
PLANNING COMMISSIONERS

JEFFREY BARNES
Chair

PATRICIA KORZEC
Vice-Chair

RAY L. BAKER
Commissioner



JEFFREY SIMS
Commissioner

BRIAN LOWELL
Commissioner

VACANT
Commissioner

VACANT
Commissioner

PLANNING COMMISSION

Regular Meeting

Agenda

Thursday, October 26, 2017 at 7:00 PM
City Hall Council Chamber – 14177 Frederick Street

CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

APPROVAL OF AGENDA

Approval of PC Agenda of October 26, 2017

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 - August 24, 2017 7:00 PM

PUBLIC COMMENTS PROCEDURE

Any person wishing to address the Commission on any matter, either under the 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.

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.

NON-PUBLIC HEARING ITEMS

None

PUBLIC HEARING ITEMS

- 1. Case: PEN16-0050 (PA16-0009)
- Applicant: MACJONES Holdings, Inc.
- Owner: MACJONES Holdings, Inc.
- Representative: Thienes Engineering, Inc.
- Location: South side of Cottonwood Avenue at Lakeport Drive
- Case Planner: Jeff Bradshaw
- Council District: 3

- Proposal: Proposed Tentative Tract Map to subdivide 10 acres of vacant RA-2 zoned land into 16 single-family residential lots, and three lettered lots for water quality treatment facilities.

STAFF RECOMMENDATION

- A. Staff recommends that the Planning Commission **APPROVE** Resolution No. 2017-34, and thereby:
 - 1. **CERTIFY** that the Mitigated Negative Declaration prepared for Tentative Tract Map 37060 (PEN16-0050) on file with the Community Development Department, incorporated herein by this reference, has been completed in compliance with the California Environmental Quality Act, that the Planning Commission reviewed and considered the information contained in the Mitigated Negative Declaration and the document reflects the City’s independent judgment and analysis; attached hereto as Exhibit A and
 - 2. **ADOPT** the Mitigation Monitoring and Reporting Program prepared for Tentative Tract Map 37060 (PEN16-0050), attached hereto as Exhibit B.

- B. Staff recommends that the Planning Commission **APPROVE** Resolution No. 2017-35, and thereby:
 - 1. **APPROVE** Tentative Tract Map 37060 (PEN16-0050) based on the findings contained in this resolution, and subject to the conditions of approval included as Exhibit A.

2. Case: PEN17-0115
Applicant: City of Moreno Valley
Owner: City of Moreno Valley
Representative: Community Development Department
Location: Citywide
Case Planner: Claudia Manrique
Council District: All

Proposal: A CITYWIDE MUNICIPAL CODE (TITLE 9)
AMENDMENT ADDRESSING LAND USE
REGULATIONS FOR ACCESSORY DWELLING UNIT
(ADU) (FORMERLY SECOND DWELLING UNITS) TO
ENSURE COMPLIANCE WITH NEW STATE OF
CALIFORNIA LAWS

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2017-33, and thereby:

1. **FIND** that PEN17-0115 (Municipal Code Amendment for Accessory Dwelling Units) qualifies for a Statutory Exemption in accordance with CEQA Guidelines, Section 15282(h); and
2. **RECOMMEND** that the City Council approve the proposed amendments to Title 9 of the City Municipal Code, PEN17-0115.

OTHER COMMISSION BUSINESS

STAFF COMMENTS

PLANNING COMMISSIONER COMMENTS

ADJOURNMENT

NEXT MEETING: Planning Commission Regular Meeting, November 09, 2017 at 7:00 P.M., City of Moreno Valley, City Hall Council Chamber, 14177 Frederick Street, Moreno Valley, CA 92553.

1 CITY OF MORENO VALLEY PLANNING COMMISSION
2 REGULAR MEETING
3 CITY HALL COUNCIL CHAMBER – 14177 FREDERICK STREET
4

5 Thursday, August 24, 2017 at 7:00 PM

6
7
8 CALL TO ORDER
9

10
11 CHAIR BARNES – Good evening ladies and gentlemen. I would like to
12 welcome you to this evening’s meeting of the Planning Commission. Today is
13 Thursday, August 24, 2017, and it is 7:04 PM. May we have roll call please?
14

15
16 ROLL CALL
17

18 Commissioners Present:

19 Commissioner Baker
20 Commissioner Sims
21 Vice Chair Korzec
22 Chair Barnes
23 Commissioner Lowell – Excused absent
24

25
26 Staff Present:

27 Rick Sandzimier, Planning Official
28 Erica Tadeo, Administrative Assistant
29 Sergio Gutierrez, Case Planner
30 Mayra Salas, Case Planner
31 Jeff Bradshaw, Case Planner
32 Chris Ormsby, Senior Planner
33

34
35 Speakers:

36 Rafael Brugueras
37

38
39 PLEDGE OF ALLEGIANCE
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41
42 CHAIR BARNES – Thank you. Commissioner Korzec, could you lead us in the
43 pledge?
44

1
2 **APPROVAL OF THE AGENDA**

3
4 Approval of Agenda

5
6
7 **CHAIR BARNES** – At this time, we need to approve the Agenda. Can I get a
8 motion?

9
10 **COMMISSIONER BAKER** – I’ll move that we approve the Agenda.

11
12 **COMMISSIONER SIMS** – I’ll second.

13
14 **CHAIR BARNES** – A motion from Commissioner Baker and a second from
15 Commissioner Sims. All in favor...

16
17 **VICE CHAIR KORZEC** – Aye.

18
19 **CHAIR BARNES** – Aye.

20
21 **COMMISSIONER BAKER** – Aye.

22
23 **COMMISSIONER SIMS** – Aye.

24
25 **CHAIR BARNES** – Opposed? The motion carries unanimously.

26
27
28 Opposed – 0

29
30
31 **Motion carries 4 – 0**

32
33
34 **CONSENT CALENDAR**

35
36 *All matters listed under Consent Calendar are considered to be routine and all*
37 *will be enacted by one rollcall vote. There will be no discussion of these items*
38 *unless Members of the Planning Commission request specific items be removed*
39 *from the Consent Calendar for separate action.*

40
41
42 **APPROVAL OF MINUTES**

43
44 Planning Commission - Special Meeting - July 20, 2017 at 7:00 PM

45
46 Approve as submitted

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CHAIR BARNES – Moving onto the Consent Calendar. We have the approval of Minutes from the Special Meeting of July 20, 2017. Anyone have any comments, corrections, adjustments?

COMMISSIONER SIMS – Well, I’d like to make a motion.

CHAIR BARNES – Please.

COMMISSIONER SIMS – I would like to make a motion to approve the Minutes from the Planning Commission Special Meeting of July 20, 2017.

CHAIR BARNES – Thank you. Motion from Commissioner Sims and a second from Commissioner Baker. All in favor...

VICE CHAIR KORZEC – Aye.

CHAIR BARNES – Aye.

COMMISSIONER BAKER – Aye.

COMMISSIONER SIMS – Aye.

CHAIR BARNES – Opposed? No opposed. Moving along.

Opposed – 0

Motion carries 4 – 0

PUBLIC COMMENTS PROCEDURE

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Minutes Acceptance: Minutes of Aug 24, 2017 7:00 PM (APPROVAL OF MINUTES)

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2 disability who requires a modification or accommodation in order to participate in
3 a meeting should direct their request to Guy Pegan, our ADA Coordinator, at
4 (951) 413-3120 at least 72 hours prior to the meeting. The 72-hour notification
5 will enable the City to make reasonable arrangements to ensure accessibility to
6 this meeting.

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8
9 **CHAIR BARNES** – Now to the Public Comments portion of the meeting. Do we
10 have any Speaker Slips?

11
12 **ADMINISTRATIVE ASSISTANT ERICA TADEO** – No.

13
14 **CHAIR BARNES** – No Speaker Slips, alright. We will move past Public
15 Comments. Moving onto Non-Public Hearing Items.

16
17
18 **NON-PUBLIC HEARING ITEMS**

19
20 None

21
22
23 **PLANNING OFFICIAL RICK SANDZIMIER** – We have none.

24
25 **CHAIR BARNES** – We have none, alright. Next, Public Hearing Items. The first
26 case is PEN17-0048. The Applicant is Martha Veloz, and do we have a Staff
27 Report?

28
29
30
31 **PUBLIC HEARING ITEMS**

- 32
33
34 1. Case: PEN17-0048 (PA16-0026)
35
36 Applicant: Martha L. Veloz
37
38 Owner: John Lin
39
40 Representative: Melvin Evitt
41
42 Location: 13373 Perris Boulevard
43
44 Case Planner: Sergio Gutierrez
45
46 Council District: 1

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2 Proposal: PEN17-0048 Conditional Use Permit. An
3 application to allow for the sale of beer and
4 wine within an existing convenience store
5 located at 13373 Perris Boulevard.
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9 **STAFF RECOMMENDATION**

10
11 Staff recommends that the Planning Commission **APPROVE** Resolution No.
12 2017-30, and thereby:

- 13
14 1. **CERTIFY** that this item is exempt from the provisions of the California
15 Environmental Quality Act (CEQA), as a Class I Categorical Exemption,
16 CEQA Guidelines, Section 15301 for Existing Facilities; and
17
18 2. **APPROVE** PEN17-0048 Conditional Use Permit subject to the attached
19 Conditions of Approval included at Exhibit A.
20
21
22

23 **PLANNING OFFICIAL RICK SANDZIMIER** – I would like to introduce Sergio
24 Gutierrez, a consultant that works for our department who will be making this
25 presentation.
26

27 **CHAIR BARNES** – Welcome.
28
29

30 **CASE PLANNER SERGIO GUTIERREZ** – Thank you, Rick. Thank you,
31 Chairman Barnes. Thank you, Planning Commission. The project consists of a
32 Conditional Use Permit to allow alcoholic beverage sales within an existing 2,400
33 square foot Carniceria Las Glorias convenience store located at 13373 Perris
34 Boulevard. The alcoholic beverage sales will be limited to beer and wine, offsite
35 consumption only, through a Type 20 Alcohol License obtained by the California
36 Department of Alcoholic Beverage Control. The current hours of operation for
37 the convenience store are 7 a.m. to 9 p.m. The interior of the convenience store
38 includes a variety of amenities, including groceries, a meat market, and
39 household items, which make the convenience store unique. Based on the City's
40 Municipal Code definitions in consideration of the size of the store, it was
41 determined that this business most closely fit the convenience store, as opposed
42 to the retail sales establishment. The project site is located within the Hometown
43 Square Commercial Center in Suite D304 and D305. The site is surrounded by
44 existing retail office and restaurant uses within the commercial center. The
45 surroundings uses from the project site include residential to the west,
46 commercial uses to the north, vacant land to the east zoned as office, and

1 existing commercial and residential uses to the south. The project site is located
2 in the Community Commercial Zone. Convenience store use is consistent with
3 the Community Commercial Zoning District. Based on the City's Municipal Code,
4 alcohol sales within convenience stores require a Conditional Use Permit if within
5 300 feet of residential. The site is located approximately 200 feet from
6 residential, which requires a Conditional Use Application. There are no proposed
7 exterior modifications to the site. The only modifications include interior, which
8 will accommodate a refrigerator for the beer and wine sales. To minimize
9 potential concerns, a Conditional Approval has been placed to limit alcohol sales
10 to current hours of operation, which are 7 a.m. to 9 p.m. The project was routed
11 and reviewed by the police department. The police had addressed specific
12 comments to Staff. The project was reviewed in accordance with the California
13 Environmental Quality Act Guidelines and determined to be exempt in that this
14 project qualifies as a Class I Categorical Exemption under Section 15301,
15 Existing Facilities. Staff recommends approval of Resolution 2017-30 and
16 thereby certify that the project is exempt from the California Environmental
17 Quality Act as a Class I Categorical Exemption, Section 15301, Existing
18 Facilities, and requests approval for Conditional Use Permit PEN17-0048,
19 subject to the attached Conditions of Approval included as Exhibit A. The
20 representative, Mr. Melvin Evitt, is present tonight to answer any questions that
21 may arise from the Planning Commission. Thank you.

22
23 **CHAIR BARNES** – Thank you very much. Would the Applicant like to make a
24 presentation?
25

26 **SPEAKER MELVIN EVITT** – Good evening. My name is Melvin Evitt. Also,
27 known as Nick Evitt. I reside at 5905 Glen Cliff Drive in Jurupa Valley. I have
28 been a real estate business broker for quite a number of years, and I've been to
29 Moreno Valley over the years, and they have been very cooperative with what I
30 have been requesting. The client is a very small operation, and they are
31 requesting that they be allowed to sell beer and wine in their store to accomplish
32 and complement their sales in meat, produce, and groceries. They are not
33 asking to...they'll even specify they don't even require singles. They would just
34 like to have prepackaged from the manufacturer. There is going to be a limited
35 space. They don't have a large space so they are respectfully requesting that
36 you allow them to have the sale of beer and wine. And, while we're talking about
37 this, ABC requires a PCN letter, a public convenience necessity letter, either by
38 the...in this case, I believe the police department is the one that authorizes that
39 or, if they would make comment, that they will make no decision that ABC can
40 issue the license with your approval and, until then, we're on a hold, so are there
41 any questions I can answer for you?
42

43 **VICE CHAIR KORZEC** – Can you explain what prepackaged is?
44

1 **SPEAKER MELVIN EVITT** – Like a 6-pack or a 12-pack, anything...no singles
2 sales of any size. No 12 ounce, 16 ounce, no 20 ounce, no 40 ounce; strictly
3 prepackaged items from the manufacturer.

4
5 **VICE CHAIR KORZEC** – And what about wine? Like wine coolers? Is that what
6 you're talking about?

7
8 **SPEAKER MELVIN EVITT** – Okay wine coolers come in 4-packs and we
9 could...you could eliminate the size of the containers of the wine at 750 mL. In
10 other words, you don't have a small, easy single-shot package. We are not
11 going to have any of that. The wine will consist of the 750 mL, a little less
12 than...a little less than a quart in size and the wines, beer and wine. No singles.

13
14 **COMMISSIONER SIMS** – I have a question.

15
16 **CHAIR BARNES** – Commissioner Sims, go ahead.

17
18 **COMMISSIONER SIMS** – On the sketch....it is on packet page 63, I don't know
19 if...yeah there it is.

20
21 **SPEAKER MELVIN EVITT** – I see it. Go ahead.

22
23 **COMMISSIONER SIMS** – So it looks like you're proposing to put the refrigerators
24 right in front of the restroom for this property. So, how is that going to work?
25 That looks like it is not going to work?

26
27 **SPEAKER MELVIN EVITT** – (blank air for several seconds) Does that clarify it
28 for you?

29
30 **COMMISSIONER SIMS** – Yeah, I just...the sketch, though, would tend to look
31 like the refrigerators are blocking the door....

32
33 **SPEAKER MELVIN EVITT** – No.

34
35 **COMMISSIONER SIMS** – To the restroom.

36
37 **SPEAKER MELVIN EVITT** – There is room to walk behind it.

38
39 **COMMISSIONER SIMS** – And I would assume that would...it would be placed
40 per Code, whatever building...

41
42 **PLANNING OFFICIAL RICK SANDZIMIER** – It would have to be by our Building
43 Code and existing requirements, and the width of the aisles would have to be
44 checked. We did not...actually let me ask Sergio. Sergio did you visit the site to
45 see if the entire interior of this place already has the shelving as described?
46

1 **CASE PLANNER SERGIO GUTIERREZ** – I did make a site visit. Unfortunately,
2 I did not go inside the convenience store. I mainly checked the exterior and did a
3 walk around the project site as far as the outside. I did not go inside to check on
4 the shelving as mentioned.

5
6 **PLANNING OFFICIAL RICK SANDZIMIER** – Okay, so in terms of changing out
7 the equipment to put in a new refrigerator, they would have to obtain the
8 appropriate business...I mean building permit, there would be an inspection
9 done, and the inspection would be to verify that it was installed correctly and that
10 it also maintains all the exiting requirements and would provide access to the
11 restroom. So we have some assurances that that could be accommodated, and
12 we can pass that information onto our building department if that is a concern of
13 the Commission that you would like us to emphasize. Thank you.

14
15 **CHAIR BARNES** – Commissioner Baker.

16
17 **COMMISSIONER BAKER** – I did visit the site and visited, I think, the manager or
18 the owner, and I think where they're going to put this...it seemed like to me...I
19 mean, it didn't measure anything out, but it seemed like it would work. And, I will
20 say this, this is one of the cleanest markets I've seen in a long time. I mean, it
21 really...he is spic and span, and they, they really do a nice job the way it looks to
22 me, but I'm no expert on markets but, when I went in there, it really looked nice.

23
24 **VICE CHAIR KORZEC** – You know, you're saying it's prepackaged right now
25 but, when you get this permit, I don't believe the ABC license says it has to be
26 prepackaged. So now you're talking prepackaged but, in a year, you could
27 eliminate that and do the regular bottles of wine and all those things, so I, I
28 understand your approach on this but I don't think that...first, we're just going for
29 the Conditional Use Permit, but I don't think the ABC license requires it to be
30 prepackaged. I think it's your plan for now but will it be your plan in a year?

31
32 **SPEAKER MELVIN EVITT** – When the City approves...if and when the City
33 approves this and you put a Condition in there that the beer and wine will be sold
34 as prepackaged items only, that goes directly to ABC, and they'll type up their
35 Conditions accordingly. If they decided after a year they want to change it and
36 try to sell singles, then they have to come back to the City and have to go back to
37 the ABC Board before it is considered. So that's, that's a year down the road
38 before they could even consider it, and they have no desire to sell singles
39 because they don't have room for it.

40
41 **VICE CHAIR KORZEC** – But things do change and you know....

42
43 **SPEAKER MELVIN EVITT** – Well, that's correct, but you're protected by the
44 Conditional Use Permit that you issue to the City....to ABC, and they will modify
45 and make the Conditions according to however you tell them.

46

1 **CHAIR BARNES** – Can Staff confirm that? Is that true?

2
3 **SENIOR PLANNER CHRIS ORMSBY** – Well just to clarify that...right now, as
4 the Conditional Use Permit Conditions are written, there is not a condition that
5 specifies a restriction of a sale of singles.

6
7 **CHAIR BARNES** – Okay. Do we know...do we know that what he has
8 presented is accurate that...

9
10 **PLANNING OFFICIAL RICK SANDZIMIER** – If I may, if I may add...the
11 Applicant has had or the applicant’s representative had a meeting with our Staff
12 just a little bit earlier before the meeting, and we talked about this particular
13 issue. It has been the position of the Planning Department not to put such a
14 condition on the CUP at this point because that would be a very difficult condition
15 to enforce. If it is the prerogative of the Commission, we can enter that into the
16 Conditions of Approval. I just want to make sure that you understand it is an
17 enforcement issue, and so Chris is correct. With regard to ABC issuing a
18 license, that is a completely separate process from the approval of the
19 Conditional Use Permit, so tonight what we have before you is a
20 recommendation from the Staff to approve the Conditional Use Permit. That
21 Conditional Use Permit basically is a prerequisite for them to sell the alcohol at
22 the site. It does not remove the necessity for them to get an appropriate license
23 through the Alcoholic Beverage Control Board. If the Alcohol Beverage Control
24 Board is not yet prepared to issue a license, I just want to point out for the
25 Commission, for the CUP that you approve tonight, if you did go that route, it is
26 good for 36 months. So they would have up to 36 months to work out any of
27 their issues with ABC to get the license, and there are also opportunities, if for
28 whatever reason they weren’t able to work out those issues within 36 months,
29 then the Applicant can always request an extension of time on their applications,
30 and we do have provisions in the Code to extend the time. I know that doesn’t
31 necessarily give the Applicant some assurance that they are ready to go, but we
32 can’t force the determination of Alcoholic Beverage Control Board. He is
33 absolutely correct that, right now, our process here at the City is, if ABC needs a
34 letter stating that there is a public necessity or convenience that can override
35 ABC’s concerns with an oversaturated market, that determination is made by our
36 police department. And so he has stated the process correctly.

37
38 **CHAIR BARNES** – Okay. Does that answer your question?

39
40 **VICE CHAIR KORZEC** – Yeah. I have another question. I looked at the chart,
41 and I’ve actually gone...I go down that street all the time. I go to Dollar General.
42 There’s a lot of people out there selling alcohol in that neighborhood. What
43 makes this market think that they are going to have a competitive edge over the
44 liquor store, over the other places along that strip that are selling alcohol?

45

1 **SPEAKER MELVIN EVITT** – They are not in there for competition. They are in
2 there to service their customers conveniently when they come in to buy the meat
3 for the barbecues, their produce, and their groceries and they would like to buy a
4 6-pack or a 12-pack and take it home. We’re not in there to compete against
5 them. We’re providing a community service for the customers. That’s what the
6 purpose is behind this and there are...there are others licensed in the area. Yes,
7 they do have those, but they don’t have groceries. The 7-11 doesn’t have meat.
8 The 99 Cent Store doesn’t have the same thing. This is a public convenience for
9 the customers, and that’s what we’re trying to do.

10
11 **CHAIR BARNES** – Thank you. Any other questions of the Applicant? I have
12 one the...thank you very much. I have a question on Condition P10, the outdoor
13 trash receptacle. Is that just a trash can or a trash enclosure?
14

15 **PLANNING OFFICIAL RICK SANDZIMIER** – Mr. Chairman can I ask...this does
16 require a Public Hearing, so I was wondering if your questions would be better if
17 there are any Public Comments on...if you would like to open the Public Hearing
18 first before we go into conditions...the questions on the conditions.
19

20 **CHAIR BARNES** – Okay.
21

22 **PLANNING OFFICIAL RICK SANDZIMIER** – I was just thinking that might be
23 a...just to close out the Public Hearing process.
24

25 **CHAIR BARNES** – Happy to do that. Alright, at this time I would like to open the
26 Public Hearing. Do we have any speakers?
27

28 **ADMINISTRATIVE ASSISTANT ERICA TADEO** – We do, just one. Rafael
29 Brugueras.
30

31 **CHAIR BARNES** – Mr. Brugueras.
32

33 **SPEAKER RAFAEL BRUGUERAS** – Good evening Chair, Vice-Chair,
34 Commissioners, Staff, and our guests. I want to thank Vice Chair Korzec for the
35 questions of how we all together collectively want to protect our city and make
36 sure that all the rules are in place, and this is a unique store because not every
37 store wants to serve you packages only. They want you to buy single bottles and
38 everything around this particular store is going to sell you single bottles but, this
39 store, they are either going to sell you a 4-pack, 12-pack or something larger.
40 Now, he made a good point because many of us that shop in the supermarket,
41 especially when we buy meats on sale and we get this urge to drink a wine with
42 it, we buy this wine at the supermarket level or at Costco, so we do get service
43 from these types of stores. Now, this is what this little store is going to do also;
44 have a service for customers that decide at that moment that they want to buy a
45 wine, a cooler, or a 6-pack, and that’s it. No single bottles, nothing like that. So
46 we’re not going to have a lot of traffic with a lot of people going in and buying

1 single bottles like they do at 7-11 or at the gas stations. We know that for a fact.
2 So this makes the store a little unique. The other thing what I like about it is that
3 they are trying to stay in the City of Moreno Valley and do business without
4 closing up, and I know if you went like she does, she shops at Dollar Tree, and I
5 know the neighborhood very well. This little store is among a jungle of big stores,
6 so they are not in competition with the big stores like you mentioned. They are
7 just trying to stay alive, stay in business, and serve the public. That's about it.
8 So I'm hoping that it does get approved, but I do appreciate her for coming up
9 with these questions to make sure that whatever happens that they stick to the
10 rules that they don't open up those packages in the future and, if they do, there
11 are conditions for them to come back to us or the ABC to let them know what
12 they want to do. I like what the Staff just said, and I love her question, and I hope
13 it gets approved so we can have them stay and serve our city as they have been
14 doing for however long, but we want them to stay in our city. Thank you so
15 much.

16
17 **CHAIR BARNES** – Thank you Mr. Brugueras. Any other speakers?

18
19 **ADMINISTRATIVE ASSISTANT ERICA TADEO** – No.

20
21 **CHAIR BARNES** – Alright. I will now ask if the Applicant would like to respond to
22 anything he just heard?

23
24 **SPEAKER MELVIN EVITT** – Sure. Again, thank you for letting me speak. I
25 do...would like to clarify about the PCN, the public convenience necessity letter,
26 which will be coming from the police department, and the police department, to
27 my understanding, have sent a letter to the Department of Alcoholic Beverage
28 Control stating it is up to ABC to make the determination and, according to Rich
29 at the ABC Office, the supervisor there, he says we have to have something from
30 the police department either saying...either denying it altogether or they have no
31 objection or their decision is not to or make no decision on the license. That's all
32 they ask. That is asked of the police department to make a statement to say they
33 have no decision on the issue of the license. Thank you.

34
35 **CHAIR BARNES** – Thank you very much. Yes....

36
37
38 **PLANNING OFFICIAL RICK SANDZIMIER** – Mr. Chairman, if I could just add...I
39 did look through the process that ABC has and, if a city's police department, in
40 this case is supposed to make a...or was asked to make a determination, if that
41 determination is not made within the 90-day period of time, in the absence of that
42 determination, then the ABC Board takes over the making the decision on their
43 own. So it seems like it would be a timely process if the...if the police
44 department was to put something on the record, but that is not the only
45 requirement. So, if the police department does not make a decision or there is a
46 90-day period that passes, then ABC has some rights that they have.

1
2 **CHAIR BARNES** – Thank you. Alright, having no other public speakers, we will
3 close the Public Hearing and do we have any comments or questions of Staff?
4

5 **VICE CHAIR KORZEC** – I’m confused because, in the paperwork that we have,
6 it says the Moreno Valley Police Department does not support the additional
7 license in it. When did this change and is there anybody here from the police
8 department because, reading this, they are worried about the oversaturation that
9 I am. I go to that neighborhood several times a month. I come from Steer N’
10 Stein. I stop there, and I shop. At night, there is a change in that neighborhood,
11 and there are a lot of people hanging out that obviously are drunk or....I don’t
12 even want to shed my opinion of what it is but, in that neighborhood at night,
13 there are a lot of people hanging out that look a little unseemly. This says that
14 the police department doesn’t support this and now I’m hearing that the police
15 might write a letter, so can someone clarify that for me?
16

17 **SENIOR PLANNER CHRIS ORMSBY** – Well, at this point, the police department
18 has not written a letter. They were...had indicated they might be here to answer
19 questions tonight. Unfortunately, they are not able to be here apparently. I think
20 the Staff Report pretty well described the whole scenario with regard to
21 oversaturation, what that means, and the police department’s position on
22 that...that’s pretty much the status.
23

24 **VICE CHAIR KORZEC** – But don’t really know if they are going to write the letter
25 or not.
26

27 **SENIOR PLANNER CHRIS ORMSBY** – At this point, that is correct.
28

29 **VICE CHAIR KORZEC** – That’s all...yeah. I’m going by what’s here. That was
30 official, and I know people say things, but I don’t know if that would happen. I do
31 have that same concern, oversaturation. I have nothing against this market. It’s
32 a lovely business but, when you have so many people selling alcohol in a
33 neighborhood and if the police are concerned about, perhaps increase in a crime
34 rate, then I think to protect the citizens I don’t know if we should consider this and
35 that’s all that I’m saying by what is put in front of us from the police department.
36

37 **PLANNING OFFICIAL RICK SANDZIMIER** – If I may try and provide a little
38 clarification on why the Staff Report says something, and it sounds like we’re
39 saying something different. It may just be a matter of semantics in terms of
40 referencing something as a letter that is going to be written. It is my
41 understanding in talking with the Staff, and I know directly in talking with the
42 police department a couple of weeks back that the police department had made
43 a determination that they did not want to issue a determination for a public
44 necessity and convenience. That’s what it reflected in your Staff Report. If there
45 is ongoing discussions with the police department, that can be the case, and the
46 applicant may be working with the police department to try and get that letter that

1 they are trying to seek, and that is a process that can continue. What I was
2 trying to describe earlier is, if the Commission was to move forward and take an
3 action on the Conditional Use Permit this evening, they cannot begin to sell
4 alcohol at that store until they secure the license through ABC Board. They
5 would have up to 3 years with the granting of this approval. They would still have
6 an active CUP. In the absence of a CUP, they could not go to ABC to get a
7 license to sell alcohol because then they would be in violation of our Municipal
8 Code, which requires them to have the Conditional Use Permit to allow that to
9 happen, so the CUP is a prerequisite for them to sell alcohol in any way. It is a
10 governing law here in the city because of the proximity of the store to residential.

11
12 **CHAIR BARNES** – Thank you. Commissioner Sims.

13
14 **COMMISSIONER SIMS** – Yeah, when I read through this report, I struggled a
15 little bit about that because, you know, the police, I would have deference to their
16 opinion on this and that but at the end of...what gives me some...what it sounds
17 like is, is they have not issued...if the police department has to provide
18 something to ABC if this goes through and gets a CUP and ABC permit is applied
19 for, then the police will have another bite at the apple to decide if they either want
20 to...it sounds like they can be...deny it, affirmatively deny it, or they could affirm it
21 and say, okay, we're good with it or they just say, uh, there is just no difference,
22 and they stand down. So I'm okay with that. I guess, for me, it comes down to
23 do we think this as a Planning Commission, do we think that this is a proper
24 Conditional Use for this business? I tend to think in my thought process, I think
25 it's okay. Mainly the fact that, and I did not go past the store, but I go to one of
26 the restaurants there quite often, and there is some, even early Sunday morning,
27 you can see some people hanging out at the liquor store on the north side of that
28 that you go, hmm, what are they doing there? But they are going to get their
29 singles to recover from Saturday or to keep the party going or whatever, so but a
30 business like this is a business that is catering to groceries and, you know, meat
31 market and so forth. I get the convenience part of it, to buy a 6-pack or 12-pack
32 or something and take it home to your little barbecue. That is different than going
33 to sell distilled and pints and singles, you know, tall cans and stuff like that. Not
34 saying that it won't happen later. That sounds like there is a way for them to
35 adjust their...well Commissioner Baker said that this guy is running a clean
36 shop. He is not going to want the single traffic, the guys that are buying single
37 traffic, to come and dirty up his store. He doesn't want that in his business.

38
39 **CHAIR BARNES** – Thank you, Commissioner Sims.

40
41 **COMMISSIONER BAKER** – And he really did express that to me. Looking at the
42 list here of the...there's only three stores right in that general area on this Census
43 Tract 425.21. It's the Dollar General and then you've got the Circle K and, what's
44 the other one on Perris Boulevard, there's the, I guess, that Valley Liquor. So
45 that's the three in the general vicinity. The rest of these, I don't know how big
46 this block is, but it goes all the way over to Alessandro. The rest of them are on

1 Alessandro, which have nothing to do with this location, but I think I could support
2 this the way it stands. I think in the given situation where they are going to sell it
3 with groceries and not sell the singles, and he really spelled that out. They don't
4 want to mess with the single business, and I was there at the night part too. I
5 stopped in and, not to discredit what you said, but I didn't see anything going on
6 around that store. Maybe it was the night I was there but, in the day part, it was
7 very good.

8
9 **VICE CHAIR KORZEC** – Yeah, the day part is fine.

10
11 **COMMISSIONER BAKER** – Very good. Okay.

12
13 **CHAIR BARNES** – Rick, I think you've probably answered this, but clarify to me
14 if this is approved and the police department then writes a letter of opposition, if
15 they take a position in opposition to this, what are ABC's options?

16
17 **PLANNING OFFICIAL RICK SANDZIMIER** – It's my understanding that ABC
18 would take the determination from the local jurisdiction into consideration when
19 they are going to make their determination on their license. Are they going to
20 issue a license if they have that determination? It's probably less likely that they
21 would, but I am not sure that they are precluded from doing that.

22
23 **CHAIR BARNES** – It's not an absolute.

24
25 **PLANNING OFFICIAL RICK SANDZIMIER** – I'd have to defer to ABC on that
26 but our assurance in the CUP, if you turn to page 60 of the document, the reason
27 we're comfortable as a Staff recommending this, is that Condition BD-12, which
28 is the second to last condition on page 60, is indicating that Alcohol Beverage
29 Control of the State of California approval will be required for alcohol licenses in
30 the area. No alcohol beverage sales can commence until a Type 20 Alcohol
31 License is secured, and the license must remain valid at all times. That's the
32 assurance we have in here, so long as they want to continue to work with ABC
33 and even in the event that the police department doesn't give them what they
34 want, it is my understanding they can continue to work with ABC until ABC is
35 comfortable issuing the license. If they can bring more compelling arguments to
36 our police department over the course of that negotiation to the point where our
37 police department is comfortable making a different determination, if they had
38 issued some sort of determination to them already, I think that is still an option
39 out there. I'm saying the doors not shut I guess.

40
41 **CHAIR BARNES** – I was just curious how much weight the police department
42 recommendation carried with ABC. It's not an absolute.

43
44 **PLANNING OFFICIAL RICK SANDZIMIER** – I don't know that it's an absolute. I
45 don't want to say that it's not important. I think that it is an important
46 consideration of ABC. I think that is a fair statement to make.

1
2 **CHAIR BARNES** – It seems that it should be, but I was just curious. Okay.
3 Anything else? Alright. Well, with no further comments, would anyone like to
4 make a motion?

5
6 **COMMISSIONER SIMS** – I’ll make a motion.

7
8 **CHAIR BARNES** – Commissioner Sims.

9
10 **COMMISSIONER SIMS** – I would like to make a motion that the Planning
11 Commission approve Resolution No. 2017-30 and certify that this item is exempt
12 from the provisions of CEQA as a Class I Categorical Exemption and (2) approve
13 PEN17-0048, the Conditional Use Permit, subject to the attached Conditions of
14 Approval included as Exhibit A to the Staff Report.

15
16 **COMMISSIONER BAKER** – I’ll second that.

17
18 **CHAIR BARNES** – A motion from Commissioner Sims and a second from
19 Commissioner Baker. Let me see if I can get the electronic wizardry
20 to....Commissioner Sims, would you hit the mover button and Commissioner
21 Baker can you hit the second? Again. One more time. There we go.

22
23 **COMMISSIONER BAKER** – Got it.

24
25 **CHAIR BARNES** – Alright, please vote; the rest of us. Alright, the...is somebody
26 missing? Alright, what am I doing wrong? Oh, all votes have been cast. Sorry,
27 operator error. I’m the Chair. Alright, three votes in favor, one opposed. The
28 motion carries. Thank you. Closing remarks from...

29
30
31 Opposed – 1

32
33
34 **Motion carries 3 – 1**

35
36
37 **PLANNING OFFICIAL RICK SANDZIMIER** – The item that you have just taken
38 an action on is an appealable action. If any interested party would like to file an
39 appeal on this item, they can direct their appeal through the Director of
40 Community Development to the City Council, and we would work with the City
41 Clerk to put it on an Agenda for the City Council within 30 days. They have 15
42 days to file that appeal.

43
44 **CHAIR BARNES** – Alright, thank you very much. Alright, moving onto Case No.
45 2, PEN17-0091. The Applicant is RSI Communities, and the request is for a
46 Variance. Staff Report?

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- 2. Case: PEN17-0091
- Applicant: RSI Communities, LLC.
- Owner: RSI Communities, LLC.
- Representative: Rola Nicasio
- Location: 15436 El Braso Drive
- Case Planner: Mayra Salas and Jeff Bradshaw
- Council District: 4
- Proposal: PEN17-0091

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2017-31, and thereby:

- 1. **CERTIFY** that the project is exempt under the California Environmental Quality Act in that it can be determined with certainty that there is no possibility that the variance application could have a significant effect on the environment and is therefore exempt under the general rule exemption Section 15061 (b)(3) of the California Environmental Quality Act Guidelines; and
- 2. **APPROVE** Variance application PEN17-0091 based on the findings contained in this resolution.

