio = 118 sf
Entry = 36 sf
Wh/sto = 17 sf
Total = 1269 sf x (4) = 5,076 sf

Second Floor Units
Unit B2 = 2br/2ba
Living = 1098 sf
Deck = 68 sf
Entry = 36 sf
Wh/sto = 17 sf
Total = 1219 sf x (4) = 4,876 sf

Total Area Building Type 2 = 9,952 sf

BUILDING TYPE 3 AREA:

First Floor Units
Unit C1 = 2br/2ba
Living = 1135 sf
Patio = 110 sf
Entry = 46 sf
Wh/sto = 18 sf
Total = 1309 sf x (4) = 5,236 sf

Second Floor Units
Unit C2 = 2BR/2BA
Living = 1135 sf
Deck = 72 sf
Entry = 46 sf
Wh/sto = 18 SF
Total = 1271 sf x (4) = 5,084 sf

Total Area Building Type 3 = 10,320 sf

BUILDING TYPE 4 AREA:

1 Story Building
First Floor Units
Unit B1 = 3br/2ba
Living = 1292 sf
Patio = 156 sf
Entry = 25 sf
Wh/sto = 18 sf
Total = 1,491 sf x (2) = 2,982 sf

Total Area Building Type 4 = 2,982 sf

COMMUNITY BUILDING AREA:

Building Area:
Office Space = 766 sf
Computer rm = 204 sf
Lounge = 1,355 sf
Theater = 581 sf
Game Room = 1,173 sf
Exercise Room = 960 sf
Restrooms = 413 sf
Storage = 160 sf
Jan = 89 sf
Elect Rm = 95 sf
lobby/Hallway = 786 sf
Total = 6,582 sf

Covered Areas
Patio = 330 sf
Entries = 280sf
Total = 610 sf

PARKING COUNT

Garages:
5-Car Garage 55'x21' = 1,155 sf
28 x 1,155 = 32,340 sf
Accessible
5- Car Garage 60'x21' = 1,060 sf
4 x 1,060 = 5,040 sf
Total (32) = 37,380 sf
Total Garage stalls = 160

Carports:
16 x 6-Car Carport = 96
9 x 5 -Car Carport = 45 (of which 3 ADA)
Total Carport stalls =141 stalls

Open Stalls:
Standard Stalls = 225 stalls
Accessible Stalls = 8 stalls
Total = 233 stalls

Total Parking Provided = 535 stalls

OPEN SPACE REQUIREMENTS

Required 300 sq. ft. of open space per each dwelling unit
=272 D.U. x 300 sq. ft. = 81,600 sq. ft.

OPEN SPACE PROVIDED

Building foot prints = 188,518 sq. ft.
Garage foot prints = 37,380 sq. ft.
AC paving areas = 177,550 sq. ft.
Open Space = 461,653 sq. ft.

Site Area = 19.47ac / 848,113 sq. ft.
Coverage
= 461,653 sq. ft. / 865,101 sq. ft = 53%
Open Space = 53%

PARKING

Parking Required:
1.5 stalls per 1ba/1ba = 88 D.U. = 132 stalls
2 stalls per 2ba/2ba = 160 D.U. = 320 stalls
2.5 stalls per 3ba/2ba = 24 D.U. = 60 stalls

Total Stalls Required = 512 stalls
Guest parking included in minimum requirements
Required Covered 1 for each unit type
equals = 260 covered parking required

Parking Provided:
Covered
Garages = 160 (4 of which are accessible)
Carports = 141 (3 of which are accessible)
Total Covered = 301 covered stalls
Open std stalls = 234 open stalls (7 accessible)
Total Parking Provided = 535 stalls provided

Required Accessible Parking per CBC section 1109A.4

Per Section 1109A.3 "Required Accessible Parking"
Provided 2% Accessible Parking of Each Type:
Open stalls: 233 x .02 = 4.6 (min of 5 stalls - 5 provided)
Carports stalls: 131 x .02 = 2.62 (min 3 stalls req'd - 3 provided)
Garages: 184 x .02 = 3.68 (min 4 stall req'd - 4 provided)

SJA Design Group
1915 Carolina Ave, Clovis CA 93611
PH: 559. 593.9692

Villa Annette Apartments

Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date
X/X/X
STATE OF CALIFORNIA

Date: 10.18.16
Drawn By: Susan Jones
Project # 15068

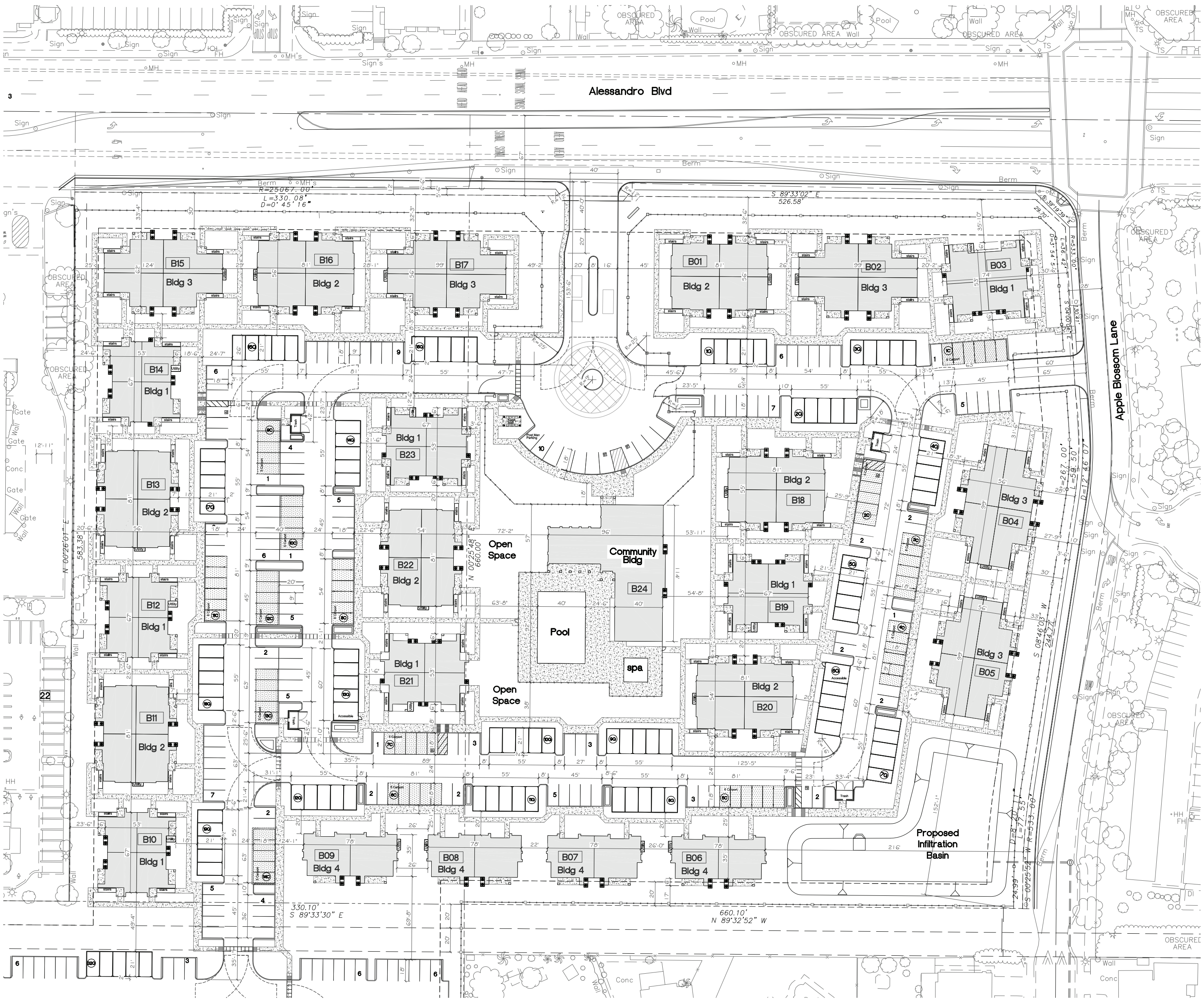
Overall Site Plan

Revisions
x

SHEET No.
A1.1

PA16 - 0039

1.s



PARTIAL DIMENSIONED SITE PLAN

1"=40'-0"

Villa Annette Apartments

Alessandro Boulevard
Moreno Valley, CA

SJA Design Group
1915 Carolina Ave, Clovis CA 93611
PH: 559. 593.9692

Janice K. Bier C22169 Renewal Date: X/X/X

Date: 10.18.16
Drawn By: Susan Jones
Project # 15068

Partial Dimensioned Site Plan

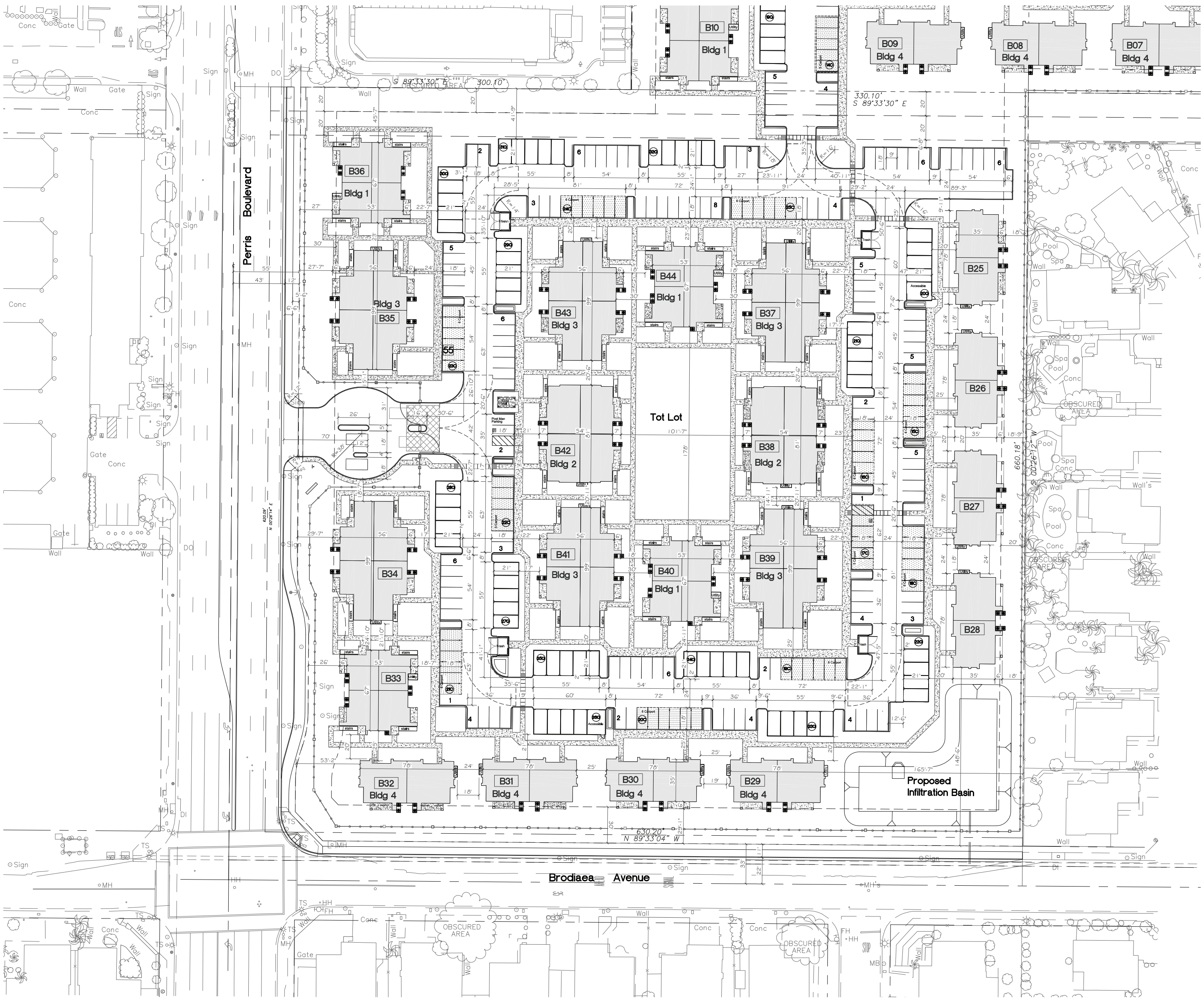
Revisions
x

SHEET No.
A1.2

PA16 - 0039

1.s

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



PARTIAL DIMENSIONED SITE PLAN

1"=40'-0"

SJA Design Group

1915 Carolina Ave. Clovis CA 93611

PH: 559. 593.9692

Villa Annette Apartments

Alessandro Boulevard

Moreno Valley, CA

LICENSED ARCHITECT

Janice K. Bier

C22169

Renewal Date: X/X/X

STATE OF CALIFORNIA

Date: 10.18.16

Drawn By: Susan Jones

Project # 15068

Partial Dimensioned Site Plan

Revisions

x

SHEET No.

A1.3

PA16 - 0039

1.s

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)

PARTIAL ANNOTATED SITE PLAN

1"=40'-0"

Site Plan Keynotes

No.	Description	No.	Description
1	Alessandro Boulevard is classified as a Divided Major Arterial (134'RW/110'CC) per City Standard MVSI-101A-0	31	Existing fire hydrant
		32	Existing edge of paving reference Civil drawings
2	Apple Blossom Lane classified as a Collector (56'RW/36'CC) City Standard MVSI-107A-0	33	Existing curb and gutter to be demolished for new street configuration
3	Curb, gutter and sidewalk per City of Moreno Valley standards reference civil drawings	34	No Parking Sign shall be posted in turn-around area per City of Moreno requirements
4	Driveway approach per City standards ref. Civil drawings	35	Presence loop detectors within 1 or 2 feet of the gates that ensures that the gates remain open while any vehicle is in the queue
5	6' High wrought iron fence with 24" square decorative pilasters every 40'-0" o.c. Fence and gates under separate permit	36	All residential dwellings shall display street numbers in a prominent location on the street side of the residence in such a position that the numbers are easily visible. The numbers shall be no less than four inches in height and shall be low voltage lighted fixtures
6	Wrought iron swinging vehicular motorized gate with knox box Rapid Entry System per CFC 506.1. Gates under separate permit		
7	3' wide pedestrian gate with access key pad and lever hardware. Post diagram of complex showing location of viewer and the building designations. All access gates shall be provided with Knox Key switches for access by emergency personnel, Gates and fence under separate permits	37	All Commercial buildings shall display street numbers in a prominent location on the street side and rear access locations. The numbers shall be no less than six inches in height and six inches in height for suite identification on contrasting background.
8	Directory and entry key pad at by-pass lane	38	A "Knox Box Rapid Entry System" shall be provided. The knox-box shall be installed in an accessible location approved by the Fire Chief. All exterior security emergency access gates shall be electronically operated and be provided with Knox key switches for access by emergency personnel
9	Decorative stamped pavement at entry drives and Pedestrian walkways across drive aisles		
10	Concrete sidewalks, 4' wide typical or 7' wide where adjacent to parking. All sidewalks shall be 5% max. slope in direction of travel with 2% cross slope	39	Existing lighted intersection
		40	Median island per City standards see Civil drawings
11	Asphaltic (A/C) paving	41	Utility Easement to be landscaped
12	Pre-engineered carport with sloping metal roof (deferred submittal). Vert. clr at accessible stalls shall be 8'-2" a.f.f see sheet A2.1h	42	Perris Boulevard is classified as a Divided Arterial (110'RW/86'CC) per City Standard MVSI-103C-0
13	Detached garages. Reference Sheet A2.1f and A2.1g	43	Brodiaea Avenue is classified as a Collector (66'RW/44'CC) per City Standard MVSI-106B-0
14	Curb ramp with detectable warning	44	Provide a 12 inch wide conc. step out a planters adjacent to parking stalls, this is in addition of the 6" concrete curb typical
15	Mail kiosk, Mail boxes per PostMaster approved selections, see sheet A2.1j		
16	Turning radius for fire truck access 44' outside and 24' inside	45	Sliding gate for Emergency and Fire vehicles only. Provide knox box per city standards under separate permits
17	Landscape planter area		
18	Existing overhead power lines under grounded	46	Utility Closet (1) per building see building plan and electrical drawings for additional information
19	Accessible parking stall with signage and striping	47	AC units on concrete pad, screened by landscaping see mechanical & landscape plans
20	Reserved parking stall for Postman		
21	Monument sign, under separate submittal	48	Accessible site entry sign
22	6' High CMU Wall integral color "Precision tan block", per city standards under separate permit	49	Provide Short term bicycle parking 5-loop wave style bike rack (7 bike capacity) "Uline" manufacture or equal
23	Accessible path of travel 2% max cross slope with 5% slope in direction of travel, indicated with decorative paving see sheet A1.0a	50	Existing 6' high wood fence to remain
		51	Existing Property line to be removed and a Lot line adjustment shall be completed
24	6' High wrought iron fence at pool area	52	Existing 6 ft. high block wall to remain.
25	3' Wide wrought iron gate at pool area with panic hardware	53	Bus Bay per City of Moreno Valley standards No. MVSI-161-0
		54	New fire hydrant see civil
26	Private patio area shall be fenced with either wrought iron fencing or perimeter hedge to define open space. typical see enlarged unit plans for areas	55	Double Parking stripes shall be three inch line - six inch line - three inch line, per City standards
27	Pool under separate submittal. Submittal to include walks and fenced area, shown only for reference		
28	Tot lot area play equipment by others		
29	Trash enclosure per City standard No. 660A. Enclosure shall have a singlge slope Roof and CMU shall be painted to match buildings, see sheet A1.6		
30	4 foot wide concrete side walk min at 5% max slope in direction of travel and 2% max cross slope		

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Villa Annette Apartments

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Janice K. Bier
C22169
Renewal Date X/X/X
STATE OF CALIFORNIA

Date: 10.18.16
Drawn By: Susan Jones
Project # 15068

Partial Annotated Site Plan

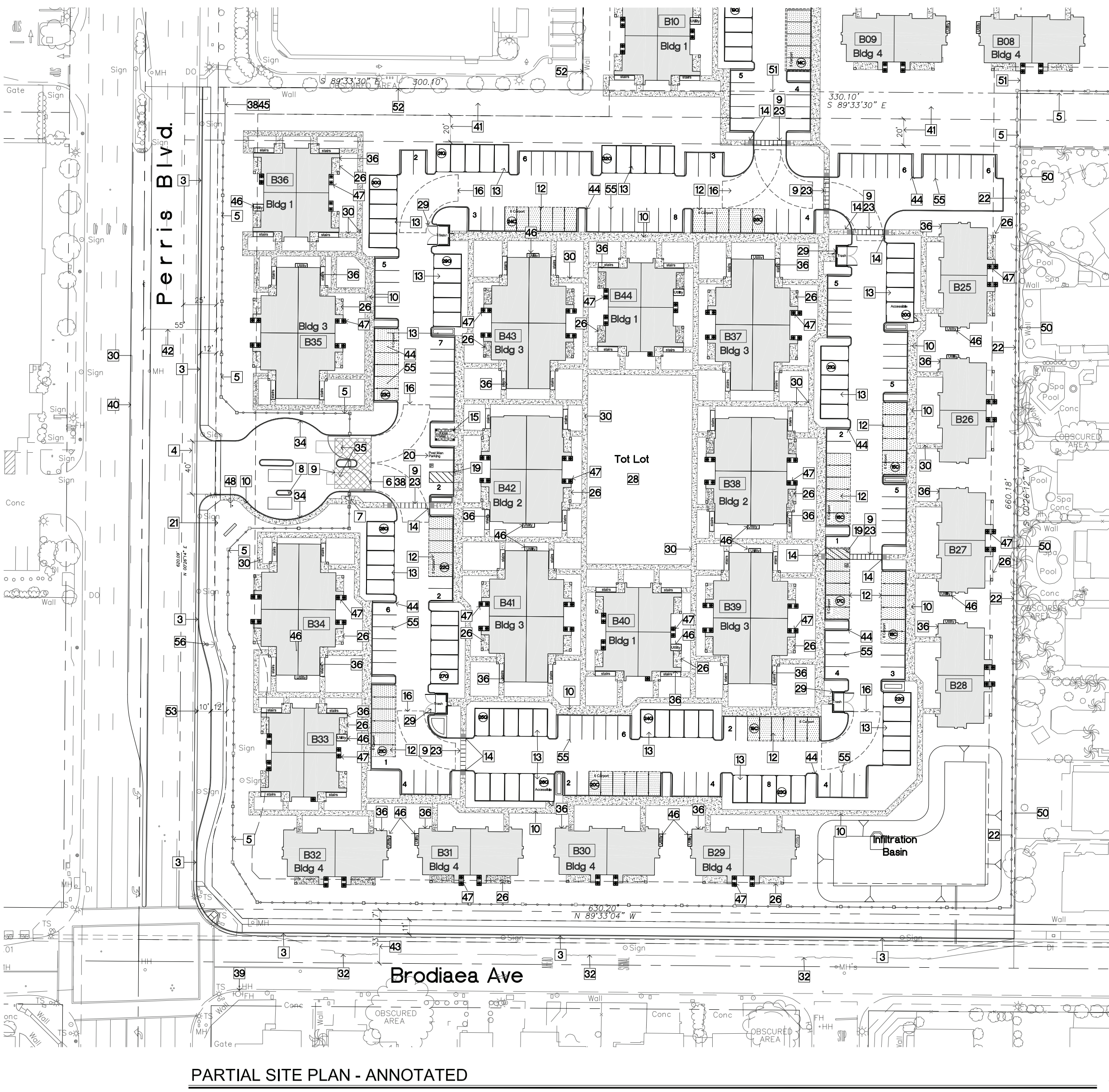
Revisions
x

SHEET No.
A1.4

1.s

PA16 - 0039

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



PARTIAL SITE PLAN - ANNOTATED

Scale = 1" = 40'-0"

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7	3' wide pedestrian gate with access key pad and lever hardware. Post diagram of complex showing location of viewer and the building designations. All access gates shall be provided with Knox Key switches for access by emergency personnel, Gates and fence under separate permits	37	All Commercial buildings shall display street numbers in a prominent location on the street side and rear access locations. The numbers shall be no less than six inches in height and six inches in height for suite identification on contrasting background.
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10	Concrete sidewalks, 4' wide typical or 7' wide where adjacent to parking. All sidewalks shall be 5% max. slope in direction of travel with 2% cross slope	40	Median island per City standards see Civil drawings
11	Asphaltic (A/C) paving	41	Utility Easement to be landscaped
12	Pre-engineered carport with sloping metal roof (deferred submittal). Vert. clr at accessible stalls shall be 8'-2" a.f.f see sheet A2.1h	42	Perris Boulevard is classified as a Divided Arterial (110'RW/86'CC) per City Standard MVSI-103C-0
13	Detached garages. Reference Sheet A2.1f and A2.1g	43	Brodiaea Avenue is classified as a Collector (66'RW/44'CC) per City Standard MVSI-106B-0
14	Curb ramp with detectable warning	44	Provide a 12 inch wide conc. step out a planters adjacent to parking stalls, this is in addition of the 6" concrete curb typical
15	Mail kiosk, Mail boxes per PostMaster approved selections, see sheet A2.1j	45	Sliding gate for Emergency and Fire vehicles only. Provide knox box per city standards under separate permits
16	Turning radius for fire truck access 44' outside and 24' inside	46	Utility Closet (1) per building see building plan and electrical drawings for additional information
17	Landscape planter area	47	AC units on concrete pad, screened by landscaping see mechanical & landscape plans
18	Existing overhead power lines under grounded	48	Accessible site entry sign
19	Accessible parking stall with signage and striping	49	Provide Short term bicycle parking 5-loop wave style bike rack (7 bike capacity) "Uline" manufacture or equal
20	Reserved parking stall for Postman	50	Existing 6' high wood fence to remain
21	Monument sign, under separate submittal	51	Existing Property line to be removed and a Lot line adjustment shall be completed
22	6' High CMU Wall integral color "Precision tan block", per city standards under separate permit	52	Existing 6 ft. high block wall to remain.
23	Accessible path of travel 2% max cross slope with 5% slope in direction of travel, indicated with decorative paving see sheet A1.0a	53	Bus Bay per City of Moreno Valley standards No. MVSI-161-0
24	6' High wrought iron fence at pool area	54	New fire hydrant see civil
25	3' Wide wrought iron gate at pool area with panic hardware	55	Double Parking stripes shall be three inch line - six inch line - three inch line, per City standards
26	Private patio area shall be fenced with either wrought iron fencing or perimeter hedge to define open space. typical see enlarged unit plans for areas		
27	Pool under separate submittal. Submittal to include walks and fenced area, shown only for reference		
28	Tot lot area play equipment by others		
29	Trash enclosure per City standard No. 660A. Enclosure shall have a singlge slope Roof and CMU shall be painted to match buildings, see sheet A1.6		
30	4 foot wide concrete side walk min at 5% max slope in direction of travel and 2% max cross slope		

Symbol Legend

Symbol	Description
X	Keynotes, see this sheet
1G	Garage building identification number
1c	Carport identification number
B04	Building identification number
	Proposed Fire Hydrant