ASSOCIATE PLANNER JEFF BRADSHAW – Thank you. Good evening, Chair Barnes and Members of the Planning Commission. My name is Jeff Bradshaw. I’m an Associate Planner with the Planning Division, and the application before you this evening is a request for a Variance. The applicant, RSI Communities, is requesting the Planning’s consideration in the reduction of the street-side

1 setback for lot 48 of tract 22180-2 and, if you look at the Location Map on the
2 screen, this is a Recorded Map that is located on the northwest corner of Jensen
3 and Perris Boulevard. The lot is located interior to the tract and it is a...the lot
4 itself is a site that is vacant. It is flat and has been graded in the past. Areas
5 surrounding this particular location have comparable zoning. The zoning is R5 in
6 surrounding neighborhoods with some smaller-sized lots to the west that are
7 zoned RS10. There is an approved Planned Unit Development across the street
8 to the southwest that the Planning Commission approved recently called Legacy
9 Park and then, directly south, is the approved Walmart site that was also
10 presented to the Planning Commission within the last couple years. The specific
11 request is for a reduction in the street-side setback for lot 48. The size of the lot
12 is 0.14 of an acre. It is zoned R5 currently, and the request would allow for
13 reduction from the city's street-side setback standard of 15 feet to 11.9 feet. The
14 tract 22180-2 is a recorded phase of a Tentative Map that was approved prior to
15 City Incorporation, so this is a map...the original tentative was approved in April
16 of 1990 and, shortly after that, the map was recorded, so the design of this map
17 and the adjoining 22180-3 to the west were approved under a County Standard,
18 and it makes some of the lot sizes a little bit smaller than the current standard.
19 So, in this case, lot 48 is 61 feet in width. The current standard for the R5 zone
20 is 70 feet. The City Staff worked with the developer to see if we could come up
21 with any number of solutions to this challenge of siting a home on a narrow lot, a
22 corner lot. There is approved housing product for tract 22180-3 to the west,
23 which is also being developed by the Applicant. That same housing product was
24 also approved for this tract 22180-2, and we worked with them. We considered
25 every footprint that they had. We looked at combinations of setbacks and just
26 were not successful in coming up with a solution that would work and that brings
27 us here this evening with the request for the Variance. In the Staff Report, there
28 are some specific references to the City's requirements for a Variance, and I
29 wanted to read those into the record as part of the presentation. It reads, as
30 provided for in Section 9.02.100 of the Municipal Code, the purpose of a
31 Variance is to provide for equity in the use of property and to prevent
32 unnecessary hardships that might result from a strict or literal interpretation in
33 enforcement of certain regulations. The authority to grant Variances is vested
34 with the Planning Commission and requires a Public Hearing. Variances can be
35 granted with respect to Development Standards, which would include street-side-
36 yard setbacks, which is what is being requested by the Applicant. In this case,
37 the strict interpretation of the Code would result in an unnecessary hardship
38 because of the unique circumstances that apply to lot 48 and this tract. Again,
39 this map was recorded in October of 1990, prior to the adoption of our current
40 Code. It is designed with a lot width that is substandard to the current Code. All
41 other setbacks for lot 48 have been satisfied, so they have selected the smallest
42 housing, the smallest product, the smallest floor plan that they have in the
43 approved homes that the City approved for them and all of their setbacks can be
44 met, except for the street side yard setback. Lot 48 would be the only lot within
45 either this tract or the adjacent tract 22180-3, which is also being developed by
46 RSI that would require the Variance. In terms of the environmental for the

1 project, there was an environmental assessment that was prepared previously for
2 this original project, a Negative Declaration for the Tract Map rather. A Negative
3 Declaration was adopted for Tract Map 22180 on April 10, 1990. Over time, the
4 site has been disturbed through grading and other construction activities and,
5 considering the site conditions and the request for the Variance, the minor
6 change that would be requested by that Variance, Staff has reviewed this project
7 in light of the California Environmental Quality Act Guidelines and determined
8 that this project does not have the potential to cause a significant impact on the
9 environment and therefore qualifies for a General Rule Exemption as provided
10 for in Section 15061 of the California Environmental Quality Act Guidelines.
11 Standard notification was completed for this project. The site was posted. The
12 notification of the Public Hearing was also published in the local paper and
13 notices sent to all property owners within 300 feet of the site. As of this evening,
14 I did not receive any inquiries about tonight’s Public Hearing or questions about
15 the Variance. With that, Staff would recommend the Planning Commission
16 approve Resolution 2017-31 certifying that the project is exempt under the
17 California Environmental Quality Act and approving Variance Application PEN17-
18 0091 based on the findings contained in the Resolution. That concludes my
19 report.

20
21 **CHAIR BARNES** – Thank you, Jeff. Is the Applicant present and wishing to
22 make a statement?

23
24 **ASSOCIATE PLANNER JEFF BRADSHAW** – I don’t believe the Applicant was
25 able to make it this evening.

26
27 **CHAIR BARNES** – Okay, any questions from the Commissioners?

28
29 **COMMISSIONER SIMS** – I do have one. On the interior lots on the R5 Zone, it
30 looks like you have five on one side. Is there...what...if it’s an interior lot, is the
31 other side five and would... is the other side larger?

32
33 **ASSOCIATE PLANNER JEFF BRADSHAW** – The standard is a combined 15
34 feet for interior lots, so you could go as small as five feet on one side as long as
35 you had 10 feet of setback on the other, and then it can be any other combination
36 as long as you have a minimum of at least five feet on the one side.

37
38 **COMMISSIONER SIMS** – So this one will have 60.9, or something like that, is
39 what we’re looking at there?

40
41 **ASSOCIATE PLANNER JEFF BRADSHAW** – So, for corner lots, they would
42 need to meet the minimum of five feet and typically would have to meet the full
43 15 feet, and they are not able to do that here in this case but, yes, you’re correct
44 in terms of the combined setbacks.

45

1 **COMMISSIONER SIMS** – So I guess my point on this is it’s going to look
2 similar...

3
4 **ASSOCIATE PLANNER JEFF BRADSHAW** – Yeah...

5
6 **COMMISSIONER SIMS** – Along, along the streetscape to the other lots?

7
8 **ASSOCIATE PLANNER JEFF BRADSHAW** – That is something we also looked
9 at, in terms of placement of the wall and the street view and the parkway
10 dimension between the wall and the corner...and the sidewalk, will all look the
11 same as any of the other homes along the frontage.

12
13 **CHAIR BARNES** – Was the wall pulled back to five feet because there’s a slope
14 between the pad and right-of-way or was that an effort to mitigate the Variance?

15
16 **ASSOCIATE PLANNER JEFF BRADSHAW** – No. I think the placement of the
17 wall is where the wall always would have been. If this was a 70-foot-wide lot, I
18 think the wall ends up placed....I don’t know if I’m answering your question Chair
19 Barnes. I apologize.

20
21 **CHAIR BARNES** – Well normally, without a slope, they would put the wall along
22 the right-of-way to maximize the courtyard space.

23
24 **ASSOCIATE PLANNER JEFF BRADSHAW** – For corner lots, typically they
25 wouldn’t have it right on the property line. There would be some width between
26 the right-of-way and the wall to allow for street trees and so this, this dimension
27 of five or six feet is pretty standard for corner lots and the placement of the wall.

28
29 **CHAIR BARNES** – Oh, okay. Alright, and then I think there’s like nine other
30 corner lots. Those are all wider than 48, huh?

31
32 **ASSOCIATE PLANNER JEFF BRADSHAW** – This is the only lot between tract
33 22180-2, in which lot 48 is located and the adjoining tract that was also recorded
34 at the same time that requires the Variance.

35
36 **CHAIR BARNES** – Right, okay, alright. Any other questions?

37
38 **PLANNING OFFICIAL RICK SANDZIMIER** – Just one other comment about the
39 placement of the fence. At a corner lot, the other thing that is being taken into
40 consideration is the site distance, so the wall also has to be pulled back and over
41 to allow for the site distance from El Braso Drive in this particular location looking
42 in the direction where the wall would be so....

43
44 **CHAIR BARNES** – Alright, thank you. Well, having no public speakers. Oh, I’m
45 sorry....

46

1 **ADMINISTRATIVE ASSISTANT ERICA TADEO** – Actually, we do have one.

2
3 **CHAIR BARNES** – We do have a public speaker, yeah.

4
5 **ADMINISTRATIVE ASSISTANT ERICA TADEO** – Yes.

6
7 **CHAIR BARNES** – We don't have the Applicant. Alright, so, at this time, I will
8 open the Public Hearing.

9
10 **ADMINISTRATIVE ASSISTANT ERICA TADEO** – Rafael Brugueras.

11
12 **SPEAKER RAFAEL BRUGUERAS** – Good evening, Chair, Vice Chair,
13 Commissioners, Staff, and Guests. I'm glad that it took a little while to call me up
14 because I got to hear a lot more of the project, so that was good. So there is a
15 solution to the problem and it is unnoticeable, as Mr. Sims mentioned, as it all
16 gets done and all the trees get put in and the grass goes down and the bush. It's
17 just going to be a smaller lot. For some people, it will be a little small. I went by
18 there because I wanted to see how the City's growing on that side in District 4.
19 To know that the Walmart will go up one day, that more houses will be around
20 the school. I heard the year here, 1990. Wow, 27 years. Please don't let
21 another 27 years be empty on that little corner. We want to fill it up with a house
22 at least. Somebody will be happy not to have a lot to clean or something, but I
23 was happy to go by because I got to see of all the approvals and other things that
24 we're doing in the City of Moreno Valley. Please, let's move on. Accept it. It's a
25 small change, and it will finish out the project. Thank you.

26
27 **CHAIR BARNES** – Thank you, Mr. Brugueras. No other public speakers?

28
29 **ADMINISTRATIVE ASSISTANT ERICA TADEO** – No.

30
31 **CHAIR BARNES** – Alright, I'll close the Public Hearing. Now, any deliberation or
32 comments or possibly a motion? Oh, I'm sorry. I'm lost tonight. I can't get there.
33 Alright, do you want to make a motion?

34
35 **COMMISSIONER BAKER** – Whatever you want.

36
37 **CHAIR BARNES** – Proceed. I haven't done anything else right tonight, so I
38 better not make a motion.

39
40 **COMMISSIONER BAKER** – Okay, the Planning Commission hereby approves
41 Resolution, let me make sure, Resolution No. 2017-31 and thereby certifies that
42 the project is exempt from the California Environmental Quality Act in that it can
43 be determined with certainty that there is no possibility the Variance Application
44 could have a significant effect on the environment and therefore exempt under
45 Section 15061(b)(3).

1 **CHAIR BARNES** – We have a motion from Commissioner Baker, a second from
2 Commissioner Korzec. The rest of us, please vote. The motion carries 4-0. Do
3 we have a Staff wrap-up?

4
5
6 Opposed – 0
7

8
9 **Motion carries 4 – 0**

10
11
12 **PLANNING OFFICIAL RICK SANDZIMIER** – Yes. The decision of the Planning
13 Commission this evening is an appealable action. If any interested party would
14 like to file an appeal, they have 15 days to make an appeal. The appeal should
15 be directed in writing through the Director of Community Development to the City
16 Council. If we do receive an appeal, we will be working with the City Clerk to put
17 it on the Agenda for the City Council within 30 days.

18
19 **CHAIR BARNES** – Thank you, Mr. Sandzimier.
20

21
22
23 **OTHER COMMISSION BUSINESS**

24
25
26
27 **PLANNING COMMISSIONER COMMENTS**

28
29
30 **CHAIR BARNES** – Well, that being the closing case, do we have any closing
31 comments from the Commissioners?

32
33 **VICE CHAIR KORZEC** – I do.
34

35 **CHAIR BARNES** – Commissioner Korzec.
36

37 **VICE CHAIR KORZEC** – I want to wish Mr. Sims a happy birthday. We were
38 supposed to wear crazy hats tonight, and we all left them at home.
39

40 **CHAIR BARNES** – That’s right. That was actually in the Minutes.
41

42 **VICE CHAIR KORZEC** – So, happy birthday. You still have time to go out and
43 celebrate.
44

45 **COMMISSIONER SIMS** – I’m happy to have lived another year. I’m looking
46 forward to many more.

1
2 **CHAIR BARNES** – We’re happy that you could spend it with us, so thank you
3 Commissioner Sims. Alright, anything else?
4
5
6

7 **STAFF COMMENTS**
8

9 **CHAIR BARNES** – Well, thank you everyone. Thank you, Staff, for your support
10 and your assistance.
11

12 **PLANNING OFFICIAL RICK SANDZIMIER** – I have a Staff comment, if I may.
13

14 **CHAIR BARNES** – Please.
15

16 **PLANNING OFFICIAL RICK SANDZIMIER** – I just want to let the Commission
17 know we do have budget for the Planning Commission to provide for some
18 training opportunities from time to time. I don’t have a robust budget. We can’t
19 send you guys to everything but it just came to mind that we just recently had a
20 small event, the State of the City, which is also something that we can use some
21 of our budget to send some of you to, if you’d like to go. So, if you ever see
22 anything that comes up and you have a question to see if it is something that
23 would be eligible, don’t hesitate to give me a call. We’ll try and work with you to
24 get you the training that you need. We obviously budget some of the money to
25 try and send some of the Planning Commissioners to the Planning Commission
26 Academy that is put on by the League of California Cities, so that is part of what
27 that budget is for, but there is a little bit in there for some little things here and
28 there, so just wanted to let you know that.
29

30 **CHAIR BARNES** – Thank you, I appreciate that. Anything else?
31

32 **COMMISSIONER BAKER** – You know, I had one question here. Rick got...you
33 know, when we post these locations....there is one over on Elsworth there next
34 to Cactus, that sign has never been removed. Is that part of our contract with
35 those guys or do you need to know about that? I can shoot you an email if you
36 want to know about them?
37

38 **PLANNING OFFICIAL RICK SANDZIMIER** – If you see a sign that’s out there
39 after the case has already been heard...
40

41 **COMMISSIONER BAKER** – Yeah.
42

43 **PLANNING OFFICIAL RICK SANDZIMIER** – Bring it to my attention. I would
44 like our sign contractor to be removing those. We have talked to them about that
45 on projects in the past. Some of the push back they have given us is that they
46 like to take those signs and then relocate them to the next...they repurpose

1 them. They put a new print on them for the next project and move it but, if we
2 don't have any....another project coming up at the next Agenda and they leave
3 that sign out there for that long period of time, that's unsightly in my opinion. So,
4 if you see that, let me know. I have asked my Staff to look into that, and we'll
5 take care of it.

6
7 **COMMISSIONER SIMS** – I do want to....I live out on the east end, and I do want
8 to report that I see Larry Jacinto, grading contractor, pushing dirt around and re-
9 grading the development that was right across from the now defunct or....well I
10 shouldn't say defunct....it's the outlet now, Best Buy Outlet, so hopefully those
11 houses get up and more foot traffic gets in that commercial zone over there.

12
13 **CHAIR BARNES** – Very good. Anything else?
14
15

16
17 **ADJOURNMENT**

18
19 **CHAIR BARNES** – Alright, well, with that, thank you very much. We are
20 adjourned until the next regularly-scheduled meeting of....
21

22 **PLANNING OFFICIAL RICK SANDZIMIER** – September 28th I believe.
23

24 **CHAIR BARNES** – September 28, 2017? Is that correct?
25

26 **PLANNING OFFICIAL RICK SANDZIMIER** – Yeah.
27

28 **CHAIR BARNES** – Alright, September 28, 2017. We will see you then. Thank
29 you very much.
30

31
32 **NEXT MEETING**

33 *Next Meeting: Planning Commission Regular Meeting, September 28, 2017, at*
34 *7:00 PM, City of Moreno Valley, City Hall Council Chamber, 14177 Frederick*
35 *Street, Moreno Valley, CA 92553.*
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43 _____
44 Richard J. Sandzimier
45 Planning Official
46 Approved

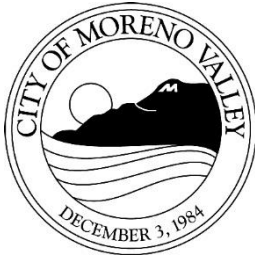
Date

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Jeffrey Barnes
Chair

Date

Minutes Acceptance: Minutes of Aug 24, 2017 7:00 PM (APPROVAL OF MINUTES)



PLANNING COMMISSION

STAFF REPORT

Meeting Date: October 26, 2017

PROPOSED TENTATIVE TRACT MAP TO SUBDIVIDE 10 ACRES OF VACANT RA-2 ZONED LAND INTO 16 SINGLE-FAMILY RESIDENTIAL LOTS, AND THREE LETTERED LOTS FOR WATER QUALITY TREATMENT FACILITIES.

Case: PEN16-0050 (PA16-0009)
Applicant: MACJONES Holdings, Inc.
Owner: MACJONES Holdings, Inc.
Representative: Thienes Engineering, Inc.
Location: South side of Cottonwood Avenue at Lakeport Drive
Case Planner: Jeff Bradshaw
Council District: 3

SUMMARY

The applicant, MacJones Holdings, has submitted Tentative Tract Map 37060 proposing to subdivide approximately 10 acres of vacant land for 16 single-family residential home sites, and three lettered lots for water quality treatment facilities. The proposed subdivision is located along the south side of Cottonwood Avenue, approximately 700' east of Lasselle Street. The land is presently vacant and zoned as Residential Agriculture 2 (RA-2). The proposed subdivision includes street infrastructure that will align a main north-south local street in the western portion of the project site with connections to Lakeport Drive at Cottonwood Avenue, and to Erin Drive to the south. The interior street system includes two cul de sacs tied to the main north-south local street.

PROJECT DESCRIPTION

Background

On May 12, 2006 the Planning Commission approved a similar sixteen-lot subdivision with a curvilinear interior road system for the project site. That application (PA04-0115) was for Tentative Tract Map 32329. The approved tentative map had a valid map life through May 12, 2015 based on available extensions of time granted by State legislation. No additional extensions of time beyond May 12, 2015 were secured by the property owner for the project and in the absence of final recordation of the map, commencement of grading of the site or construction of the units, the map approval expired as of May 12, 2015.

Project

The new residential subdivision proposed under the new Tentative Tract Map 37060 will subdivide the vacant 9.4 gross acres into sixteen (16) home sites. Each home site lot, consistent with the RA-2 zoning, will be at least 20,000 square feet in size. In addition to the home sites, the tract design includes three lettered lots A, B and C for water quality treatment facilities. Lot A is adjacent to home site Lot 1. Lot B is adjacent to home site Lot 12, and Lot C is adjacent to home site Lot 13. Each of the letter lots is also directly adjacent to the main north-south running local-street.

The design for the tentative tract map includes a landscaped parkway and a six (6) foot tall perimeter wall along the site's Cottonwood Avenue frontage at the rear of lots 1, 2 and 3 and the north side yard of lot 16.

The project layout and design is considerate of and conforms with the adjacent existing and anticipated residential developments to the west, south and east of the project site. The grade transition along the southern and western project boundaries will be addressed with a combination of a three (3) foot tall retaining wall and five (5) foot tall perimeter fence on the property line along the rear property lines of lots 10 through 16. The grade transition along the eastern project boundary will be a 2:1 rear yard slope for lots 3, 4, 9, and the east facing edge of lot 10.

Site and Surrounding Area

The project site is located on the south side of Cottonwood Avenue at Lakeport Drive and is zoned RA-2. The project site has a land use designation of Residential 5 (R5) in the City's General Plan, the zoning of RA-2 is a lower density. The project site is bounded by Cottonwood Avenue on the north. On the north side of Cottonwood Avenue the property is zoned Residential 5 (R5) and there are existing tracts of single-family homes in that area. To the west the project site abuts properties that are similarly zoned RA-2 and which have been developed with homes on lots of at least 20,000 square feet in size, consistent with the underlying zoning. The southern project site boundary abuts existing R5 zoned single family homes. The properties to the immediate east of the project site are currently vacant with a zoning designation of RA-2 and they have been subdivided to create home site lots of at least 20,000 square feet.

Access

Primary access to the project site is from Cottonwood Avenue. The primary interior north-south running public street for the project will connect to Cottonwood Avenue and align with Lakeport Drive, which already exists to the north. The projects interior main street will align with existing Erin Dive to the south. Two short cul-de-sac streets that branch off the main interior north-south running public street will provide access to interior lots within the tract.

Design/Landscaping

The project is designed in accordance with the provisions of Chapter 9.03 Residential Districts, Section 9.16.130 Design Guidelines and Section 9.14 Land Divisions of the City's Municipal Code. The project as designed and conditioned complies with all applicable City zoning and development regulations.

Through appropriate conditions of approval applied to the project approval, the developer must create a homeowner's association (HOA) prior to recordation of the final map. The purpose of the HOA at a minimum will be to accept ownership and maintenance responsibility in perpetuity of water quality treatment facilities.

The walls and fences for this tract are conditioned to be consistent with the provisions for walls and fences within the Moreno Valley Municipal Code, maintenance responsibility for the walls and fences shall be borne by the respective homeowner or may be included in the responsibility of the HOA at the discretion of the applicant.

Decorative block is required for all retaining walls, corner wall treatments and for the perimeter wall and pilasters required along Cottonwood Avenue. Interior partitioning for the lots will be wood or vinyl fencing or block wall at the discretion of the builder.

REVIEW PROCESS

The application for this project was submitted in March 2016. The project has been considered by all appropriate agencies within and outside of the City as is the standard review process with these types of development applications. The project was reviewed by the Project Review Staff Committee as required by the City Municipal Code.

Upon completion of the development review process, as well as review of final drafts of the required technical studies and completion of the Initial Study / Mitigated Negative Declaration, a determination was made to schedule this project for a requisite public hearing before Planning Commission on October 26, 2017.

ENVIRONMENTAL

The project was evaluated in accordance with the California Environmental Quality Act (CEQA) Guidelines in order to make an appropriate environmental clearance

determination for the project. The City prepared an Initial Study and based upon the thorough analysis of potential environmental impacts it was determined the proposed project will not have a significant effect on the environment with the implementation of mitigation measures identified, therefore a Mitigated Negative Declaration was found to be appropriate for this project. Technical studies prepared for the project included a cultural resource assessment, a burrowing owl assessment, a MSHCP consistency assessment, a preliminary hydrology study, a geotechnical study and a preliminary water quality management plan. The Mitigated Negative Declaration represents the City's independent judgment and analysis.

A Mitigation Monitoring Program has been prepared to ensure implementation of the mitigation measures (see Attachment 5).

Public notice of the availability of the Initial Study / Mitigated Negative Declaration was published in the newspaper for a 20-day public review period consistent with requirements of the CEQA Guidelines, prior to taking any final action on the determination.

NOTIFICATION

As prescribed by the City's Municipal Code, the final action on a tentative tract map for a residential subdivision requires a public hearing before the Planning Commission. The notice of the public hearing before the Planning Commission on this project was published in the local newspaper on October 6, 2017. Furthermore, public notices were sent to all property owners of record within 300 feet of the project site on October 12, 2017. And the notice of the public hearing was posted on the project site on October 16, 2017.

As of the date of report preparation, staff had received one phone call from a neighboring property owner in support of the project.

REVIEW AGENCY COMMENTS

Staff has coordinated with outside agencies and where applicable, conditions of approval have been included as an attachment to the Planning Commission Resolution for this project to address concerns from the responding agencies, including the Riverside County Airport Land Use Commission.

STAFF RECOMMENDATION

- A. Staff recommends that the Planning Commission **APPROVE** Resolution No. 2017-34, and thereby:
1. **CERTIFY** that the Mitigated Negative Declaration prepared for Tentative Tract Map 37060 (PEN16-0050) on file with the Community Development Department, incorporated herein by this reference, has been completed in compliance with the California Environmental Quality Act, that the Planning

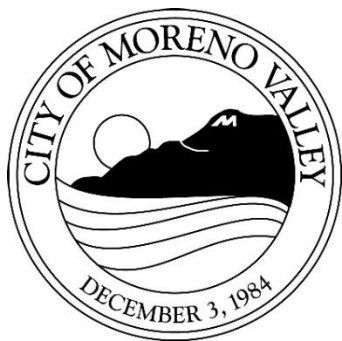
- Commission reviewed and considered the information contained in the Mitigated Negative Declaration and the document reflects the City's independent judgment and analysis; attached hereto as Exhibit A and
2. **ADOPT** the Mitigation Monitoring and Reporting Program prepared for Tentative Tract Map 37060 (PEN16-0050), attached hereto as Exhibit B.
- B. Staff recommends that the Planning Commission **APPROVE** Resolution No. 2017-35, and thereby:
1. **APPROVE** Tentative Tract Map 37060 (PEN16-0050) based on the findings contained in this resolution, and subject to the conditions of approval included as Exhibit A.

Prepared by:
Jeffrey Bradshaw
Associate Planner

Approved by:
Allen Brock
Community Development Director

ATTACHMENTS

1. Public Hearing Notice
2. 300 Foot Radius Map
3. Resolution 2017-34 - Mitigated Negative Declaration
4. Exhibit A to Resolution 2017-34 - Initial Study
5. Exhibit B to Resolution 2017-34 - MMRP
6. Resolution 2017-35
7. Exhibit A to Resolution 2017-35 - Conditions
8. Tentative Tract Map 37060
9. TTM 37060 - Preliminary Grading Plan
10. Preliminary Hydrology Study
11. Burrowing Owl Report August 2016
12. MSHCP Habitat Assessment Consistency Analysis
13. Cultural Resources Assessment
14. Preliminary Water Quality Management Plan



Notice of PUBLIC HEARING

This may affect your property. Please read.

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):

CASE: PEN16-0050 (PA16-0009) – Tentative Tract Map 37060

APPLICANT: MACJONES Holdings, Inc.

OWNER: MACJONES Holdings, Inc.

REPRESENTATIVE: Thienes Engineering, Inc.

LOCATION: South side of Cottonwood Avenue at Lakeport Drive

PROPOSAL: Tentative Tract Map 37060 proposes to subdivide 10 acres in the RA-2 zone into 16 single-family lots, and three lettered lots for water quality treatment facilities. The subdivision proposes to align tract roadways with Lakeport Drive to the north and Erin Drive to the south.

ENVIRONMENTAL DETERMINATION: Mitigated Negative Declaration

COUNCIL DISTRICT: 3

STAFF RECOMMENDATION: Approval

Any person interested in any listed proposal can contact the Community Development Department, Planning Division, at 14177 Frederick St., Moreno Valley, California, during normal business hours (7:30 a.m. to 5:30 p.m., Monday through Thursday and Fridays from 7:30 a.m. to 4:30 p.m.), or may telephone (951) 413-3206 for further information. The associated documents will be available for public inspection at the above address.

In the case of Public Hearing items, any person may also appear and be heard in support of or opposition to the project or recommendation of adoption of the Environmental Determination at the time of the Hearing.

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: October 26, 2017 at 7 PM

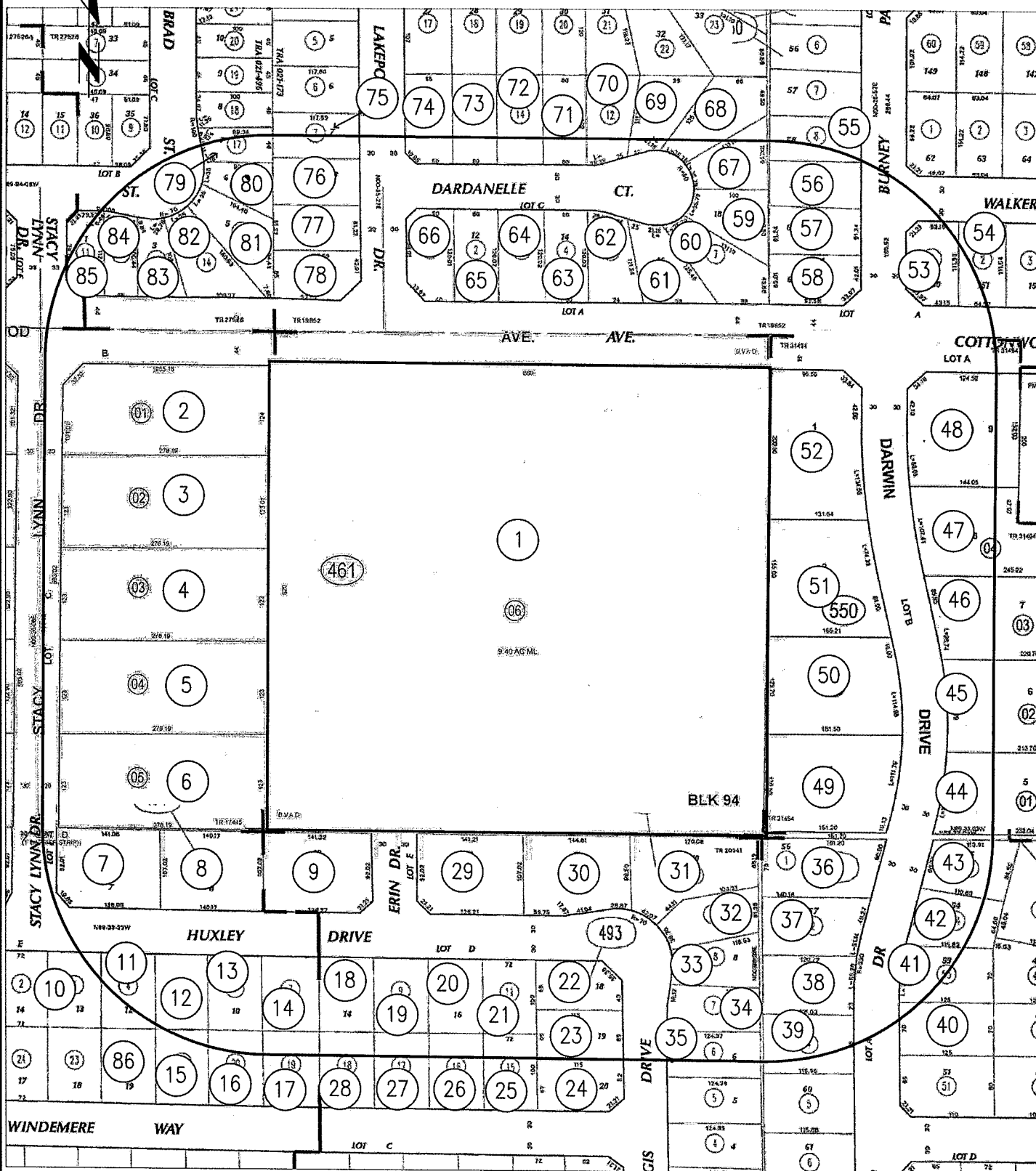
CONTACT PLANNER: Jeff Bradshaw

PHONE: (951) 413-3224

Upon request and 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 48 hours before the meeting. The 48-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

300' RADIUS MAP

COTTONWOOD AVENUE & LAKEPORT DRIVE



PLANNING COMMISSION RESOLUTION NO. 2017-34

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, CERTIFYING THE MITIGATED NEGATIVE DECLARATION AND APPROVING THE MITIGATION MONITORING AND REPORTING PROGRAM FOR TENTATIVE TRACT MAP 37060 (PEN16-0050).

WHEREAS, the applicant, MACJONES Holdings, Inc., filed applications for the Tentative Tract Map 37060 ("Project"), which include an Expanded Environmental Review (PEN16-0163) and Tentative Tract Map (PEN16-0050). The tentative tract map application shall not be approved unless the Final Mitigated Negative Declaration (PEN16-0163) is certified and approved; and

WHEREAS, the applications for the Project have 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, an Initial Study, supporting technical studies, and Mitigated Negative Declaration for the Project were prepared, consistent with the California Environmental Quality Act (CEQA); and

WHEREAS, a 20-day public review period of the Initial Study and Mitigated Negative Declaration commenced on October 6, 2017 and concluded on October 25, 2017. The public notice for the Mitigated Negative Declaration was published in the local newspaper on October 6, 2017; and

WHEREAS, the City, in conducting its own independent analysis of the Final Mitigated Negative Declaration, determined that a Mitigated Negative Declaration is an appropriate environmental determination for the Project as there is substantial evidence that demonstrates the Project with mitigation would not result in any significant environmental impacts; and

WHEREAS, a Mitigation Monitoring and Reporting Program (MMRP) has been prepared in accordance with CEQA Guidelines, and is designed to ensure compliance with the identified mitigation measures outlined in the Final Mitigated Negative Declaration through Project implementation; and

WHEREAS, The City of Moreno Valley, Community Development Department, located at 14177 Frederick Street, Moreno Valley, California 92552 is the custodian of documents and other materials that constitute the record of proceedings upon which the decision to adopt the Mitigated Negative Declaration is based; and

WHEREAS, the Planning Commission of the City of Moreno Valley considered the Project, including all environmental documentation, at a public hearing held on October 26, 2017; and

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

WHEREAS, the Planning Commission considered the Initial Study prepared for the Project for the purpose of compliance with the California Environmental Quality Act (CEQA), and based on the Initial Study including all supporting technical evidence, it was determined that the project impacts are expected to be less than significant with mitigation, and approval of a Mitigated Negative Declaration is an appropriate environmental determination for the Project.

NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

A. This Planning Commission 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 October 26, 2017, including written and oral staff reports, and the record from the public hearing, this Planning Commission finds as follows:

1. Independent Judgment and Analysis - City staff prepared the Mitigated Negative Declaration/Initial Study and related technical studies prepared for Tentative Tract Map 37060. The documents were properly circulated for public review in accordance with the California Environmental Quality Act Guideline. The Mitigated Negative Declaration/Initial Study has been completed along with the Mitigation Monitoring and Reporting Program (MMRP) to ensure compliance with all mitigation through project implementation. All environmental documents that comprise the Mitigated Negative Declaration, including all technical studies were independently reviewed by the City. On the basis of the whole record, there is no substantial evidence that the Project as designed, conditioned, and mitigated, will have a significant effect on the environment. The Mitigated Negative Declaration prepared and completed, in accordance with the CEQA Guidelines, reflects the independent judgment and analysis of the City.

THEREFORE THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY APPROVE Resolution No. 2017-34, and:

1. **CERTIFY** that the Mitigated Negative Declaration prepared for Tentative Tract Map 37060 (PEN16-0050) on file with the Community Development Department, incorporated herein by this reference, has been completed in compliance with the California Environmental Quality Act, that the Planning Commission reviewed and considered the information contained in the Mitigated Negative Declaration and the document reflects the City's independent judgment and analysis; attached hereto as Exhibit A and
2. **ADOPT** the Mitigation Monitoring and Reporting Program prepared for Tentative Tract Map 37060 (PEN16-0050), attached hereto as Exhibit B.

APPROVED AND ADOPTED this 26th day of October, 2017.

AYES:
NOES:
ABSTAIN:

Jeffrey Barnes
Chair, Planning Commission

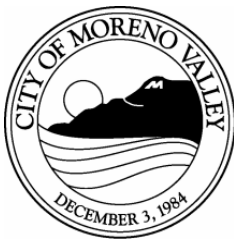
ATTEST:

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

APPROVED AS TO FORM:

City Attorney

Exhibit A and Exhibit B



**INITIAL STUDY/
ENVIRONMENTAL CHECKLIST FORM
CITY OF MORENO VALLEY**

1. Project Title: Tentative Tract Map 37060 (PEN16-0050)
2. Lead Agency Name and Address: City of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553
3. Contact Person and Phone Number: Jeff Bradshaw, Associate Planner
(951) 413-3224
4. Project Location: South side of Cottonwood Avenue at Lakeport Drive
5. Project Sponsor's Name and Address: MACJONES Holdings, LLC
2 Gondoliers Bluff
Newport Beach, CA 92657
6. Existing General Plan Designation: Residential 5 (R5)
7. Existing Zoning: Residential Agriculture 2 (RA-2)
8. Description of the Project:

Tentative Tract Map 37060 proposes to subdivide approximately 10 acres in the RA-2 zone into 16 single-family lots, and three lettered lots for water quality treatment facilities. The subdivision proposes to align interior tract roadways with Lakeport Drive to the north and Erin Drive to the south.

9. Surrounding Land Uses and Setting:

The project site is located on the south side of Cottonwood Avenue at Lakeport Drive and is zoned RA-2. The project site is bounded by existing single-family tract homes in the R5 zone to the north, on the north side of Cottonwood Avenue and existing single-family tract homes in the R5 zone immediately to the south. The properties to the west have been developed with homes on lots of at least 20,000 square feet in the RA-2 zone with vacant RA-2 zoned lots to the east.

The project site is well suited for future development of single-family residences on half-acre lots. Overall, the proposed subdivision is compatible with existing land uses and the City's General Plan and Municipal Code.

10. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

The City received requests for consultation from the following Native American tribes and consultation has begun:

- Agua Caliente Band of Cahuilla Indians;
- Pechanga Band of Luiseno Indians; and
- Soboba Band of Luiseno Indians.

13. Other public agencies whose approval is required:

N/A.

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
	Tribal Cultural Resources				

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 mitigation measures have been adopted that will reduce all potential impacts to less than significant. A MITIGATED NEGATIVE DECLARATION will be prepared.	■
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.	

October 4, 2017

Signature

Date

Jeff Bradshaw, Associate Planner

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
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I. AESTHETICS. Would the project:

a) Have a substantial adverse effect on a scenic vista?				■
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The Moreno Valley General Plan identifies scenic highways, panoramic viewsheds, and photographic viewing locations within the aesthetic resource element. The General Plan identifies no scenic roadways or panoramic viewsheds in the project vicinity. The project site is comprised of level topography with no rock outcroppings. As designed and conditioned, the proposed project will have no effect on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				■
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The project property topography is flat. Based upon site visits by staff and review of the General Plan, the subject site does not include scenic resources. There are no rock outcroppings, trees or historic buildings on site. There are no scenic highways in the area. The site has been previously disturbed through weed abatement. As designed and conditioned, the proposed project will not substantially damage scenic resources.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?				■
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Tentative Tract Map 37060 proposes to develop the 9.4 acre site with sixteen (16) single-family residential lots of at least 20,000 square feet each in the RA-2 zoning district. Development of the site will require installation of public street improvements along the south side of Cottonwood Avenue. The project has been designed and conditioned for consistency with the City's Municipal. The proposed project as designed is aesthetically compatible with adjacent single-family homes in the RA-2 and R5 zoning districts. The As designed and conditioned, the proposed project would not significantly degrade the existing visual character or quality of the site and surroundings.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			■	
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The project would introduce some additional new light sources into the area as the project site is currently vacant. The proposed residential development would include required street lighting and exterior wall mounted lights on the residences. The project will be required to satisfy the City's light standards as referenced in Municipal Code Section 9.08.100 including the shielding of lighting and restrictions on the intensity of exterior lighting which will reduce light and glare impacts to City accepted levels on surrounding properties. Therefore, potential impacts related to substantial light or glare are less than significant and no mitigation would be required.

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?				■
--	--	--	--	---

The site is designated as 'Farmland of Local Importance' on the 2015 State Important Farmland Map. This category is described as soils that would be classified as Prime and Statewide but lack available irrigation water. The site is surrounded by land that is categorized as Urban and Built-up Land on the State Farmland Map. The project site is bounded by existing single-family tract homes in the R5 zone to the north, on the north side of Cottonwood Avenue and existing single-family tract homes in the R5 zone immediately to the south. The properties to the west have been developed with homes on lots of at least 20,000 square feet in the RA-2 zone with vacant RA-2 zoned lots to the east. There are currently no agriculturally productive activities occurring within the project boundaries. There will be no impact to farmlands as the development of this project will not result in the conversion of Prime Farmland, Unique Farmland or Farmland of Statewide Importance.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				■
--	--	--	--	---

The site is not currently in agricultural use, or under Williamson Act control. There is no existing surrounding agricultural use, or sites under Williamson Act contract within the City limits. The Municipal Code allows for agricultural uses such as crops in all zoning districts, therefore, the proposed project does not conflict with existing zoning for agricultural use, or impact sites under Williamson Act contract.

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))?				■
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Attachment: Exhibit A to Resolution 2017-34 - Initial Study [Revision 1] (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The project site is not zoned or designated on the City’s General Plan for forest land, timberland, or timberland zoned Timberland Production. The City does not have any forest lands, or timberland as defined in the State Public Resources Code and Government Code within the City limits. Therefore, since the project will not result in impacts 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?				■
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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, since the project will not result in the 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.

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?				■
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There is no immediate surrounding or proposed agricultural use. The proposed project will not involve changes to the existing environment, which will result in the conversion of farmland to non-agricultural use, or conversion of forest land to non-forest land.

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?			■	
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b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.			■	
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(a and b) The Air Quality Management Plan (AQMP) adopted by the South Coast Air Quality Management District (SCAQMD) in 2012 sets forth a comprehensive program that will lead the air basin into compliance with all federal and state air quality standards. The proposed project is located within the boundaries of the AQMP. The AQMP control measures and related emission reduction estimates are based upon emissions projections for a future development scenario derived from General Plan land use, population, and employment characteristics defined in consultation with local governments. Moreno Valley’s General Plan Land Use Element was considered in the preparation of the 2012 AQMP. Accordingly, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections.

The project as proposed would not obstruct implementation of the South Coast Air Quality Management Plan. The proposed 16 lot subdivision falls below the threshold of project size (166 lots for single-family residences) as identified in the SCAQMD Air Quality Handbook, Threshold Levels for Land Uses.

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)?			■	
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CEQA Section 21100 (e) addresses evaluation of cumulative effects allowing the use of approved land use documents in a cumulative impact analysis. CEQA Guidelines Section 15064 (i)(3) further stipulates that for an impact involving a resource that is addressed by an approved plan or mitigation program, the lead agency may determine that a project’s incremental contribution is not cumulatively considerable if the project complies with the adopted plan or program. In addressing cumulative effects for air quality, the AQMP is the most appropriate document to use because the AQMP sets forth a comprehensive program that will lead the air basin, including the project area, into compliance with all federal and state air quality standards and utilizes control measures and related emission reduction estimates based upon emissions projections for a future development scenario derived from land use, population, and employment characteristics defined in consultation with local governments.

Since the proposed project is in conformance with the AQMP and the project is not significant on an individual basis according to the Daily Thresholds of Potential Significance for Air Quality, SCAQMD Air Quality Handbook, it is appropriate to conclude that the project’s incremental contribution to criteria pollutant emissions is not cumulatively considerable.

d) Expose sensitive receptors to substantial pollutant concentrations?			■	
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The nearest sensitive receptors include Moreno Elementary School located approximately 2,000 feet to the east on Cottonwood Avenue. Existing single-family homes are located immediately to the west and south with existing homes to the north on the north side of Cottonwood Avenue. Considering the direction of the prevailing winds from northwest to southeast, dispersion of potential pollutants, and the quantity of potential pollutants generated, the project will not expose sensitive receptors to substantial pollutant concentrations.

e) Create objectionable odors affecting a substantial number of people?			■	
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Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed Project's (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the City's solid waste regulations. The proposed Project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed Project construction and operations would be less than significant and no mitigation is required.

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?			■	
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?			■	

(a and b) The site is comprised of square in shape and flat. The site has been disturbed routinely through weed abatement of the site.

Biological studies were prepared for the project site by Ruben S. Ramirez, Jr. with Cadre Environmental which include a Focused Burrowing Owl Survey (August 29, 2016) and an MSHCP Consistency Analysis (July 15, 2016).

The Project site is located within the Reche Canyon/Badlands Area Plan of the MSHCP, but is not located within the MSHCP Criteria Area. The Project site is located within the burrowing owl survey area, but is not located within the NEPSSA, CAPSSA, amphibian, or mammal survey areas. Focused burrowing owl surveys were conducted for the Project site; however, no burrowing owls or burrows with owl sign were detected onsite. In compliance with the MSHCP, pre-construction burrowing owl surveys are required prior to site disturbance.

The Project site will not impact special-status plants, but will result in the loss of actual or potential habitat for special-status animals, including potential habitat for Stephens' kangaroo rat (*Dipodomys stephensi*) [SKR]. Impacts to SKR are covered under the SKR Habitat Conservation Plan (HCP) with payment of the SKR mitigation fee. The loss of potential habitat for other special-status animals would be less than significant due to the low degree of sensitivity of the species, the disturbed nature of the site, and the lack of adjacency to native open space. The Project site does not contain jurisdictional waters, MSHCP riparian/riverine areas, or MSHCP vernal pools.

The following discussion provides project-specific mitigation/avoidance measures for actual or potential impacts to special-status resources.

Burrowing Owl

The Project site contains suitable habitat for burrowing owls; however, burrowing owls were not detected onsite during focused surveys. MSHCP Objective 6 for burrowing owls requires that pre-construction surveys prior to site grading. As such, the following measures are recommended to avoid direct impacts to burrowing owls and to ensure consistency with the MSHCP:

BR1. A 30-day burrowing owl preconstruction survey will be conducted immediately prior to the initiation of ground-disturbing construction to ensure protection for this species and compliance with the conservation goals as outlined in the MSHCP. The survey will be conducted in compliance with both MSHCP and CDFW guidelines (MSHCP 2006, CDFW 2012). A report of the findings prepared by a qualified biologist shall be submitted to the City of Moreno Valley prior to any permit or approval for ground disturbing activities.

If burrowing owls are detected onsite during the 30-day preconstruction survey, during the breeding season (February 1st to August 31st) then construction activities shall be limited to beyond 300 feet of the active burrows until a qualified biologist has confirmed that nesting efforts are completed or not initiated. In addition to monitoring breeding activity, if construction is proposed to be initiated during the breeding season or active relocation is proposed, a burrowing owl mitigation plan will be developed based on the County of Riverside Environmental Programs Division, CDFW and USFWS requirements for the relocation of individuals to the Lake Mathews Preserve.

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BR2. Construction outside the nesting season (between September 16th and January 31st does not require pre-removal nesting bird surveys. If construction is proposed between February 1st and September 15th, a qualified biologist must conduct a nesting bird survey(s) no more than fourteen (14) days prior to initiation of grading to document the presence or absence of nesting birds within or directly adjacent (100 feet) to the Project Site.

Therefore, the project as conditioned and subject to the biological resource mitigation measures listed above, will not 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 Wildlife or U. S. Fish and Wildlife Service. The project will not 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 Wildlife or U. S. Wildlife Service.

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?				■
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The project site comprised of flat topography that has been disturbed routinely through weed abatement of the site. There are no existing trees or vegetation on the project site. The site is bounded on the north, south and west by existing residences and on the east by vacant RA-2 lots. Based upon the results of the Biological Technical reports prepared for the project, the project site does not contain jurisdictional waters, MSHCP riparian/riverine areas, or MSHCP vernal pools. Therefore, no impacts would occur 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, 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?				■
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The project site comprised of flat topography that has been disturbed routinely through weed abatement of the site. There are no existing trees or vegetation on the project site. The site is bounded on the north, south and west by existing residences and on the east by vacant RA-2 lots. Based upon the conclusions of the Biological Technical reports prepared for this project, there is no evidence of resident or migratory fish or wildlife species was noted on the project site or the adjacent vacant parcel. Therefore, the project will not 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.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				■
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The project site comprised of flat topography. There are no existing trees or vegetation on the project site, therefore, the project will not conflict with 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?			■	
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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.

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?			■	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?			■	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			■	

(a, b and c) A Phase I Cultural Resource Assessment for the project site was prepared by Applied Earth Works, Inc. in October 2016. The cultural resources study included a record search, a Sacred Lands File search, tribal outreach, a review of historic maps and aerial photographs, an intensive survey by archaeologist Ken Moslak, and preparation of a report.

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The project site is comprised of flat topography with no rock outcroppings or other unique geologic features. Based upon inspections of the project site in March 2016 and review of a 1987 citywide survey (Archeological Research Unit, University of California Riverside), there are no known archaeological resources on the project site. There are no historical structures existing on the project site (General Plan, Figure 5.10-1, Historic Resources Inventory). There are no known historical paleontological or unique geological features on the project site (General Plan, Figures 5.10-2, Prehistoric Sites). Additionally, the City's Final Program EIR (June 2006), Figure 5.10-3 list the project site as low potential for paleontological sensitive area based on extensive field work (Page 5.10-10).

Based on the results of a Phase I Cultural Resources Survey, prepared by Brian F. Smith and Associates on September 8, 2016, a record search of the project area and a one-mile radius from the Eastern Information Center (EIC) at University of California Riverside (UCR) indicated that 22 cultural resources had been recorded within the search radius.

The Phase I Cultural Resources Survey for the project did not identify any historic or prehistoric sites within the project site. In addition, no registered prehistoric or historic resources were recorded within the property boundaries and no previous surveys have involved portions of the current project based upon the records search results from the EIC at UCR. The cultural resources study has provided information that forms the basis for the conclusion that the planned development of Tentative Tract Map 37060 will not affect any cultural resources. No resource-specific mitigation measures are recommended as a condition of approval for this project due to the absence of identified cultural resources and the very low potential for any buried cultural resources at this location.

However, the following mitigation measures have been introduced by the City to ensure compliance with City General Plan Policies and the State Public Resources Code:

CR-1: Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a professional archaeologist has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Monitoring Tribe(s), the Developer and the City, shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. Details in the Plan shall include:

- a. Project grading and development scheduling;
- b. The Project archeologist and the Monitoring Tribes(s) shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Monitoring Tribe(s) shall make themselves available to provide the training on an as-needed basis.
- c. The coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project archaeologist, and the applicant;
- d. The protocols and stipulations that the Developer, City, Monitoring Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

CR-2: Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians tribal representatives (hereafter referred to as "Native American Tribal Representatives") received a minimum of 30 days advance notice of all mass grading and trenching activities, and any monitoring agreements between the applicant and the Tribes as requested through the SB 18 process. Native American Tribal Representatives shall provide a copy of the signed agreement(s) prior to the issuance of a grading permit and the Tribal Representatives shall be notified of and allowed to attend the pre-grading meeting with the City and Project construction contractors and/or monitor all Project mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2. If the resource is significant, Mitigation Measure CR-3 shall apply.

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CR-3: A treatment plan shall be prepared by the Project Archaeologist and expeditiously reviewed by the interested Native American Tribal Representatives and the City Planning Division and implemented by the Project Archaeologist to protect the identified archaeological resource(s) from damage and destruction. If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be temporarily suspended 100 feet around the resource(s) until a treatment plan is implemented. The Project Archaeologist, interested Native American Tribal Representatives, and the City Planning Division shall confer regarding mitigation of the discovered resource(s).

CR-4: In the event that Native American cultural resources are discovered during the course of grading, the following procedures shall be carried out for treatment and final disposition of the discoveries:

a) The landowner(s) shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources. The artifacts shall be relinquished through one or more of the following methods and evidence of such shall be provided to the City of Moreno Valley Planning Department:

- i. Accommodate the process for Preservation-In-Place /Onsite reburial of the discovered items with the consulting Native American tribes or bands, as detailed in the treatment plan prepared by the Project Archaeologist under Mitigation Measure CR-3. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed;
- ii. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 CFR Part 79; therefore, the resources would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation;

iii. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center by default.

CR-5: 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 Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-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-6: Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a qualified paleontologist has been retained by the Project Applicant to conduct monitoring of excavation activities and has the authority to halt and redirect earthmoving activities in the event that suspected paleontological resources are unearthed.

CR-7: The paleontological monitor shall conduct full-time monitoring during grading and excavation operations in undisturbed, very old alluvial fan sediments and shall be equipped to salvage fossils if they are unearthed to avoid construction delays and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The paleontological monitor shall be empowered to temporarily halt or divert equipment to allow of removal of abundant and large specimens in a timely manner. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface, or if present, are determined upon exposure and examination by qualified paleontological personnel to have a low potential to contain or yield fossil resources.

CR-8: Recovered specimens shall be properly prepared to a point of identification and permanent preservation, including screen washing sediments to recover small invertebrates and vertebrates, if necessary. Identification and curation of specimens into a professional, accredited public museum repository with a commitment to archival conservation and permanent retrievable storage, such as the Western Science Museum in Hemet, California, is required for significant discoveries.

CR-9: A final monitoring and mitigation report of findings and significance shall be prepared, including lists of all fossils recovered, if any, and necessary maps and graphics to accurately record the original location of the specimens. The report shall be submitted to the City of Moreno Valley prior to building final.

CR-10: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person (meeting the Secretary of the Interior's standards (36CFR61) Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the applicant to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource.

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Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all affected Native American Tribes before any further work commences in the affected area.

If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the “most likely descendant.” The “most likely descendant” shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

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.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?			■	
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No known human remains have been identified at the project site. Compliance with mitigation measure CR-10 as identified in the response to checklist questions a, b, and c for Cultural Resources will also serve to prevent the disturbance of any human remains.

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:

(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.				■
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According to the City’s General Plan, the project site is not on, or close to, any known earthquake fault. There is no new information that would indicate the existence of a fault or fault tract in proximity of the site. Accordingly, there is no risk of ground rupture due to faulting at the proposed project site.

(ii) Strong seismic ground shaking?			■	
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According to the City’s General Plan, the project site is not on, or close to, any known earthquake fault. The nearest fault is the San Jacinto fault system, which is located about 4 miles to the northeast. The San Andreas fault system is more than 25 miles from the site. The active Sierra Madre and San Gabriel fault zones lie roughly 35 and 40 miles respectively to the northwest of the site. The active Elsinore and Newport-Inglewood fault zones lie approximately 20 and 45 miles, respectively, to the southwest of the site. This faulting is not considered a significant constraint to development on the site with the use of current building codes. Ground-shaking intensity could be moderately-high during a 100-year interval earthquake. Foundation designs will be reviewed to ensure incorporation of appropriate engineering recommendations to mitigate any such seismicity. There is no new information that would indicate the existence of a fault on the site.

(iii) Seismic-related ground failure, including liquefaction?			■	
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According to the City’s General Plan, the project site is not on, or close to, any known earthquake fault. However, ground-shaking intensity could be moderately-high during a 100-year interval earthquake. Based on available resources and the City’s General Plan, the potential for seismic related failure or liquefaction on the site is minimal based on the water table and soil conditions at the site.

(iv) Landslides?				■
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The project site is not near or adjacent to mountainside areas. Due to a lack of slopes within or nearby the project site seismically induced landslides are not anticipated to pose a danger to the project site. Development of the project will not result in impacts from landslides and no mitigation measures would be required.

(b) Result in substantial soil erosion or the loss of topsoil?			■	
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The development of the site will likely result in the reduction of erosion with the placement of buildings and landscaping on the site. During construction, there is the potential for less than significant impacts for short-term soil erosion from minimal excavation and grading. This will be addressed as part of standard construction, such as watering to reduce dust and sandbagging, if required, during raining periods.

(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?			■	
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According to the City’s environmental information, the geologic unit or soil is not known to be unstable (Western Riverside Area Soil Survey – University of California Agricultural Experiment Station, 1971). As designed and conditioned, the potential for the impacts resulting from a landslide, lateral spreading, subsidence, liquefaction or collapse is less than significant.

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(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?			■	
According to the City's environmental information the geologic unit or soil is not known to be unstable. As provided for in the conditions of approval, the applicant must provide a soils and geologic report to City Public Works Department. The site will not be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code. The potential for the project to create substantial risks to life or property is less than significant.				
(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?			■	
The project will operate on a sewer system that will be reviewed, approved and installed according to Eastern Municipal Water District requirements. The proposed project will not be introducing septic tanks or alternative water disposal systems.				
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?			■	
Global climate change is caused by greenhouse gas (GHG) emissions throughout the world. Mitigating global climate change will require worldwide solutions. Greenhouse gases are gases emitted from the earth's surface that absorb infrared radiation in the atmosphere. Increases in these gases lead to more absorption of radiation and warm the lower atmosphere, and therefore increase evaporation rates and temperatures on the Earth's surface. The City of Moreno Valley has adopted a Climate Action Strategy. However, at this time, there are no widely accepted thresholds of significance for determining the impact of GHG emissions from an individual project, or from a cumulative standpoint. As provided for in the CEQA Guidelines (Section 15064.4), it is necessary for the lead agency to make a good-faith effort in considering GHG emissions on a project specific basis. Based on the scope of the project and consistency of the design of Tentative Tract map 37060 which does not exceed the density of the existing General Plan land use designation of Residential 5 (R5) and the RA-2 zoning, and consistency with the City's adopted General Circulation Element and the Genera' Plan's build out scenarios, the City has chosen to rely on a qualitative analysis. To the extent possible based on scientific and factual data available, it has been determined that this project will not result in generating greenhouse gas emissions that will either directly or indirectly have a significant impact on the environment.				
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			■	
On October 9, 2012, the Moreno Valley City Council approved an Energy Efficiency and Climate Action Strategy and related Greenhouse Gas Analysis. The proposed project does not conflict with this strategy or any other applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.				
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?				■
The proposed project will not involve the routine transport, use or disposal of hazardous materials. Since the project will not involve the routine transport, use or disposal of hazardous materials, there will be no potential for a significant hazard to the public or the environment.				
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?				■
The proposed project will not involve the routine transport, use or disposal of hazardous materials. The proposed project will not create a significant hazard to the public or the environment through the routine transport, or use or disposal of hazardous materials. Since the project will not involve the routine transport, use or disposal of hazardous materials, there will be no potential for a significant hazard to the public or the environment.				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				■
Moreno Elementary School is located approximately 2,000 feet to the east of the project site on Cottonwood Avenue. The project as designed and conditioned will not emit hazardous emissions or handle hazardous materials.				
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?				■
The site was checked against the list of hazardous material sites pursuant to Government Code Section 65962.5. The project is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.				
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			■	

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Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
area?				
The nearest airport is the March Air Reserve Base located approximately four miles to the west. The distance to the runway is approximately five miles. The project site is located outside of the March Air Reserve Base/Inland Port Airport Land Use Influence Area. This project was reviewed by the Riverside County Airport Land Use Commission (ALUC) and in an email dated April 7, 2016, it was determined that the project would not require review by ALUC. The project, as conditioned, will not result in a safety hazard for future residents.				
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?				■
There are no private airstrips within the City of Moreno Valley. The project is not within proximity of a private airstrip. Therefore, the project would not result in a safety hazard pertaining to proximity of a private airstrip.				
g) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?				■
The proposed project would not have any direct effect on an adopted emergency response plan, or emergency evacuation plan. The City's emergency plans are also consistent with the General Plan. The proposed project has been designed and conditioned to provide required circulation and required fire access to allow for ingress of emergency vehicles and egress of passenger vehicles. Therefore, the proposed project would not be in conflict in any way with the emergency response or emergency evacuation plans.				
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?				■
The proposed project site is not adjacent to wildlands and is not located within the Very High Fire Hazard Severity Zone. As designed and conditioned, the project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. In addition, the project is not located within a designated wildland area.				
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?			■	
Pursuant to the requirements of the Santa Ana Regional Water Quality Control Board, a project specific Water Quality Management Plan (WQMP) is required of certain projects involving discretionary approval. This project requires a WQMP to address pollutants of concern. Site Design and Source Control best management practices (BMP) are conditioned to be used throughout the project. The project has proposed the use of bioretention facilities modified for infiltration and an infiltration trench. Final design and sizing details of all BMPs must be provided in the first submittal of the F-WQMP. The project has been conditioned to provide documentation that runoff will be treated in conformance with the "Riverside County Water Quality Management Plan for Urban Runoff" dated October 22, 2012 and approved by the Santa Ana Regional Water Quality Control Board (Guidance Document). Additionally, grading activities would temporarily expose soils to wind and water erosion that would contribute to downstream sedimentation. The proposed project would comply with all permits and development guidelines associated with urban water runoff and discharge set forth by the City of Moreno Valley and the Regional Water Quality Control Board. With the approval of the storm drainage facilities by the City Engineer and Riverside County Flood Control District (RCFCD), as well as complying with all applicable storm water discharge permits, impacts would be less than significant.				
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)?			■	
The Eastern Municipal Water District (EMWD) would provide the proposed project with potable water as opposed to utilizing individual water wells. Potable water is adequate to serve the proposed project. Although the project would cover a majority of the site with impervious surfaces, the landscaped areas would still provide a means for groundwater recharge. Impacts would be less than significant.				
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 manner which would result in substantial erosion or siltation on- or off-site?			■	
There is no streambed or river on the project site, so the project will not cause a change in the existing on-site drainage pattern that would result in substantial erosion or siltation on- or off-site. During construction of the project, there is the potential for some sediments to be discharged within the storm water system. Erosion control plans are required for projects prior to issuance of grading permits for preventing substantial erosion. The project as designed and conditioned will not change the existing drainage pattern that would result in substantial erosion or siltation on- or off-site. Impacts would be less than significant.				
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			■	

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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site?				
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There is no streambed or river on the project site. Historically, the project site's storm runoff flows southwesterly towards Erin Drive. Based on the results of the Preliminary Drainage Study prepared by Thienes Engineering, Inc. in July 2016, project storm drain infrastructure will direct on-site storm runoff southwest to Erin Drive. The study demonstrates that post-construction storm flows will not exceed historic flows from the project site. The project as designed and conditioned will not cause a change in the existing drainage pattern that would result in substantial erosion or siltation on- or off-site. Therefore, project implementation would not result in modifications that could ultimately result in substantial erosion or siltation on- or off-site. Impacts would be less than significant.

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?			■	
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Historically, the project site's storm runoff flows southwesterly towards Erin Drive. Based on the results of the Preliminary Drainage Study prepared by Thienes Engineering, Inc. in July 2016, project storm drain infrastructure will direct on-site storm runoff southwest to Erin Drive. The study demonstrates that post-construction storm flows will not exceed historic flows from the project site. The project proposes to construct on-site storm drain infrastructure and bioretention facilities for water quality treatment. The study demonstrates that post-construction, the project will not discharge storm water that exceeds historic capacities and will not exceed the capacity of existing or planned stormwater drainage systems.

As with any urban project, runoff entering the storm drainage system would contain minor amounts of pollutants (including pesticides, fertilizers and motor oil). This would incrementally contribute to the degradation of surface and sub-surface water quality. Additionally, grading activities would temporarily expose soils to water erosion that would contribute to downstream sedimentation. However, the project is subject to the permit requirements of the Santa Ana Regional Water Quality Control Board. As the site is currently unpaved and exposed, development of the proposed project would lessen the existing site contribution to sediment runoff at project completion. Additionally, the approved Preliminary WQMP proposes Best Management Practices for water quality treatment at both the project construction and operational stages. With the approval of the storm drainage facilities by the City Engineer and RCFCD, incorporation of conditions of approval into the project's design, as well as compliance with all applicable storm water discharge permits, impacts would be less than significant.

f) Otherwise substantially degrade water quality?			■	
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The proposed project is consistent with the City's General Plan. All storm drainage improvements would be developed to the standards of the City Engineer and the RCFCD. Additionally, the project has been designed in accordance with the City's standard conditions of approval, which includes measures pertaining to storm drainage facilities and runoff. As with any urban project, runoff entering the storm drainage system would contain minor amounts of pollutants (including pesticides, fertilizers and motor oil). This would incrementally contribute to the degradation of surface and sub-surface water quality. Additionally, grading activities would temporarily expose soils to water erosion that would contribute to downstream sedimentation. However, the project is subject to the permit requirements of the Santa Ana Regional Water Quality Control Board. As the site is currently unpaved and exposed, development of the proposed project would lessen the existing site contribution to sediment runoff at project completion. With the approval the storm drainage facilities by the City Engineer and Riverside County Flood Control District, incorporation of conditions of approval into the project's design, as well as compliance with all applicable storm water discharge permits, impacts would be less than significant.

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?			■	
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h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			■	
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(g and h) The proposed project site is located within Federal Emergency Management Agency Zone "X" area outside of the 100-year flood hazard area. This is an area determined to be outside of the 0.2% annual chance flood plain. 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. Therefore, impacts would be less than significant. The project as designed and conditioned will not place structures which would impede or redirect flood flows.

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?				■
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The proposed project site is located within Federal Emergency Management Agency Zone "X" area outside of the 100-year flood hazard area. This is an area determined to be outside of the 0.2% annual chance flood plain. The project site is outside of the delineated dam inundation area for Perris Dam at Lake Perris Reservoir and will not 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.

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j) Inundation by seiche, tsunami, or mudflow?				■
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The project site is not identified in the General Plan as a location subject to seiche, or mudflow. The project is outside of the delineated dam inundation area for Perris Dam at Lake Perris Reservoir. Additionally, due to the position of the proposed project, mudflows from local mountains would be unlikely due to surrounding development. There would be no impacts resulting from inundation by seiche, tsunami, or mudflow.

X. LAND USE AND PLANNING. Would the project:

a) Physically divide an established community?			■	
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The project proposes to develop a sixteen (16) lot subdivision on a 9.4 acre site in the RA-2 zone. The project site is located on the south side of Cottonwood Avenue at Lakeport Drive and is zoned RA-2. The project site is bounded by existing single-family tract homes in the R5 zone to the north, on the north side of Cottonwood Avenue and existing single-family tract homes in the R5 zone immediately to the south. The properties to the west have been developed with homes on lots of at least 20,000 square feet in the RA-2 zone with vacant RA-2 zoned lots to the east. Since the development proposed at this location is an extension of an established land use pattern and is compatible with adjacent General Plan and Zoning districts and existing land uses, the project will not physically divide an established community and impacts would be less than significant under this category.

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?			■	
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This project, proposes development that is an allowed use within the RA-2 zone subject to approval of a tentative tract map. The project as designed and conditioned is consistent with the goals, objectives and policies of the site's Residential 5 General Plan Land Use designation. As designed and conditioned, and subject to implementation of mitigation measures, the project will not conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project including the City's General Plan.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?			■	
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The 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.

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?				■
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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?				■
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(a and b) 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 within the project site or the surrounding area. Consequently, the development of the project site would not conflict with a mineral recovery plan as adopted by the General Plan. No significant impacts would occur.

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?			■	
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b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			■	
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Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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(a and b) The General Plan Environmental Impact Report (EIR) Noise Section for the City of Moreno Valley states that “The noise generated by construction is addressed by existing city regulations. It is unlawful to create noise that annoys reasonable people of normal sensitivity. The Public Works Department has a standard condition of approval regarding the public nuisance aspect of the construction activities. Any construction within the city shall only be completed between the hour of seven a.m. to seven p.m. Monday through Friday, excluding holidays and from eight a.m. to four p.m. on Saturday, unless written approval is obtained from the city building official or city engineer (Municipal Code Section 8.14.040.E).

Although construction activities will result in a noise impact, this impact will be short-term and will cease upon completion of construction. The temporary nature of the impact in conjunction with existing city regulations on hours of operation will lessen the potential of a significant impact due to construction noise. However, noise sensitive land use located adjacent to construction sites may be impacted by future construction in the planning area as a result of groundborne noise levels, noise levels that exceed existing standards, and temporary or periodic increases in the ambient noise level.

Although not required as mitigation measures to reduce a potentially significant impact to acceptable levels, the following mitigation measures have been introduced to ensure compliance with City General Plan Policies regarding noise:

N-1: Construction activities shall be operated in a manner that limits noise impacts on surrounding uses (General Plan Policy 6.5.2). In order to limit noise impacts on surrounding property, the construction contractor will ensure the following:

- All construction equipment powered by gasoline or diesel engines will be required to have sound-control devices at least as effective as those originally provided by the manufacturer; no equipment will be permitted to have an unmuffled exhaust.
- Mobile noise-generating equipment and machinery will be shut off when not in use;
- Construction vehicles assessing the site will be required to use the shortest possible route to and from local freeways, provided the routes do not expose additional receptors to noise.

N-2: The staging of construction equipment and the construction trailer shall be placed as far as possible from the existing single-family residences located to the east and the school to the northeast.

The proposed development as designed and conditioned is consistent with City Municipal Code development standards and the City’s design guidelines for non-residential development. It is anticipated that project traffic will operate within acceptable Levels of Service at General Plan build-out, therefore, noise levels will be consistent with General Plan criteria for noise, and noise levels will not exceed the standards set forth in the General Plan. Perceptible groundborne vibrations are typically associated with blasting operations and potentially the use of pile drivers, neither of which will be used during construction of the Proposed Project. As such, no excessive groundborne vibration would be created by the Proposed Project. A less than significant impact would occur.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			■	
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The proposed, as designed and conditioned, is consistent with City Municipal Code development standards and Design Guidelines for single-family residential development. Permanent noise associated with the proposed residential development includes, but are not limited to, resident and visitor vehicular traffic, routine landscape and home maintenance, and maintenance of common landscape areas. However, these noise sources would be typical of the adjacent area and therefore, the project would not introduce unique noise sources. Although not required as mitigation measures to reduce a potentially significant impact to acceptable levels, mitigation measures N-1 and N-2 as referenced under Noise checklist questions (a) and (b) have been introduced to ensure compliance with City General Plan Policies related to noise regulation. Therefore, noise levels would be consistent with General Plan criteria for noise, and noise levels will not exceed the standards set forth in the General Plan. Impacts would be less than significant as a result of the proposed project.

d) A substantially temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			■	
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Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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During construction, there will be the temporary impact of noise from construction equipment. The nearest sensitive receptors are Moreno Elementary School located approximately 2,000 feet to the east on Cottonwood Avenue and existing single-family homes located immediately adjacent to the west and south and to north on the north side of Cottonwood Avenue. The Public Works Department has a standard condition of approval regarding the public nuisance aspect of the construction activities. Any construction within the city shall only be completed between the hour of seven a.m. to seven p.m. Monday through Friday, excluding holidays and from eight a.m. to four p.m. on Saturday, unless written approval is obtained from the city building official or city engineer (Municipal Code Section 8.14.040.E). According to the Moreno Valley Municipal Code (9.10.030), all temporary construction activities are exempt from the noise standards as long as construction activities are limited to the daytime hours as described above and construction equipment is properly maintained with working mufflers. Although not required as mitigation measures to reduce a potentially significant impact to acceptable levels, mitigation measures N-1 and N-2 as referenced under Noise checklist questions (a) and (b) have been introduced to ensure compliance with City General Plan Policies related to noise regulation.

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?				■
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The nearest airport is the March Air Reserve Base located approximately four miles to the west. The distance to the runway is approximately five miles. The project site is located outside of the March Air Reserve Base/Inland Port Airport Land Use Influence Area. This project was reviewed by the Riverside County Airport Land Use Commission (ALUC) and in an email dated April 7, 2016, it was determined that the project would not require review by ALUC. The project will not expose people residing or working in the project area to excessive noise levels.

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?				■
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There is no private airstrip within the vicinity of the site, or within the City of Moreno Valley.

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)?			■	
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Tentative Tract Map 37060 proposes to develop sixteen (16) lots on 9.4 acres in the RA-2 zone. The project site is bounded by existing single-family tract homes in the R5 zone to the north, on the north side of Cottonwood Avenue and existing single-family tract homes in the R5 zone immediately to the south. The properties to the west have been developed with homes on lots of at least 20,000 square feet in the RA-2 zone with vacant RA-2 zoned lots to the east. Moreno Elementary School is located approximately 2,000 feet to the east. The project has been conditioned to construct all required on-site and off-site public infrastructure and to participate in the payment of applicable development impact fees. The project will not induce substantial growth in an area either directly or indirectly.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				■
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c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				■
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(b and c) This property is currently vacant, and no housing is currently located there. No housing will be displaced by development of this project. The project will not displace any residents.

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?			■	
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The proposed project has incorporated the City's standard conditions of approval into its design. These standards specifically address concerns regarding the Fire Prevention Bureau. Standards such as providing approved fire hydrants, fire flow requirements; development impact fee programs and utilizing fire retardant materials have all been incorporated into the project's design. Insurance Services Office (ISO) ratings are given to firefighting districts in order to rank their operation level. This scale ranges from one (1) the highest possible score, to a ten (10), the worst possible score. The City of Moreno Valley currently has an ISO rating of four (4), which is considered high. With the implementation of the conditions of approval of the project pertaining to Fire Services, impacts would be less than significant

b) Police protection?			■	
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Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The proposed project conforms to the City’s Municipal Code and to the General Plan. Police protection to the project area is provided through the Moreno Valley Police Department. The Police Department was involved in the project review process. Conditions of approval have been included by Police Department to ensure health and safety is protected during construction. Development of the project site would increase the demand for services on the Police Department. The project will pay development impact fees related to Police Facilities. With payment of impact fees, the development of the proposed project would not overburden their service ability in continuing to provide high quality police service.

c) Schools?				■
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The City provided information about the location and design for this project to Moreno Valley Unified School District (MVUSD) for their review and consideration with no comments or response received from the school district. The development of sixteen half acre lots on the project site does not exceed the site’s General Plan Land Use designation of Residential 5. The project has been conditioned to provide proof of fee payment to the MVUSD for any required impact fees prior to issuance of building permits. Since the project is consistent with the General Plan and will be paying impact fees for each new lot, the Moreno Valley Unified School District will be able to adequately serve the students from the development, and therefore no potentially significant impact would occur.

d) Parks?				■
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The project would most likely increase the use of parks. The impact of this project on parks is anticipated to be minimal. This project will be subject to development impact fees, which shall address the impact of the proposed 16 lot subdivision to recreational parks facilities.

e) Other public facilities?			■	
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There will be an incremental increase in the demand for new or altered public services including city hall, and city yard facilities. These facilities would be needed with or without the project. This project will be subject to development impact fees, which will address the impact of the proposed 16 lot subdivision.

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?				■
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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?				■
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(a and b) The project would most likely increase the use of parks. The impact of this project on parks is anticipated to be minimal. This project will be subject to development impact fees, which shall address the impact of the proposed 16 lot subdivision to recreational facilities.

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?			■	
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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?			■	
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(a and b) The proposed development of sixteen half acre lots in the RA-2 zone is compatible with the site’s General Plan Land Use designation of Residential 5 and does not conflict with any City plans, ordinances or policies establishing measures of effectiveness for the performance of the circulation system. Therefore, traffic resulting from the proposed project is not anticipated to exceed General Plan build out projections for the project site. As designed and conditioned, the project will not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system and will not 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 highway.