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PH: 559. 593.9692

Villa Annette Apartments
Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

Date: 10.18.16
Drawn By: Susan Jones
Project # 15068

Partial Annotated Site Plan

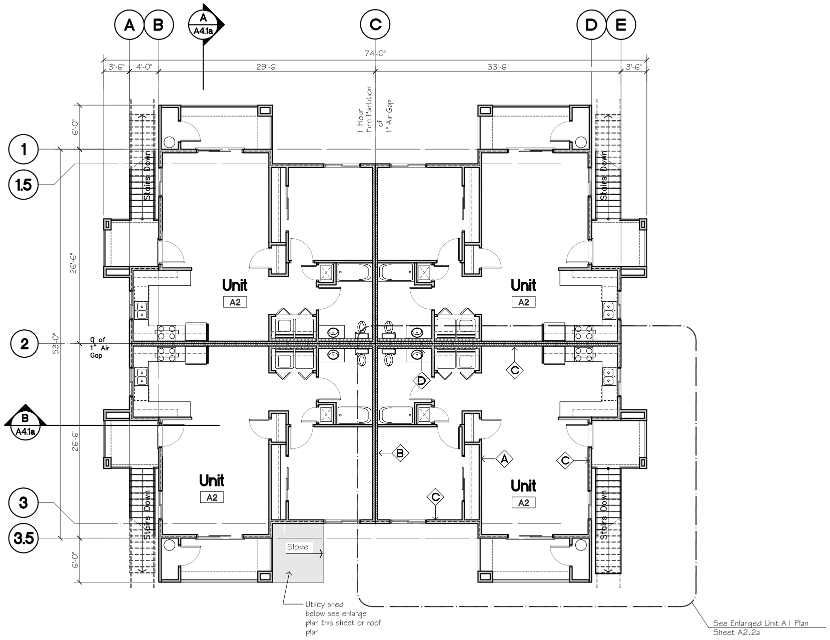
Revisions
x

SHEET No.
A1.5

1.s

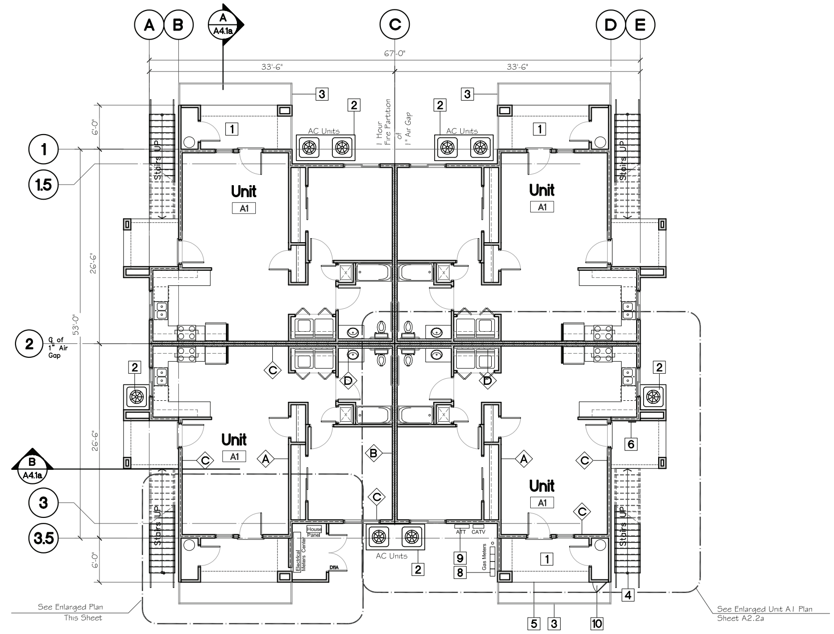
PA16 - 0039

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



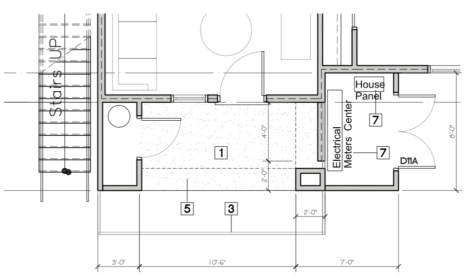
BUILDING TYPE 1 - SECOND FLOOR

1/8"=1'–0"



BUILDING TYPE 1 - FIRST FLOOR

1/8"=1'–0"



BUILDING TYPE 1 - ENLARGED UTILITY CLOSET

1/4"=1'–0"

Wall Legend

Walls are drawn at nomial size

Item	Wall	Description	Detail	Fire	Remark
A		Interior walls 2x4 studs @16" o.c.w/ 5/8" gypsum bd.	B on 9/A0.3	--	--
B		Fire Partition bearing. Double row of 2x4 studs @16" o.c. on separate plates see detail for add'l info	C on 9/A0.3	1 Hour	--
C		Exterior wall 2x6 studs @16" o.c. unless otherwise noted. w/ cement plaster finish	A2 on 8/A0.3	--	--
D		Furred plumbing wall. 2x4 studs @16" o.c.	D on 10/A0.3	--	--
E		+42" partial-height wall 2x4 studs @16" o.c.	9/A0.3	--	--

Building Keynotes

No.	Description
1	4" concrete slab with broom finish. Slope away from building 2% maximum
2	Condensing Unit on concrete pad screed by landscaping see site plan sheet A0.1 and Mech drawings for additional information
3	6 Foot high wood fence at patio area
4	Pre-Fabricated steel stairs with concrete treads see building sections
5	Dash line indicates soffit above see sections
6	2a:10bc rated fire extinguisher mounted so that top is not more than 40inches from finished floor, total of (1) per building. Reference Detail 12/A6.6
7	Utility closet with Electrical meters see site plan sheet A1.0 and Electrical drawings for additional information
8	Gas meter location reference plumbing drawings screen with landscaping
9	Telephone and Cable see electrical site plan
10	Fire riser cabinet, see Fire Sprinkler plans separate submittal

Building Type 1 Area

FIRST FLOOR UNITS
UNIT A1 = 1BR/1BA
LIVING = 796 sf
PATIO = 122 sf (open space)
ENTRY = 47 sf (open space)
WH/STO = 17 sf
TOTAL = 982 sf x (4) = 3,928 sf

SECOND FLOOR UNITS
UNIT A2 = 1BR/1BA
LIVING = 796 sf
DECK = 75 sf (open space)
ENTRY = 47 sf (open space)
WH/STO = 17 SF
TOTAL = 935 sf x (4) = 3,740 sf

TOTAL AREA
BUILDING TYPE 1 = 7,668 sf

Insulation

Location	Type
EXTERIOR WALLS	R-21 Batt
FIRE PARTITION BOTH STUDS	R-11 Batt
FLOOR ASSEMBLY	R-19 Batt
ROOF	R-38 Batt
ROOF SHEATHING SHALL HAVE RADIANT BARRIER	

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Villa Annette Apartments
Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Floor Plan
Building Type 1

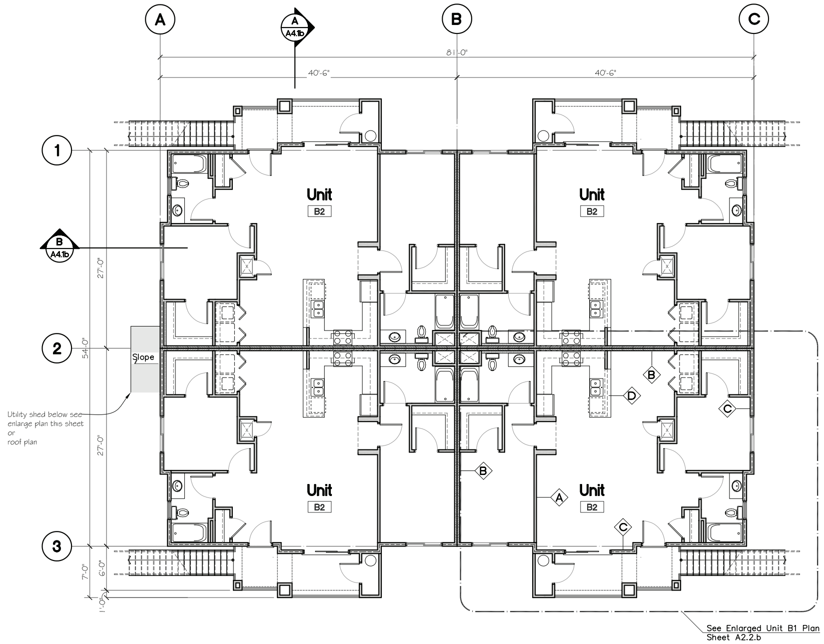
Revisions
x

SHEET No.
A2.1a

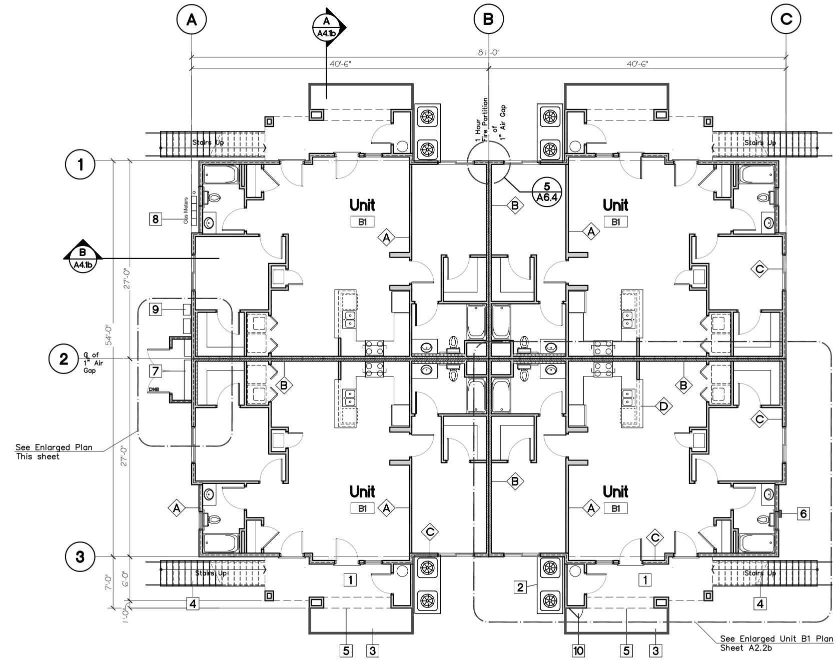
PA 16- 0039

1.s

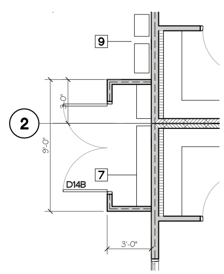
Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



BUILDING TYPE 2 - SECOND FLOOR
1/8"=1'-0"



BUILDING TYPE 2 - FIRST FLOOR
1/8"=1'-0"



ENLARGED UTILITY CLOSET
1/4"=1'-0"

Wall Legend

Walls are drawn at nomial size

Item	Wall	Description	Detail	Fire	Remark
A		Interior walls 2x4 studs @16" o.c.w/ 5/8" gypsum bd.	B on 9/A0.3	--	--
B		Fire Partition bearing. Double row of 2x4 studs @16" o.c. on separate plates see detail for add'l info	C on 9/A0.3	1 Hour	--
C		Exterior wall 2x6 studs @16" o.c. unless otherwise noted. w/ cement plaster finish	A2 on 8/A0.3	--	--
D		Furred plumbing wall. 2x4 studs @16" o.c.	D on 10/A0.3	--	--
E		+42" partial-height wall 2x4 studs @16" o.c.	9/A0.3	--	--

Building Keynotes

No.	Description
1	4" concrete slab with broom finish. Slope away from building 2% maximum
2	Condensing Unit on concrete pad screed by landscaping see site plan sheet A0.1 and Mech drawings for additional information
3	6 Foot high wood fence at patio area
4	Pre-Fabricated steel stairs with concrete treads see building sections
5	Dash line indicates soffit above see sections
6	2a:10bc rated fire extinguisher mounted so that top is not more than 40inches from finished floor, total of (1) per building. Reference Detail 12/A6.6
7	Utility closet with Electrical meters see site plan sheet A1.0 and Electrical drawings for additional information
8	Gas meter location reference plumbing drawings screen with landscaping
9	Telephone and Cable see electrical site plan
10	Fire riser cabinet, see Fire Sprinkler plans separate submittal

Building Type 2 Area

FIRST FLOOR UNITS
UNIT B1 = 2BR/2BA
LIVING = 1098 sf
PATIO = 118 sf (open space)
ENTRY = 36 sf (open space)
WH/STO = 17 sf
TOTAL = 1269 sf x (4) = 5,076 sf

SECOND FLOOR UNITS
UNIT B2 = 2BR/2BA
LIVING = 1098 sf
DECK = 68 sf (open space)
ENTRY = 36 sf (open space)
WH/STO = 17 sf
TOTAL = 1219 sf x (4) = 4,876 sf

TOTAL AREA
BUILDING TYPE 2 = 9,952 sf

Insulation

Location	Type
EXTERIOR WALLS	R-21 Batt
FIRE PARTITION BOTH STUDS	R-11 Batt
FLOOR ASSEMBLY	R-19 Batt
ROOF	R-38 Batt
ROOF SHEATHING SHALL HAVE RADIANT BARRIER	

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Villa Annette Apartments
Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Floor Plan
Building Type 2