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?				■
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The nearest airport is the March Air Reserve Base located approximately four miles to the west. The distance to the runway is approximately five miles. The project site is located outside of the March Air Reserve Base/Inland Port Airport Land Use Influence Area. This project was reviewed by the Riverside County Airport Land Use Commission (ALUC) and in an email dated April 7, 2016, it was determined that the project would not require review by ALUC. This project will not 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.				
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?			■	
The project has been conditioned by Public Works to complete public street improvements along the site's Cottonwood Avenue frontage. The street improvements will include but not be limited to, pavement, curb, gutter, sidewalk, streetlights, signing and striping, and dry and wet utilities. As designed, the project will not result in hazards, but will help decrease potential hazards at this location. The project is not adjacent to any potential incompatible uses.				
e) Result in inadequate emergency access?			■	
As designed and conditioned, public streets within the project will be built to the specifications of the City Engineer and Traffic Engineer, the Fire Prevention Bureau and the General Plan. This will ensure that no hazardous traffic situations would occur during construction or with completion of the project. The site will be readily accessible for emergency access.				
f) Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				■
The project as designed and conditioned will not conflict with adopted alternative transportation policies, therefore, no adverse impacts would occur.				
XVII. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?				■
The Project Site does not include any historical resources, and impacts related to historic resources would not occur.				
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?		■		
The City received requests for consultation from the Agua Caliente Band of Cahuilla Indians, the Pechanga Band of Luiseno Indians, and the Soboba Band of Luiseno Indians. The City met in consultation and/or coordinated with each of the above Native American Tribes in compliance with Assembly bill 52 to complete the consultation process. The City recognized the stated concerns from the tribes with regards to the participation of tribal monitors during construction (grading) to mitigate potential impacts to inadvertent finds of cultural resources or human remains and has agreed that such mitigation would be implemented for this project (see mitigation measures CR-1 through CR-10 under Section V. Cultural Resources).				
XVIII. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				■
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?				■
(a and b) A Preliminary Water Quality Management Plan (PWQMP) was prepared by Thienes Engineering, Inc. The PWQMP identifies treatment Best Management Practices (BMP's) to address the project's pollutants of concern. The information presented in the PWQMP has been found by the City to be in general conformance with the document, "Water Quality Management Plan for the Santa Ana Region of Riverside County" dated October 22, 2012 and approved by the Santa Ana Regional Water Quality Control Board (Guidance Document). This project will not exceed the wastewater treatment requirements of the Regional Water Quality Control Board. The Eastern Municipal Water District (EMWD) is the sanitary district provider for the project. The project will not exceed wastewater treatment capacity of the Moreno Water Reclamation Facility.				
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?			■	

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The project as designed and conditioned will not require the construction of new storm drainage facilities or the expansion of existing facilities. Historically, the project site's storm runoff flows southwesterly towards Erin Drive. Based on the results of the Preliminary Drainage Study prepared by Thienes Engineering, Inc. in July 2016, project storm drain infrastructure will direct on-site storm runoff southwest to Erin Drive. The study demonstrates that post-construction storm flows will not exceed historic flows from the project site. The project proposes to construct on-site storm drain infrastructure and bioretention facilities for water quality treatment. The study demonstrates that post-construction, the project will not discharge storm water that exceeds historic capacities and will not exceed the capacity of existing or planned stormwater drainage systems.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				■
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The water purveyor, Eastern Municipal Water District (EMWD), prepared an Urban Water Management Plan in 2010 demonstrating that it has or will have sufficient water supplies available to serve urban development within the City of Moreno Valley. EMWD's plan was based on the City's General Plan Land Use Element. The proposed development is consistent with existing General Plan and Zoning designations. Therefore, sufficient water supplies exist to support the proposed project.

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?				■
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The wastewater treatment provider is EMWD. The current wastewater treatment facility has adequate capacity to serve projects within Moreno Valley that are consistent with the General Plan and EMWD has plans for major expansions of the Moreno Water Reclamation Facility to serve future needs. Source: EIR for the 2006 General Plan Update.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				■
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Waste Management provides waste hauling service to the City of Moreno Valley. The project will be served by a landfill in the Badlands with sufficient permitted capacity to accommodate the project's solid waste disposal needs. Source: EIR for the 2006 General Plan Update.

g) Comply with federal, state, and local statues and regulations related to solid waste?				■
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City policies require compliance with State and Federal regulations regarding solid waste. This project will be required to comply with the current policies regarding solid waste. (General Plan Objective 7.8 and Municipal Code Section 6.02)

XIX. 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?			■	
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There are no streambeds or riparian habitat within the project site. There were no surveyed rare plant or animal species noted on the project site. The project would not significantly degrade the quality of the environment or 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. There are no historic structures on the site, and there will be no impact to historic resources. The project will not eliminate important examples of the major periods of California history or prehistory. The analysis in this Initial Study demonstrates that project and cumulative impacts would be less than significant. The project as designed and conditioned would not cause substantial adverse health effects on human beings.

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)?		■		
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This project as conditioned and with mitigation will not create any impacts that would be considered cumulatively considerable when viewed in connection with existing land uses, other recently approved projects, and existing land use designations. It is not expected that the proposed project would result in incremental effects. The analysis in this Initial Study demonstrates that with the implementation of mitigation measures for cumulative impacts to traffic infrastructure, the proposed project's cumulative impacts would be less than significant.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			■	
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Attachment: Exhibit A to Resolution 2017-34 - Initial Study [Revision 1] (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The project proposes development of a sixteen lot subdivision on 9.4 acres in the RA-2 zone. The project as designed and conditioned and with mitigation will not cause substantial adverse effects on human beings, either directly or indirectly for the reasons described in this checklist/initial study.

List of Key Documents and Resources:

- City of Moreno Valley General Plan, adopted by City Council on July 11, 2006
- City of Moreno Valley Municipal Code, adopted by City Council in 1997
- Preliminary Water Quality Management Plan prepared by Thienes Engineering, Inc., dated April 28, 2017
- Focused Burrowing Owl Survey prepared by Cadre Environmental, dated August 29, 2016
- General MSHCP Habitat Assessment/Consistency Analysis, prepared by Cadre Environmental, dated July 15, 2016
- Riverside County Integrated Project Long Report, Riverside County Transportation and Land Management Agency,
- Western Riverside Area Soil Survey – University of California Agricultural Experiment Station, 1971
- Urban Water Management Plan, Eastern Municipal Water District, 2010
- State Important Farmland Map, 2015, <http://maps.conservation.ca.gov/ciff/ciff.html>
- Air Quality Management Plan (AQMP), South Coast Air Quality Management Board, 2012
- Cultural Resources Inventory, Archeological Research Unit, University of California, Riverside), October 1987
- Phase I Cultural Resources Survey prepared by Brian F. Smith and Associates, Inc., dated September 8, 2016
- March Air Reserve Base /Inland Port Airport Land Use Compatibility Plan, Riverside County Airport Land Use Commission, adopted November 13, 2014
- Preliminary Drainage Study, prepared by Thienes Engineering, Inc., dated July 2016
- Flood Insurance Rate Map, Federal Emergency Management Agency, Map Number 06065C765G, August 28, 2008
- State Wildland Fires Map
- Riverside County Airport Land Use Commission – email dated April 7, 2016

**The above documents and studies are incorporated by reference and available in the case file for Expanded Initial Study PEN16-0163 and the Community Development Department – Planning Division or Public Works Department – Land Development Division.

Tentative Tract Map 37060 – Mitigation Monitoring and Reporting Program

Application PEN16-0050

Introduction

This Mitigation Monitoring and Reporting Program has been prepared for use in implementing mitigation for the Mitigated Negative Declaration (MND) for Tentative Tract Map 37060 (PEN16-0050). The program has been prepared in compliance with State law and the 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 regards, 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: Tentative Tract Map 37060 (PEN16-0050)

Applicant: MACJONES Holdings, Inc.

Date: October 26, 2017

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Biological Resources						
BR1. A 30-day burrowing owl preconstruction survey will be conducted immediately prior to the initiation of ground-disturbing construction to ensure protection for this species and compliance with the conservation goals as outlined in the MSHCP. The survey will be conducted in compliance with both MSHCP and CDFW guidelines (MSHCP 2006, CDFW 2012). A report of the findings prepared by a qualified biologist shall be submitted to the City of Moreno Valley prior to any permit or approval for ground disturbing activities. If burrowing owls are detected onsite during the 30-day preconstruction survey, during the breeding season (February 1st to August 31st) then construction activities shall be limited to beyond 300 feet of the active burrows until a qualified biologist has confirmed that nesting efforts are completed or not initiated. In addition to monitoring breeding activity, if construction is proposed to be initiated during the breeding season or active relocation is proposed, a burrowing owl mitigation plan will be developed based on the County of Riverside Environmental Programs Division, CDFW and USFWS requirements for the relocation of individuals to the Lake Mathews Preserve.	City of Moreno Valley Planning Division	Ongoing during grading plan check	Prior to Issuance of a grading permit	Review of and approval of pre-construction survey		Withhold Grading Permit
BR2. Construction outside the nesting season (between September 16th and January 31st does not require pre-removal nesting bird surveys. If construction is proposed between February 1st and September 15th, a qualified biologist must conduct a nesting bird survey(s) no more than fourteen (14) days prior to initiation of grading to document the presence or absence of nesting birds within or directly adjacent (100 feet) to the Project Site.	City of Moreno Valley Planning Division	Ongoing during grading plan check	Prior to Issuance of a grading permit	Review of and approval of pre-construction survey		Withhold Grading Permit

Attachment: Exhibit B to Resolution 2017-34 - MMRP (2836 : PEN16-0050 - Tentative Tract Map 37060 to

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Cultural Resources						
<p>CR-1: Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a professional archaeologist has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Monitoring Tribe(s), the Developer and the City, shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. Details in the Plan shall include:</p> <ul style="list-style-type: none"> a. Project grading and development scheduling; b. The Project archeologist and the Monitoring Tribes(s) shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent 	<p>City of Moreno Valley Land Development Division and Planning Division</p>	<p>Once prior to Grading and during grading and construction operations.</p>	<p>Prior to issuance of Grading Permit</p>	<p>Review of construction documents and on-site inspection</p>		<p>Withhold Grading Permit or Issuance of a Stop Work Order</p>

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Cultural Resources						
discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures						
<p>c. Until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Monitoring Tribe(s) shall make themselves available to provide the training on an as-needed basis.</p> <p>d. The coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project archaeologist, and the applicant;</p> <p>The protocols and stipulations that the Developer, City, Monitoring Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation</p>						

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Cultural Resources						
<p>CR-2: Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians tribal representatives (hereafter referred to as “Native American Tribal Representatives”) received a minimum of 30 days advance notice of all mass grading and trenching activities, and any monitoring agreements between the applicant and the Tribes as requested through the SB 18 process. Native American Tribal Representatives shall provide a copy of the signed agreement(s) prior to the issuance of a grading permit and the Tribal Representatives shall be notified of and allowed to attend the pre-grading meeting with the City and Project construction contractors and/or monitor all Project mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section</p>	<p>City of Moreno Valley Land Development Division and Planning Division</p>	<p>Once prior to Grading and during grading and construction operations.</p>	<p>Prior to issuance of Grading Permit</p>	<p>Review of construction documents and on-site inspection</p>		<p>Withhold Grading Permit or Issuance of a Stop Work Order</p>

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Cultural Resources						
21083.2. If the resource is significant, Mitigation Measure CR-3 shall apply.						
CR-3: A treatment plan shall be prepared by the Project Archaeologist and expeditiously reviewed by the interested Native American Tribal Representatives and the City Planning Division and implemented by the Project Archaeologist to protect the identified archaeological resource(s) from damage and destruction. If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be temporarily suspended 100 feet around the resource(s) until a treatment plan is implemented. The Project Archaeologist, interested Native American Tribal Representatives, and the City Planning Division shall confer regarding mitigation of the discovered resource(s).	Project Applicant / Landowner; Project Construction Contractor; Project Archaeologist	City of Moreno Valley Planning Division	During grading operations	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order
CR-4: In the event that Native American cultural resources are discovered during the course of grading, the following procedures shall be carried out for treatment and final disposition of the discoveries: a) The landowner(s) shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources. The artifacts shall be relinquished through one or more of the following methods and evidence of such shall be provided to the City of Moreno Valley Planning Department: i. Accommodate the process for	Landowner; Project Archaeologist	City of Moreno Valley Planning Division	In the event that Native American cultural resources are discovered during grading operations	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order

Attachment: Exhibit B to Resolution 2017-34 - MMRP (2836 : PEN16-0050 - Tentative Tract Map 37060 to

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Cultural Resources						
<p>Preservation-In-Place /Onsite reburial of the discovered items with the consulting Native American tribes or bands, as detailed in the treatment plan prepared by the Project Archaeologist under Mitigation Measure MM 4.5-3. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed;</p> <p>ii. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 CFR Part 79; therefore, the resources would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation;</p> <p>iii. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science</p>						

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Cultural Resources						
Center by default.						
<p>CR-5: Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:</p> <p>"If any suspected archaeological resources are discovered during ground-disturbing activities and the Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the Project Archaeologist and the Tribal Representatives to the site to assess the significance of the find."</p>	Project Applicant	City of Moreno Valley Planning Division	Prior to grading permit issuance.	Review of grading plans		Withhold Grading Permit or Issuance of a Stop Work Order
<p>CR-6: Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a qualified paleontologist has been retained by the Project Applicant to conduct monitoring of excavation activities and has the authority to halt and redirect earthmoving activities in the event that suspected paleontological resources are unearthed.</p>	Project Applicant; Project Paleontologist	City of Moreno Valley Planning Division	Prior to issuance of grading permit	Review of construction documents		Withhold Grading Permit or Issuance of a Stop Work Order
<p>CR-7: The paleontological monitor shall conduct full-time monitoring during grading and excavation operations in undisturbed, very old alluvial fan sediments and shall be equipped to salvage fossils if they are unearthed to avoid construction delays and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The paleontological monitor shall be</p>	Project Paleontologist	City of Moreno Valley Planning Division	On-going during construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order

Attachment: Exhibit B to Resolution 2017-34 - MMRP (2836 : PEN16-0050 - Tentative Tract Map 37060 to

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Cultural Resources						
empowered to temporarily halt or divert equipment to allow of removal of abundant and large specimens in a timely manner. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface, or if present, are determined upon exposure and examination by qualified paleontological personnel to have a low potential to contain or yield fossil resources.						
CR-8: Recovered specimens shall be properly prepared to a point of identification and permanent preservation, including screen washing sediments to recover small invertebrates and vertebrates, if necessary. Identification and curation of specimens into a professional, accredited public museum repository with a commitment to archival conservation and permanent retrievable storage, such as the Western Science Museum in Hemet, California, is required for significant discoveries.	Project Paleontologist	City of Moreno Valley Planning Division	Prior to grading permit final inspection.	Review of treatment plan referenced in CR-3.		Withhold Grading Permit or Issuance of a Stop Work Order
CR-9: A final monitoring and mitigation report of findings and significance shall be prepared, including lists of all fossils recovered, if any, and necessary maps and graphics to accurately record the original location of the specimens. The report shall be submitted to the City of Moreno Valley prior to building final.	Project Paleontologist	City of Moreno Valley Planning Division	Prior to building final.	Review of final report referenced in CR-9.		Withhold building final.
CR-10: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must	Project Applicant; Project Paleontologist	City of Moreno Valley Planning	Prior to and during grading.	Review of construction documents and on-site		Withhold Grading Permit or Issuance of a

Attachment: Exhibit B to Resolution 2017-34 - MMRP (2836 : PEN16-0050 - Tentative Tract Map 37060 to

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Cultural Resources						
<p>cease immediately and a qualified person (meeting the Secretary of the Interior's standards (36CFR61) Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the applicant to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all affected Native American Tribes before any further work commences in the affected area.</p> <p>If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant." The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).</p>		Division		inspection		Stop Work Order

Mitigation Measure No.	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/Initials	Sanctions for Non-Compliance
Noise						
<p>N-1: Construction activities shall be operated in a manner that limits noise impacts on surrounding uses (General Plan Policy 6.5.2). In order to limit noise impacts on surrounding property, the construction contractor will ensure the following:</p> <ul style="list-style-type: none"> • All construction equipment powered by gasoline or diesel engines will be required to have sound-control devices at least as effective as those originally provided by the manufacturer; no equipment will be permitted to have an unmuffled exhaust. • Mobile noise-generating equipment and machinery will be shut off when not in use; • Construction vehicles assessing the site will be required to use the shortest possible route to and from local freeways, provided the routes do not expose additional receptors to noise 	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading and during grading and construction operations.	Prior to issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order
<p>N-2: The staging of construction equipment and the construction trailer shall be placed as far as possible from the existing single-family residences located to the east and the school to the northeast.</p>	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading and during grading and construction operations.	Prior to issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order

PLANNING COMMISSION RESOLUTION NO. 2017-35

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY APPROVING TENTATIVE TRACT MAP 37060 (PEN16-0050) TO SUBDIVIDE APPROXIMATELY 10 ACRES OF RA-2 ZONED LAND INTO SIXTEEN RESIDENTIAL LOTS AND THREE LETTERED LOTS FOR WATER QUALITY TREATMENT FACILITIES, FOR PROPERTY LOCATED ON THE SOUTH SIDE OF COTTONWOOD AVENUE AT LAKEPORT DRIVE (ASSESSOR'S PACEL NUMBER 487-461-006).

WHEREAS, MACJONES Holdings, Inc., has filed an application for the approval of Tentative Tract Map 37060 (application PEN16-0050), a proposal to subdivide the 9.4 acres located within Assessor's Parcel Number 487-461-006 into sixteen RA-2 zoned lots as described in the title of this Resolution;

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, the City has 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. The Mitigated Negative Declaration represents the City's independent judgment and analysis; 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 6, 2017. Public notice was sent to all property owners of record within 300 feet of the project site on October 12, 2017. The public hearing notice for this project was also posted on the project site on October 16, 2016;

WHEREAS, on October 26, 2017, 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 of the City of Moreno Valley 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 October 26, 2017, including written and oral staff reports, and the record from the public hearing, this Planning Commission hereby specifically finds as follows:

1. That the proposed map is consistent with applicable general and specific plans and the zoning ordinance;

FACT: General Plan Objective 2.2 states that it is the intent of the City to provide a wide range of residential opportunities and dwelling types to meet the demands of present and future residents of all socioeconomic groups. The proposed project has a Residential land use designation that would allow for development of single family residences consistent with this objective.

The project site is located on the south side of Cottonwood Avenue at Lakeport Drive and is zoned RA-2. The project site is bounded by existing single-family tract homes in the R5 zone to the north on the north side of Cottonwood Avenue and immediately to the south. The properties to the east and west have been developed with homes on lots of at least 20,000 square feet in the RA-2 zone.

The project is designed in accordance with the provisions of Chapter 9.03 Residential Districts, Section 9.16.130 Design Guidelines and Section 9.14 Land Divisions of the City's Municipal Code. The project as designed and conditioned would comply with all applicable zoning and other regulations.

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. That the design or improvement of the proposed subdivision is consistent with applicable general and specific plans;

FACT: General Plan Objective 2.2 states that it is the intent of the City to provide a wide range of residential opportunities and dwelling types to meet the demands of present and future residents of all socioeconomic groups. The proposed project has a residential land use designation that would allow for development of single family residences consistent with this objective.

The project as designed is consistent with City General Plan Policy 2.2.7, which states that the primary purpose of areas designated

Residential 5 is to provide for single-family detached housing on standard sized suburban lots. The maximum allowable density under this designation is 5.0 dwelling units per acre. The project proposes a density of 1.7 dwelling units per acre which is consistent with the site's RA-2 zoning and does not exceed the density envisioned in the General Plan.

The subdivision as designed and conditioned is consistent with existing goals, objectives, policies and programs of the General Plan.

3. That the site is physically suitable for the type of development;

FACT: The project site is located on the south side of Cottonwood Avenue at Lakeport Drive and is zoned RA-2. The project site is square in shape with level topography with existing development at all four property lines. Overall, the project site is well suited for the proposed subdivision.

4. That the site of the proposed land division is physically suitable for the proposed density of the development;

FACT: The project site is square in shape and is comprised of level topography. The tentative tract map is designed in accordance with the provisions of the City's Municipal Code Section 9.14 Land Divisions. The project site is physically suitable for the proposed density of the development.

5. That the design of the subdivision or the proposed improvements are not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat;

FACT: The project site is bounded on all sides by existing single-family development. There are no existing trees, streambeds, drainage features or riparian vegetation on the project site. Based upon information from the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Full Report and review of the MSHCP Plan, there are no identified candidate, sensitive or special status species associated with the project site. An Initial Study and Mitigated Negative Declaration have been prepared for the project concluding that with the implementation of mitigation measures, project impacts are reduced to a less than significant impact. Therefore, the tentative tract map will not cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.

6. That the design of the subdivision or type of improvements is not likely to cause serious public health problems;

FACT: As conditioned, the proposed parcel map would not cause serious public health problems. The Eastern Municipal Water District will provide water and sewer services to the project site. There are no known hazardous conditions associated with the property, the design of the land division or the type of improvements.

The proposed tract map as designed and conditioned will not result in unacceptable levels of protection from natural and man-made hazards to life, health, and property and is therefore consistent with General Goal 9.6.1. The project site is located within approximately 1,900 feet of Fire Station #99 which is consistent with General Plan Goal 9.6.2 which requires emergency services that are adequate to meet minor emergency and major catastrophic situations.

The proposed tract map will not result in a development that would be inconsistent with General Plan Objective 6.1 to minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage due to seismic ground shaking and secondary effects or General Plan Objective 6.2 to minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage, and to minimize nuisances due to flooding.

The tract map has been designed consistently with the City's Municipal Code Section 9.14 Land Divisions and meets all City requirements related to subdividing a property.

7. That the design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision;

FACT: The tentative tract map has been designed to accommodate and not conflict with existing easements on the subject site including utility and storm drain easements.

8. That the proposed land division and the associated design and improvements are not consistent with applicable ordinances of the city.

FACT: The land division proposed by Tentative Tract Map 37060 is consistent with the City's Municipal Code Section 9.14 Land Divisions. The subdivision as designed and conditioned is consistent with applicable ordinances of the city.

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 PEN16-0050, 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.

BE IT FURTHER RESOLVED that the Planning Commission HEREBY APPROVES Resolution No. 2017-35 and thereby:

1. APPROVES Tentative Tract Map 37060 (application PEN16-0050) based on the findings contained in this resolution, and subject to the attached conditions of approval included as Exhibit A.

APPROVED AND ADOPTED this 26th day of October, 2017.

AYES:
NOES:
ABSTAIN:

Jeffrey Barnes
Chair, Planning Commission

ATTEST:

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

APPROVED AS TO FORM:

City Attorney

Exhibit A

Attachment: Resolution 2017-35 [Revision 1] (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16

Exhibit A

**CITY OF MORENO VALLEY
 CONDITIONS OF APPROVAL FOR PEN16-0050
 TENTATIVE TRACT MAP 37060
 ASSESSORS PARCEL NUMBER: 487-461-006**

Approval Date:
Expiration Date:

October 26, 2017
October 26, 2020

COMMUNITY DEVELOPMENT DEPARTMENT

Planning Division

For questions regarding any Planning condition of approval, please contact the Planning Division at (951) 413-3206.

- P1. Tentative Tract Map No. 37060 is approved to subdivide the 9.4 acres of Assessor's Parcel Number 487-461-006 into sixteen lots for development purposes and three lettered lots for water quality treatment facilities in the RA-2 zone.
- P2. This approval shall comply with all applicable requirements of the City of Moreno Valley Municipal Code.
- P3. This tentative map shall expire three years after the approval date of this tentative map unless extended as provided by the City of Moreno Valley Municipal Code; otherwise it shall become null and void and of no effect whatsoever in the event the applicant or any successor in interest fails to properly file a final map before the date of expiration. (MC 9.02.230, 9.14.050, 080)
- P4. The site shall be developed in accordance with the approved tentative map on file in the Community Development Department -Planning Division, the Municipal Code regulations, General Plan, 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)

Timing Mechanisms for Conditions (see abbreviation at beginning of affected condition):

R - Map Recordation	GP - Grading Permits	CO - Certificate of Occupancy or building final
WP - Water Improvement Plans	BP - Building Permits	P - Any permit

Governing Document (see abbreviation at the end of the affected condition):

GP - General Plan	MC - Municipal Code	CEQA - California Environmental Quality Act
Ord - Ordinance	DG - Design Guidelines	Ldscp - Landscape Development Guidelines and Specs
Res - Resolution	UFC - Uniform Fire Code	UBC - Uniform Building Code
	SBM - Subdivision Map Act	

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- P6. All landscaped areas shall be maintained in a healthy and thriving condition, free from weeds, trash and debris. (MC 9.02.030)
- P7. All site plans, grading plans, landscape and irrigation plans, and street improvement plans shall be coordinated for consistency with this approval.

Prior to Map Recordation

- P8. (R) Prior to final map recordation, subdivision phasing (including any proposed common open space or improvement phasing, if applicable), shall be subject to Planning Division approval. Any proposed phasing shall provide for adequate vehicular access to all lots in each phase as determined by the City Transportation Engineer or designee and shall substantially conform to all intent and purpose of the subdivision approval. (MC 9.14.080)
- P9. (R) Prior to recordation of the final subdivision map, the developer shall submit for review and approval the following documents to the Planning Division which shall demonstrate that the project will be developed and maintained in accordance with the intent and purpose of the approval:
- a. The document to convey title
 - b. Deed restrictions, easements, or Covenants, Conditions and Restrictions to be recorded

The approved documents shall be recorded at the same time that the subdivision map is recorded. The documents shall contain provisions for maintenance of the water quality treatment BMP's. The approved documents shall also contain a provision, which provides that they may not be terminated and/or substantially amended without the consent of the City and the developer's successor-in-interest. (MC 9.14.090)

- P9. (R) Prior to final map recordation, the water quality basin shall be labeled as a lettered lot.

Prior to Grading Permit Issuance

- P10. (GP) Prior to issuance of grading permits, the developer shall pay the applicable Stephen's' Kangaroo Rat (SKR) Habitat Conservation Plan mitigation fee. (Ord)
- P11. (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)

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- P12. (GP) Prior to the issuance of grading permits, the following burrowing owl survey requirements shall be incorporated into the grading plans in accordance with the Riverside County Multi-species Habitat Conservation Plan: Within 30 days of and prior to disturbance, a burrowing owl survey shall be conducted by a qualified biologist using accepted protocols. The survey shall be submitted to the Planning Division for review and approval.
- P13. (GP) Prior to the issuance of grading permits, mitigation measures contained in the Mitigation Monitoring Program approved with this project 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 or tentative map approval. No City permit or approval shall be issued until such fee is paid. (CEQA)
- P14. (GP) Prior to issuance of grading permits, the developer shall submit wall/fence plans to the Planning Division for review and approval for a six (6) foot high solid decorative block wall with pilasters for the following lots:
- All reverse frontage lots (including lots 1, 2, 3 and 16)
 - All corner lots with street side yards; and
 - Lots 1, 12 and 13 which include water quality basin might be screened by solid decorative block walls with pilasters or a combination of solid walls and tubular steel fence with pilasters.
- Any property line walls combined with a retaining wall shall not exceed maximum height for walls as stated in the City's Municipal Code. (MC 9.08.070)
- P16. (GP) Prior to issuance of precise grading permits, landscape and irrigation plans for typical front and street side yards, street trees, private slopes and the water quality basins shall be submitted to the Planning Division for review. The plans shall be prepared in accordance with the City's Municipal Code and landscape specifications.
- P17. (GP) Prior to issuance of grading permits, the developer shall submit wall/fence plans to Planning for review and approval for all retaining walls and all required street side yard and property line walls. (MC 9.08.070)
- P18. (GP) Prior to issuance of precise grading permits, homes on all knuckle lots and cul-de-sac lots within the project shall be sited to provide space for off-street parking of at least three cars in addition to required garage parking.

Prior to Building Permit Issuance

- P19. (BP) Prior to issuance of building permits, all trash, debris, refuse, etc. shall be removed from the project site in a manner consistent with local, state and federal standards.

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- P20. (BP) Prior to issuance of building permits, final landscape and irrigation plans for final typical front and street side yards, street trees, private slopes and the water quality basins shall be approved.
- P21. (BP) Prior to issuance of building permits, fence/wall plans shall be approved.
- P22. (BP) Prior to issuance of building permits, the developer or developer's successor-in-interest shall pay all applicable fees, including but not limited to Development Impact Fees (DIF), Transportation Uniform Mitigation Fees (TUMF), Multiple Species Habitat Conservation Plan (MSHCP) fees, and park in-lieu fees. (Ord)
- P23. (BP) Enhanced window and door treatments shall be required on all elevations for all homes within this tract map.

Prior to Building Final

- P24. (CO) Prior to the issuance of Certificates of Occupancy or building final, landscape and irrigation for all cut or fill slopes over 3 feet high shall be installed. Landscaping on lots not yet having dwelling units shall be maintained by the developer weed and disease free. (MC 9.03.040)
- P25. (CO) Prior to issuance of Certificates of Occupancy or building final, required landscaping and irrigation, including street trees, shall be installed. (MC 9.03.040)
- P26. (CO) Prior to the issuance of Certificates of Occupancy or building final, all required and proposed fences and walls shall be constructed per the approved plans on file in Planning. (MC 9.080.070, Ldscp)
- P27. If the proposed project requires blasting, it shall be used only as a last resort for land forming. In such cases, it shall be approved by the Fire Marshall, and the developer shall comply with the current City ordinance governing blasting. (Ord)

MITIGATION MEASURES

Noise

- P28. N-1: Construction activities shall be operated in a manner that limits noise impacts on surrounding uses (General Plan Policy 6.5.2). In order to limit noise impacts on surrounding property, the construction contractor will ensure the following:
- All construction equipment powered by gasoline or diesel engines will be required to have sound-control devices at least as effective as those originally provided by the manufacturer; no equipment will be permitted to have an unmuffled exhaust.

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- Mobile noise-generating equipment and machinery will be shut off when not in use;
- Construction vehicles assessing the site will be required to use the shortest possible route to and from local freeways, provided the routes do not expose additional receptors to noise.

P29. N-2: The staging of construction equipment and the construction trailer shall be placed as far as possible from the existing single-family residences located to the east and the school to the northeast.

Biological

P30. BR1. A 30-day burrowing owl preconstruction survey will be conducted immediately prior to the initiation of ground-disturbing construction to ensure protection for this species and compliance with the conservation goals as outlined in the MSHCP. The survey will be conducted in compliance with both MSHCP and CDFW guidelines (MSHCP 2006, CDFW 2012). A report of the findings prepared by a qualified biologist shall be submitted to the City of Moreno Valley prior to any permit or approval for ground disturbing activities.

If burrowing owls are detected onsite during the 30-day preconstruction survey, during the breeding season (February 1st to August 31st) then construction activities shall be limited to beyond 300 feet of the active burrows until a qualified biologist has confirmed that nesting efforts are completed or not initiated. In addition to monitoring breeding activity, if construction is proposed to be initiated during the breeding season or active relocation is proposed, a burrowing owl mitigation plan will be developed based on the County of Riverside Environmental Programs Division, CDFW and USFWS requirements for the relocation of individuals to the Lake Mathews Preserve.

P30. BR2. Construction outside the nesting season (between September 16th and January 31st) does not require pre-removal nesting bird surveys. If construction is proposed between February 1st and September 15th, a qualified biologist must conduct a nesting bird survey(s) no more than fourteen (14) days prior to initiation of grading to document the presence or absence of nesting birds within or directly adjacent (100 feet) to the Project Site.

Cultural Resources

P31. CR-1: Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a professional archaeologist has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Monitoring Tribe(s), the Developer and the

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City, shall develop a Cultural Resources Monitoring Plan (CRMP) to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. Details in the Plan shall include:

- a. Project grading and development scheduling;
 - b. The Project archeologist and the Monitoring Tribes(s) shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Monitoring Tribe(s) shall make themselves available to provide the training on an as-needed basis.
 - c. The coordination of a monitoring schedule as agreed upon by the Monitoring Tribe(s), the Project archaeologist, and the applicant;
 - d. The protocols and stipulations that the Developer, City, Monitoring Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.
- P32. CR-2: Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians tribal representatives (hereafter referred to as "Native American Tribal Representatives") received a minimum of 30 days advance notice of all mass grading and trenching activities, and any monitoring agreements between the applicant and the Tribes as requested through the AB 52 process. Native American Tribal Representatives shall provide a copy of the signed agreement(s) prior to the issuance of a grading permit and the Tribal Representatives shall be notified of and allowed to attend the pre-grading meeting with the City and Project construction contractors and/or monitor all Project mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall

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evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2. If the resource is significant, Mitigation Measure CR-3 shall apply.

- P33. CR-3: A treatment plan shall be prepared by the Project Archaeologist and expeditiously reviewed by the interested Native American Tribal Representatives and the City Planning Division and implemented by the Project Archaeologist to protect the identified archaeological resource(s) from damage and destruction. If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be temporarily suspended 100 feet around the resource(s) until a treatment plan is implemented. The Project Archaeologist, interested Native American Tribal Representatives, and the City Planning Division shall confer regarding mitigation of the discovered resource(s).
- P34. CR-4: In the event that Native American cultural resources are discovered during the course of grading, the following procedures shall be carried out for treatment and final disposition of the discoveries:
- a) The landowner(s) shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources. The artifacts shall be relinquished through one or more of the following methods and evidence of such shall be provided to the City of Moreno Valley Planning Department:
- i. Accommodate the process for Preservation-In-Place /Onsite reburial of the discovered items with the consulting Native American tribes or bands, as detailed in the treatment plan prepared by the Project Archaeologist under Mitigation Measure CR-3. This shall include measures and provisions to protect the future reburial area from any future impacts. Reburial shall not occur until all cataloguing and basic recordation have been completed;
 - ii. A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per 36 CFR Part 79; therefore, the resources would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation;
 - iii. For purposes of conflict resolution, if more than one Native American tribe or band is involved with the project and cannot come to an agreement as to the disposition of cultural materials, they shall be curated at the Western Science Center by default.
- P35. CR-5: Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

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"If any suspected archaeological resources are discovered during ground-disturbing activities and the Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the Project Archaeologist and the Tribal Representatives to the site to assess the significance of the find."

- P36. CR-6: Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a qualified paleontologist has been retained by the Project Applicant to conduct monitoring of excavation activities and has the authority to halt and redirect earthmoving activities in the event that suspected paleontological resources are unearthed.
- P37. CR-7: The paleontological monitor shall conduct full-time monitoring during grading and excavation operations in undisturbed, very old alluvial fan sediments and shall be equipped to salvage fossils if they are unearthed to avoid construction delays and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The paleontological monitor shall be empowered to temporarily halt or divert equipment to allow of removal of abundant and large specimens in a timely manner. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface, or if present, are determined upon exposure and examination by qualified paleontological personnel to have a low potential to contain or yield fossil resources.
- P38. CR-8: Recovered specimens shall be properly prepared to a point of identification and permanent preservation, including screen washing sediments to recover small invertebrates and vertebrates, if necessary. Identification and curation of specimens into a professional, accredited public museum repository with a commitment to archival conservation and permanent retrievable storage, such as the Western Science Museum in Hemet, California, is required for significant discoveries.
- P39. CR-9: A final monitoring and mitigation report of findings and significance shall be prepared, including lists of all fossils recovered, if any, and necessary maps and graphics to accurately record the original location of the specimens. The report shall be submitted to the City of Moreno Valley prior to building final.

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- P40. CR-10: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person (meeting the Secretary of the Interior's standards (36CFR61) Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the applicant to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all affected Native American Tribes before any further work commences in the affected area.
- P41. Prior to the start of any construction, temporary security fencing shall be erected. The fencing shall be a minimum of six (6) feet high with locking, gated access and shall remain through the duration of construction. Security shall remain in place until the project is completed or the above conditions no longer exist. (Security fencing is required if there is: construction, unsecured structures, unenclosed storage of materials and/or equipment, and/or the condition of the site constitutes a public hazard).

Building and Safety Division

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.

- B1. 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 2016 CBC.
- B2. Prior to building plan 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.
- B3. 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.
- B4. Building plans submitted shall be signed and sealed by a California licensed design professional as required by the State Business and Professions Code.

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- B5. 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.
- B6. 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.
- B7. 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.
- B8. 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)
- B9. Any construction within the city shall only be as follows: Monday through Friday (except for holidays) seven a.m. to seven p.m.; Saturday from 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).
- B10. Contact the Building Safety Division for permit application submittal requirements.

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.