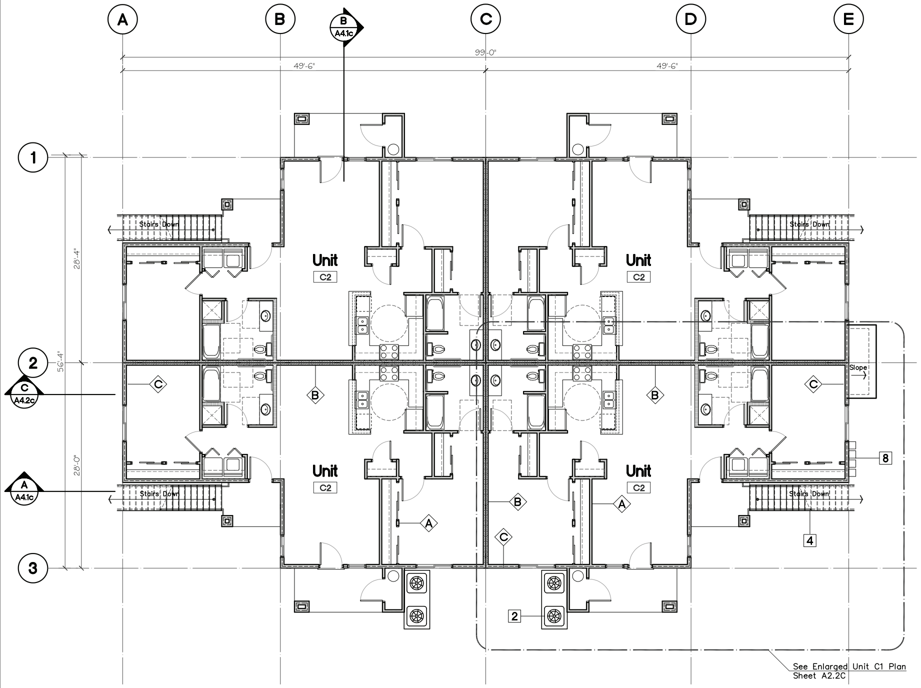
Revisions
x

SHEET No.
A2.1b

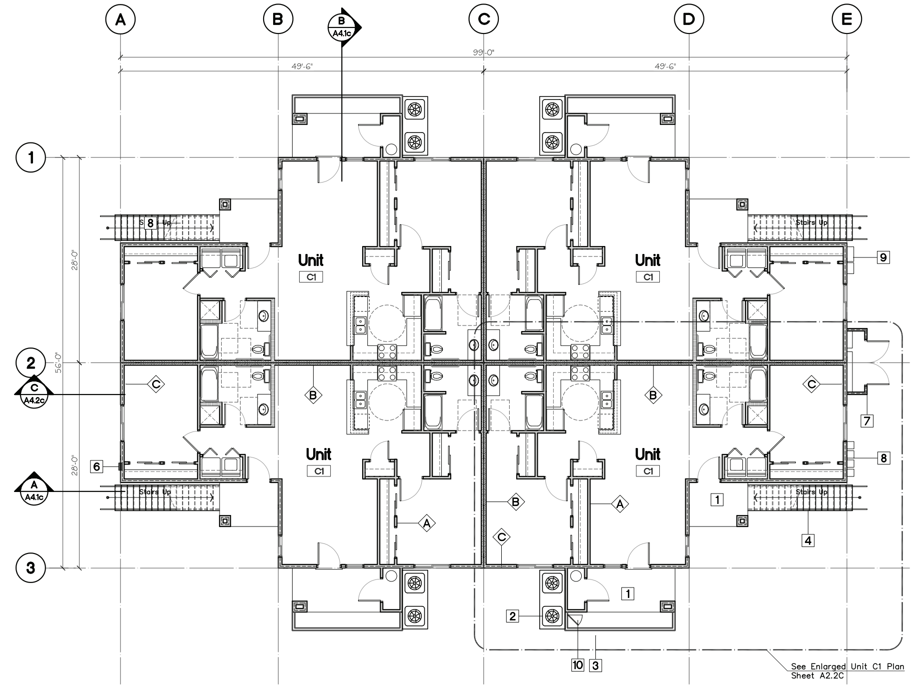
PA16 - 0039

1.s

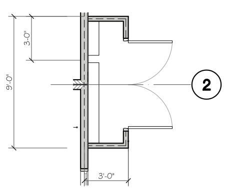
Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



BUILDING TYPE 3 - SECOND FLOOR
1/8"=1'-0"



BUILDING TYPE 3 - FIRST FLOOR
1/8"=1'-0"



ENLARGED UTILITY CLOSET
1/4"=1'-0"

Wall Legend

Walls are drawn at nominal size

Item	Wall	Description	Detail	Fire	Remark
A		Interior walls 2x4 studs @16" o.c.w/ 5/8" gypsum bd.	B on 9/A0.3	--	--
B		Fire Partition bearing. Double row of 2x4 studs @16" o.c. on separate plates see detail for add'l info	C on 9/A0.3	1 Hour	--
C		Exterior wall 2x6 studs @16" o.c. unless otherwise noted. w/ cement plaster finish	A2 on 8/A0.3	--	--
D		Furred plumbing wall. 2x4 studs @16" o.c.	D on 10/A0.3	--	--
E		+42" partial-height wall 2x4 studs @16" o.c.	9/A0.3	--	--

Building Type 3 Area

FIRST FLOOR UNITS
UNIT C1 = 2BR/2BA
LIVING = 1135 sf
PATIO = 110 sf
ENTRY = 46 sf
WH/STO = 18 sf
TOTAL = 1309 sf x (4) = 5,236 sf

SECOND FLOOR UNITS
UNIT C2 = 2BR/2BA
LIVING = 1135 sf
DECK = 72 sf
ENTRY = 46 sf
WH/STO = 18 SF
TOTAL = 1271 sf x (4) = 5,084 sf

TOTAL AREA
BUILDING TYPE 3 = 10,320 sf

Building Keynotes

No.	Description
1	4" concrete slab with broom finish. Slope away from building 2% maximum
2	Condensing Unit on concrete pad screed by landscaping see site plan sheet A0.1 and Mech drawings for additional information
3	6 Foot high wood fence at patio area
4	Pre-Fabricated steel stairs with concrete treads see building sections
5	Dash line indicates soffit above see sections
6	2a:10bc rated fire extinguisher mounted so that top is not more than 40inches from finished floor, total of (1) per building. Reference Detail 12/A6.6
7	Utility closet with Electrical meters see site plan sheet A1.0 and Electrical drawings for additional information
8	Gas meter location reference plumbing drawings screen with landscaping
9	Telephone and Cable see electrical site plan
10	Fire riser cabinet, see Fire Sprinkler plans separate submittal

Insulation

Location	Type
EXTERIOR WALLS	R-21 Batt
FIRE PARTITION BOTH STUDS	R-11 Batt
FLOOR ASSEMBLY	R-19 Batt
ROOF	R-38 Batt
ROOF SHEATHING SHALL HAVE RADIANT BARRIER	

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Villa Annette Apartments
Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date X/X/X
STATE OF CALIFORNIA

Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Floor Plan
Building Type 3

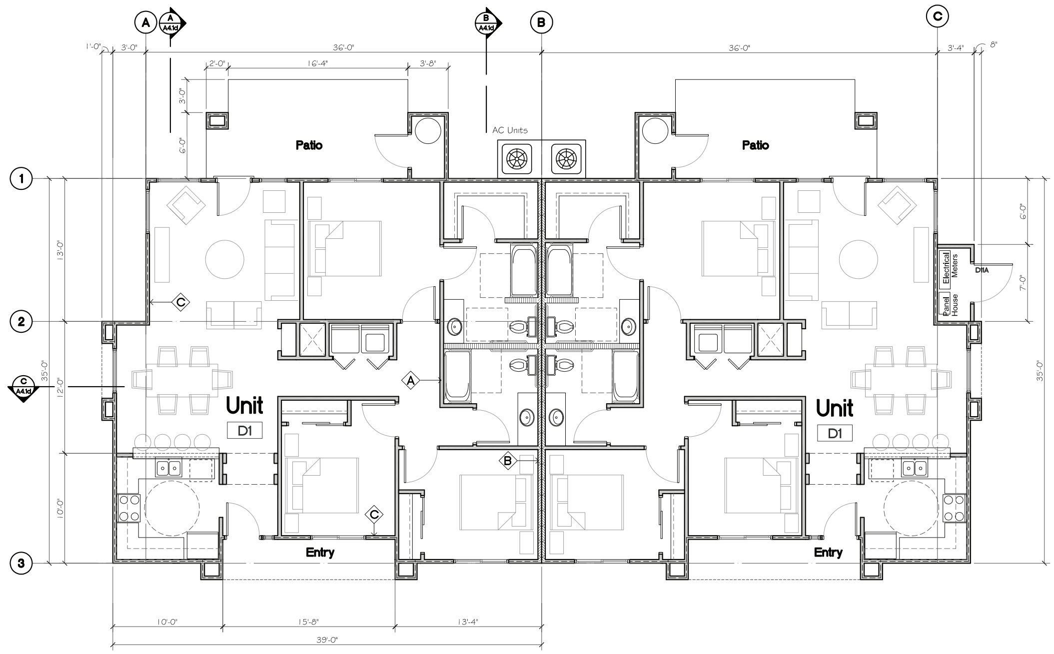
Revisions
x

SHEET No.
A2.1c

PA16 - 0039

1.s

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



BUILDING TYPE 4 - FLOOR PLAN

3/16"=1'-0"

Building Keynotes

No.	Description
1	4" concrete slab with broom finish. Slope away from building 2% maximum
2	Condensing Unit on concrete pad screed by landscaping see site plan sheet A0.1 and Mech drawings for additional information
3	6 Foot high wood fence at patio area
4	Pre-Fabricated steel stairs with concrete treads see building sections
5	Dash line indicates soffit above see sections
6	2a:10bc rated fire extinguisher mounted so that top is not more than 40inches from finished floor, total of (1) per building. Reference Detail 12/A6.6
7	Utility closet with Electrical meters see site plan sheet A1.0 and Electrical drawings for additional information
8	Gas meter location reference plumbing drawings screen with landscaping
9	Telephone and Cable see electrical site plan
10	Fire riser cabinet, see Fire Sprinkler plans separate submittal

Wall Legend

Walls are drawn at nominal size

Item	Wall	Description	Detail	Fire	Remark
A		Interior walls 2x4 studs @16" o.c.w/ 5/8" gypsum bd.	B on 9/A0.3	--	--
B		Fire Partition bearing. Double row of 2x4 studs @16" o.c. on separate plates see detail for add'l info	C on 9/A0.3	1 Hour	--
C		Exterior wall 2x6 studs @16" o.c. unless otherwise noted. w/ cement plaster finish	A2 on 8/A0.3	--	--
D		Furred plumbing wall. 2x4 studs @16" o.c.	D on 10/A0.3	--	--
E		+42" partial-height wall 2x4 studs @16" o.c.	9/A0.3	--	--

Building Type 4 Areas

FIRST FLOOR UNITS

UNIT D1 = 3BR/2BA
LIVING = 1292 sf
PATIO = 156 sf (Open Space)
ENTRY = 25 sf (Open Space)
WH/STO = 18 sf
TOTAL = 1,491 sf x (2) = 2,982 sf

TOTAL AREA
BUILDING TYPE 4 = 2,982 sf

Insulation

Location	Type
EXTERIOR WALLS	R-21 Batt
FIRE PARTITION BOTH STUDS	R-11 Batt
FLOOR ASSEMBLY	R-19 Batt
ROOF	R-38 Batt
ROOF SHEATHING SHALL HAVE RADIANT BARRIER	

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Villa Annette Apartments
Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

Date: 10.18.16
Drawn By: Susan Jones
Project # 15068

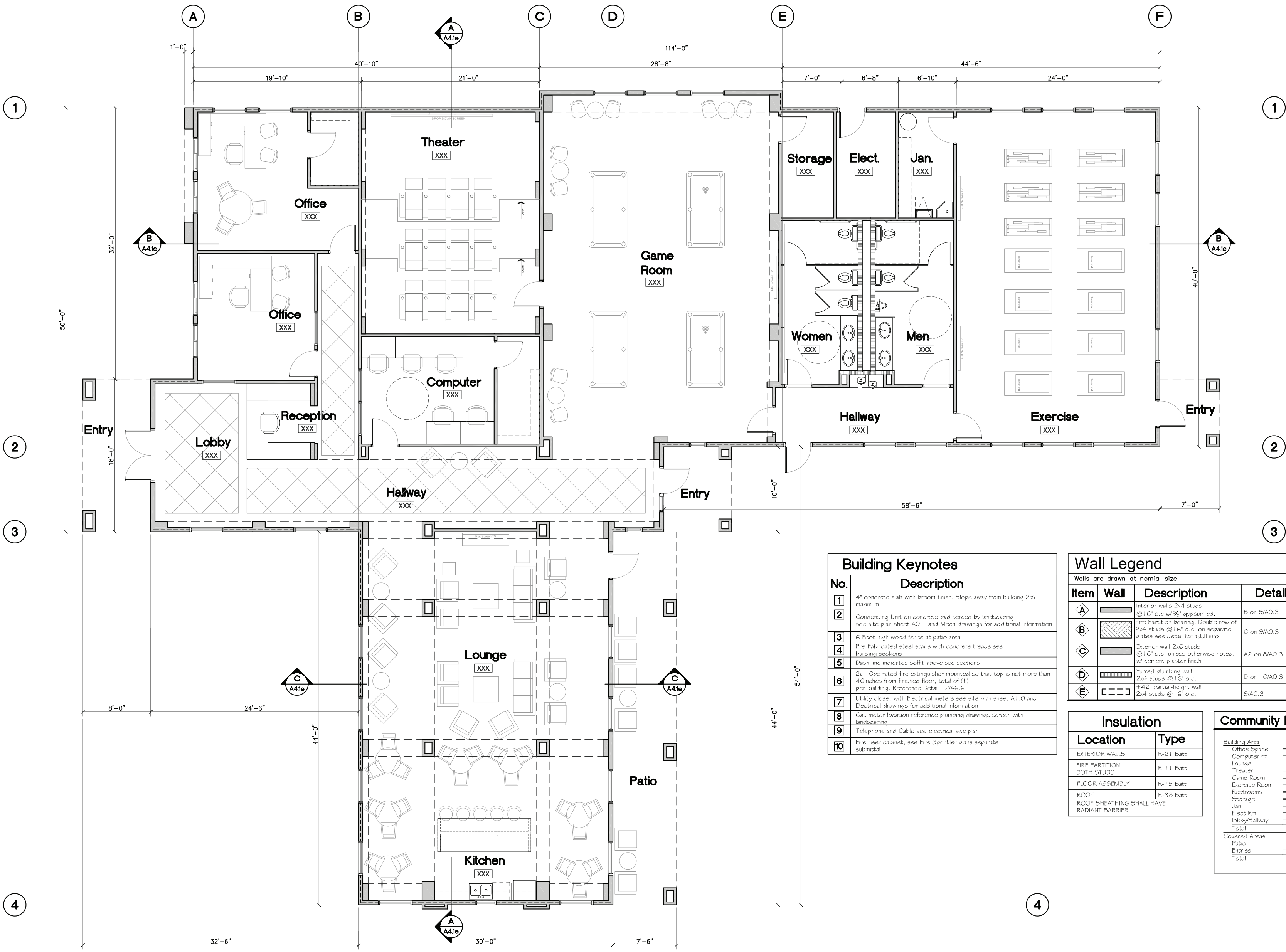
Floor Plan
Building Type 4

Revisions
x

SHEET No.
A2.1d

1.s

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



COMMUNITY BUILDING FLOOR PLAN

3/16"=1'-0"

Building Keynotes

No.	Description
1	4" concrete slab with broom finish. Slope away from building 2% maximum
2	Condensing Unit on concrete pad screed by landscaping see site plan sheet A0.1 and Mech drawings for additional information
3	6 Foot high wood fence at patio area
4	Pre-Fabricated steel stairs with concrete treads see building sections
5	Dash line indicates soffit above see sections
6	2a:10bc rated fire extinguisher mounted so that top is not more than 40inches from finished floor, total of (1) per building. Reference Detail 12/A6.6
7	Utility closet with Electrical meters see site plan sheet A1.0 and Electrical drawings for additional information
8	Gas meter location reference plumbing drawings screen with landscaping
9	Telephone and Cable see electrical site plan
10	Fire riser cabinet, see Fire Sprinkler plans separate submittal

Wall Legend

Walls are drawn at nomial size

Item	Wall	Description	Detail	Fire	Remark
A		Interior walls 2x4 studs @16" o.c.w/ 5/8" gypsum bd.	B on 9/A0.3	--	--
B		Fire Partition bearing. Double row of 2x4 studs @16" o.c. on separate plates see detail for add'l info	C on 9/A0.3	1 Hour	--
C		Exterior wall 2x6 studs @16" o.c. unless otherwise noted. w/ cement plaster finish	A2 on 8/A0.3	--	--
D		Furred plumbing wall. 2x4 studs @16" o.c.	D on 10/A0.3	--	--
E		+42" partial-height wall 2x4 studs @16" o.c.	9/A0.3	--	--

Insulation

Location	Type
EXTERIOR WALLS	R-21 Batt
FIRE PARTITION BOTH STUDS	R-11 Batt
FLOOR ASSEMBLY	R-19 Batt
ROOF	R-38 Batt
ROOF SHEATHING SHALL HAVE RADIANT BARRIER	

Community Building Area

Building Area	
Office Space	= 766 sf
Computer rm	= 204 sf
Lounge	= 1,355 sf
Theater	= 581 sf
Game Room	= 1,173 sf
Exercise Room	= 960 sf
Restrooms	= 413 sf
Storage	= 160 sf
Jan	= 89 sf
Elect Rm	= 95 sf
lobby/Hallway	= 786 sf
Total	= 6,582 sf
Covered Areas	
Patio	= 330 sf
Entries	= 280sf
Total	= 610 sf

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Villa Annette Apartments

Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Floor Plan Community Building

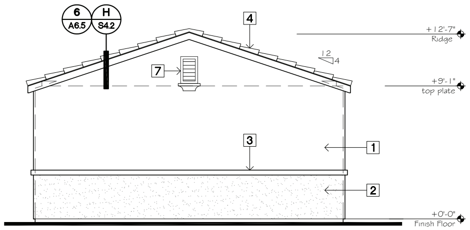
Revisions
x

SHEET NO.
A2.1e

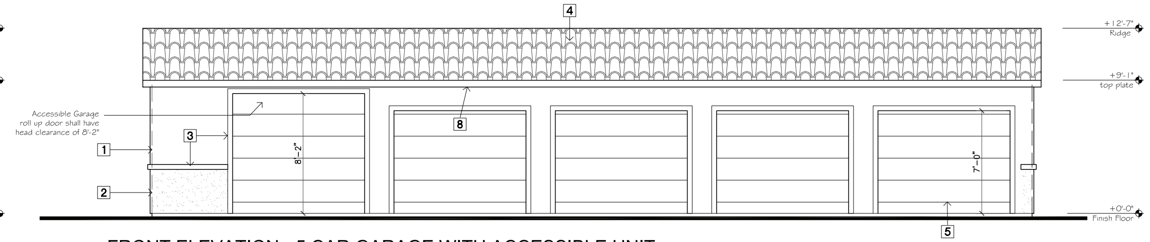
PA16 - 0039

1.s

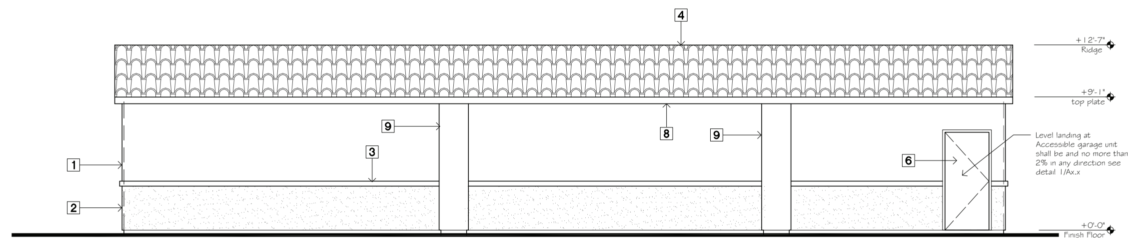
Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



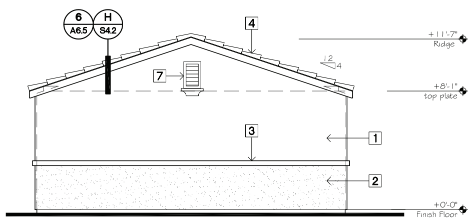
SIDE ELEVATION AT ACCESSIBLE UNIT
1/4"=1'-0"



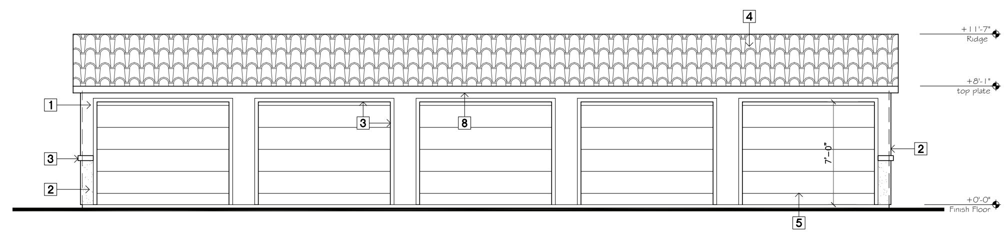
FRONT ELEVATION - 5 CAR GARAGE WITH ACCESSIBLE UNIT
1/4"=1'-0"



REAR ELEVATION - 5 CAR GARAGE WITH ACCESSIBLE UNIT
1/4"=1'-0"

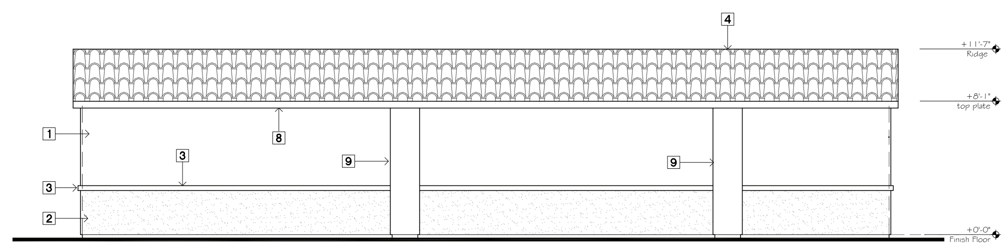


SIDE ELEVATION TYPICAL
1/4"=1'-0"



FRONT ELEVATION - 5 CAR GARAGE
1/4"=1'-0"

Elevations Key Notes	
1	Cement plaster finish with integral color (field color)
2	Cement plaster finish with integral color (accent color)
3	Foam trim with accent paint color
4	Concrete tile roof
5	Sectional metal roll-up garage door
6	Hollow metal door painted see door schedule
7	Decorative gable vent with foam sill
8	Wood fascia board painted
9	Architectural popout pilaster with stucco filed color



REAR ELEVATION - 5 CAR GARAGE
1/4"=1'-0"

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Villa Annette Apartments
Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

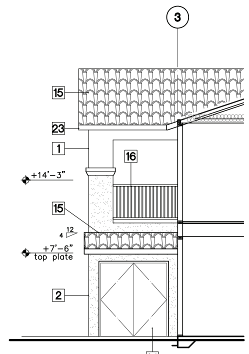
Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Garage Elevations

Revisions
x

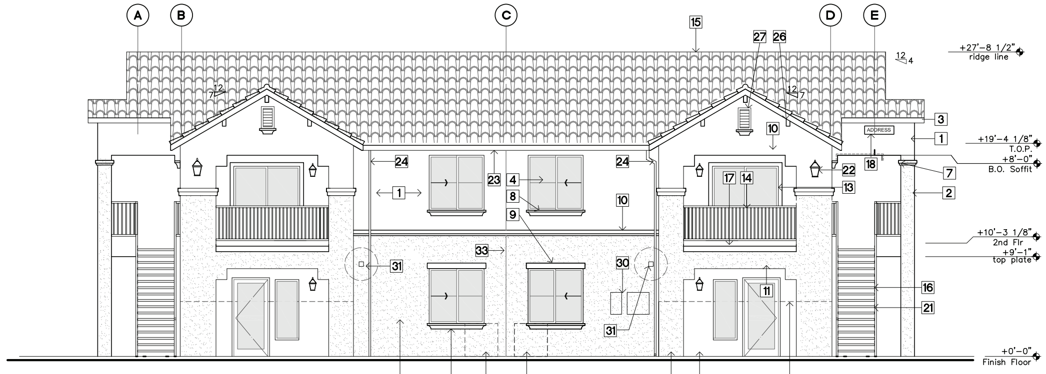
SHEET No.
A2.1g

PA16 - 0039

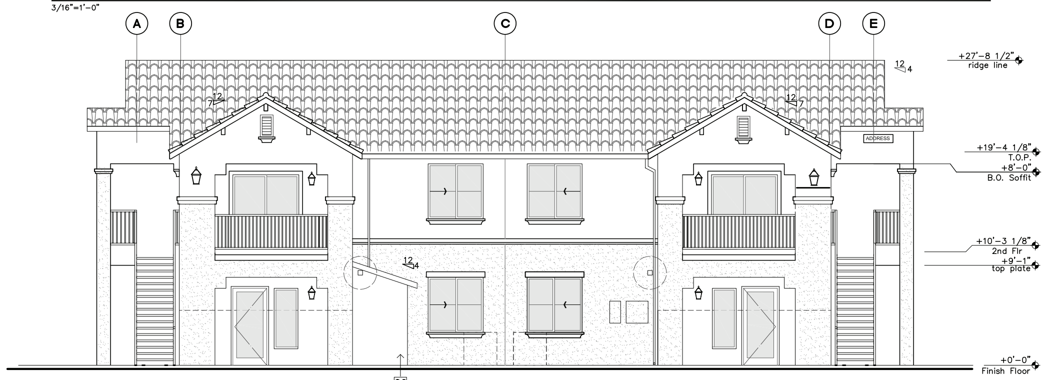
1.s



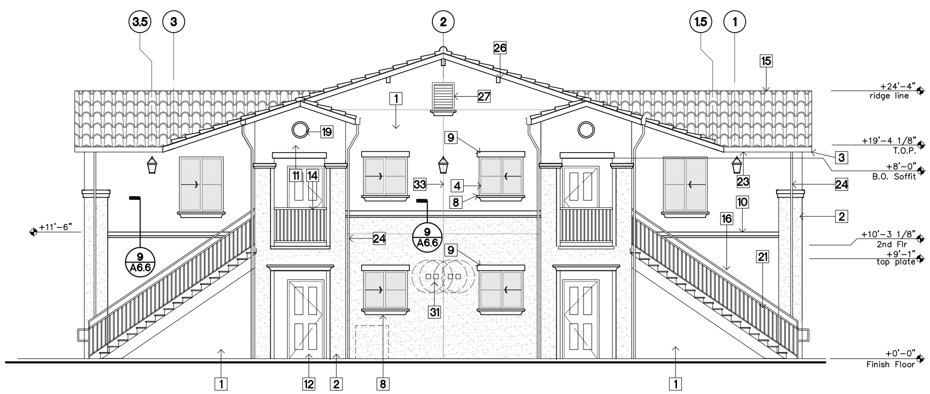
PARTIAL ELEV
3/16"=1'-0"



REAR ELEVATION BUILIDNG TYPE 1
3/16"=1'-0"



FRONT ELEVATION BUILIDNG TYPE 1
3/16"=1'-0"



SIDE ELEVATION BUILIDNG TYPE 1 (oppsite side similar)
3/16"=1'-0"

Elevations Key Notes

1	Stucco Field color - 7/8" Cement plaster o/ metal lath o/ (2) layers type 'D' building paper o/ plywood sheathing
2	Hatch area indicates area with Accent paint color
3	2x6 Fascia board painted
4	Vinyl windows dual glazing, see window schedule
5	Pre-fabricated steel stairs with concrete treads
6	Decorative plaster faux vent tiles
7	Foam trim at columns painted
8	Foam trim at window sill painted
9	Foam trim at window header painted
10	Foam trim band painted
11	Foam trim at opening painted
12	Swinging door (vision panel where shown)
13	Sliding glass door with foam trim
14	42" high wrought guardrails
15	Concrete tile
16	Handrails and Guardrails see sections
17	Light weight concrete deck with water proof membrane
18	Building address min 4" high letters with contrasting background visible from street
19	2 foot diameter Decorative vent
20	5 foot high fence at patio areas see enlarged plans
21	Prefabricated stairs with concrete treads see building sections
22	Exterior wall mounted lights
23	5" Rectangular metal roof gutter
24	5" Metal downspout
25	Stone Veneer
26	2x8 rafter tails at gable painted
27	Rectangular gable vent with foam trim at sill
28	AC units on concrete pad see mechanical drawings and reference site plan sheet A1.1 and enlarged plans
29	Gas Meter location, landscaping to screen units, see plumbing drawings for add'l information
30	Telephone and Cable boxes, see electrical drawings
31	Mechanical exhaust vent shall be clear of any windows or openings by 3' diameter min
32	Utility closet see electrical plans and Architectural site plan for locations
33	Stucco control joint