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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. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire sprinkler system based on square footage and type of construction, occupancy or use. Fire sprinkler plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9, MVMC 8.36.100[D])
- F2. Prior to issuance of Certificate of Occupancy or Building Final, 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 to approaching emergency vehicles. The numbers shall be located consistently on each dwelling throughout the development. The numerals shall be no less than four (4) inches in height and shall be low voltage lighted fixtures. (CFC 505.1, MVMC 8.36.060[I])
- F3. Single Family Dwellings. Schedule "A" fire prevention approved standard fire hydrants (6" x 4" x 2 ½") shall be provided. Hydrants shall be spaced no more than 500 feet apart in any direction so that no point on the street is more than 250 feet from a hydrant. Minimum fire flow shall be 1000 GPM for 1 hour duration of 20 PSI. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, serving one and two-family residential developments, standard fire hydrants shall be provided at spacing not to exceed 1000 feet along the tract boundary for transportation hazards. (CFC 507.3, Appendix B, MVMC 8.36.060).
- F4. Prior to issuance of the building permit for development, independent paved access to the nearest paved road, maintained by the City shall be designed and constructed by the developer within the public right of way in accordance with City Standards. (MVMC 8.36.060, CFC 501.4)
- F5. Prior to building construction, dead end roadways and streets which have not been completed shall have a turnaround capable of accommodating fire apparatus. (CFC 503.2.5)
- F6. 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)

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- F7. 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)
- F8. 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 than the thirteen (13) feet six (6) inches. (CFC 503.2.1 and MVMC 8.36.060[E])
- F9. All Fire Department access roads or driveways shall not exceed 12 percent grade. (CFC 503.2.7 and MVMC 8.36.060[G])
- F10. The angle of approach and departure for any means of Fire Department access shall not exceed 1 ft drop in 20 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)
- F11. Fire Department access driveways over 150 feet in length shall have a turn-around as determined by the Fire Prevention Bureau capable of accommodating fire apparatus. (CFC 503 and MVMC 8.36.060, CFC 501.4)
- F12. 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 MVL 440A-0 through MVL 440C-0)
- F13. 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.
- F14. The Fire Code Official is authorized to enforce the fire safety during construction requirements of Chapter 33. (CFC Chapter 33 & CBC Chapter 33)
- F15. Prior to construction, all traffic calming designs/devices must be approved by the Fire Marshal and City Engineer.

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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 Public Works Department – Land Development Division.

- LD1. A digital (pdf) copy of all approved improvement plans shall be submitted to the Land Development Division.
- LD2. All applicable inspection fees shall be paid.
- LD3. 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)]
- LD4. 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.
- LD5. 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]
- LD6. 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.

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- LD7. 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.
- LD8. 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. 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]
- LD10. 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.
- LD11. The developer shall protect downstream properties from damage caused by alteration of drainage patterns (i.e. concentration or diversion of flow, etc).

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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]

- LD12. For single family residential subdivisions, all lots shall drain toward the street unless otherwise approved by the City Engineer. Residential lot drainage to the street shall be by side yard swales, and must be directed to a driveway or drainage devices located outside the right-of-way in accordance with City Standard MVS1-154-0. No cross-lot or over the sidewalk drainage shall be allowed.
- LD13. The tentative map, master plot plan, plot plan, or conditional use permit 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)]
- LD14. Water quality best management practices (BMPs) designed to meet Water Quality Management Plan (WQMP) requirements for single-family residential development shall not be used as a construction BMP. Water quality BMPs shall be maintained for the entire duration of the project construction and be used to treat runoff from those developed portions of the project. Water quality BMPs shall be protected from upstream construction related runoff by having proper best management practices in place and maintained. Water quality BMPs shall be graded per the approved design plans and once landscaping and irrigation has been installed, it and its maintenance shall be turned over to an established Homeowner's Association (HOA). The Homeowner's Association shall enter into an agreement with the City for basin maintenance.
- LD15. A copy of the Covenants, Conditions and Restrictions (CC&Rs) shall be submitted for review and approved by the City Engineer. The CC&Rs shall include, but not be limited to, access easements, reciprocal access, private and/or public utility easements as may be relevant to the project. In addition, for single-family residential development, bylaws and articles of incorporation shall also be included as part of the maintenance agreement for any water quality BMPs.
- LD16. After recordation, a digital (pdf) copy of the recorded map shall be submitted to the Land Development Division.
- LD17. Final maps (prepared by a registered civil engineer and/or licensed surveyor) shall be submitted for review and approved by the City Engineer per the current submittal requirements.
- LD18. 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:

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- a. Establish a Home Owners Association (HOA) to finance the maintenance of the “Water Quality BMPs”. Any lots which are identified as “Water Quality BMPs” shall be owned in fee by the HOA.
- b. Dedicate a maintenance easement to the City of Moreno Valley.
- c. Execute a maintenance agreement between the City of Moreno Valley and the HOA, which shall be approved by City Council.
- d. Establish a trust fund per the terms of the maintenance agreement.
- e. Provide a certificate of insurance per the terms of the maintenance agreement.
- f. 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 Residential NPDES Regulatory Rate Schedule and pay all associated costs with the ballot process, or
 - ii. Establish an endowment to cover future maintenance costs for the Residential NPDES Regulatory Rate Schedule.
- g. Notify the Special Districts Division of the intent to record the final map 90 days prior to City Council action authorizing recordation of the final map and the financial option selected. The final option selected shall be in place prior to the issuance of certificate of occupancy. [California Government Code & Municipal Code]

LD19. The developer shall guarantee the completion of all related improvements required for this project by executing a Public Improvement Agreement (PIA) with the City and posting the required security. [MC 9.14.220]

LD20. All public improvement plans required for this project shall be approved by the City Engineer in order to execute the Public Improvement Agreement (PIA).

LD21. All street dedications shall be free of all 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.

LD22. All proposed street names shall be submitted for review and approved by the City Engineer, if applicable. [MC 9.14.090(E.2.k)]

Prior to Grading Plan Approval

LD23. 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

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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.

LD24. 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.

LD25. 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.

LD26. 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.

LD27. The developer shall pay all remaining plan check fees.

LD28. 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.

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LD29. 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.

LD30. Landscape & Irrigation plans (prepared by a registered/licensed civil engineer) for water quality BMPs shall be submitted for review and approved by the City Engineer per the current submittal requirements, if applicable.

Prior to Grading Permit

LD31. 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)]

LD32. A digital (pdf) copy of all approved grading plans shall be submitted to the Land Development Division.

LD33. 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)]

LD34. 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]

LD35. The developer shall pay all applicable inspection fees.

Prior to Improvement Plan Approval

LD36. 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 otherwise approved by the City Engineer.

LD37. The developer shall submit clearances from all applicable agencies, and pay all applicable plan check fees.

LD38. The street improvement plans shall comply with current City policies, plans and applicable City standards (i.e. MVS1-160 series, etc.) throughout this project.

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- LD39. 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.
- LD40. 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.
- LD41. 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]
- LD42. 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.
- LD43. 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.
- LD44. 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.

Prior to Building Permit

- LD45. 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.
- LD46. For all subdivision projects, the map shall be recorded (excluding model homes). [MC 9.14.190]

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- LD47. Residential subdivision projects are subject to the following requirements 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:
- a. Establish a Home Owners Association (HOA) to finance the maintenance of the “Water Quality BMPs”. Any lots which are identified as “Water Quality BMPs” shall be owned in fee by the HOA.
 - b. Dedicate a maintenance easement to the City of Moreno Valley.
 - c. Execute a maintenance agreement between the City of Moreno Valley and the HOA, which shall be approved by City Council.
 - d. Establish a trust fund per the terms of the maintenance agreement.
 - e. Provide a certificate of insurance per the terms of the maintenance agreement.
 - f. 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 Residential NPDES Regulatory Rate Schedule and pay all associated costs with the ballot process, or
 - ii. Establish an endowment to cover future maintenance costs for the Residential NPDES Regulatory Rate Schedule.
 - g. Notify the Special Districts Division of the intent to obtain a building permit 90 days prior to the City’s issuance of a building permit and the financial option selected. [California Government Code & Municipal Code]
- LD48. Certification to the line, grade, flow test and system invert elevations for the water quality control BMPs shall be submitted for review and approved by the City Engineer (excluding models homes).
- LD49. All outstanding fees shall be paid.
- LD50. 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.
- LD51. The engineered final/precise grade certification shall be submitted for review and approved by the City Engineer.
- LD52. 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,

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- 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.
- LD53. For residential subdivisions, prior to releasing the last 20% or last 5 permitted structures (whichever is greater, unless otherwise determined by the City Engineer) of any Map Phase, punch list work for improvements and capping of streets in that phase shall be completed and approved for acceptance by the City Engineer.
- LD54. 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.
- LD55. 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 drawing if necessary.
 - f. Provide City with updated Engineer's Line and Grade Certification.
 - g. Obtain approval and complete installation of the irrigation and landscaping.
- LD56. All proposed LID BMPs shall be designed in accordance with the Riverside County LID BMP Design Handbook, and modified as detailed in the approved P-

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WQMP. This includes, but is not limited to gravel layers and sizing, underdrain locations, clean out locations, soil media mix, filter strips, etc. Additionally, drainage of the bioretention systems must be demonstrated and documented to occur within 72 hours.

- LD57. The first submittal of the Final WQMP shall include a landscape plan detailing all planting and tree types located adjacent to and within all proposed surface LID BMPs. It shall also include a copy of the site's utility plan to verify that no proposed utilities or light structures will be located within or conflict with any proposed LID BMP, if applicable
- LD58. The F-WQMP shall be consistent with the approved P-WQMP and in full conformance with the document: "Water Quality Management Plan, A Guidance Document for the Santa Ana Region of Riverside County," with an approval date of October 22, 2012 (WQMP Guidance). At a minimum, the F-WQMP shall include the following: LID principles; Harvest and Use BMPs (as applicable); Source control BMPs; LID BMPs; Operation and Maintenance requirements for BMPs; and sources of funding for BMP implementation. The Applicant has proposed to incorporate the use of Bioretention facilities modified for infiltration and an infiltration trench. 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, subject to "effective area" requirements.
- LD59. Street grades shall be a minimum of 0.65% or as approved by City Engineer.

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PUBLIC WORKS DEPARTMENT

Transportation Engineering Division

Based on the information contained in our standard review process we recommend the following conditions of approval be placed on this project:

- TE1. Cottonwood Avenue is classified as a Minor Arterial (88'RW/64'CC) per City Standard Plan No. MVSI-105A-0. Any modifications or improvements undertaken by this project shall be consistent with the City's standards for this.
- TE2. Erin Drive is classified as a Local Street (56'RW/36'CC) per City Standard Plan No. MVSI-107A-0. Any modifications or improvements undertaken by this project shall be consistent with the City's standards for this facility.
- TE3. Sight distance at driveways and on streets shall conform to City Standard Plan No. MVSI-164A-0, MVSI-164B-0, MVSI-164C-0 at the time of preparation of final grading, landscape, and street improvements.
- TE4. All driveways shall conform to Section 9.11.080, and Table 9.11.080-14 of the City's Development Code - Design Guidelines and City Standard Plan No. MVSI-111A-0 for residential driveway approach.
- TE5. Prior to the final approval of the street improvement plans, a signing and striping plan shall be prepared per City of Moreno Valley Standard Plans - Section 4.
- TE6. Prior to the sign-off of final inspection of the street improvements, all approved signing and striping shall be installed per current City Standards and the approved plans.
- TE7. Prior to the commencement of construction activity, construction traffic control plans prepared by a Registered Civil or Traffic engineer may be required for plan approval or as required by the City Traffic Engineer.

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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 PEN16-0050; 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 Plans for parkway 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-3 In the event the City of Moreno Valley determines that funds authorized by any Proposition 218 mail ballot proceeding are insufficient to meet the costs for parkway maintenance and utility charges, the City shall have the right, at its option, to terminate the grant of any or all parkway maintenance easements. This power of termination, should it be exercised, shall be exercised in the manner provided by law to quit claim and abandon the property so conveyed to the District, and to revert to the Developer or the Developer's successors in interest, all rights, title, and interest in said parkway areas, including but not limited to responsibility for perpetual maintenance of said areas.
- SD-4 The Developer, or the Developer's successors or assignees shall be responsible for all parkway 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

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Works Department Landscape Design Guidelines, or until such time as the District accepts maintenance responsibilities.

- SD-5 Plan check fees for review of parkway 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-6 Inspection fees for the monitoring of landscape installation associated with the City of Moreno Valley maintained parkways are due prior to the required pre-construction meeting. (MC 3.32.040)
- SD-7 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 Recordation of Final Map

- SD-8 (R) This project has been conditioned to provide a funding source for the continued maintenance, enhancement, and/or retrofit of parks, open spaces, linear parks, and/or trail 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 of 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 of its selected financial option prior to City Council action authorizing recordation of the final map for the development. A minimum of 90 days is needed to complete the special election process. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution for conducting a special election.

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 building permit for this project.

- SD-9 (R) This project has been identified to be included in the formation of a Community Facilities District for Public Safety services including but not limited

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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 that may already be established. The Developer must notify the Special Districts Division at 951.413.3480 or specialdistricts@moval.org of its intent to record the final map for the development 90 days prior to City Council action authorizing recordation of the map. 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-10 (R) 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 parkway landscaping on Cottonwood Ave.

The Developer's responsibility is to provide a funding source for the capital improvements and the continued maintenance of the landscaped area. 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 or Home Owner's Association, 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 prior to City Council action authorizing recordation of the final map for the development. 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 for conducting a special election.

The financial option selected shall be in place prior to the issuance of the first building permit for this project.

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- SD-11 (R) This project is conditioned 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 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 of its selected financial option prior to City Council action authorizing recordation of the final map for the development. A minimum of 90 days is needed to complete the special election process. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution for conducting a special election.

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

- SD-12 *Residential* (R) 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, storm water utilities services for the required continuous operation, maintenance, monitoring, systems evaluation and enhancements of on-site facilities and performing annual inspections of the affected areas to ensure compliance with state mandated storm water 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 (see Land Development's related condition). Participating in a special election the process requires a 90 day period prior to City Council action authorizing recordation of the final map for the development and to participate in a special election process. 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-13 (R) Easements for reverse frontage parkway landscape areas abutting Cottonwood Ave. shall be 6ft or to top of parkway facing slope or to face of perimeter tract wall, whichever is greater. Easements shall be dedicated to the

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City of Moreno Valley for landscape maintenance purposes, and shall be depicted on the final map, and an offer of their dedication made thereon.

Prior to Building Permit Issuance

- SD-14 (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-15 (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-16 (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 parkway landscape/irrigation plans as designated on the tentative map or in these Conditions of Approval prior to the issuance of the first Building Permit.
- SD-17 (BP) Parkway 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 25% (or 4) of the

**CONDITIONS OF APPROVAL
PEN16-0050
TENTATIVE TRACT MAP 37060
PAGE 29 OF 31**

dwelling permits for this tract or 12 months from the issuance of the first dwelling permit, whichever comes first. In cases where a phasing plan is submitted, the actual percentage of dwelling permits issued prior to the completion of the landscaping shall be subject to the review of the construction phasing plan.

Prior to Certificate of Occupancy

SD-18 (CO) Landscape and irrigation plans for parkway landscape 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.

FINANCE AND MANAGEMENT SERVICES DEPARTMENT

Moreno Valley Utility

Acknowledgement of Conditions

The following items are Moreno Valley Utility's Conditions of Approval for project PEN16-00509; 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

**CONDITIONS OF APPROVAL
PEN16-0050
TENTATIVE TRACT MAP 37060
PAGE 30 OF 31**

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.

**CONDITIONS OF APPROVAL
PEN16-0050
TENTATIVE TRACT MAP 37060
PAGE 31 OF 31**

PARKS & COMMUNITY SERVICES

GENERAL CONDITIONS:

- PCS1. 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.
- PCS2. 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.
- PCS3. This project is subject to current Development Impact Fees, at time of building permit issuance.
- PCS4. This project is subject to current Quimby Fees, at time of building permit issuance.

PREPARED FOR:

MACJONES HOLDINGS, LLC
2 GONDOLIERS BLUFF
NEWPORT COAST, CA 92657
PHONE: (949) 244-1363

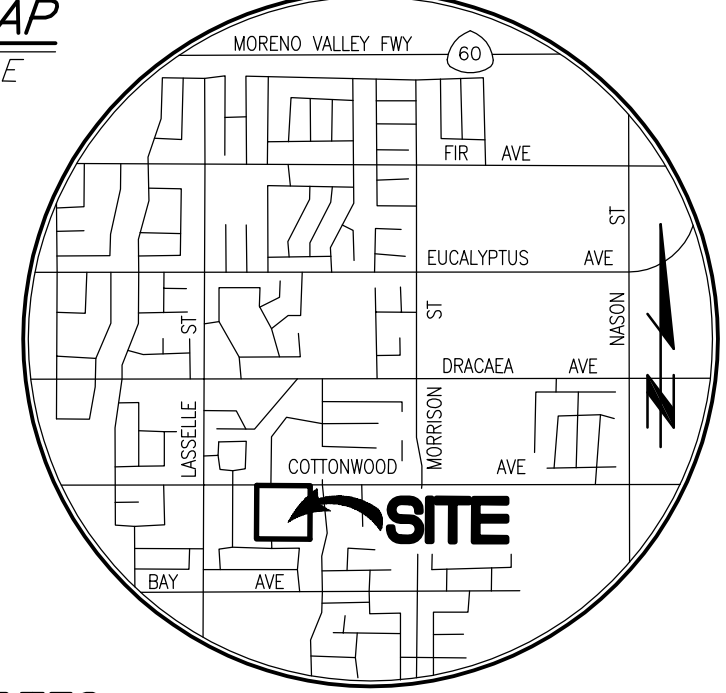
OWNER:

MACJONES HOLDINGS, LLC
2 GONDOLIERS BLUFF
NEWPORT COAST, CA 92657
PHONE: (949) 244-1363

TENTATIVE TRACT NO. 37060

ASSESSORS PARCEL NUMBER: 487-461-006
REAL PROPERTY IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA
"COTTONWOOD RESIDENTIAL SUBDIVISION"

VICINITY MAP
NOT TO SCALE



LINE TABLE

LINE #	BEARING	LENGTH	LINE #	BEARING	LENGTH
L1	N 46°56'19" W	33.97'	L23	N 0°42'24" W	26.49'
L2	N 47°49'20" E	33.97'	L24	N 0°42'24" W	73.51'
L3	N 47°49'20" E	27.69'	L25	S 89°33'27" E	52.98'
L4	N 0°26'33" E	75.00'	L26	S 0°26'33" W	73.50'
L5	N 0°26'33" E	91.70'	L27	N 1°35'07" E	35.01'
L6	N 44°33'27" W	35.36'	L28	N 89°33'27" W	50.70'
L7	S 44°33'27" E	17.61'	L29	S 0°26'33" W	35.00'
L8	S 44°33'27" E	17.74'	L30	S 0°25'54" W	40.00'
L9	S 74°07'52" W	50.00'	L31	N 0°25'54" E	44.00'
L10	S 73°14'46" E	50.00'	L32	S 40°23'59" E	43.46'
L11	N 44°54'40" E	35.68'	L33	N 37°06'39" E	53.21'
L12	S 14°40'00" E	21.65'	L34	N 40°21'01" E	58.37'
L13	S 14°40'00" E	21.65'	L35	N 15°52'08" W	48.00'
L14	S 14°40'00" E	21.65'	L36	N 30°41'59" E	48.00'
L15	S 0°26'22" W	24.30'	L37	N 89°37'02" W	48.00'
L16	N 0°27'37" E	9.27'	L38	S 29°55'59" E	48.00'
L17	N 44°47'21" W	35.21'	L39	S 16°45'14" W	48.00'
L18	S 74°07'52" W	50.00'	L40	N 15°52'08" W	48.00'
L19	S 73°14'46" E	50.00'	L41	N 30°54'02" E	48.00'
L20	N 89°33'27" W	3.62'	L42	N 89°24'48" W	48.00'
L21	N 45°26'27" E	35.35'	L43	N 29°43'47" W	48.00'
L22	N 0°42'24" W	100.01'	L44	S 16°45'14" W	48.00'

CURVE TABLE

CURVE #	DELTA	RADIUS	LENGTH
C1	16°18'41"	100.00'	28.47'
C2	46°34'07"	48.00'	39.01'
C3	59°40'59"	48.00'	50.00'
C4	59°41'03"	48.00'	50.00'
C5	46°41'13"	48.00'	39.11'
C6	16°18'41"	100.00'	28.47'
C7	14°02'46"	272.00'	66.68'
C8	15°06'33"	300.00'	79.11'
C9	15°06'33"	328.00'	86.49'
C10	15°06'21"	328.00'	86.48'
C11	1°27'24"	328.00'	8.34'
C12	13°38'57"	328.00'	78.14'
C13	15°06'21"	300.00'	79.09'
C14	15°06'21"	272.00'	71.71'
C15	4°47'35"	272.00'	22.75'
C16	10°18'46"	272.00'	48.96'
C17	16°18'41"	100.00'	28.47'
C18	46°46'10"	48.00'	39.18'
C19	59°41'10"	48.00'	50.00'
C20	59°41'01"	48.00'	50.00'
C21	46°29'01"	48.00'	38.94'
C22	16°18'41"	100.00'	28.47'

UTILITY PUREYORS:

CABLE:
TIME WARNER COMM. - ONTARIO
3281 GUASTI ROAD, STE. 350
ONTARIO, CA 91761
909-929-9412

SEWER:
EASTERN MUNICIPAL WATER DISTRICT
2270 TRUMBLE ROAD,
PERRIS, CA 92585
951-928-6111

GAS:
SOUTHERN CALIFORNIA GAS
COMPANY-REDLANDS
1981 W. LUGONIA AV. PO. BOX 3003
REDLANDS, CA 92374
(800) 427-2200

TELEPHONE:
VERIZON - HEMET
150 S. JUANITA ST.
HEMET, CA 92343
951-929-9412

ELECTRICAL:
MORENO VALLEY UTILITY
14331 FREDERICK STREET, SUITE 2
MORENO VALLEY, CA 92552-0805

WATER:
EASTERN MUNICIPAL WATER DISTRICT
2270 TRUMBLE ROAD,
PERRIS, CA 92585
951-928-6111

SURVEYOR'S NOTES:

- TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN: MACJONES HOLDINGS, LLC, AN ARIZONA LIMITED LIABILITY COMPANY
- PROJECT ADDRESSES: COTTONWOOD AVENUE AT LAKEPORT DRIVE MORENO VALLEY, CALIFORNIA
- ASSESSOR'S PARCEL NUMBER: 487-461-006
- PARCEL AREAS: SEE AREA SUMMARY
- ZONING INFORMATION: (THE FOLLOWING ZONE DESIGNATIONS ARE PER CITY OF MORENO VALLEY DEPARTMENT OF ENGINEERING / MAPS) GENERAL PLAN DESIGNATION: RA2-RESIDENTIAL AGRICULTURAL 2 ZONE DESIGNATION: RESIDENTIAL AGRICULTURAL 2 DU/AC
- FLOOD ZONE INFORMATION: THE PROPERTY INDICATED HEREON IS SITUATED WITHIN THE FLOOD INSURANCE RATE MAP (F.I.R.M.) WITH MAP NO. 0606500765G, EFFECTIVE DATE: AUGUST 28, 2008, COMMUNITY NUMBER: 065074 FOR CITY OF MORENO VALLEY, PANEL NUMBER: 0765, SUFFIX: "G", ZONE "X-UNSHADED" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN).

BENCHMARK:

RIVERSIDE COUNTY BENCHMARK NO. "M-76"
A BRASS DISK IN CONCRETE POST, STAMPED M-76 RESET, MARK IS SET ON SOUTHWEST CORNER OF COTTONWOOD AVENUE AND PERRIS BOULEVARD 62.5 FEET WEST OF PERRIS BOULEVARD 64 FEET SOUTH OF COTTONWOOD AVENUE 4 FEET EAST OF NORTHEAST CORNER OF CONCRETE BUILDING OF EMDW PUMPING STATION A STANDARD DISK SET IN CONCRETE POST 1" SOUTH OF A MARKER POST AND 4" ABOVE GROUND MARKED M-76 RESET 1972.
ELEVATION = 1588.292' (NGVD '29/ 1972 ADJ.)

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM (CCS83), ZONE 6, NORTH AMERICAN DATUM 1983 (NAD83) BASED LOCALLY ON CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS) "MLP1" AND "P584" AS SHOWN HEREON (BASIS OF BEARINGS: N 84°41'07.3949" W). ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS.

LEGAL DESCRIPTION:

REAL PROPERTY IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:
LOT 3 IN BLOCK 94 OF MAP NO. 1 OF BEAR VALLEY ALESSANDRO DEVELOPMENT COMPANY, IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 11 PAGE 10 OF MAPS, RECORDS OF SAN BERNARDINO COUNTY, CALIFORNIA.

EXISTING EASEMENTS:

- AN EASEMENT FOR PIPELINES AND INCIDENTAL PURPOSES, IN FAVOR OF: EASTERN MUNICIPAL WATER DISTRICT, RECORDED NOVEMBER 12, 1969 AS INSTRUMENT NO. 158332 OF OFFICIAL RECORDS. (SAID EASEMENT IS BLANKET IN NATURE OVER SAID LAND AND OTHER LANDS)

PROPOSED EASEMENTS:

- 4' WIDE EASEMENT FOR STREET AND PUBLIC UTILITY PURPOSES ALONG COTTONWOOD AVENUE TO THE CITY OF MORENO VALLEY DEDICATED HEREOF.
- 56' TO 60' WIDE EASEMENT FOR STREET AND PUBLIC UTILITY PURPOSES TO THE CITY OF MORENO VALLEY.
- 6' WIDE EASEMENT LANDSCAPE PURPOSES DEDICATED TO THE CITY OF MORENO VALLEY.

PREPARED BY:

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH. (714) 521-4811 FAX (714) 521-4173

SURVEYOR:

PREPARED UNDER THE DIRECTION OF:
BRIAN L. THIENES
P.L.S. NO. 5750
REG. EXP. 12/31/17

DATE OF PREPARATION:

06/27/2017

CITY OF MORENO VALLEY CASE NO.

ABBREVIATIONS:

- A.C. ASPHALT CONCRETE
- APN ASSESSOR'S PARCEL NUMBER
- B.W. BACK OF WALK
- BUILDING
- BLOG
- C.L.F. CHAIN LINK FENCE
- C.B. CATCH BASIN
- C/L CENTERLINE
- C.F. CURB FACE
- C.O. CONC.
- (0.00) EXISTING ELEVATION
- E.P. EDGE OF PAVEMENT
- EXIST. EXISTING
- F.H. FIRE HYDRANT
- F.G. FINISH GRADE
- F.S. FINISH SURFACE
- F.F. FINISH FLOOR
- F.L.W. FLOW LINE
- G.B. GRADE BREAK
- H.C. HANDICAP
- H. HEIGHT OF RETAINING
- H.P. HIGH POINT
- INV. INVERT
- L.P. LOW POINT
- M.H. MANHOLE
- N.G. NATURAL GRADE
- P.V.C. POLYVINYLCHLORIDE
- P.P. POWER POLE
- P.P.KY. PARKWAY DRAIN
- R/W RIGHT OF WAY
- R. RATE OF GRADE
- R.D. ROOF DRAIN
- R.C.P. REINFORCED CONCRETE PIPE
- ST.LT. STREET LIGHT
- S. SLOPE
- S.D. STORM DRAIN
- S.F. SQUARE FEET
- T.C. TOP OF CURB
- T.S. TOP OF CONCRETE SLAB
- T.O.P. TOP OF PIPE
- T.F. TOP OF FOOTING
- T.W. TOP OF WALL
- T.R. TOP OF RAIL
- T.G. TOP OF GRATE
- TOP TOP OF SLOPE
- TOE TOE OF SLOPE
- T.B. TOP OF BERM
- TRANS. TRANSFORMER PAD

NOTE:

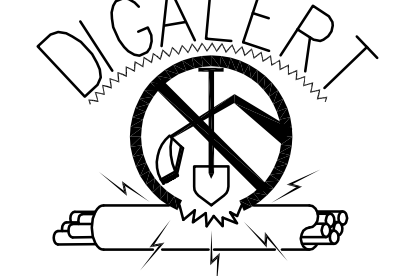
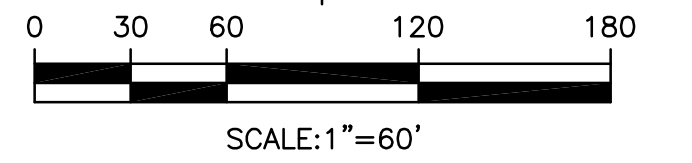
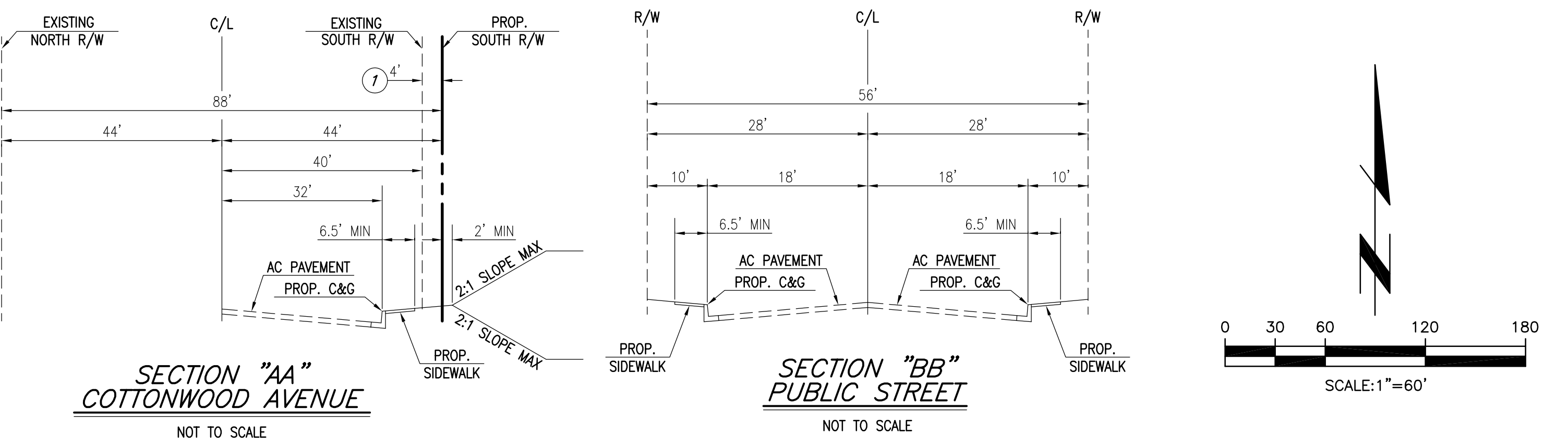
INDICATES EXISTING CONTOUR

LEGEND:

- PH EXIST. FIRE HYDRANT
- WM EXIST. WATER METER
- WV EXIST. WATER VALVE
- GAS V. EXIST. GAS VALVE
- GUY WIRE/DEADMAN EXIST. GUY WIRE/DEADMAN
- PP EXIST. POWER POLE
- TR EXIST. TRAFFIC SIGNAL
- CSW EXIST. CROSSWALK SIGNAL
- SLB EXIST. STREET LIGHTING BOX
- STL EXIST. STREET LIGHT
- SDMH EXIST. STORM DRAIN MANHOLE
- SMH EXIST. SEWER MANHOLE
- VT EXIST. VAULT
- EXIST. SIGN
- TREE
- TSB EXIST. TRAFFIC SIGNAL BOX
- GM EXIST. GAS METER
- MB EXIST. MAIL BOX
- TMH EXIST. TELEPHONE MANHOLE
- X 1854.69 EXIST. GRADE ELEVATION
- EXIST. EDGE OF A.C. PAVEMENT
- EXIST. CURB AND GUTTER
- EXIST. SANITARY SEWER
- EXIST. STORM DRAIN
- EXIST. GAS LINE
- EXIST. TELEPHONE CONDUIT
- EXIST. WATER LINE
- EXIST. CONTOUR
- R/W LINE
- PROPERTY LINE
- EASEMENT LINE
- MONITORING WELL

AREA SUMMARY

PARCEL	USE	BLDG PAD SQ. FT.	SQ. FT.	ACRES	
LOTA	INFILTRATION TRENCH		1,202	0.028	
LOT B	INFILTRATION TRENCH		3,840	0.088	
LOT C	INFILTRATION TRENCH		1,762	0.040	
LOT 1	RESIDENTIAL	2,805	20,000	0.459	
LOT 2	RESIDENTIAL	2,805	20,000	0.459	
LOT 3	RESIDENTIAL	2,805	20,057	0.460	
LOT 4	RESIDENTIAL	2,805	20,027	0.460	
LOT 5	RESIDENTIAL	2,805	20,005	0.459	
LOT 6	RESIDENTIAL	2,805	20,005	0.459	
LOT 7	RESIDENTIAL	2,805	20,013	0.459	
LOT 8	RESIDENTIAL	2,805	20,007	0.459	
LOT 9	RESIDENTIAL	2,805	20,050	0.460	
LOT 10	RESIDENTIAL	2,805	20,014	0.459	
LOT 11	RESIDENTIAL	2,805	20,004	0.459	
LOT 12	RESIDENTIAL	2,805	20,003	0.459	
LOT 13	RESIDENTIAL	2,805	20,173	0.463	
LOT 14	RESIDENTIAL	2,805	20,045	0.460	
LOT 15	RESIDENTIAL	2,805	20,048	0.460	
LOT 16	RESIDENTIAL	2,805	20,079	0.461	
COTTONWOOD AVENUE (EXISTING)	STREET		26,405	0.606	
COTTONWOOD AVENUE (DEDICATION)	STREET		2,641	0.061	
PUBLIC STREET	STREET		79,369	1.822	
TOTAL			44,880	435,750	10.000

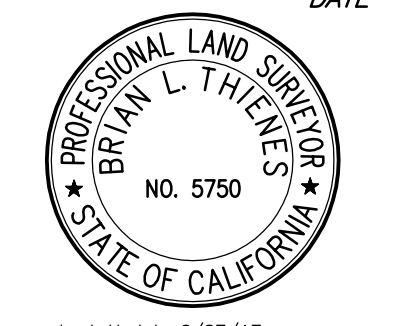


DIAL TOLL FREE
1-800-422-4133
AT LEAST TWO DAYS
BEFORE YOU DIG

UNDERGROUND SERVICE ALERT(USA) OF SOUTHERN CALIFORNIA



Underground
Service Alert
Call: TOLL FREE
1-800
227-2600
TWO WORKING DAYS BEFORE YOU DIG