Exterior Wall Openings- Bldg type 1

* Reference Site Plan for Fire Separation Distance or assumed Property Line

Wall Elevation Bldg 1		Surface area per floor	Max allowable opening per Fire separation distance	Proposed Openings (all windows & doors unprotected)	Max area wall openings per table 705.8: 10' to < 15' Fire separation distance	Max area wall openings per table 705.8: 15' to < 20' Fire separation distance
Front	1st Flr	609 sq. ft.	25% = 152sf	134sf / 22%	15% of wall area*	25% of wall area*
	2nd Flr	538 sq. ft.	25% = 134.5sf	134sf / 25%		
Side	1st Flr	674 sq. ft.	15% = 101sf	70sf / 10%		
	2nd Flr	767 sq. ft.	15% = 115sf	110sf / 14%		
Rear	1st Flr	609 sq. ft.	25% = 152sf	134sf / 22%		
	2nd Flr	538 sq. ft.	25% = 134.5sf	134sf / 25%		
Side	1st Flr	674 sq. ft.	15% = 101sf	70sf / 10%		
	2nd Flr	767 sq. ft.	15% = 115sf	110sf / 14%		

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LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

Date: 08.31.16
Drawing By: Susan Jones
Drawing Title
Exterior Elevations Building Type 1

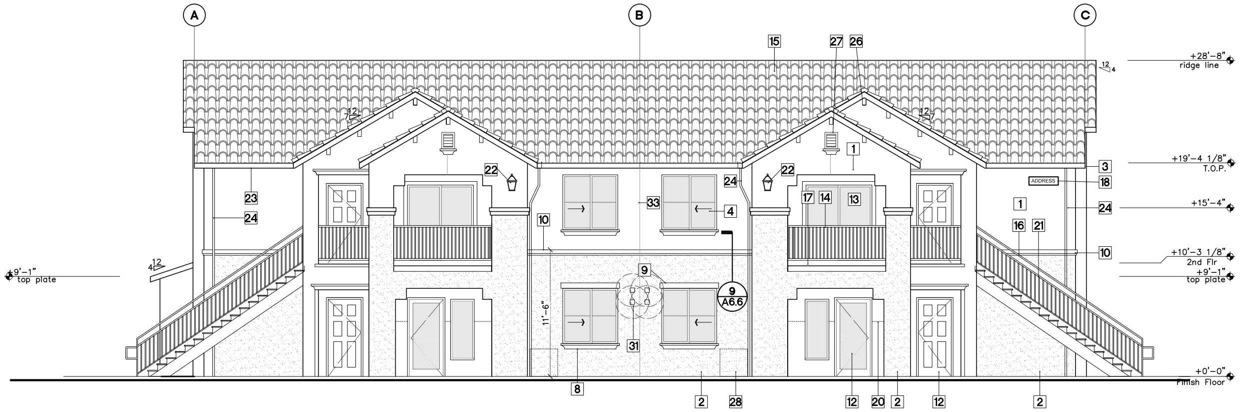
Revisions
x

SHEET NO.
A3.1a

PA16 - 0039

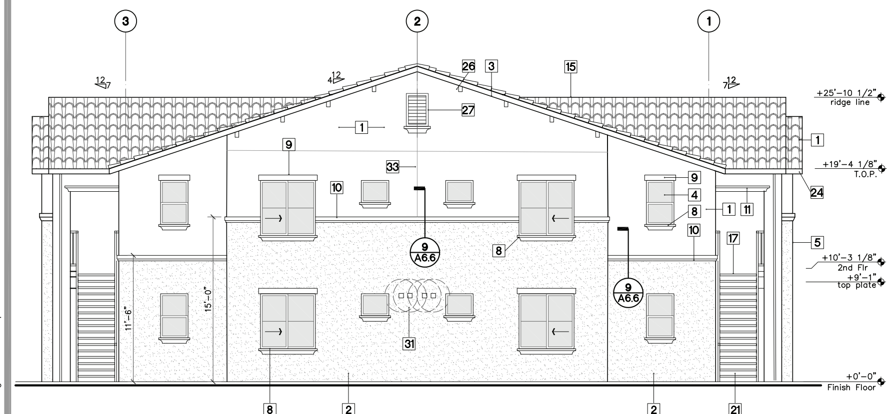
1.s

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



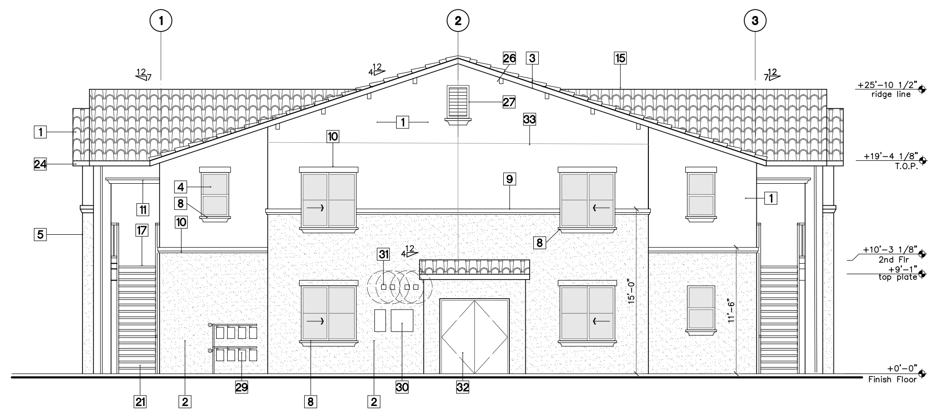
FRONT ELEVATION - BUILDING TYPE 2 (rear elevation similar)

3/16"=1'-0"



SIDE 2 ELEVATION - BUILDING TYPE 2

3/16"=1'-0"



SIDE 1 ELEVATION - BUILDING TYPE 2

3/16"=1'-0"

Elevations Key Notes

1	Stucco Field color - 7/8" Cement plaster o/ metal lath o/ (2) layers type 'D' building paper o/ plywood sheathing
2	Hatch area indicates area with Accent paint color
3	2x6 Fascia board painted
4	Vinyl windows dual glazing, see window schedule
5	Pre-fabricated steel stairs with concrete treads
6	Decorative plaster faux vent tiles
7	Foam trim at columns painted
8	Foam trim at window sill painted
9	Foam trim at window header painted
10	Foam trim band painted
11	Foam trim at opening painted
12	Swinging door (vision panel where shown)
13	Sliding glass door with foam trim
14	42" high wrought guardrails
15	Concrete tile
16	Handrails and Guardrails see sections
17	Light weight concrete deck with water proof membrane
18	Building address min 4" high letters with contrasting background visible from street
19	2 foot diameter Decorative vent
20	5 foot high fence at patio areas see enlarged plans
21	Prefabricated stairs with concrete treads see building sections
22	Exterior wall mounted lights
23	5" Rectangular metal roof gutter
24	5" Metal downspout
25	Stone Veneer
26	2x8 rafter tails at gable painted
27	Rectangular gable vent with foam trim at sill
28	AC units on concrete pad see mechanical drawings and reference site plan sheet A1.1 and enlarged plans
29	Gas Meter location, landscaping to screen units, see plumbing drawings for add'l information
30	Telephone and Cable boxes, see electrical drawings
31	Mechanical exhaust vent shall be clear of any windows or openings by 3' diameter min
32	Utility closet see electrical plans and Architectural site plan for locations
33	Stucco control joint

Wall Elevation Building Type 1		Surface area per floor	Max allowable opening per Fire separation distance	Proposed Openings (all windows & doors unprotected)	Proposed Openings (windows unprotected, 1-hour doors)	Max area wall openings per table 705.8	
						10' to < 15' Fire separation distance	15' to < 20' Fire separation distance
Front	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A	15% of wall area*	25% of wall area*
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	70sf / 13%	N/A		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		
Rear	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A		
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	60sf / 11%	See note below		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		

Exterior Wall Openings- Bldg type 2

* Reference Site Plan for Fire Separation Distance or assumed Property Line

General Note:
1. All doors at utility sheds, except at building B09 & B15, shall be 20 min rated due to fire separation distances and allowable openings, Reference Site Plan Sheet A1.0 and door schedule Sheet A0.5 for locations.

PA16 - 0039

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Villa Annette Apartments

Alessandro Boulevard
Moreno Valley, CA

Licensed Architect
Janice K. Bier
C22169
Renewal Date: X/X/X
State of California

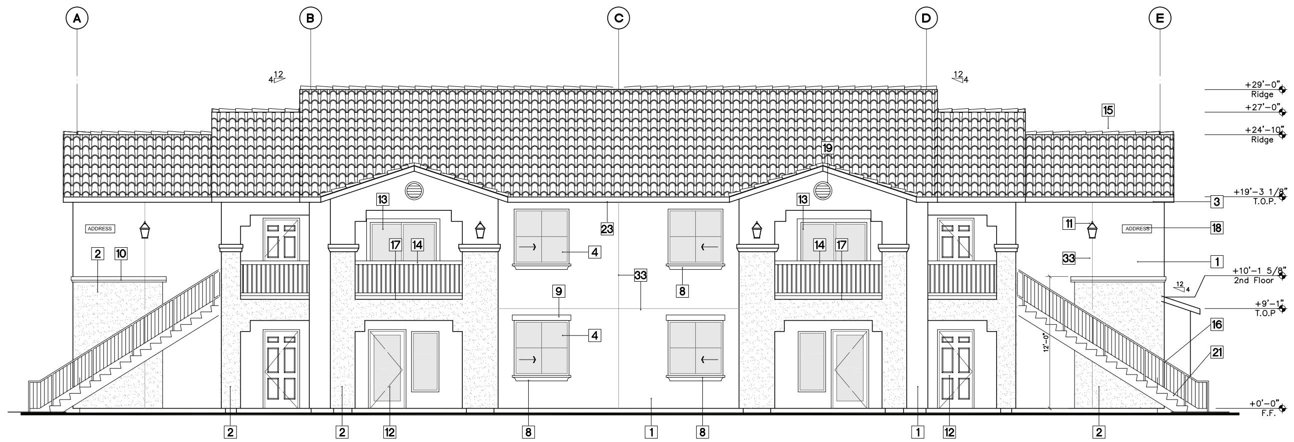
Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Exterior Elevations Building Type 2

Revisions
x

SHEET No.
A3.1b

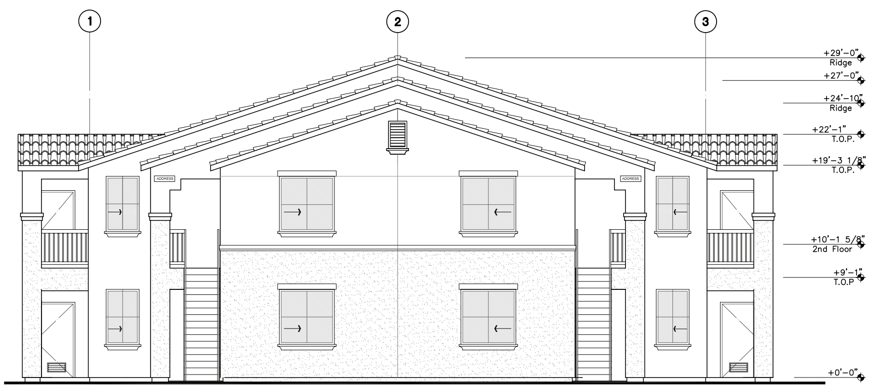
1.s

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



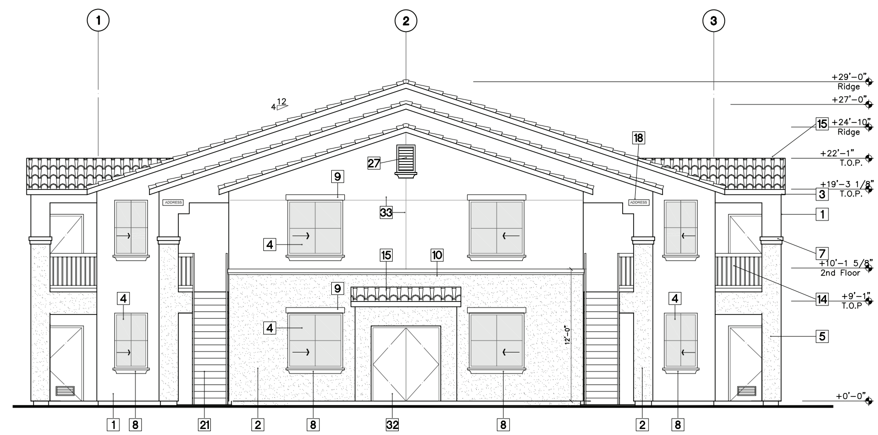
FRONT ELEVATION - BUILDING TYPE 3 (rear elevation similar)

3/16"=1'-0"



SIDE 1 ELEVATION - BUILDING TYPE 3

3/16"=1'-0"



SIDE 1 ELEVATION - BUILDING TYPE 3

3/16"=1'-0"

Elevations Key Notes

1	Stucco Field color - 7/8" Cement plaster o/ metal lath o/ (2) layers type 'D' building paper o/ plywood sheathing
2	Hatch area indicates area with Accent paint color
3	2x6 Fascia board painted
4	Vinyl windows dual glazing, see window schedule
5	Pre-fabricated steel stairs with concrete treads
6	Decorative plaster faux vent tiles
7	Foam trim at columns painted
8	Foam trim at window sill painted
9	Foam trim at window header painted
10	Foam trim band painted
11	Foam trim at opening painted
12	Swinging door (vision panel where shown)
13	Sliding glass door with foam trim
14	42" high wrought guardrails
15	Concrete tile
16	Handrails and Guardrails see sections
17	Light weight concrete deck with water proof membrane
18	Building address min 4" high letters with contrasting background visible from street
19	2 foot diameter Decorative vent
20	5 foot high fence at patio areas see enlarged plans
21	Prefabricated stairs with concrete treads see building sections
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24	5" Metal downspout
25	Stone Veneer
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27	Rectangular gable vent with foam trim at sill
28	AC units on concrete pad see mechanical drawings and reference site plan sheet A1.1 and enlarged plans
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30	Telephone and Cable boxes, see electrical drawings
31	Mechanical exhaust vent shall be clear of any windows or openings by 3' diameter min
32	Utility closet see electrical plans and Architectural site plan for locations
33	Stucco control joint

Wall Elevation Building Type 1		Surface area per floor	Max allowable opening per Fire separation distance	Proposed Openings (all windows & doors unprotected)	Proposed Openings (windows unprotected, 1-hour doors)	Max area wall openings per table 705.8 10' to < 15' Fire separation distance	Max area wall openings per table 705.8 15' to < 20' Fire separation distance
Front	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A	15% of wall area*	25% of wall area*
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	70sf / 13%	N/A		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		
Rear	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A		
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	60sf / 11%	See note below		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		

Exterior Wall Openings- Bldg type 3

* Reference Site Plan for Fire Separation Distance or assumed Property Line

General Note:
1. All doors at utility sheds, except at building B09 & B15, shall be 20 min rated due to fire separation distances and allowable openings, Reference Site Plan Sheet A1.0 and door schedule Sheet A0.5 for locations.

PA16 - 0039

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Alessandro Boulevard
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LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

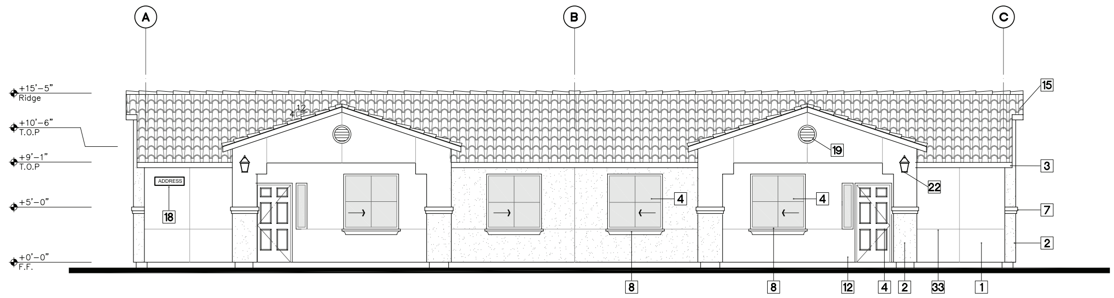
Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Exterior Elevations Building Type 3

Revisions
x

SHEET No.
A3.1c

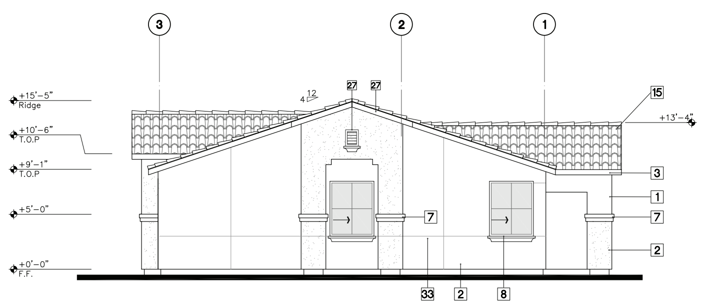
1.s

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)



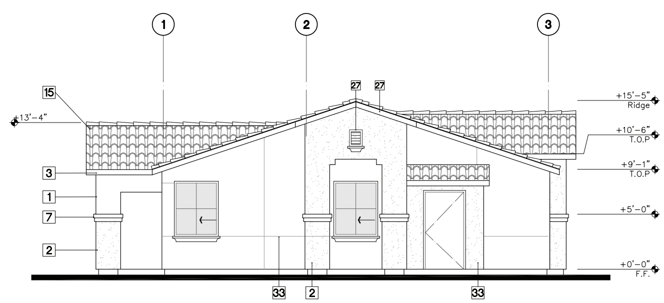
FRONT ELEVATION - BUILDING TYPE 4

3/16"=1'-0"



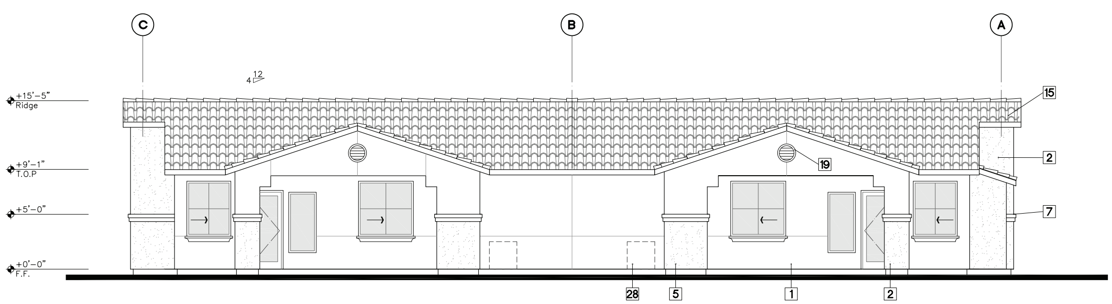
SIDE 1 ELEVATION - BUILDING TYPE 4

3/16"=1'-0"



SIDE 2 ELEVATION - BUILDING TYPE 4

3/16"=1'-0"



REAR ELEVATION - BUILDING TYPE 4

3/16"=1'-0"

Elevations Key Notes

1	Stucco Field color - 7/8" Cement plaster o/ metal lath o/ (2) layers type 'D' building paper o/ plywood sheathing
2	Hatch area indicates area with Accent paint color
3	2x6 Fascia board painted
4	Vinyl windows dual glazing, see window schedule
5	Pre-fabricated steel stairs with concrete treads
6	Decorative plaster faux vent tiles
7	Foam trim at columns painted
8	Foam trim at window sill painted
9	Foam trim at window header painted
10	Foam trim band painted
11	Foam trim at opening painted
12	Swinging door (vision panel where shown)
13	Sliding glass door with foam trim
14	42" high wrought guardrails
15	Concrete tile
16	Handrails and Guardrails see sections
17	Light weight concrete deck with water proof membrane
18	Building address min 4" high letters with contrasting background visible from street
19	2 foot diameter Decorative vent
20	5 foot high fence at patio areas see enlarged plans
21	Prefabricated stairs with concrete treads see building sections
22	Exterior wall mounted lights
23	5" Rectangular metal roof gutter
24	5" Metal downspout
25	Stone Veneer
26	2x8 rafter tails at gable painted
27	Rectangular gable vent with foam trim at sill
28	AC units on concrete pad see mechanical drawings and reference site plan sheet A1.1 and enlarged plans
29	Gas Meter location, landscaping to screen units, see plumbing drawings for add'l information
30	Telephone and Cable boxes, see electrical drawings
31	Mechanical exhaust vent shall be clear of any windows or openings by 3' diameter min
32	Utility closet see electrical plans and Architectural site plan for locations
33	Stucco control joint

Wall Elevation Building Type 1		Surface area per floor	Max allowable opening per Fire separation distance	Proposed Openings (all windows & doors unprotected)	Proposed Openings (windows unprotected, 1-hour doors)	Max area wall openings per table 705.8: 10' to < 15' Fire separation distance	Max area wall openings per table 705.8: 15' to < 20' Fire separation distance
Front	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A	15% of wall area*	25% of wall area*
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	70sf / 13%	N/A		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		
Rear	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A		
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	60sf / 11%	See note below		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		

Exterior Wall Openings- Bldg type 4

* Reference Site Plan for Fire Separation Distance or assumed Property Line

General Note:
1. All doors at utility sheds, except at building B09 & B15, shall be 20 min rated due to fire separation distances and allowable openings, Reference Site Plan Sheet A1.0 and door schedule Sheet A0.5 for locations.

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LICENSED ARCHITECT
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C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

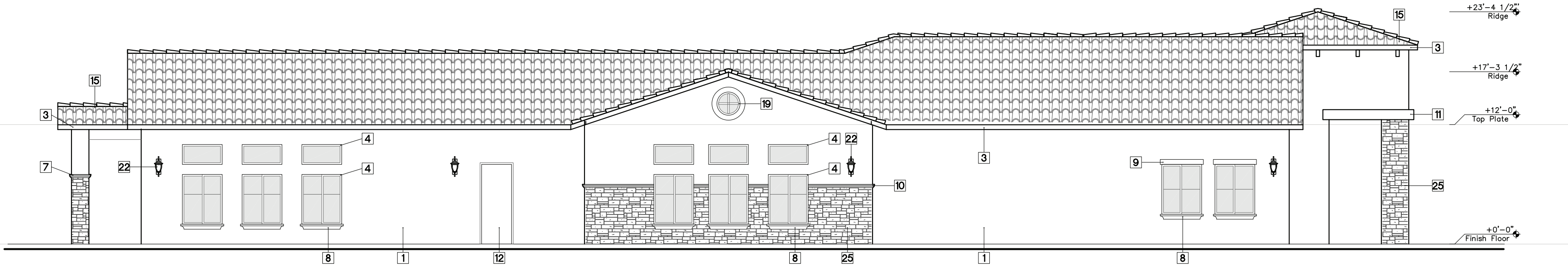
Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Exterior Elevations Building Type 4

Revisions
x

SHEET No.
A3.1d

PA16 - 0039

1.s



SOUTH ELEVATION - COMMUNITY BUILDING

3/16"=1'-0"

SOUTH ELEVATION - COMMUNITY BUILDING

3/16"=1'-0"

Wall Elevation Building Type 1		Surface area per floor	Max allowable opening per Fire separation distance	Proposed Openings (all windows & doors unprotected)	Proposed Openings (windows unprotected, 1-hour doors)	Max area wall openings per table 705.8: 10' to < 15' Fire separation distance	Max area wall openings per table 705.8: 15' to < 20' Fire separation distance
Front	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A	15% of wall area*	25% of wall area*
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	70sf / 13%	N/A		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		
Rear	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A		
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	60sf / 11%	See note below		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		

Exterior Wall Openings- Bldg type 4

* Reference Site Plan for Fire Separation Distance or assumed Property Line

General Note:

1. All doors at utility sheds, except at building B09 & B15, shall be 20 min rated due to fire separation distances and allowable openings, Reference Site Plan Sheet A1.0 and door schedule Sheet A0.5 for locations.

Elevations Key Notes

1	Stucco Field color - 7/8" Cement plaster o/ metal lath o/ (2) layers type 'D' building paper o/ plywood sheathing
2	Hatch area indicates area with Accent paint color
3	2x6 Fascia board painted
4	Vinyl windows dual glazing, see window schedule
5	Pre-fabricated steel stairs with concrete treads
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9	Foam trim at window header painted
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11	Foam trim at opening painted
12	Swinging door (vision panel where shown)
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14	42" high wrought guardrails
15	Concrete tile
16	Handrails and Guardrails see sections
17	Light weight concrete deck with water proof membrane
18	Building address min 4" high letters with contrasting background visible from street
19	2 foot diameter Decorative vent
20	5 foot high fence at patio areas see enlarged plans
21	Prefabricated stairs with concrete treads see building sections
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23	5" Rectangular metal roof gutter
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28	AC units on concrete pad see mechanical drawings and reference site plan sheet A1.1 and enlarged plans
29	Gas Meter location, landscaping to screen units, see plumbing drawings for add'l information
30	Telephone and Cable boxes, see electrical drawings
31	Mechanical exhaust vent shall be clear of any windows or openings by 3' diameter min
32	Utility closet see electrical plans and Architectural site plan for locations
33	Stucco control joint

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Villa Annette Apartments

Alessandro Boulevard
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LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

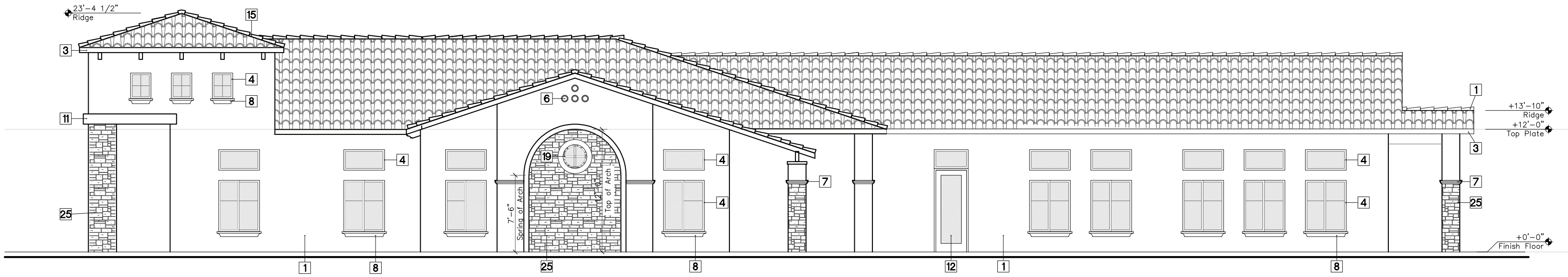
Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Community bldg
Exterior Elevations