Last Update: 6/27/17
CS 3300-3399/3357/TM 3357_TPM.dwg

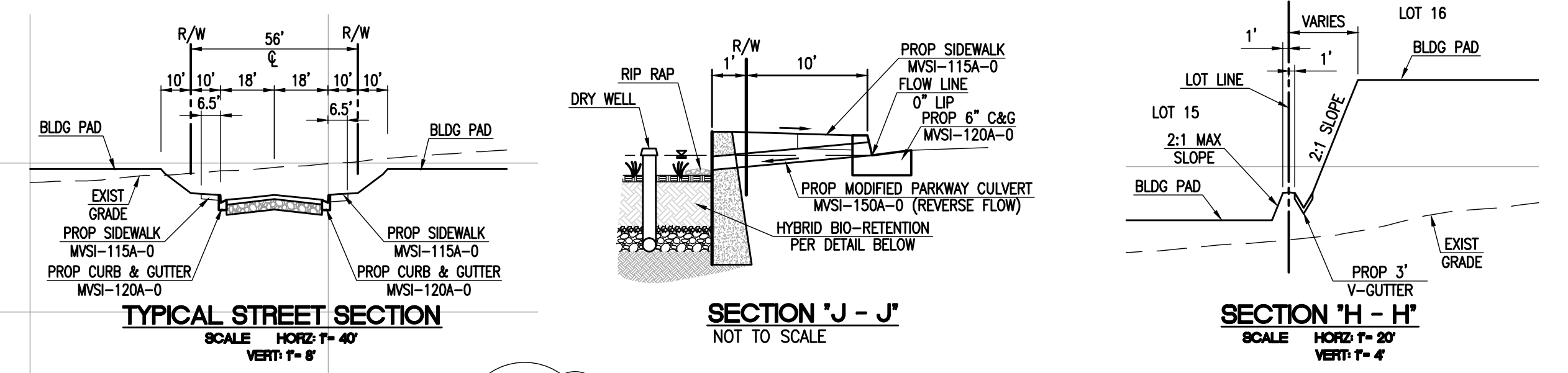
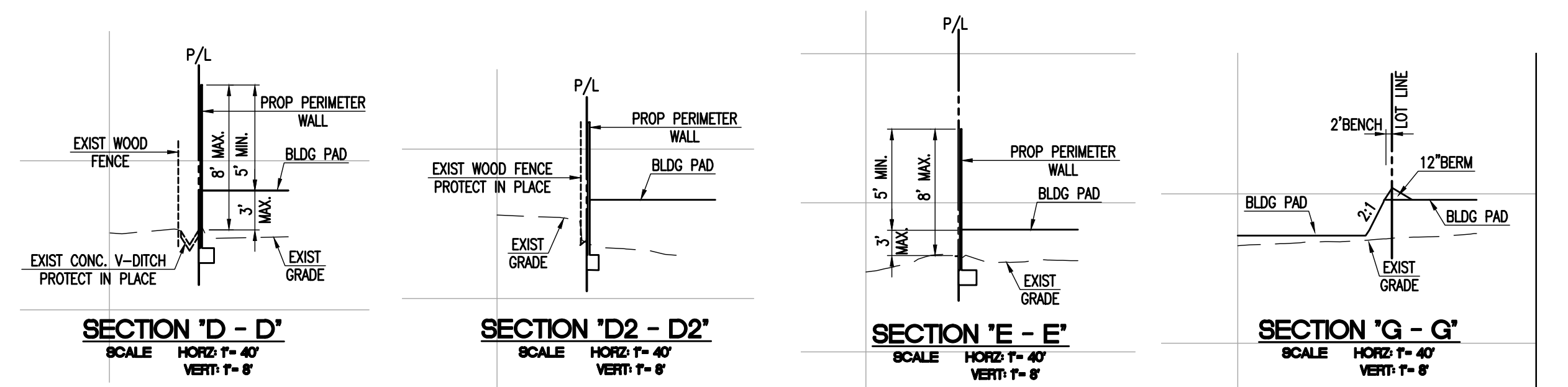
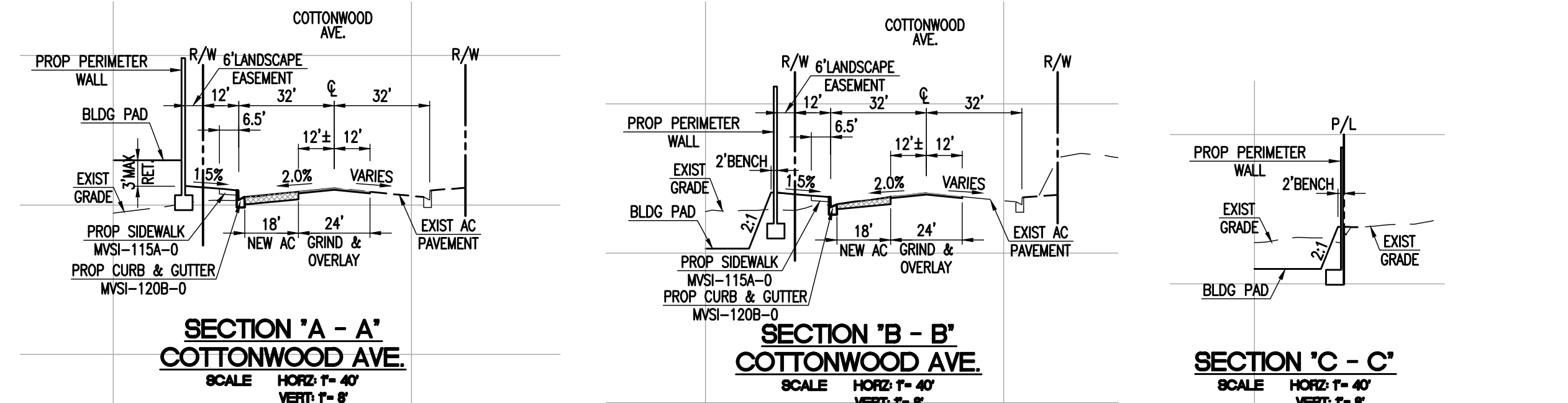
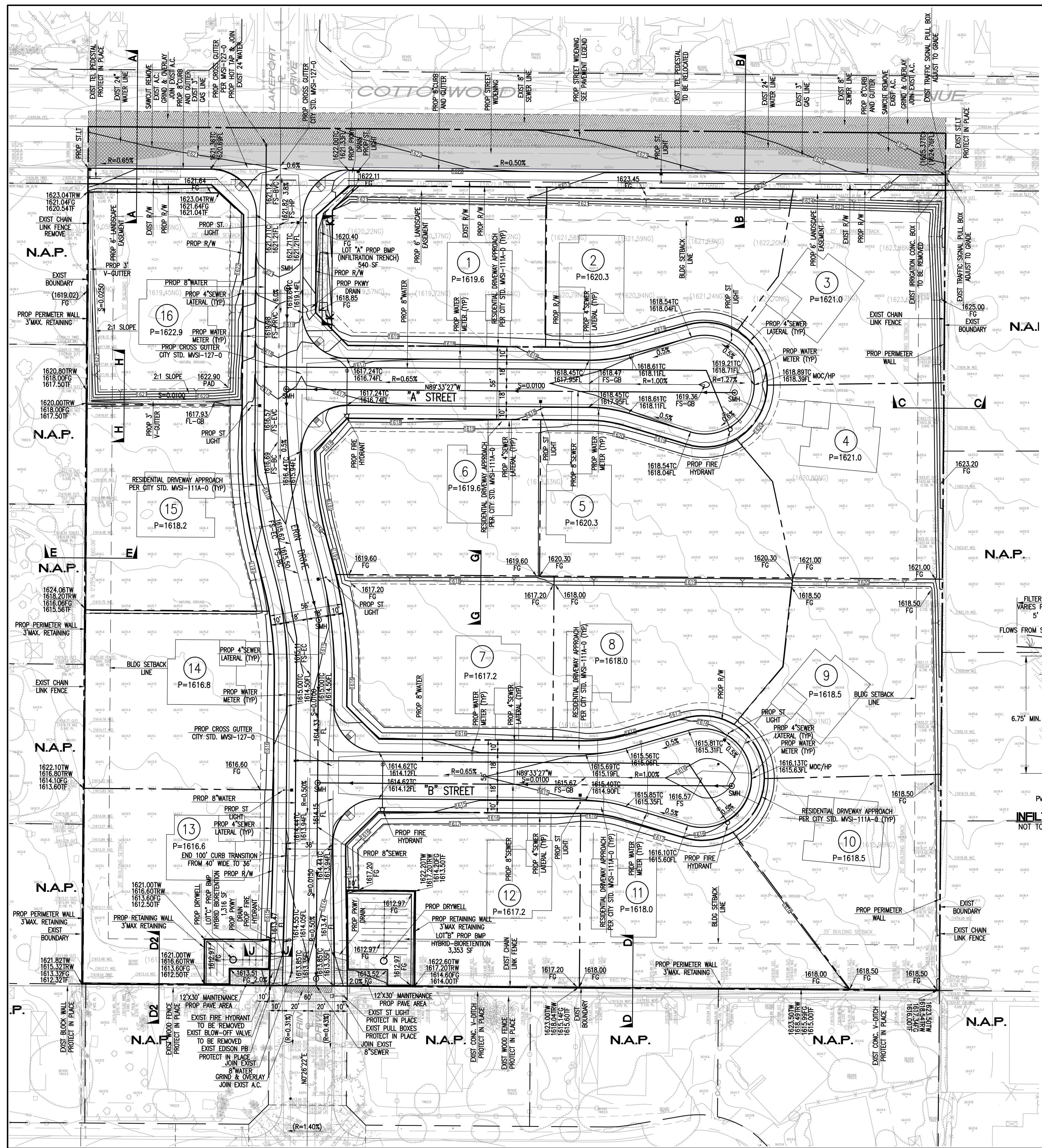
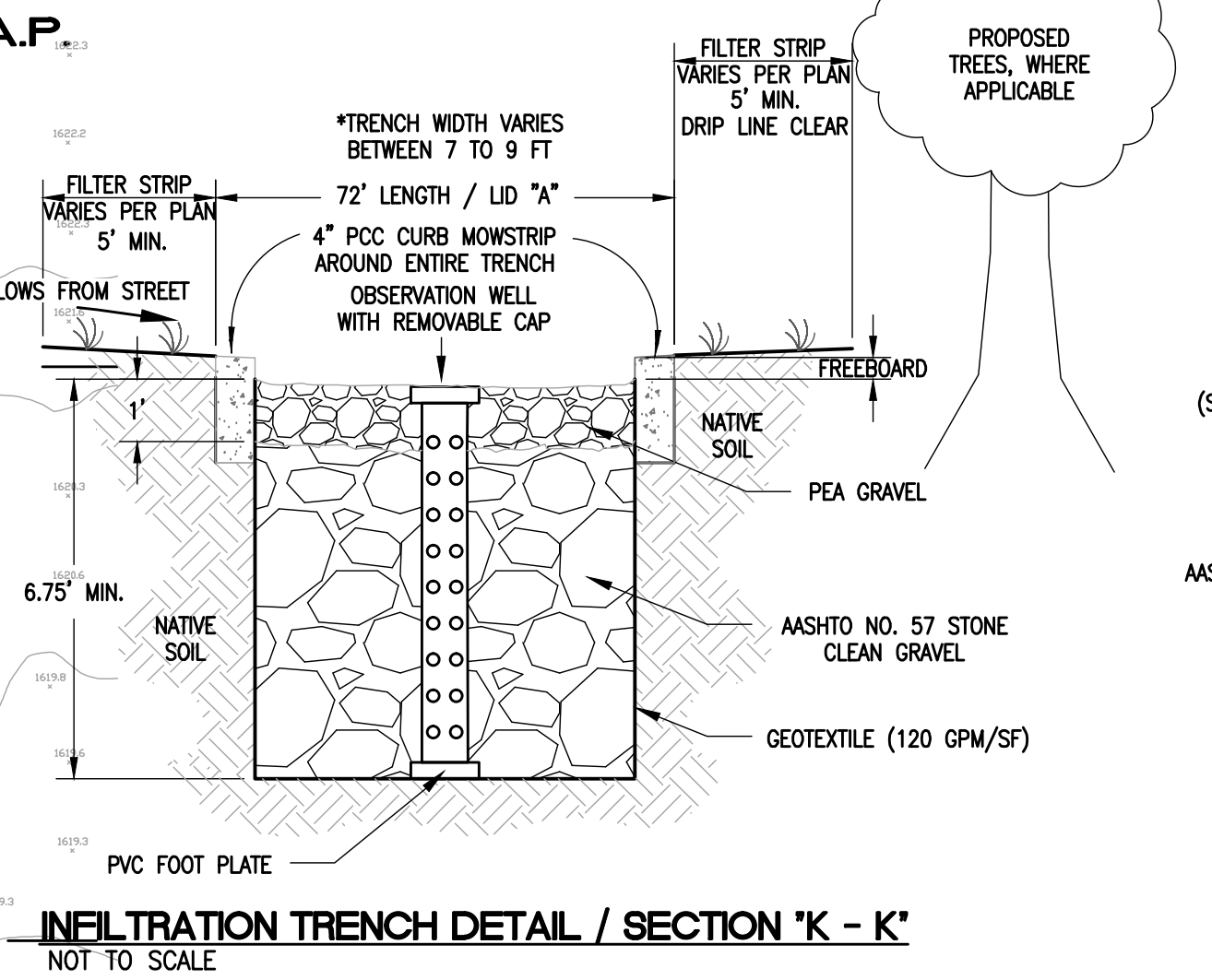
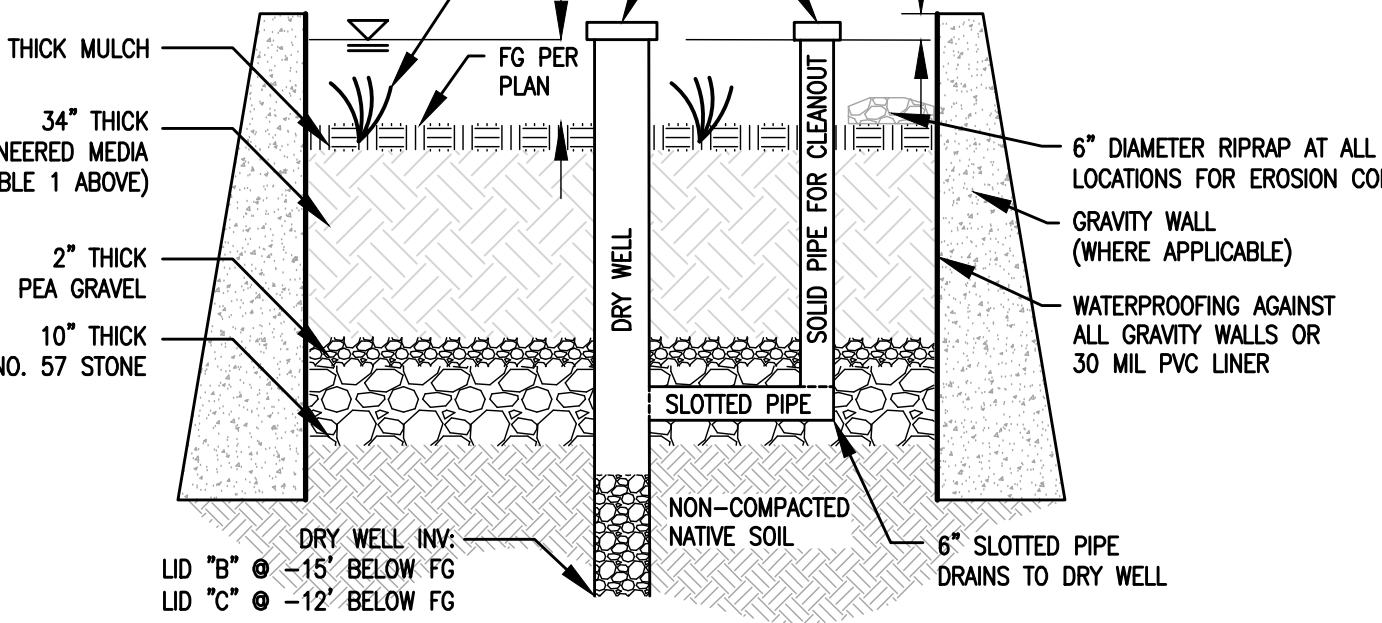


TABLE 1: MINERAL COMPONENT RANGE REQUIREMENTS (BY VOLUME)

PERCENT RANGE	COMPONENT
70-80	SAND
15-20	SILT
5-10	CLAY



PAVEMENT LEGEND:

- SAWCUT & REMOVE EXISTING AC PAVE
- CONSTRUCT NEW ASPHALT PAVEMENT AS INDICATES IN SECTION
- GRIND AND OVERLAY EXISTING A.C.

PRELIMINARY EARTHWORK ANALYSIS:

MATERIAL AVAILABLE (CUT)		MATERIAL REQUIRED (FILL)	
CUT	7,900 C.Y.	FILL	15,500 C.Y.
ASSUMED 0.15% ON-SITE STREET SECTION	2,378 C.Y.	OVER-EX FILL	30,130 C.Y.
ASSUMED 0.15% GRIND & OVERLAY O/S STREET (15,843 SF)	88 C.Y.	STRIPPING (ft)	0 C.Y.
ASSUMED 1.25% FULL SECTION O/S STREET (11,726 SF)	543 C.Y.	SUBSIDENCE (ft)	0.125 1,883 C.Y.
ASSUMED 24" OVER EX WHOLE SITE	30,130 C.Y.	ASSUMED SHRINKAGE 10.0%	1,028 C.Y.
		OVER-EX SHRINKAGE 10.0%	3,013 C.Y.
TOTAL	41,038 C.Y.	APPROX. (IMPORT) OR EXPORT:	(10,515) C.Y.

NOTE: EARTHWORK FIGURES SHOWN ARE APPROXIMATE FIGURES, AND ARE TO BE USED BY BUILDING DEPARTMENT ONLY. CONTRACTOR SHALL CALCULATE HIS OWN EARTHWORK QUANTITIES AND BID A COMPLETE JOB.

PREPARED FOR: MACJONES HOLDINGS, LLC.
2 GONDOLIERS BLUFF
NEWPORT COAST, CA 92657
PHONE: 949/509-5004
CONTACT: DANIEL WEBB

CITY OF MORENO VALLEY
PUBLIC WORKS DEPARTMENT

CONCEPTUAL GRADING PLAN
COTTONWOOD RESIDENTIAL SUBDIVISION
COTTONWOOD AVE. and LAKEPORT DR.

Designed by: _____ Date: _____
Checked by: _____ Date: _____
Designed by: _____ Date: _____
Checked by: _____ Date: _____

Approved by: _____ Date: _____
Public Works Director: _____ R.C.E. _____

Sheet **1** of **1** Sheets

JN: 3357b
PLOT DATE: October 13, 2017

Thienes Engineering, Inc.
CIVIL ENGINEERING & LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH: (714)521-4811 FAX: (714)521-4113

Scale: 1"=40'

Attachment: TTM 37060 - Preliminary Grading Plan (2836 - PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-family

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

**COTTONWOOD RESIDENTIAL SUBDIVISION
COTTONWOOD AVENUE AND LAKEPORT DRIVE
MORENO VALLEY, CALIFORNIA**

PREPARED FOR

**MACJONES HOLDINGS, LLC
2 GONDOLIERS BLUFF
NEWPORT BEACH, CA 92657
(949) 509-5004**

JANUARY 2015
REVISED: JULY 2016

JOB NO. 3357B

PREPARED BY

**THIENES ENGINEERING
14349 FIRESTONE BLVD.
LA MIRADA, CALIFORNIA 90638
(714) 521-4811**

**PRELIMINARY HYDROLOGY
CALCULATIONS**

FOR

COTTONWOOD RESIDENTIAL SUBDIVISION

PREPARED UNDER
THE SUPERVISION OF

HAIDOOK AGHAIAN DATE:
R.C.E. 43293
EXP. 03/31/18

INTRODUCTION

A: PROJECT LOCATION

The project site is located on the southern side of Cottonwood Avenue near the intersection of Lakeport and Cottonwood, in the City of Moreno Valley. Please see figure 1 for vicinity map.

B: STUDY PURPOSE

The purpose of this study is to determine the 100-year and 10-year peak flow rate from the project site that will discharge into Erin Drive.

C: PROJECT STAFF:

Thienes Engineering staff involved in this study include:

Haidook Aghaian
Kristie Ferronato



FLOW

VICINITY MAP

FOR

COTTONWOOD RESIDENTIAL SUBDIVISION

THI *Thienes Engineering, Inc.*
 CIVIL ENGINEERING • LAND SURVEYING
 14349 FIRESTONE BOULEVARD
 LA MIRADA, CALIFORNIA 90638
 PH.(714)521-4811 FAX(714)521-4173

Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-

DISCUSSION

The proposed project site encompasses approximately 10.2 acres. Improvements to the site include the construction of 16 single family homes, public streets, sidewalks and utility improvements.

Existing Condition Hydrology

The site is currently a rough graded dirt lot. Runoff from the site (nodes 100-101 on existing condition hydrology map) and the southerly half of Cottonwood Ave (street adjacently north of site) generally flows southwesterly towards Erin Drive. The existing flow rate for the 10-year storm event is 7.4 cfs and for the 100-year storm event is 13.0 cfs.

See Appendix B for existing hydrology calculations.

Proposed Condition Hydrology

The site will continue to drain towards Erin Drive. The proposed flow rate from the project site for the 10-year storm event is 9.7 cfs and for the 100-year storm event is 15.9 cfs. These proposed condition peak flow rates are comparable to values shown in the street improvement plan for Erin Drive (File no 86-134-A). Street plans show a Q_{10} of 8.5 cfs and a Q_{100} of 14.3 cfs flowing from the project site to Erin Drive. The proposed condition peak flow rates is comparable to the street plan peak flow rates, therefore there won't be an adverse effect on the downstream facilities.

Runoff from southerly half of Cottonwood Ave flows westerly via a proposed cross gutter. In the existing condition, runoff from this area sheet flows through the project site.

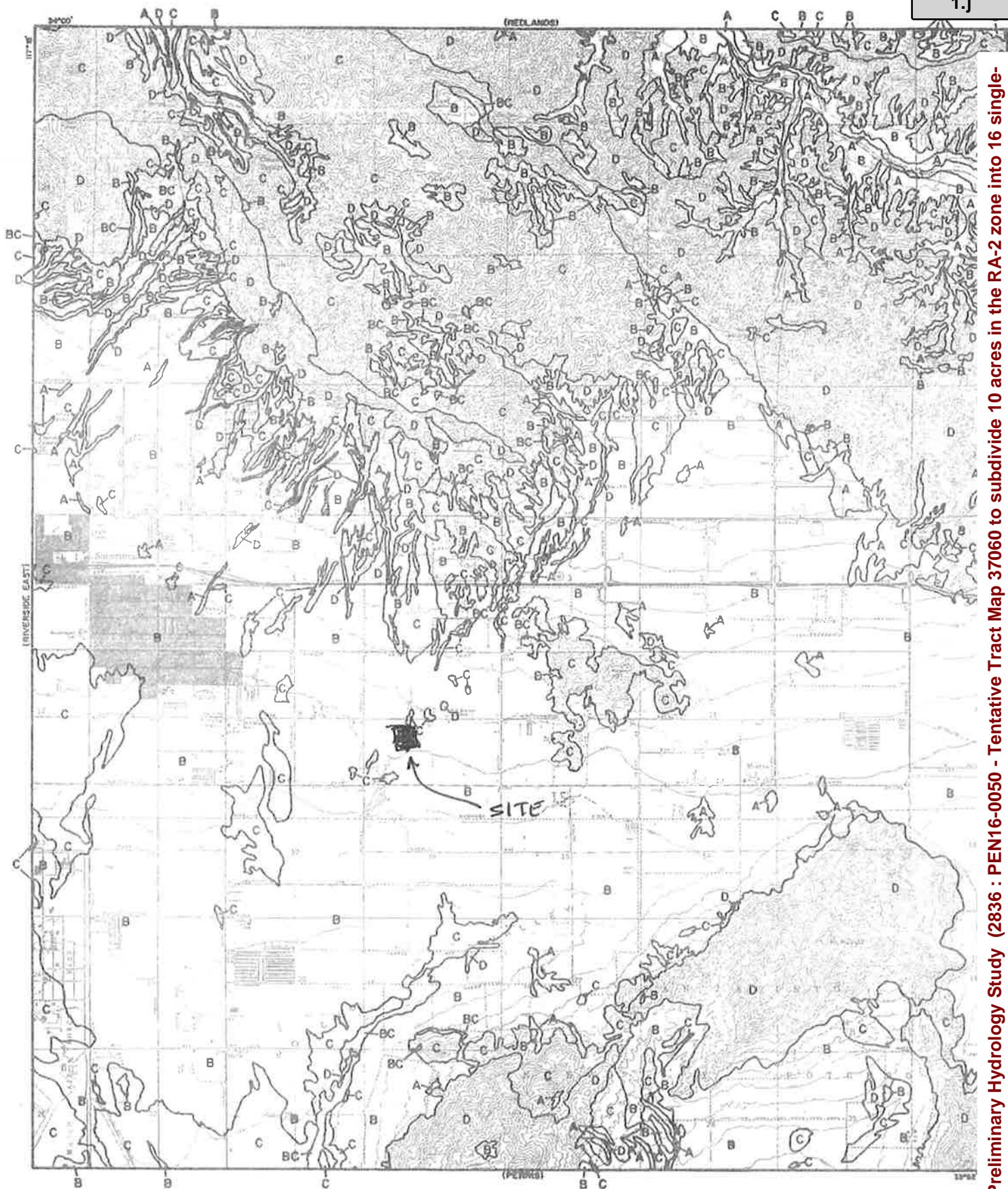
See Appendix B for proposed hydrology calculations.

Methodology

Riverside County Rational Method program (AES Software) was used for the hydrology calculations. The site is composed of soil type "B" per the Riverside County Hydrology Manual.

APPENDIX A

REFERENCE MATERIALS





Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-

LEGEND

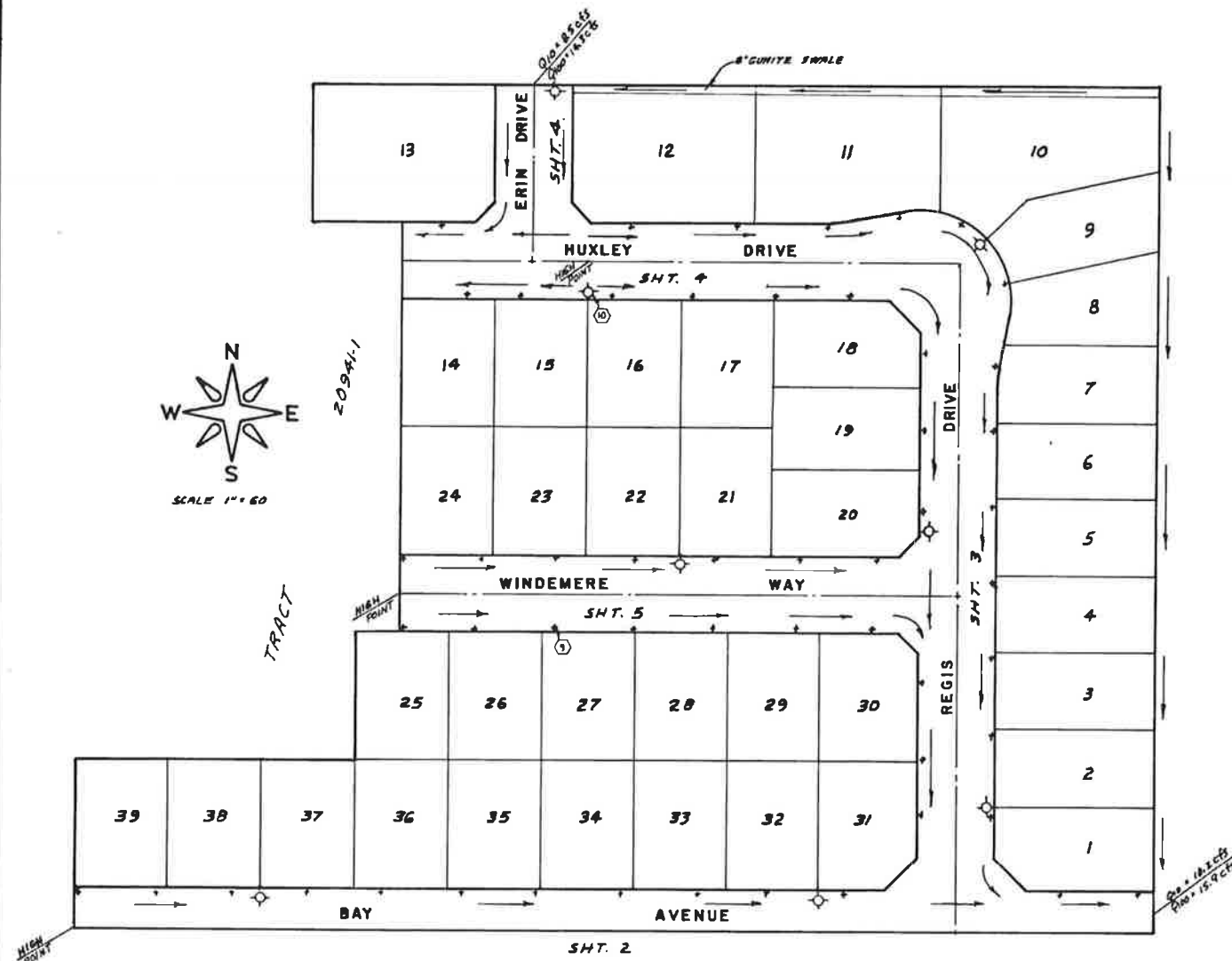
— SOILS GROUP BOUNDARY
 A SOILS GROUP DESIGNATION

RCFC&WCD
 HYDROLOGY MANUAL



 0 FEET 3000

**HYDROLOGIC SOILS GROUP MAP
 FOR
 SUNNYMEAD**

Packet Pg. 115



CONSTRUCTION NOTES

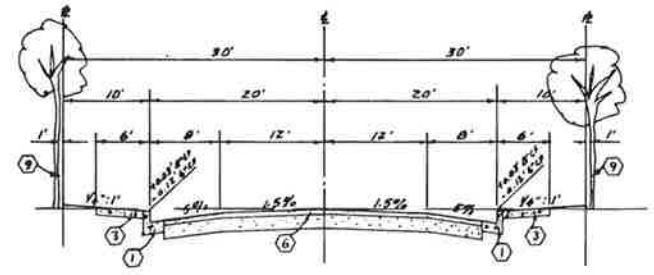
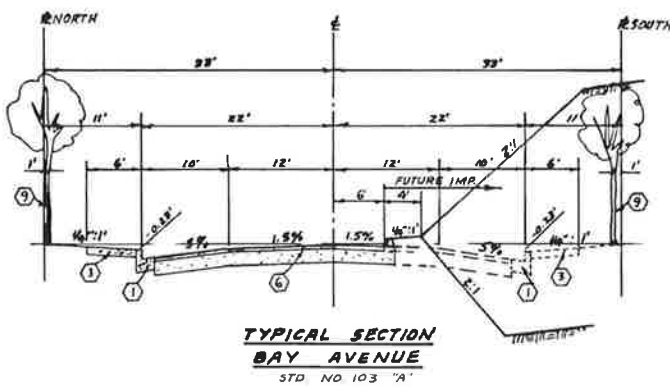
- 1. CONSTRUCT TYPE "A" CURB AND GUTTER 8" C.S. PER STANDARD NO. 200.
- 2. CONSTRUCT CURB SIDEWALK PER STANDARD NO. 400 AND 401.
- 3. CONSTRUCT CROSS GUTTER PER STANDARD NO. 208 AND 210 8".
- 4. CONSTRUCT ACCESS RAMP PER STANDARD NO. 403.
- 5. A.C. PAVING (SEE GENERAL NOTE NO. 6)
- 6. CONSTRUCT BARRICADE PER STANDARD NO. 810.
- 7. PLACE 2" X 4" REDWOOD HEADER.
- 8. INSTALL STREET TREES PER ORDINANCE NO. 48033. (SEE INDEX MAP AT LEFT)
- 9. INSTALL STREET LIGHT STD. 1000 : 9500 LUMENS. (SEE INDEX MAP AT LEFT)
- 10. CONSTRUCT 6" A.C. DIKE PER STANDARD NO. 812.

QUANTITY ESTIMATE

STD. 200 TYPE "A" 8" CURB AND GUTTER	3,551 LF
A.C. PAVEMENT	77,279 SF
CLASS 3 A.B.	77,279 SF
REDWOOD HEADER	28 LF
ROADWAY EXCAVATION	3,374 C.Y.
STREET NAME SIGN STD. 816	4 EA
BARRICADE	28 LF
CROSS GUTTER	1,882 SF
DRIVEWAY APPROACH STD. 207	39 EA
CURBLINE SIDEWALK	22,208 SF
STREET TREES	57 EA
UTILITY TRENCH	2,614 LF
6" A.C. DIKE STD. NO. 812	837 LF

LEGEND

- ⑨ - STREET TREES
- ⑩ - STREET LIGHTS



GENERAL NOTES

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANING OF THE PROPOSED WORK AREA AND RELOCATION COSTS OF ALL EXISTING UTILITIES. PERMITTEE MUST INFORM CITY OF CONSTRUCTION SCHEDULE AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION. INSPECTION (714) 242-8248
- 2. THE DEVELOPER WILL INSTALL STREET NAME SIGNS CONFORMING TO CITY STANDARD NO.
- 3. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985 EDITION, INCLUDING SUPPLEMENTS, EXCEPT AS OTHERWISE NOTED ON THE PROJECT PLANS.
- 4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER TO INSTALL STREET CENTERLINE MONUMENTS AS REQUIRED BY CITY ORDINANCE (TRACT AND PARCEL MAPS ONLY).
- 5. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER OR CONTRACTOR TO APPLY TO THE CITY ENGINEER'S OFFICE, PERMIT SECTION, PRIOR TO CONSTRUCTION FOR AN ENCROACHMENT PERMIT FOR ALL WORK ON EXISTING MAINTAINED ROADS, AND FOR UTILITY WORK WITHIN OFFERS OF DEDICATION FOR PUBLIC USE.
- 6. A.C. PAVING OF CITY STREETS SHALL BE A MIN. OF 2.5" PAV. THICK AND SHALL BE Laid IN TWO (2) SEPARATE LIFTS. THE FINAL LIFT SHALL BE A 1.0" FOOT MINIMUM. ALL UNDERGROUND WORK, GRADING AND ANY NECESSARY CONCRETE REMOVALS SHALL BE COMPLETED UNLESS APPROVED BY THE CITY ENGINEER.
- 7. CURB DEPRESSIONS AND DRIVEWAY APPROACHES WILL BE INSTALLED AND CONSTRUCTED ACCORDING TO STANDARD NO. 207, AS DIRECTED IN THE FIELD.
- 8.
- 9. ALL STREET SECTIONS ARE TENTATIVE. ADDITIONAL SOIL TESTS SH BE TAKEN AFTER ROUGH GRADING TO DETERMINE THE EXACT STREET SECTION REQUIREMENTS. USE STANDARD NO. 1, IF EXPANSIVE SOILS ARE ENCOUNTERED.
- 10. "ASPHALTIC EMULSION" (POG SEAL) SHALL BE APPLIED NOT LESS THAN FOURTEEN (14) DAYS FOLLOWING PLACEMENT OF THE ASPHALT SURFACING AND SHALL BE APPLIED AT A RATE OF 0.03 GALLON PER SQUARE YARD. ASPHALTIC EMULSION SHALL CONFORM TO SECTIONS 37, 38 AND 34 OF THE STATE STANDARD SPECIFICATIONS.
- 11. PRIME COAT REQUIRED PRIOR TO PAVING ALL GRADE IN EXCESS OF 10%.
- 12. INSTALL STREET TREES IN ACCORDANCE WITH ORDINANCE NO.
- 13. NO PUBLIC STREET SHALL BE CLOSED TO TRAFFIC WITHOUT PRIOR CITY COUNCIL APPROVAL.
- 14. ALL SIGNS ARE TO BE FINISHED AND INSTALLED BY THE DEVELOPER AT HIS EXPENSE.
- 15. SEWER AND WATER LATERALS SHALL BE MARKED ON THE CURB ACCORDING TO EASTERN MUNICIPAL WATER DISTRICT STANDARDS. WATER = "W" SEWER = "S"
- 16. ALL BACKFILL TO BE 90% RELATIVE COMPACTION UNLESS OTHERWISE SPECIFIED, AND SHALL BE CERTIFIED BY THE CITY'S SOILS ENGINEER PRIOR TO PAVING. RETESTING SHALL BE AT THE DEVELOPER'S EXPENSE.
- 17. ALL EXISTING OR NEW WATER VALVES OR SEWER MANHOLES SHALL BE RAISED IN ACCORDANCE WITH EASTERN MUNICIPAL WATER DISTRICT STANDARDS.
- 18. ALL IRRIGATION LINES ARE TO BE REMOVED, RELOCATED OR RECONSTRUCTED AS SHOWN.
- 19. NO TRENCHES MAY BE LEFT OPEN OVERNIGHT UNLESS APPROVED BY THE CITY ENGINEER.
- 20. IF ANY UTILITIES OR FACILITIES CONFLICT WITH PROPOSED IMPROVEMENTS, WORK SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- 21. ALL UTILITIES SHALL BE INSTALLED, TESTED AND APPROVED BY THE APPROPRIATE UTILITY COMPANY PRIOR TO PAVING.
- 22. ALL TRAFFIC CONTROL DEVICES OR SIGNS SHALL BE IN PLACE PRIOR TO PAVING. STREET SHALL BE COMPLETED PRIOR TO STREET OPENING.
- 23. AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE CITY UPON PROJECT COMPLETION.
- 24. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OF STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. THESE LOCATIONS ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR, SO THAT ANY NECESSARY ADJUSTMENT CAN BE MADE IN ALIGNMENT AND/OR GRADE OF THE PROPOSED IMPROVEMENT. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
- 25. CITY APPROVAL OF PLANS DOES NOT RELIEVE THE DEVELOPER FROM RESPONSIBILITY FOR THE CORRECTION OF ERROR AND OMISSION DISCOVERED DURING CONSTRUCTION. UPON REQUEST, THE REQUIRED PLAN REVISIONS SHALL BE PROMPTLY SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
- 26. CONTRACTOR IS REQUIRED TO REMOVE AND/OR INSTALL PAVEMENT MARKINGS AND STRIPING AS REQUIRED BY THE CITY ENGINEER.
- 27. BLUE DOTS FIRE HYDRANT MARKERS SHALL BE INSTALLED PER CITY STANDARD NO.
- 28. ALL SURVEY MONUMENTS SHALL BE PROTECTED AND PERPETUATED IN PLACE. ANY DISTURBED OR COVERED MONUMENTS SHALL BE RESET BY A REGISTERED CIVIL ENGINEER OR A LICENSED LAND SURVEYOR AT THE DIRECTION OF THE CITY ENGINEER.
- 29. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE 1985 EDITION OF "WORK AREA TRAFFIC CONTROL HANDBOOK".