Revisions
x

SHEET No.
A3.1e

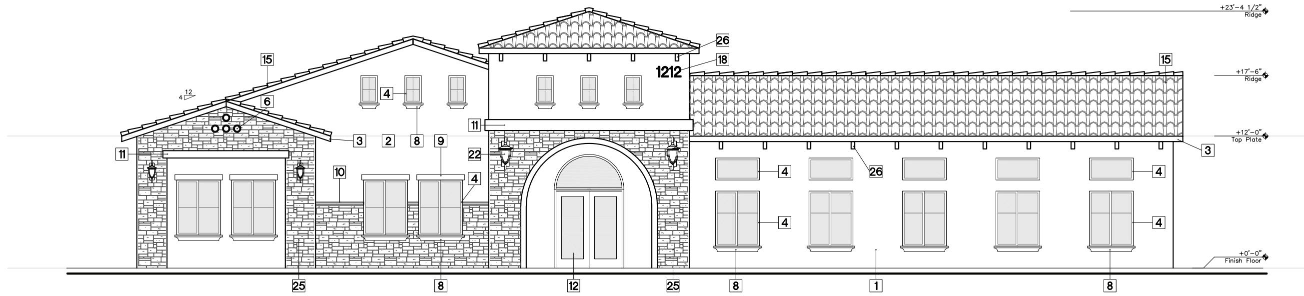
PA16 - 0039

1.s



WEST ELEVATION - COMMUNITY BUILDING

3/16"=1'-0"



NORTH ELEVATION - COMMUNITY BUILDING

3/16"=1'-0"

Elevations Key Notes

1	Stucco Field color - 7/8" Cement plaster o/ metal lath o/ (2) layers type 'D' building paper o/ plywood sheathing
2	Hatch area indicates area with Accent paint color
3	2x6 Fascia board painted
4	Vinyl windows dual glazing, see window schedule
5	Pre-fabricated steel stairs with concrete treads
6	Decorative plaster faux vent tiles
7	Foam trim at columns painted
8	Foam trim at window sill painted
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11	Foam trim at opening painted
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16	Handrails and Guardrails see sections
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21	Prefabricated stairs with concrete treads see building sections
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23	5" Rectangular metal roof gutter
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26	2x8 rafter tails at gable painted
27	Rectangular gable vent with foam trim at sill
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29	Gas Meter location, landscaping to screen units, see plumbing drawings for add'l information
30	Telephone and Cable boxes, see electrical drawings
31	Mechanical exhaust vent shall be clear of any windows or openings by 3' diameter min
32	Utility closet see electrical plans and Architectural site plan for locations
33	Stucco control joint

Wall Elevation Building Type 1		Surface area per floor	Max allowable opening per Fire separation distance	Proposed Openings (all windows & doors unprotected)	Proposed Openings (windows unprotected, 1-hour doors)	Max area wall openings per table 705.8 10' to < 15' Fire separation distance	15' to < 20' Fire separation distance
Front	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A	15% of wall area*	25% of wall area*
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	70sf / 13%	N/A		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		
Rear	1st Floor	815 sq. ft.	25% = 203 sf	176sf / 22%	N/A		
	2nd Floor	717 sq. ft.	25% = 179 sf	176sf / 24%	N/A		
Side	1st Floor	557 sq. ft.	15% = 84sf	60sf / 11%	See note below		
	2nd Floor	729 sq. ft.	15% = 109sf	76sf / 10%	N/A		

Exterior Wall Openings- Bldg type 4

* Reference Site Plan for Fire Separation Distance or assumed Property Line

General Note:
1. All doors at utility sheds, except at building B09 & B15, shall be 20 min rated due to fire separation distances and allowable openings, Reference Site Plan Sheet A1.0 and door schedule Sheet A0.5 for locations.

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Licensed Architect
Janice K. Bier
C22169
Renewal Date: X/X/X
State of California

Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Community Bldg
Exterior Elevation

Revisions
x

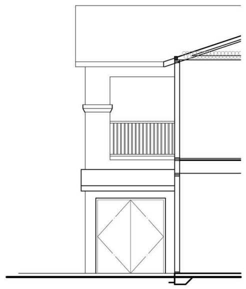
SHEET No.
A3.2e

PA16 - 0039

1.s

Attachment: Villa Annette Apartments Plans (2340 : PA16-0039 Plot Plan)

Attachment: Color Renderings (2340 : PA16-0039 Plot Plan)



PARTIAL ELEV

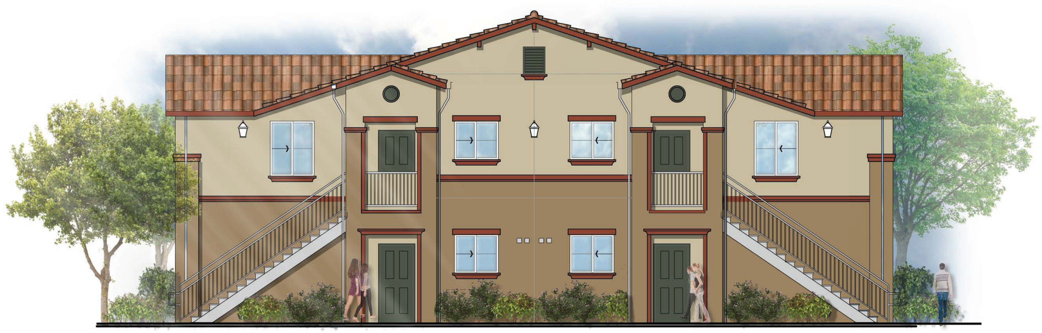
3/16"=1'-0"

REAR ELEVATION BUILIDNG 1

3/16"=1'-0"

FRONT ELEVATION BUILIDNG 1

3/16"=1'-0"



SIDE ELEVATION BUILIDNG 1 (oppsite side similar)

3/16"=1'-0"

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Villa Annette Apartments

Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date: X/X/X
STATE OF CALIFORNIA

Date: 08.31.16
Drawn By: Susan Jones
Drawing Title

Exterior
Elevations
Building Type 1

Revisions
x

SHEET No.

A3.1a

FRONT ELEVATION - BUILDING TYPE 2 (opposite side similar)

3/16"=1'-0"

SIDE 2 ELEVATION - BUILDING TYPE 2

3/16"=1'-0"

SIDE 1 ELEVATION - BUILDING TYPE 2

3/16"=1'-0"

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Drawing Title

Exterior
Elevations
Building Type 2

Revisions
x

SHEET No.

A3.1b

FRONT ELEVATION - BUILDING TYPE 3 (rear elevation similar)

3/16"=1'-0"

SIDE 1 ELEVATION - BUILDING TYPE 3

3/16"=1'-0"

SIDE 1 ELEVATION - BUILDING TYPE 3

3/16"=1'-0"

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Moreno Valley, CA

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Drawing Title

Exterior
Elevations
Building Type 3

Revisions
x

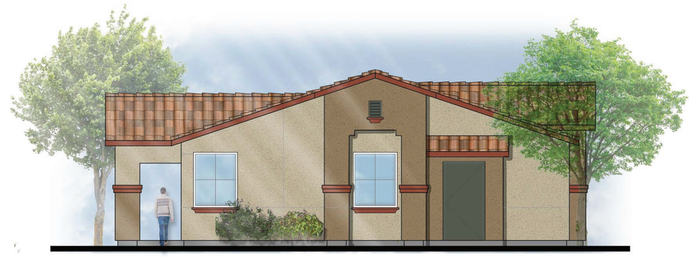
SHEET No.
A3.1c

FRONT ELEVATION - BUILDING TYPE 4

3/16"=1'-0"

SIDE 1 ELEVATION - BUILDING TYPE 4

3/16"=1'-0"



SIDE 2 ELEVATION - BUILDING TYPE 4

3/16"=1'-0"

REAR ELEVATION - BUILDING TYPE 4

3/16"=1'-0"

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Villa Annette Apartments

Alessandro Boulevard
Moreno Valley, CA

Licensed Architect
Janice K. Bier
C22169
Renewal Date
X/X/X
State of California

Date: 08.31.16
Drawn By: Susan Jones
Drawing Title

Exterior
Elevations
Building Type 4

Revisions
x

SHEET No.
A3.1d

Boral Roofing
Barcelona – Copper
Mountain Blend

422 GREAT WALL

Omega Stucco with integral color
422 Great Wall

Accent Color at base
Sherwin William
Artifact SW 6138

Trim at window, doors &
Balcony Sherwin William
“Roycroft copper Red”

Entry Doors
Sherwin Williams
“Forestwood”

VILLA ANNETTE DWELLING UNITS - SCHEME 2

SOUTH ELEVATION - COMMUNITY BUILDING

3/16"=1'-0"

SOUTH ELEVATION - COMMUNITY BUILDING

3/16"=1'-0"

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Villa Annette Apartments

Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
Janice K. Bier
C22169
Renewal Date:
X/X/X
STATE OF CALIFORNIA

Date: 08.31.16
Drawn By: Susan Jones
Drawing Title

Community bldg
Exterior Elevations

Revisions
x

SHEET No.

A3.1e

WEST ELEVATION - COMMUNITY BUILDING

3/16"=1'-0"

NORTH ELEVATION - COMMUNITY BUILDING

3/16"=1'-0"

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Villa Annette Apartments

Alessandro Boulevard
Moreno Valley, CA

Licensed Architect
Janice K. Bier
C22169
Renewal Date X/X/X
State of California

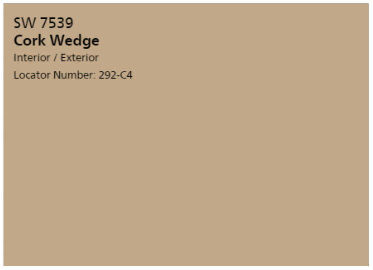
Date: 08.31.16
Drawn By: Susan Jones
Drawing Title
Community Bldg
Exterior Elevation

Revisions
x

SHEET No.
A3.2e

Boral Roofing
Barcelona – Copper
Mountain Blend

Omega Stucco with integral color
409 Toffee Crunch



Trim at windows
Sherwin William
SW 7539 “Cork Wedge”

Manufacture Eldorado stone Style
“Cliffstone” Mesquite

Fascia &Trim
Sherwin William
SW 008 “Cajun Red”

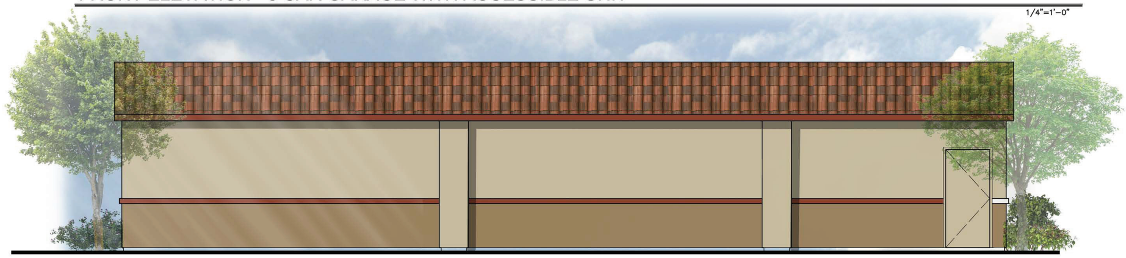
VILLA ANNETTE COMMUNITY BUILDING COLORS

SIDE ELEVATION AT ACCESSIBLE UNIT

1/4"=1'-0"

FRONT ELEVATION - 5 CAR GARAGE WITH ACCESSIBLE UNIT

1/4"=1'-0"



REAR ELEVATION - 5 CAR GARAGE WITH ACCESSIBLE UNIT

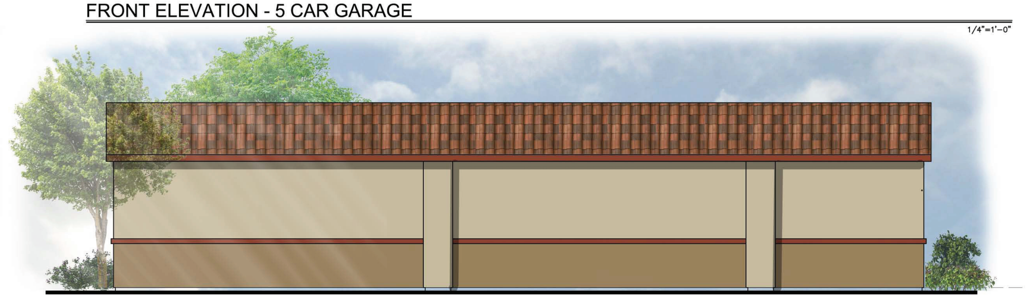
1/4"=1'-0"

SIDE ELEVATION TYPICAL

1/4"=1'-0"

FRONT ELEVATION - 5 CAR GARAGE

1/4"=1'-0"



REAR ELEVATION - 5 CAR GARAGE

1/4"=1'-0"

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Villa Annette Apartments

Alessandro Boulevard
Moreno Valley, CA

LICENSED ARCHITECT
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C22169
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STATE OF CALIFORNIA

Date: 08.31.16
Drawn By: Susan Jones
Drawing Title

Garage Elevations

Revisions
x

SHEET No.

A2.1g