NOTICE TO CONTRACTOR

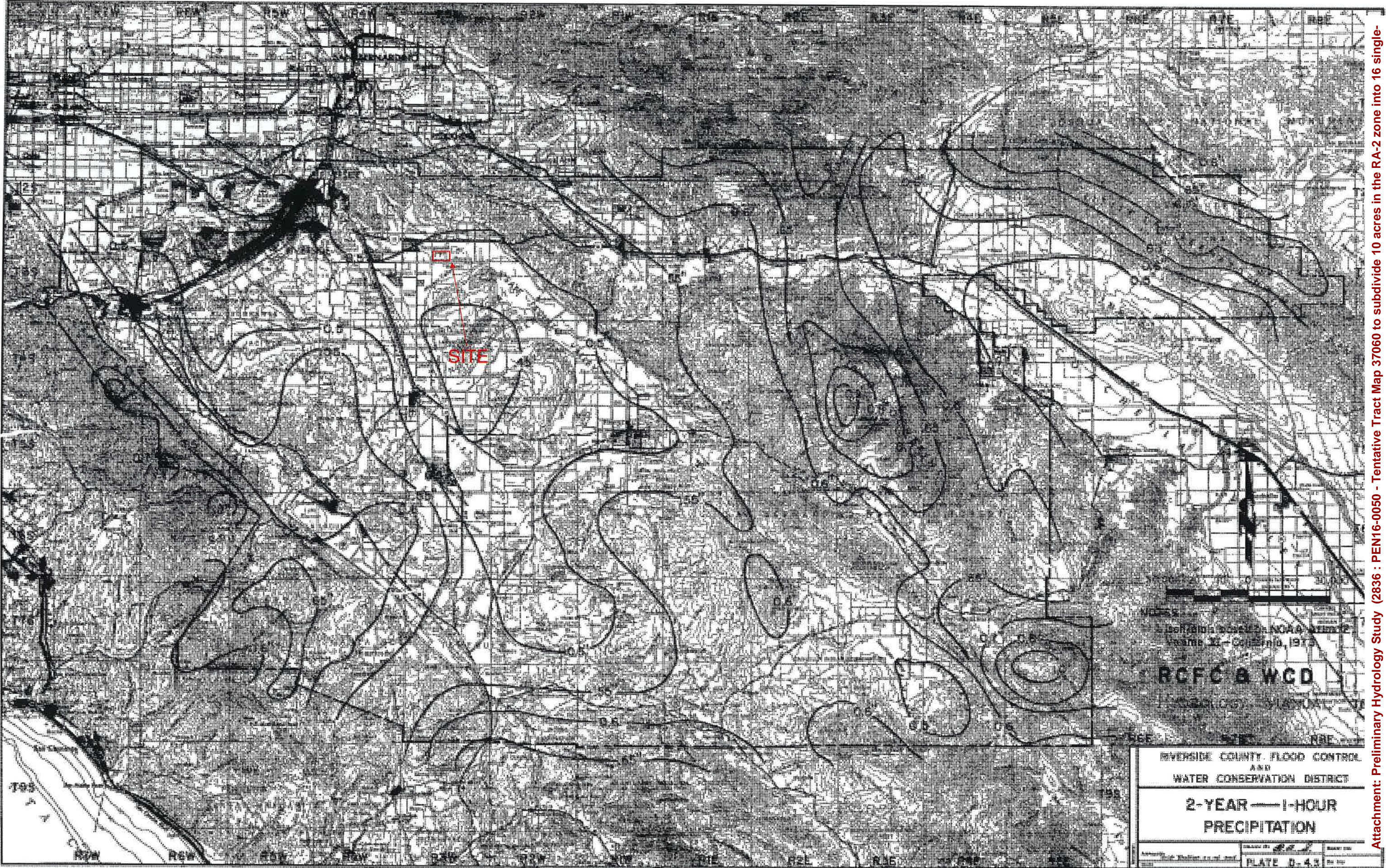
THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

CALL UNDERGROUND SERVICE ALERT (USA) 1-800-422-4133 AT LEAST 48 HOURS PRIOR TO EXCAVATION

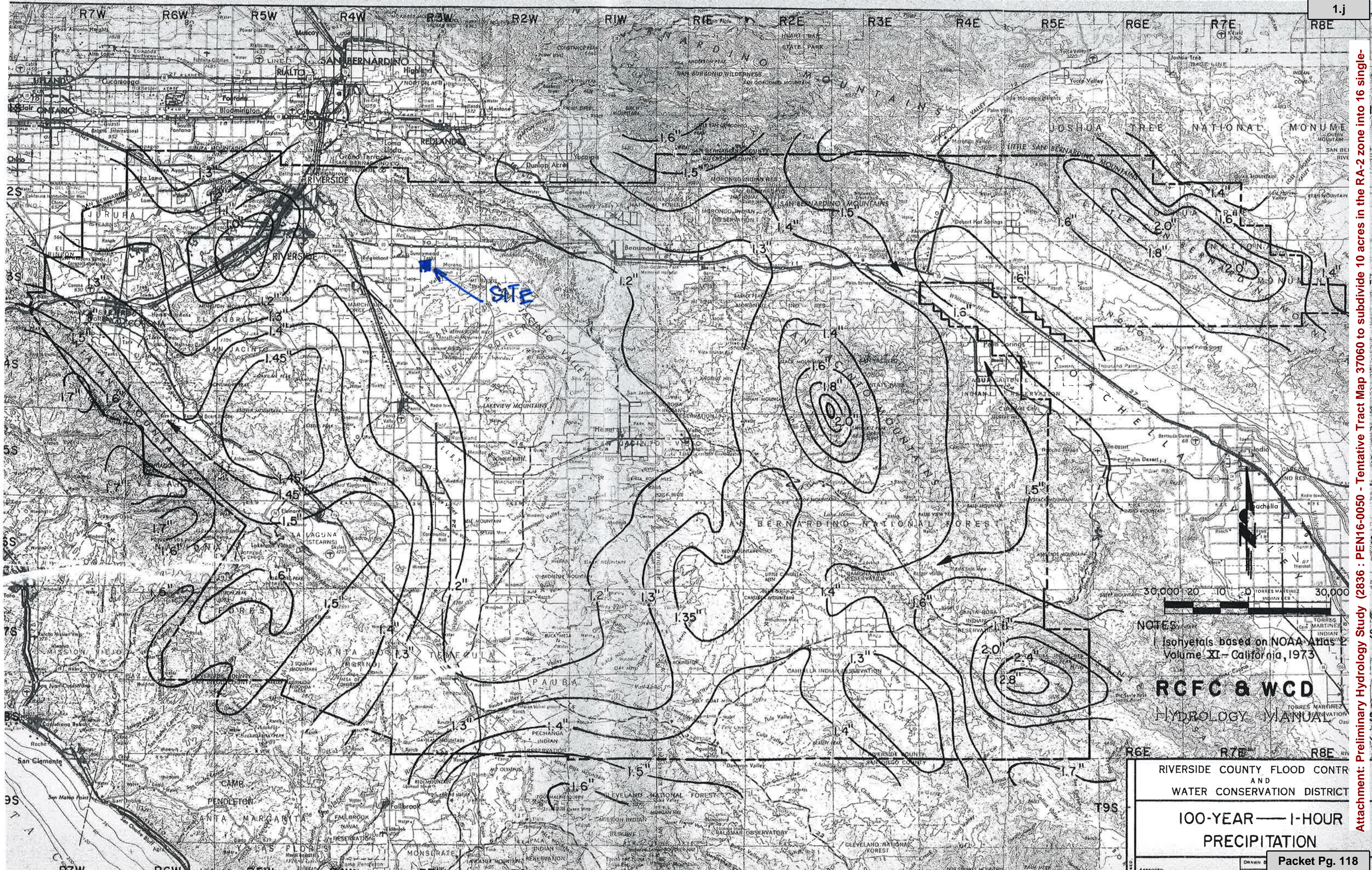
THE QUANTITY ESTIMATE SHOWN HEREON IS FOR THE USE OF GOVERNING AGENCIES IN DETERMINING BOND AMOUNTS AND/OR FEES AND IS NOT TO BE USED FOR BID PURPOSES.

REVISIONS 	APPROVED BY <i>Albert A. Webb</i> REGISTERED CIVIL ENGINEER NO. 11842	ALBERT A. WEBB ASSOCIATES CIVIL ENGINEERS 3788 MCGRAY STREET RIVERSIDE, CALIFORNIA (714) 888-1070	STREET IMPROVEMENT PLAN AND PROFILE TRACT NO. 20941 CITY OF MORENO VALLEY SCHEDULE "A"	OF 3 SHEETS FILE NO. 86-184-2
	DATE: 8-13-88	SCALE 1" = 60' BENCH MARK: ELEV. 1583.39 CAPERWOLD MOUNTAIN AT ALESSANDRO CLASSIFIED PER CO. 2027, S. 45 77, PG. 22 PER STPLANS FOR TR. 17445.	INDEX	
APPROVED BY <i>David S. Hedlund</i> CITY ENGINEER CITY OF MORENO VALLEY	DATE: 2-17-87	DRAWN BY: <i>HEE</i> DESIGNED BY: <i>HEE</i> CHECKED BY:	W.O. FOR F.B.	Packet Pg. 116

Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-



Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-



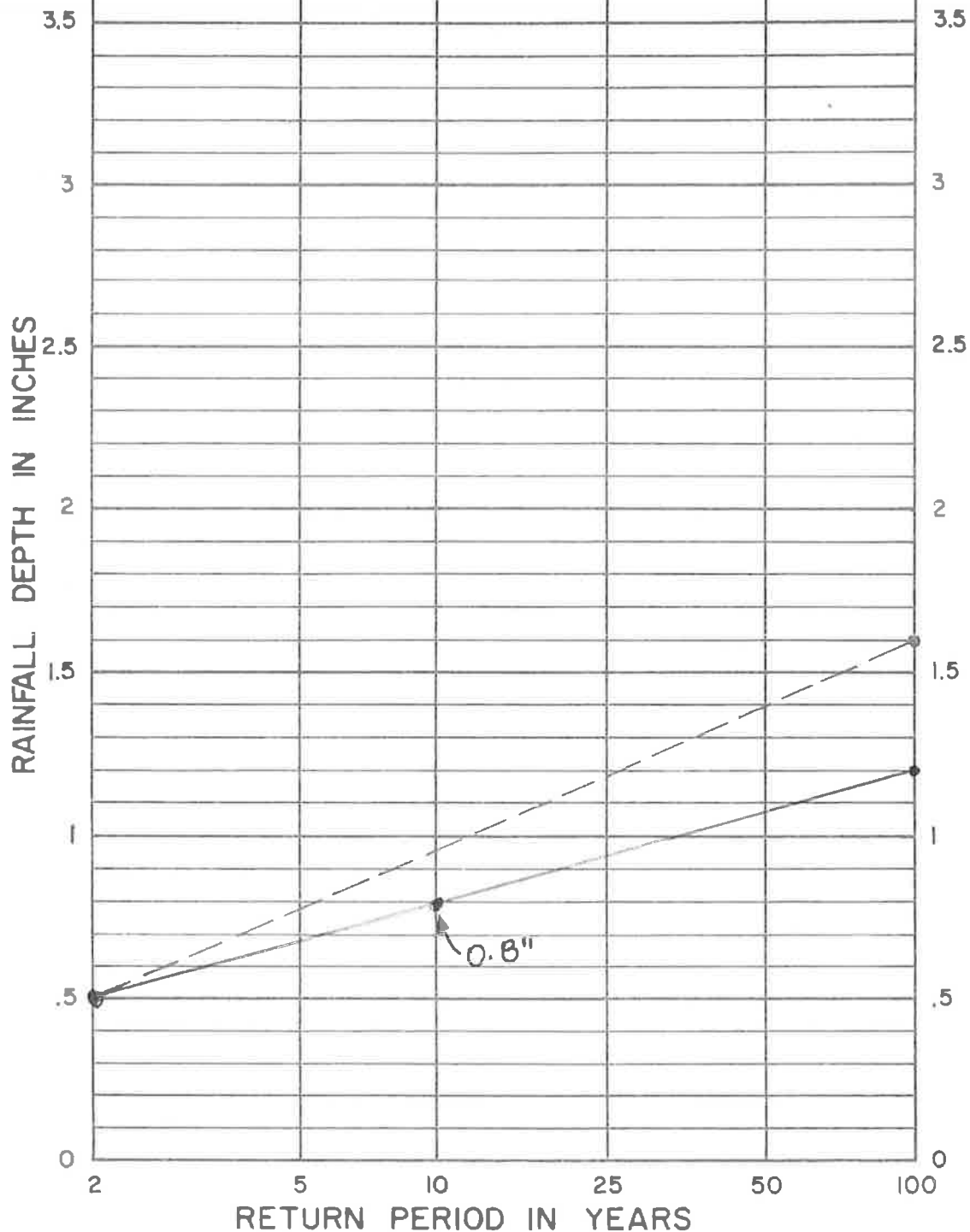
NOTES
 Isohyets based on NOAA Atlas
 Volume XI - California, 1973

RCFC & WCD
 HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTR
 AND
 WATER CONSERVATION DISTRICT

**100-YEAR — 1-HOUR
 PRECIPITATION**

Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-



NOTE:

1. For intermediate return periods plot 2-year and 100-year one hour values from maps, then connect points and read value for desired return period. For example given 2-year one hour = .50" and 100-year one hour = 1.60", 25-year one hour = 1.18"

Reference: NOAA Atlas 2, Volume XI-California, 1973.

RCFC & WCD
HYDROLOGY MANUAL

RAINFALL DEPTH VERSUS
RETURN PERIOD FOR
PARTIAL DURATION SERIES

Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-

APPENDIX B

HYDROLOGY CALCULATIONS

 RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
 RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
 (RCFC&WCD) 1978 HYDROLOGY MANUAL
 (c) Copyright 1982-99 Advanced Engineering Software (aes)
 Ver. 1.5A Release Date: 01/01/99 License ID 1435

Analysis prepared by:

THIENES ENGINEERING
 16800 VALLEY VIEW AVENUE
 LA MIRADA CA 90638
 PH: (714) 521-4811 FAX: (714) 521-4173

***** DESCRIPTION OF STUDY *****
 * TEI JOB NO 3357 *
 * EXISTING CONDITION *
 * 10 YEAR STORM EVENT *

FILE NAME: C:\XDRIVE\3357\X10.DAT
 TIME/DATE OF STUDY: 15:05 06/24/2016

 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

USER SPECIFIED STORM EVENT (YEAR) = 10.00
 SPECIFIED MINIMUM PIPE SIZE (INCH) = 12.00
 SPECIFIED PERCENT OF GRADIENTS (DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
 2-YEAR, 1-HOUR PRECIPITATION (INCH) = 0.500
 100-YEAR, 1-HOUR PRECIPITATION (INCH) = 1.200
 COMPUTED RAINFALL INTENSITY DATA:
 STORM EVENT = 10.00 1-HOUR INTENSITY (INCH/HOUR) = 0.796
 SLOPE OF INTENSITY DURATION CURVE = 0.5000
 RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
 NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
 AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
 USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP (FT) (FT)	MANNING HIKE FACTOR (n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00 0.0313	0.167 0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
 1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
 2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)
 *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

 FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

ASSUMED INITIAL SUBAREA UNIFORM
 DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER
 $TC = K * [(LENGTH**3) / (ELEVATION CHANGE)]**0.2$
 INITIAL SUBAREA FLOW-LENGTH = 926.00
 UPSTREAM ELEVATION = 1627.35
 DOWNSTREAM ELEVATION = 1614.60
 ELEVATION DIFFERENCE = 12.75
 $TC = 0.533 * [(926.00**3) / (12.75)]**0.2 = 19.287$
 10 YEAR RAINFALL INTENSITY (INCH/HOUR) = 1.404
 UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5154
 SOIL CLASSIFICATION IS "B"
 SUBAREA RUNOFF (CFS) = 7.38
 TOTAL AREA (ACRES) = 10.20 TOTAL RUNOFF (CFS) = 7.38

 END OF STUDY SUMMARY:
 TOTAL AREA (ACRES) = 10.20 TC (MIN.) = 19.29
 PEAK FLOW RATE (CFS) = 7.38

END OF RATIONAL METHOD ANALYSIS

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT (RCFC&WCD) 1978 HYDROLOGY MANUAL (c) Copyright 1982-99 Advanced Engineering Software (aes) Ver. 1.5A Release Date: 01/01/99 License ID 1435

Analysis prepared by:

THIENES ENGINEERING 16800 VALLEY VIEW AVENUE LA MIRADA CA 90638 PH: (714) 521-4811 FAX: (714) 521-4173

***** DESCRIPTION OF STUDY ***** * TEI JOB NO 3357 * * EXISTING CONDITION * * 100 YEAR STOMR EVENT *

FILE NAME: C:\XDRIVE\3357\X100.DAT TIME/DATE OF STUDY: 15:04 06/24/2016

----- USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION: -----

USER SPECIFIED STORM EVENT(YEAR) = 100.00 SPECIFIED MINIMUM PIPE SIZE(INCH) = 12.00 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95 2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500 100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.200 COMPUTED RAINFALL INTENSITY DATA: STORM EVENT = 100.00 1-HOUR INTENSITY(INCH/HOUR) = 1.200 SLOPE OF INTENSITY DURATION CURVE = 0.5000 RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL* HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING WIDTH CROSSFALL IN- / OUT-/PARK- HEIGHT WIDTH LIP HIKE FACTOR NO. (FT) (FT) SIDE / SIDE/ WAY (FT) (FT) (FT) (FT) (n) 1 30.0 20.0 0.018/0.018/0.020 0.67 2.00 0.0313 0.167 0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS: 1. Relative Flow-Depth = 0.00 FEET as (Maximum Allowable Street Flow Depth) - (Top-of-Curb) 2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S) *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

***** FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21 *****

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

===== ASSUMED INITIAL SUBAREA UNIFORM DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2 INITIAL SUBAREA FLOW-LENGTH = 926.00 UPSTREAM ELEVATION = 1627.35 DOWNSTREAM ELEVATION = 1614.60 ELEVATION DIFFERENCE = 12.75 TC = 0.533*[(926.00**3)/(12.75)]**.2 = 19.287 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.117 UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6020 SOIL CLASSIFICATION IS "B" SUBAREA RUNOFF(CFS) = 13.00 TOTAL AREA(ACRES) = 10.20 TOTAL RUNOFF(CFS) = 13.00

===== END OF STUDY SUMMARY: TOTAL AREA(ACRES) = 10.20 TC(MIN.) = 19.29 PEAK FLOW RATE(CFS) = 13.00

===== END OF RATIONAL METHOD ANALYSIS

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT (RCFC&WCD) 1978 HYDROLOGY MANUAL (c) Copyright 1982-99 Advanced Engineering Software (aes) Ver. 1.5A Release Date: 01/01/99 License ID 1435

Analysis prepared by:

THIENES ENGINEERING 16800 VALLEY VIEW AVENUE LA MIRADA CA 90638 PH: (714) 521-4811 FAX: (714) 521-4173

***** DESCRIPTION OF STUDY ***** * TEI JOB NO 3357 * * PROPOSED CONDITION * * 100 YEAR STORM EVENT *

FILE NAME: C:\XDRIVE\3357\MPK\100.DAT TIME/DATE OF STUDY: 08:53 06/17/2016

----- USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION: -----

USER SPECIFIED STORM EVENT(YEAR) = 100.00 SPECIFIED MINIMUM PIPE SIZE(INCH) = 12.00 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95 2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500 100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.200 COMPUTED RAINFALL INTENSITY DATA: STORM EVENT = 100.00 1-HOUR INTENSITY(INCH/HOUR) = 1.200 SLOPE OF INTENSITY DURATION CURVE = 0.5000 RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

Table with columns: NO., WIDTH (FT), CROSSFALL (FT), IN- / SIDE, OUT- / SIDE, WAY, HEIGHT (FT), CURB WIDTH (FT), GUTTER LIP (FT), GEOMETRIES HIKE (FT), MANNING FACTOR (n). Row 1: 1, 30.0, 20.0, 0.018/0.018/0.020, 0.67, 2.00, 0.0313, 0.167, 0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

- 1. Relative Flow-Depth = 0.00 FEET as (Maximum Allowable Street Flow Depth) - (Top-of-Curb) (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

SIZE PIPE WITH A FLOW CAPACITY GREATER THAN OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE. MINIMUM LOSS RATE PERCENTAGE FOR 24-HOUR STORM = 20.00

***** FLOW PROCESS FROM NODE 100.00 TO NODE 101.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

===== ASSUMED INITIAL SUBAREA UNIFORM DEVELOPMENT IS SINGLE FAMILY(1/2 ACRE) TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2 INITIAL SUBAREA FLOW-LENGTH = 750.00 UPSTREAM ELEVATION = 1625.21 DOWNSTREAM ELEVATION = 1615.20 ELEVATION DIFFERENCE = 10.01 TC = 0.422*[(750.00**3)/(10.01)]**.2 = 14.137 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.472 SINGLE-FAMILY(1/2 ACRE LOT) RUNOFF COEFFICIENT = .7393 SOIL CLASSIFICATION IS "B" SUBAREA RUNOFF(CFS) = 8.04 TOTAL AREA(ACRES) = 4.40 TOTAL RUNOFF(CFS) = 8.04

***** FLOW PROCESS FROM NODE 101.00 TO NODE 102.00 IS CODE = 61

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<< >>>>(STANDARD CURB SECTION USED)<<<<<

===== UPSTREAM ELEVATION(FEET) = 1615.20 DOWNSTREAM ELEVATION(FEET) = 1613.40 STREET LENGTH(FEET) = 295.00 CURB HEIGHT(INCHES) = 6.0 STREET HALFWIDTH(FEET) = 20.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 10.00 INSIDE STREET CROSSFALL(DECIMAL) = 0.020 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 11.92 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW: STREET FLOW DEPTH(FEET) = 0.44 HALFSTREET FLOOD WIDTH(FEET) = 15.74 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.29 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.01 STREET FLOW TRAVEL TIME(MIN.) = 2.14 Tc(MIN.) = 16.28 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.304 SINGLE-FAMILY(1/2 ACRE LOT) RUNOFF COEFFICIENT = .7312 SOIL CLASSIFICATION IS "B" SUBAREA AREA(ACRES) = 4.60 SUBAREA RUNOFF(CFS) = 7.75

Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-

TOTAL AREA(ACRES) = 9.00 PEAK FLOW RATE(CFS) = 15.79
100.RES

1.j

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.48 HALFSTREET FLOOD WIDTH(FEET) = 17.62
FLOW VELOCITY(FEET/SEC.) = 2.45 DEPTH*VELOCITY(FT*FT/SEC.) = 1.17
LONGEST FLOWPATH FROM NODE 100.00 TO NODE 102.00 = 1045.00 FEET.

=====
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 9.00 TC(MIN.) = 16.28
PEAK FLOW RATE(CFS) = 15.79
=====

=====
END OF RATIONAL METHOD ANALYSIS
=====

1

Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-

 RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
 RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
 (RCFC&WCD) 1978 HYDROLOGY MANUAL
 (c) Copyright 1982-99 Advanced Engineering Software (aes)
 Ver. 1.5A Release Date: 01/01/99 License ID 1435

Analysis prepared by:

THIENES ENGINEERING
 16800 VALLEY VIEW AVENUE
 LA MIRADA CA 90638
 PH: (714) 521-4811 FAX: (714) 521-4173

***** DESCRIPTION OF STUDY *****
 * TEI JOB NO 3357 *
 * PROPOSED CONDITION *
 * 100 YEAR STORM EVENT *

FILE NAME: C:\XDRIVE\3357\MPK\200.DAT
 TIME/DATE OF STUDY: 09:29 06/17/2016

 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

USER SPECIFIED STORM EVENT (YEAR) = 100.00
 SPECIFIED MINIMUM PIPE SIZE (INCH) = 12.00
 SPECIFIED PERCENT OF GRADIENTS (DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
 2-YEAR, 1-HOUR PRECIPITATION (INCH) = 0.500
 100-YEAR, 1-HOUR PRECIPITATION (INCH) = 1.200
 COMPUTED RAINFALL INTENSITY DATA:
 STORM EVENT = 100.00 1-HOUR INTENSITY (INCH/HOUR) = 1.200
 SLOPE OF INTENSITY DURATION CURVE = 0.5000
 RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
 NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
 AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
 USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN CROSSFALL (FT)	STREET- / SIDE / SIDE / WAY	STREET-CROSSFALL: IN- / OUT- / PARK- / SIDE / WAY	CURB HEIGHT (FT)	GUTTER WIDTH (FT)	GUTTER-GEOMETRIES: LIP (FT)	HIKE (FT)	MANNING FACTOR (n)
1	30.0	20.0	0.018/0.018/0.020		0.67	2.00	0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
 1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
 2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)
 *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
 MINIMUM LOSS RATE PERCENTAGE FOR 24-HOUR STORM = 20.00

 FLOW PROCESS FROM NODE 200.00 TO NODE 201.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM
 DEVELOPMENT IS COMMERCIAL
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH = 810.00
 UPSTREAM ELEVATION = 1627.35
 DOWNSTREAM ELEVATION = 1620.23
 ELEVATION DIFFERENCE = 7.12
 TC = 0.303*[(810.00**3)/(7.12)]**.2 = 11.381
 100 YEAR RAINFALL INTENSITY (INCH/HOUR) = 2.755
 COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8752
 SOIL CLASSIFICATION IS "B"
 SUBAREA RUNOFF (CFS) = 2.17
 TOTAL AREA (ACRES) = 0.90 TOTAL RUNOFF (CFS) = 2.17

 FLOW PROCESS FROM NODE 201.00 TO NODE 201.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY (INCH/HOUR) = 2.755
 COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8752
 SOIL CLASSIFICATION IS "B"
 SUBAREA AREA (ACRES) = 0.10 SUBAREA RUNOFF (CFS) = 0.24
 TOTAL AREA (ACRES) = 1.00 TOTAL RUNOFF (CFS) = 2.41
 TC (MIN) = 11.38

 FLOW PROCESS FROM NODE 201.00 TO NODE 201.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY (INCH/HOUR) = 2.755
 SINGLE-FAMILY (1/2 ACRE LOT) RUNOFF COEFFICIENT = .7512
 SOIL CLASSIFICATION IS "B"
 SUBAREA AREA (ACRES) = 0.10 SUBAREA RUNOFF (CFS) = 0.21
 TOTAL AREA (ACRES) = 1.10 TOTAL RUNOFF (CFS) = 2.62
 TC (MIN) = 11.38

=====

END OF STUDY SUMMARY:
 TOTAL AREA (ACRES) = 1.10 TC (MIN.) = 11.38
 PEAK FLOW RATE (CFS) = 2.62

=====

Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-

=====

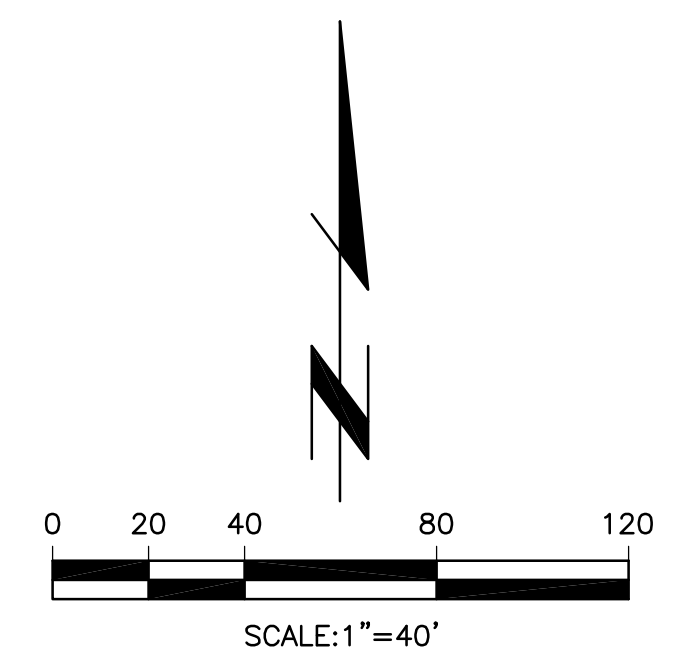
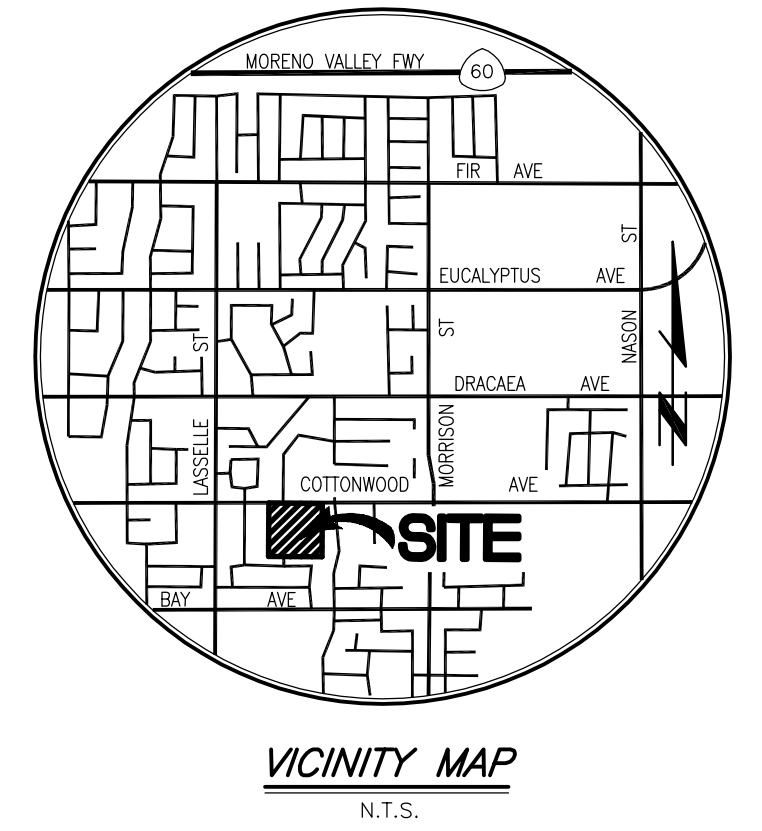
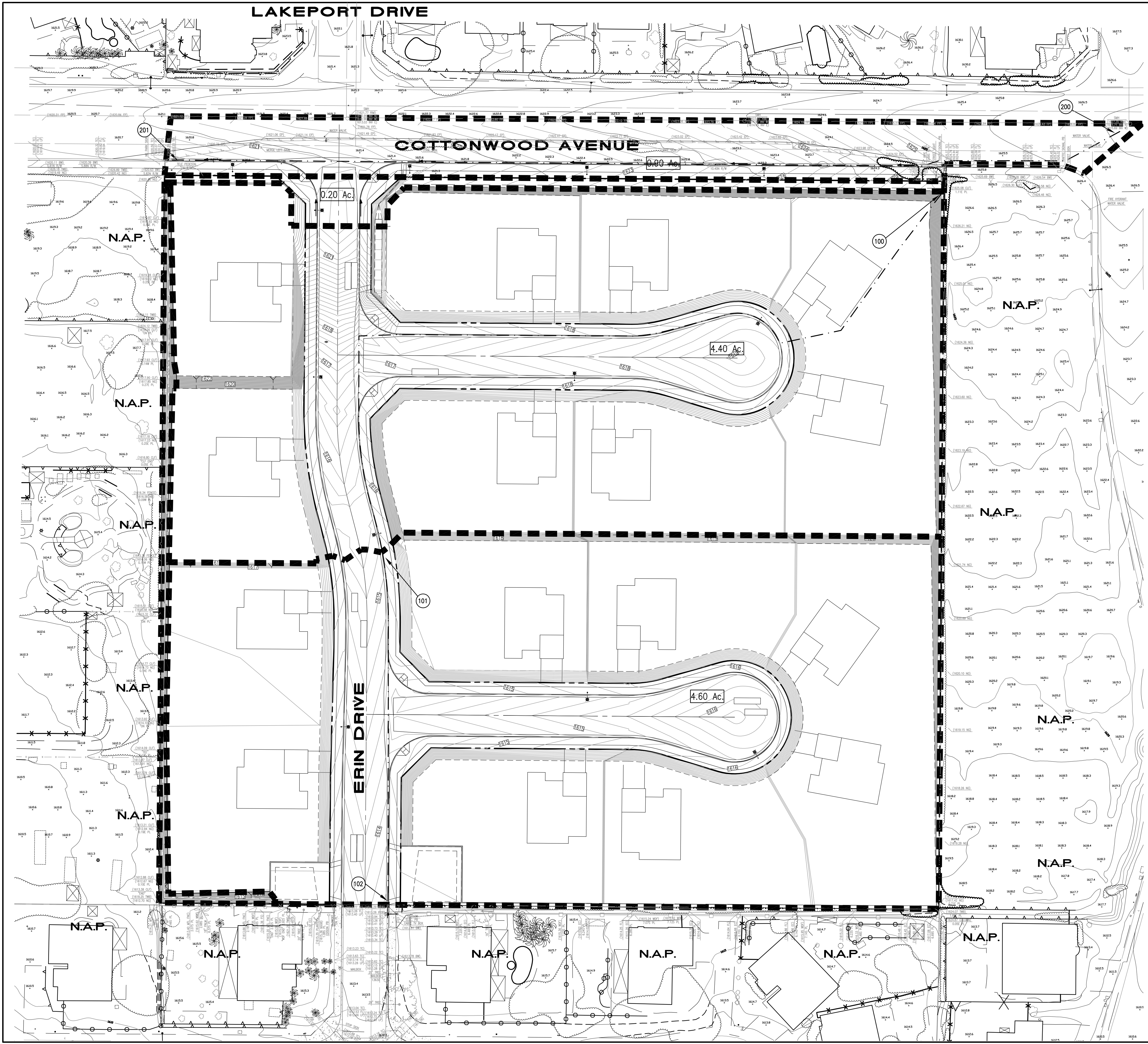
END OF RATIONAL METHOD ANALYSIS

1

Attachment: Preliminary Hydrology Study (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-

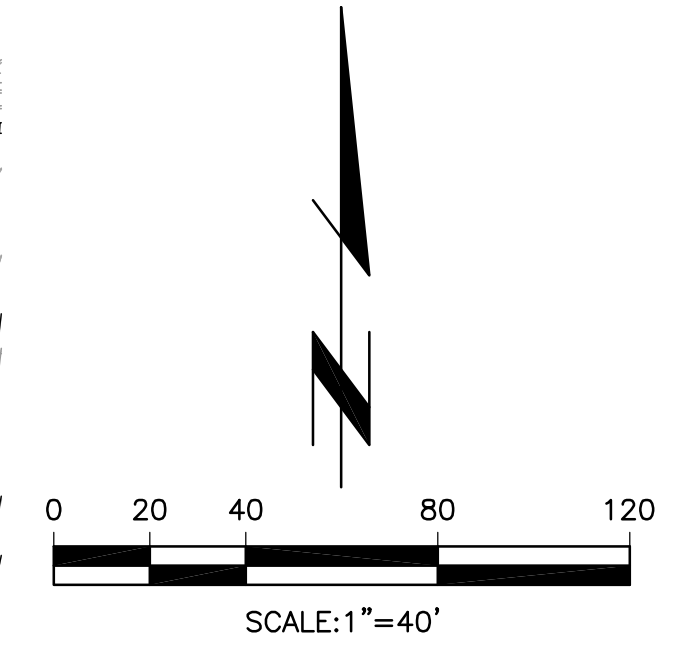
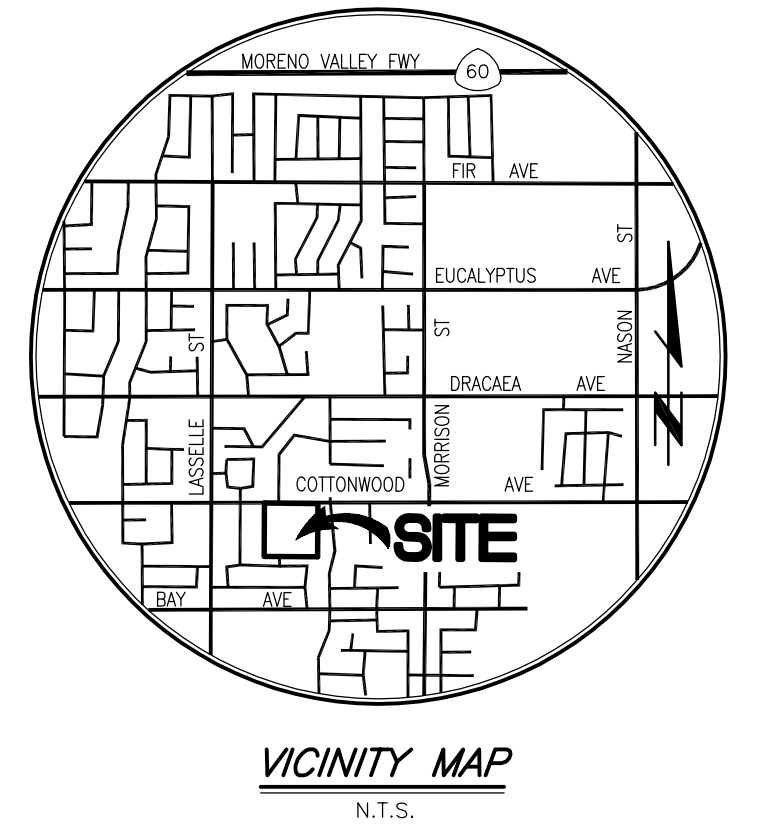
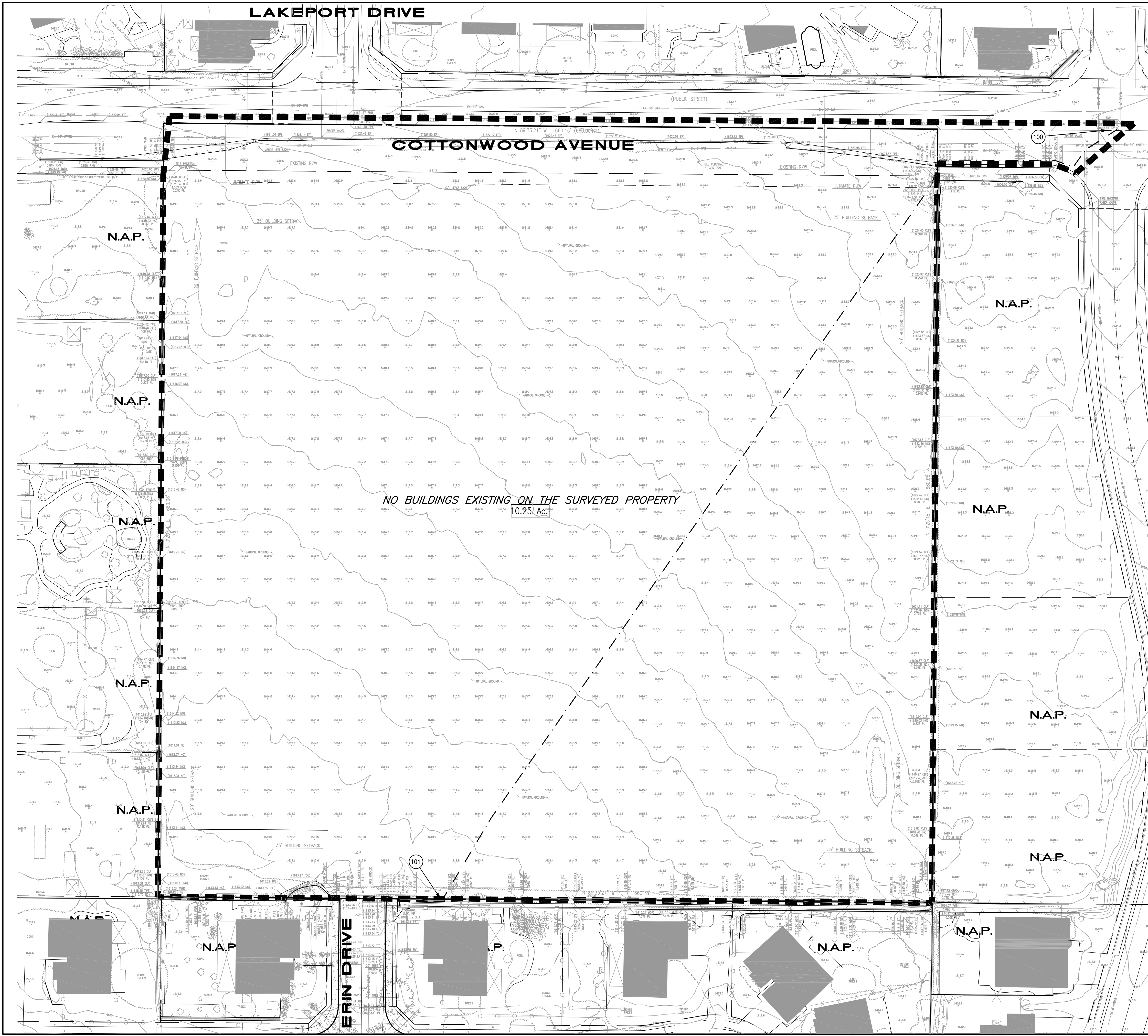
APPENDIX C

HYDROLOGY MAP



PREPARED FOR: MAC JONES HOLDINGS, LLC. 2 CONDOILIERS BLUFF NEWPORT COAST, CA 92657 PHONE: 949)509-5004 CONTACT: DANIEL WEBB		CITY OF MORENO VALLEY PUBLIC WORKS DEPARTMENT PROPOSED HYDROLOGY MAP COTTONWOOD RESIDENTIAL SUBDIVISION COTTONWOOD AVE. and LAKEPORT DR.	
Designed by _____ Date _____ Checked by _____ Date _____ Designed by _____ Date _____ Checked by _____ Date _____	Approved by _____ Date _____ Public Works Director R.C.E. XXXXXX	Sheet 1 of 1 Sheets	JN: 3357b PLOT DATE: July 5, 2016

Attachment: Preliminary Hydrology Study (2836 - PEN16-0690 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-family)



PREPARED FOR: MAC JONES HOLDINGS, LLC. 2 CONDOLIER BLUFF NEWPORT COAST, CA 92657 PHONE: 949)509-5004 CONTACT: DANIEL WEBB		CITY OF MORENO VALLEY PUBLIC WORKS DEPARTMENT EXISTING HYDROLOGY MAP COTTONWOOD RESIDENTIAL SUBDIVISION COTTONWOOD AVE. and LAKEPORT DR.	
Designed by _____ Date _____ Checked by _____ Date _____ Designed by _____ Date _____ Checked by _____ Date _____	Approved by _____ Date _____ Public Works Director _____ R.C.E. XXXXXX	Sheet 1 of 1 Sheets	JN: 3357b PLOT DATE: May 27, 2016

Attachment: Preliminary Hydrology Study (2838 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-family

MSHCP FOCUSED BURROWING OWL SURVEYS FOR THE 9.43-ACRE TTM 37060 PROJECT SITE

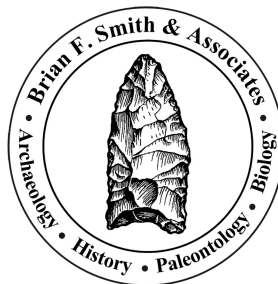
CITY OF MORENO VALLEY,
RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

MacJones Holdings, LLC
2 Gondoliers Bluff
Newport Coast, California 92657

Prepared by:

Ruben S. Ramirez, Jr.
Cadre Environmental
c/o Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064



August 29, 2016



INFORMATION SUMMARY

- A. Report Date: August 29th 2016
- B. Report Title: MSHCP Focused Burrowing Owl Surveys for the 9.43-Acre TTM 37060 Project Site, City of Moreno Valley, California.
- C. Case #: PA16-0009
- D. APN#s: 487-461-006
- E. Project Location: USGS 7.5' series Sunnymead Quadrangle, Riverside County, Township 3 South, Range 3 West, Section 9, South of Cottonwood Avenue.
- F. Applicant: MacJones Holdings, LLC
2 Gondoliers Bluff
Newport Coast, CA 92657
Contact: Daniel L. Webb
- G. MOU Principal: Cadre Environmental
701 Palomar Airport Road, Suite 300
Carlsbad, CA. 92011
Contact: Ruben S. Ramirez, Jr. (949) 300-0212
USFWS permit #TE780566-13
- H. Date of Surveys: August 3rd, 10th, 17th, 24th 2016.
- I. Summary: The 9.43-acre project site is characterized as being completely disturbed/disked as shown in Attachment A, *Biological Resources Map*, and Attachments B and C, *Current Project Site Photographs*.
- The project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Reche Canyon/Badlands Area Plan. The project site is not located within a MSHCP criteria area, group, or linkage area.
- The MSHCP has determined that all of the sensitive species potentially occurring onsite have been adequately covered (MSHCP Table 2-2 Species Considered for Conservation Under the MSHCP Since 1999, 2004). However, additional surveys may be required for specific wildlife species if suitable habitat is

documented onsite and/or if the property is located within a predetermined “Survey Area” (MSHCP 2004).

The project site occurs completely within a predetermined Survey Area for the burrowing owl. Suitable burrowing owl burrows potentially utilized for refugia and/or nesting including foraging habitat was documented within and adjacent to the project site during the habitat assessment conducted on July 12th 2016. Focused MSHCP burrowing owl surveys were conducted to determine the presence, absence and status of the species within and adjacent to the project site. Surveys were conducted by Cadre Environmental during the summer of 2016.

No burrowing owl or characteristic sign were detected within or immediately adjacent to the project site during the 2016 survey effort.

At a minimum, a 30-day preconstruction survey will be conducted immediately prior to the initiation of construction to ensure protection for this species and compliance with the conservation goals as outlined in the MSHCP. If burrowing owls are detected onsite during the 30-day preconstruction survey, a burrowing owl mitigation plan will be developed for the passive/active relocation of individuals to the Lake Mathews Ecological Reserve.

SUBJECT

MSHCP Focused Burrowing Owl Surveys for the 9.43-Acre TTM 37060 Project Site, City of Moreno Valley, California.

This report presents the findings of focused burrowing owl surveys conducted for the the 9.43-acre TTM 37060 project site (“Project Site”) located within the City of Moreno Valley. Specifically, the Project Site is located within APN 487-461-006 south of Cottonwood Avenue.

The Project Site is located in Western Riverside County and is located on the U.S. Geological Survey (USGS) 7.5’ series Sunnymead Quadrangle, Township 3 South, Range 3 West, Section 9. The Project Site is located within the Western Riverside County MSHCP Reche Canyon/Badlands Plan Area and is not located within a MHSCP Criteria Cell, Group, or Linkage Area (Attachments A, *Biological Resources Map*, B and C, *Current Project Site Photographs*).

This report incorporates the findings of a literature review, compilation of existing documentation, and a field reconnaissance and focused surveys conducted on July 12th, August 3rd, 10th, 17th, and 24th 2016.

This documentation is consistent with accepted scientific and technical standards and the requirements of the MSHCP. When appropriate, general biological resources are described in summary form in an effort to provide the reader with adequate background information.

METHODS OF STUDY

APPROACH

Prior to visiting the Project Site, a review of all available and relevant data on the biological characteristics, sensitive habitats, and species potentially present on or adjacent to the Project Site was conducted. Additionally, aerial photography, and USGS topographic map data were examined. After reviewing the available information, Cadre Environmental conducted a physical site assessment/burrow and focused survey.

As required by the MSHCP, and during the initial property assessment process, all Project Site APN’s were searched using the Conservation Report Summary Generator to determine if additional surveys for wildlife not adequately covered by the MSHCP may be required. The Project Site is located completely within a predetermined Survey Area for the burrowing owl.

Plant Community/Habitat Classification and Mapping

Plant communities were preliminarily mapped during the reconnaissance survey conducted on July 12th 2016 with the aid of an aerial photograph using the MSHCP uncollapsed vegetation communities classification system. When a vegetation community could not be accurately characterized using this classification system, an updated community classification code was developed to more accurately represent onsite habitat types.

General Wildlife Inventory

All animals identified during the reconnaissance and focused burrowing owl surveys by sight, call, tracks, scat, or other characteristic sign were recorded. In addition to species actually detected, expected use of the site by other wildlife was derived from the analysis of habitats on the site, combined with known habitat preferences of regionally occurring wildlife species.

Vertebrate taxonomy followed in this report is according to the Center for North American Herpetology (2015 for amphibians and reptiles), the American Ornithologists' Union (1988 and supplemental) for birds, and Baker et al. (2003) for mammals. Both common and scientific names are used during the first mention of a species; common names only are used in the remainder of the text.

Burrowing Owl Surveys

In accordance with the MSHCP Burrowing Owl Survey Instructions (2006), survey protocol consists of two steps, Step I – Habitat Assessment and Step II – Locating Burrows and Burrowing Owls. Step II is comprised of two parts, Part A: Focused Burrow Surveys and Part B: Focused Burrowing Owl Surveys.

Each step is briefly outlined below, followed by the methodology and results of each survey conducted within the Project Site. All initial habitat assessment, burrow and focused surveys were conducted by Ruben Ramirez.

Surveys were conducted during weather that is conducive to observing owls outside their burrows and detecting burrowing owl sign. Surveys were not conducted during rain, high winds (> 20 mph), dense fog, or temperatures over 90 °F. None of the surveys were conducted within five (5) days of measurable precipitation.

In addition to the MSHCP guidelines, field notes were taken daily. These notes recorded the date, location, animal species observed, and general habitat characteristics of each area and habitat examined that day.

Step I – Habitat Assessment

Step 1 of the MSHCP habitat assessment for burrowing owl consists of a walking survey to determine if suitable habitat is present onsite. Cadre Environmental conducted the habitat assessment on Jul 12th 2016 (Cadre Environmental 2016). Upon arrival at the Project Site, and prior to initiating the assessment survey, Cadre Environmental used binoculars to scan all suitable habitats on and adjacent to the property, including perch locations, to ascertain owl presence.

All suitable areas of the Project Site were surveyed on foot by walking slowly and methodically while recording/mapping areas that may represent suitable owl habitat onsite. Primary indicators of suitable burrowing owl habitat in western Riverside County include, but are not limited to, native and non-native grassland, interstitial grassland within shrub lands, shrub lands with low density shrub cover, golf courses, drainage ditches, earthen berms, unpaved airfields, pastureland, dairies, fallow fields, and agricultural use areas. Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels (*Otospermophilus beecheyi*) or badgers (*Taxidea taxus*), but they often utilize man-made structures, such as earthen berms, cement culverts, cement, asphalt, rock, wood debris piles, openings beneath cement or asphalt pavement. Burrowing owls are often found within, under, or in close proximity to man-made structures.

According to the MSHCP guidelines, if suitable habitat is present, the biologist should also walk the perimeter of the property, which consists of a 150-meter (approximately 500 feet) buffer zone around the Project Site boundary. If permission to access the buffer area cannot be obtained, the biologist shall not trespass, but visually inspect adjacent habitats with binoculars. In addition to surveying the entire Project Site all bordering natural habitats located immediately adjacent to the Project Site were assessed.

Results from the habitat assessment indicate that suitable resources for burrowing owl are present throughout the Project Site and undeveloped habitat extending east from the Project Site as illustrated in Attachment D, *Burrowing Owl Survey Area Map*. Accordingly, if suitable habitat is documented onsite or within adjacent habitats, both Step II, focused surveys and the 30-day pre-construction surveys are required in order to comply with the MSHCP guidelines.

Step II – Locating Burrows and Burrowing Owls

Concurrent with the initial habitat assessment, a detailed focused burrow survey was conducted and included documentation of appropriately sized natural burrows or suitable man-made structures that may be utilized by burrowing owl - as part of the MSHCP protocol, which is described below under Part A. Focused Burrow Survey. The MSHCP protocol indicated that no more than 100 acres should be surveyed per day/per biologist.

Part A: Focused Burrow Survey

A systematic survey for burrows, including burrowing owl sign, was conducted by walking across and adjacent to all suitable habitats mapped within the Project Site on July 12th 2016.

All observations of suitable burrows or dens, natural or man-made, or sightings of burrowing owl, were recorded and mapped during the survey (Cadre Environmental 2016).

Part B: Focused Burrowing Owl Surveys

Four (4) focused burrowing owl surveys (in addition to the initial focused burrow survey – Step II, Part A) were conducted on August 3rd, 10th, 17th, and 24th 2016 from one hour before sunrise to two hours after sunrise as outlined in Table 1, *Burrowing Owl Survey Schedule*. Pedestrian survey transects were spaced to allow 100% visual coverage of the ground surface. The distances between transect centerlines were no more than 20 meters (approximately 66 ft.) apart, and owing to the terrain, often much smaller. During visual surveys, all potentially suitable burrow or structure entrances were investigated for signs of owl occupation, such as feathers, tracks, or pellets, and carefully observed to determine if burrowing owls utilize these features, when present. All burrows are monitored at a short distance from the entrance, and at a location that would not interfere with potential owl behavior, when present.

Table 1 – Burrowing Owl Survey Schedule

Survey	Dates (Conditions) 2016	Results
1	August 3 rd - 64°F to 74°F, winds 1-4 mph, no rain	No owls detected
2	August 10 th – 60°F to 76°F, winds 0 mph, no rain	No owls detected
3	August 17 th - 65°F to 88°F, winds 2-4 mph, no rain	No owls detected
4	August 24 th - 65°F to 82°F, winds 0-2 mph, no rain	No owls detected

EXISTING CONDITIONS

The majority of the Project Site is characterized as disturbed/disked with little to no topographic relief.

PLANT COMMUNITY/HABITAT CLASSIFICATION**Disturbed/Disked**

The entire Project Site is characterized as disturbed (9.43-acres) based on the on-going disking activities. Common non-native species documented onsite include cheeseweed (*Malva parviflora*), London rockets (*Sisymbrium irio*), tumbling pigweed (*Amaranthus*

albus), Russian thistle (*Kali tragus*), puncture vine (*Tribulus terrestris*) and black mustard (*Brassica nigra*). Native species persisting onsite include rattlesnake spurge (*Euphorbia albomarginata*), common fiddleneck (*Amsinckia menziesii*), and alkali mallow (*Malvella leprosa*). Representative distribution and photographs of this habitat type is illustrated in Attachment A, *Biological Resources Map* and Attachments B and C, *Current Project Site Photographs*.

WILDLIFE POPULATIONS

General wildlife species documented onsite or within the vicinity during the initial site visit and focused surveys include mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), house finch (*Carpodacus mexicanus*), and California ground squirrel (*Otospermophilus beecheyi*).

RESULTS

Suitable burrowing owl burrows, foraging habitat and roost sites were documented throughout the Project Site and adjacent open space habitat extending east from the Project Site as illustrated in Attachments A, *Biological Resources Map*, and D, *Burrowing Owl Survey Area Map*. However, no burrowing owl or characteristic sign were detected within or immediately adjacent to the Project Site during the 2016 survey effort.

At a minimum, a 30-day preconstruction survey will be conducted immediately prior to the initiation of construction to ensure protection for this species and compliance with the conservation goals as outlined in the MSHCP. If burrowing owls are detected onsite during the 30-day preconstruction survey, a burrowing owl mitigation plan will be developed for the passive/active relocation of individuals to Lake Mathews Ecological Reserve.

REFERENCES

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosalitti, & D.H. Wilken, EDS. 2012. *The Jepson Manual: vascular plants of California*, 2nd ed. University of California Press, Berkeley, California.
- Cadre Environmental. 2016. *General MSHCP Habitat Assessment/Consistency Analysis, and Regulatory Constraints Assessment for the 9.43-Acre TTM 37060 Project Site*, City of Moreno Valley, California.
- California Department of Fish and Wildlife (CDFW), Natural Diversity Data Base (CNDDDB). 2016a. Sensitive Element Record Search for the Sunnymead Quadrangle. California Department of Fish and Wildlife. Sacramento, California. Accessed August 2016.

- California Department of Fish and Wildlife (CDFW). 2016b. Special Animals. Natural Heritage Division, Natural Diversity Data Base.
- California Department of Fish and Wildlife (CDFW). 2016c. Special Vascular Plants, Bryophytes, and Lichens. Natural Heritage Division, Natural Diversity Data Base.
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- Jepson Flora Project. 2015 (v. 1.0 & supplements). Jepson eFlora. <http://ucjeps.berkeley.edu/IJM.html>. Accessed Sep 2015.
- Riverside County Integrated Project (RCIP) Multiple Species Habitat Conservation Plan (MSHCP), March 2004.
- Roberts, F. M., Jr., S. D. White, A. C. Sanders, D. E. Bramlet, and S. Boyd. 2004. The vascular plants of western Riverside County, California: an annotated checklist. F.M. Roberts Publications, San Luis Rey, California, USA.

ATTACHMENTS

Attachment A - Biological Resources Map

Attachment B - Current Project Site Photographs

Attachment C - Current Project Site Photographs

Attachment D - Burrowing Owl Survey Area Map

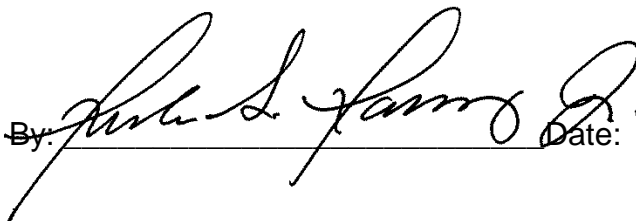
Certification

"I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief."


Author: _____ Date: August 29th 2016



Fieldwork Performed By: _____ Date: August 29th 2016

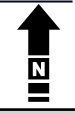




 Photo Point & Direction

Suitable Burrowing Owl Burrows (yellow polygon)

Attachment A - Biological Resources Map
 MSHCP Burrowing Owl Survey Report
 TTM 37060, APN 487-461-006





PHOTOGRAPH 1 - Southeast view of Project Site from northwest corner. The entire property is characterized as disturbed vegetation.



PHOTOGRAPH 2 - Northeast view of Project Site from southwest corner.

Refer to Attachment A for Photographic Key Map

Attachment B - Current Project Site Photographs

MSHCP Burrowing Owl Survey Report
TTM 37060, APN 487-461-006





PHOTOGRAPH 3 - Northwest view of Project Site from southeast corner.



PHOTOGRAPH 4 - Southwest view of Project Site from northeast corner.

Refer to Attachment A for Photographic Key Map

Attachment C - Current Project Site Photographs

*MSHCP Burrowing Owl Survey Report
TTM 37060, APN 487-461-006*





Attachment: Burrowing Owl Report August 2016 (2836 : PEN16-0050 - Tentative Tract Map 37060 to

Attachment D - Burrowing Owl Survey Area Map
 MSHCP Burrowing Owl Survey Report
 TTM 37060, APN 487-461-006



**GENERAL MSHCP HABITAT
ASSESSMENT/CONSISTENCY ANALYSIS
AND REGULATORY CONSTRAINTS
ASSESSMENT FOR THE 9.43-ACRE TTM
37060 PROJECT SITE**

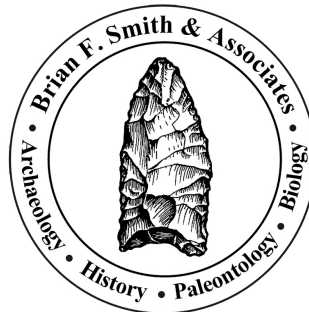
**CITY OF MORENO VALLEY,
RIVERSIDE COUNTY, CALIFORNIA**

Prepared for:

**MacJones Holdings, LLC
2 Gondoliers Bluff
Newport Coast, California 92657**

Prepared by:

**Ruben S. Ramirez, Jr.
Cadre Environmental
c/o Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064**



July 15, 2016



INFORMATION SUMMARY

- A. Report Date: July 15th, 2016
- B. Report Title: General MSHCP Habitat Assessment/Consistency Analysis, and Regulatory Constraints Assessment for the 9.43-Acre TTM 37060 Project Site, City of Moreno Valley, California.
- C. Case #: PA16-0009
- D. APN#: 487-461-006
- E. Project Location: USGS 7.5' series Sunnymead Quadrangle, Riverside County, Township 3 South, Range 3 West, Section 9, South of Cottonwood Avenue.
- F. Applicant: MacJones Holdings, LLC
2 Gondoliers Bluff
Newport Coast, CA 92657
Contact: Daniel L. Webb
- G. MOU Principal: Cadre Environmental
701 Palomar Airport Road, Suite 300
Carlsbad, CA. 92011
Contact: Ruben S. Ramirez, Jr. (949) 300-0212
USFWS permit #TE780566-13
- H. Date of Survey: July 12th, 2016.
- I. Summary: The 9.43-acre project site is characterized as completely disturbed/disked as shown in Attachment A, *Biological Resources Map*, and Attachments B and C, *Current Project Site Photographs*.
- The project site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Reche Canyon/Badlands Area Plan. The project site is not located within a MSHCP criteria area, group, or linkage area. Therefore, a Habitat Evaluation and Acquisition Negotiation Strategy (HANS) and Joint Project Review (JPR) will not be required.
- The MSHCP has determined that all of the sensitive species potentially occurring onsite have been adequately covered (MSHCP

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Table 2-2 Species Considered for Conservation Under the MSHCP Since 1999, 2004). However, additional surveys may be required for narrow endemic plants, criteria area species, and specific wildlife species if suitable habitat is documented onsite and/or if the property is located within a predetermined “Survey Area” (MSHCP 2004).

The project site is not within a predetermined Survey Area for narrow endemic or criteria area plant species. (RCIP Conservation Summary Report Generator 2016). No additional surveys are warranted.

The project site does not occur within a predetermined Survey Area for amphibians or mammals (RCIP Conservation Summary Report Generator 2016). No additional surveys are warranted.

The project site occurs completely within a predetermined Survey Area for the burrowing owl. Suitable burrowing owl burrows potentially utilized for refugia and/or nesting including foraging habitat was documented within and adjacent to the project site. Focused MSHCP burrowing owl surveys are required to determine the presence, absence and status of the species within and adjacent to the project site. A 30-day preconstruction survey will also be required immediately prior to the initiation of construction to ensure protection for this species and compliance with the conservation goals as outlined in the MSHCP.

No MSHCP riparian, riverine or vernal pool resources (Section 6.1.2) were documented within or immediately adjacent to the project site. Development of a MSHCP Determination of Biological Equivalent or Superior Preservation (DBESP) will not be required.

No suitable habitat for the least Bell’s vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*) or western yellow-billed cuckoo (*Coccyzus americanus*) was detected within or adjacent to the project site. No additional surveys are warranted.

No features regulated by the Santa Ana Regional Water Quality Control Board, California Department of Fish and Wildlife and United States Army Corps of Engineers were documented within or immediately adjacent to the project site. No regulatory permits will need to be acquired.

SUBJECT

General MSHCP Habitat Assessment/Consistency Analysis, and Regulatory Constraints Assessment for the 9.43-Acre TTM 37060 Project Site, City of Moreno Valley, California.

This report presents the findings of a general biological habitat assessment and consistency analysis for the 9.43-acre TTM 37060 project site (“Project Site”) located within the City of Moreno Valley. Specifically, the Project Site is located within APN 487-461-006 south of Cottonwood Avenue.

The purpose of this study, conducted by Cadre Environmental, is to document the existing biological resources, identify general vegetation types, and assess the potential biological and regulatory constraints and impacts associated with the proposed development within the Project Site as outlined by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) (Attachments A, *Biological Resources Map*, B and C, *Current Project Site Photographs*).

The Project Site is located in Western Riverside County and is located on the U.S. Geological Survey (USGS) 7.5’ series Sunnymead Quadrangle, Township 3 South, Range 3 West, Section 9. The Project Site is located within the Western Riverside County MSHCP Reche Canyon/Badlands Plan Area and is not located within a MSHCP Criteria Cell, Group, or Linkage Area.

This report incorporates the findings of an extensive literature review, compilation of existing documentation, and field reconnaissance conducted on July 12th, 2016. This documentation is consistent with accepted scientific and technical standards, the requirements of the United States Fish and Wildlife Service (USFWS), and the California Department of Fish and Wildlife (CDFW). When appropriate, general biological resources are described in summary form in an effort to provide the reader with adequate background information. However, the report focuses on documenting those resources considered to be significant and/or sensitive as outlined by the California Environmental Quality Act (CEQA) and the Western Riverside County MSHCP.

The following report provides a summary of topographic features, soils and habitats observed onsite. Onsite resources were analyzed to determine which if any are subject to the United States Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act, CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code, the Santa Ana Regional Water Quality Control Board (RWQCB) 401 certification/Waste Discharge Requirements (WDR’s), and MSHCP jurisdiction pursuant to section 6.1.2 (MSHCP 2004).

Accordingly, this report provides an overview of potential USACE, RWQCB, CDFW, MSHCP riparian/riverine/vernal pool jurisdictional resources and a habitat assessment for species that may require additional focused surveys as outlined by the MSHCP.

METHODS OF STUDY

APPROACH

Prior to visiting the Project Site, a review of all available and relevant data on the biological characteristics, sensitive habitats, and species potentially present on or adjacent to the Project Site was conducted. Additionally, aerial photography, and USGS topographic map were examined. After reviewing the available information, Cadre Environmental conducted a physical site assessment.

As required by the MSHCP, and during the initial property assessment process, all Project Site APN's were searched using the Conservation Report Summary Generator to determine if the property falls within a "Criteria Area" and if additional surveys for narrow endemic/criteria area plant species or wildlife not adequately covered by the MSHCP may be required. A GIS analysis was also conducted to determine the properties relationship to MSHCP designated Criteria Areas and survey areas.

During the initial survey, the Project Site's habitat was characterized, preliminary vegetative communities and primary topographic features potentially subject to USACE/CDFW/RWQCB jurisdiction mapped, and the potential to support sensitive species as required by the guidelines of the MSHCP evaluated. Data, which contain digital images derived from aerial photography with orthographic projection properties, were used in conjunction with Cadre Environmental's in-house geographic information system (GIS) database as an important base layer to identify vegetation communities, drainage features, and USFWS designated critical habitat boundaries. Vegetation communities were then "ground-truthed" during field observations to obtain characteristic descriptions.

LITERATURE REVIEW

The study was initiated with a review of relevant literature on the biological resources of the Project Site and vicinity. The MSHCP list of covered species potentially occurring onsite was also examined (MSHCP Table 2-2 Species Considered for Conservation Under the MSHCP Since 1999, 2004). In addition, federal register listings, protocols, and species data provided by USFWS were reviewed in conjunction with anticipated federally listed species potentially occurring at the Project Site. The California Natural Diversity Database (CNDDDB),¹ a review of the California Native Plant Society sixth inventory (Tibor 2001), and Roberts et al. (2004) were also reviewed for pertinent information regarding the location of known occurrences of sensitive species in the vicinity of the property. In addition, numerous regional floral and faunal field guides were utilized in the identification

¹ California Natural Diversity Data Base, Department of Fish and Wildlife. July 2016. Natural Heritage Program: RareFind, Sunnymead Quadrangle.

of species and suitable habitats. Documents consulted regarding potential onsite biological conditions are listed in the references section at the end of this report.

FIELD INVESTIGATION

The Project Site was surveyed on July 12th, 2016. The survey included complete coverage of the Project Site, with special attention focused toward sensitive species or those habitats potentially supporting sensitive flora or fauna that would be essential to efficiently implementing the terms and conditions of the Western Riverside County MSHCP, and features potentially subject to USACE, CDFW, RWQCB and MSHCP jurisdiction. Aerial photography of the Project Site and vicinity was utilized to accurately locate and survey the property. General plant communities were preliminarily mapped directly on the aerial photo using visible landmarks in the field, which are depicted in Attachment C, *Biological Resources Map*. Representative photographs of the Project Site's natural resources were taken during the field survey (Attachment B and C, *Current Project Site Photographs*).

Plant Community/Habitat Classification and Mapping

Plant communities were preliminarily mapped with the aid of an aerial photograph using the MSHCP uncollapsed vegetation communities classification system when appropriate. When a vegetation community could not be accurately characterized using this information, an updated community classification code was developed to more accurately represent onsite habitat types.

General Plant Inventory

All plants observed during the survey efforts were either identified in the field or collected and later identified using taxonomic keys. Plant taxonomy and nomenclatural changes follow Baldwin et al. (2012) or the Jepson Flora Project (2015). Common names used in this report generally follow Roberts et al. (2004) or Baldwin et al. (2012). Scientific names are included only at the first mention of a species; thereafter, common names alone are used.

General Wildlife Inventory

General wildlife surveys were not conducted during the general biological habitat assessment. However, animals identified during the reconnaissance survey by sight, call, tracks, nests, scat, remains, or other signs were recorded in field notes. All wildlife was identified in the field with the aid of binoculars and taxonomic keys (if applicable). Vertebrate taxonomy followed in this report is according to the Center of North American Herpetology (2016) for amphibians and reptiles, the American Ornithologists' Union (1998 and supplemental) for birds, and Bradley et al. (2014) for mammals. Scientific names are used during the first mention of a species; common names only are used in the remainder of the text (if applicable).

Burrowing Owl Habitat Assessment

The Project Site occurs within a MSHCP burrowing owl survey area, a habitat assessment for the species was conducted to ensure compliance with MSHCP guidelines for the species.

In accordance with the updated MSHCP Burrowing Owl Survey Instructions (2006), survey protocol consists of two steps, Step I – Habitat Assessment and Step II – Locating Burrows and Burrowing Owls. Each step is briefly outlined below, followed by the methodology.

The habitat assessment was conducted during weather that is conducive to observing owls outside their burrows. The survey was not conducted during rain, high winds (> 20 mph), dense fog, or temperatures over 90 °F.

Step 1 of the MSHCP habitat assessment for burrowing owl consists of a walking survey to determine if suitable habitat is present on site. Upon arrival at the Project Site, and prior to initiating the assessment survey, Cadre Environmental utilized binoculars to scan all potential suitable habitats on and adjacent to the property, including perch locations, to ascertain owl presence.

A focused burrow survey that includes documentation of appropriately sized natural burrows or suitable man-made structures that may be utilized by burrowing owl was conducted as described below.

All observations of suitable burrows or dens, natural or man-made, or sightings of burrowing owl, was recorded and mapped during the burrowing owl/MSHCP habitat assessment as shown in Attachment A, *Biological Resources Map*.

Regional Connectivity/Wildlife Movement Corridor Assessment

The analysis of wildlife movement corridors associated with the Project Site and its immediate vicinity is based on information compiled from literature, analysis of the aerial photograph, and direct observations made in the field during the site visit.

A literature review was conducted that included documents on island biogeography (studies of fragmented and isolated habitat “islands”), reports on wildlife home range sizes and migration patterns, and studies on wildlife dispersal. Wildlife movement studies conducted in southern California were also reviewed. Use of field-verified digital aerial data, in conjunction with the GIS database, allowed proper identification of vegetation communities and drainage features. This information was crucial to assessing the relationship of the property to large open space areas in the immediate vicinity and was also evaluated in terms of connectivity and habitat linkages. Relative to corridor issues, the discussions in this report are intended to focus on wildlife movement associated with the property and the immediate vicinity.

EXISTING CONDITIONS

The majority of the Project Site is characterized as disturbed/disked with little to no topographic relief.

SOILS

The Soil Survey of Western Riverside Area has classified the Project Site as Greenfield sandy loam, 0 to 2 percent slopes (GyA). All soils documented onsite within the project impact area are characterized as being well drained (drainage class). This is consistent with conditions observed onsite and lack of inundation documented during a review of historical aerials for years of above average rainfall.

PLANT COMMUNITY/HABITAT CLASSIFICATION

Disturbed/Disked

The entire Project Site is characterized as disturbed (9.43-acres) based on the on-going disking activities. Common non-native species documented onsite include cheeseweed (*Malva parviflora*), London rockets (*Sisymbrium irio*), tumbling pigweed (*Amaranthus albus*), Russian thistle (*Kali tragus*), puncture vine (*Tribulus terrestris*) and black mustard (*Brassica nigra*). Native species persisting onsite include rattlesnake spurge (*Euphorbia albomarginata*), common fiddleneck (*Amsinckia menziesii*), and alkali mallow (*Malvella leprosa*). Representative distribution and photographs of this habitat type is illustrated in Attachment A, *Biological Resources Map* and Attachments B and C, *Current Project Site Photographs*.

WILDLIFE POPULATIONS

General wildlife species documented onsite or within the vicinity during the site visit include mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), house finch (*Carpodacus mexicanus*), and California ground squirrel (*Otospermophilus beecheyi*).

REGIONAL CONNECTIVITY/WILDLIFE MOVEMENT

Overview

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information (MacArthur and

Wilson 1967, Soule 1987, Harris and Gallagher 1989, Bennett 1990). Corridors effectively act as links between different populations of a species. A group of smaller populations (termed “demes”) linked together via a system of corridors is termed a “metapopulation.” The long-term health of each deme within the metapopulation is dependent upon its size and the frequency of interchange of individuals (immigration vs. emigration). The smaller the deme, the more important immigration becomes, because prolonged inbreeding with the same individuals can reduce genetic variability. Immigrant individuals that move into the deme from adjoining demes mate with individuals and supply that deme with new genes and gene combinations that increases overall genetic diversity. An increase in a population’s genetic variability is generally associated with an increase in a population’s health.

Corridors mitigate the effects of habitat fragmentation by (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss 1983, Fahrig and Merriam 1985, Simberloff and Cox 1987, Harris and Gallagher 1989). Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as “wildlife corridor”, “travel route”, “habitat linkage”, and “wildlife crossing” to refer to areas in which wildlife moves from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

Travel Route: A landscape feature (such as a ridge line, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover while moving between habitat areas; and provides a relatively direct link between target habitat areas.

Wildlife Corridor: A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate

movement while in the corridor. Larger, landscape-level corridors (often referred to as “habitat or landscape linkages”) can provide both transitory and resident habitat for a variety of species.

Wildlife Crossing: A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These are often “choke points” along a movement corridor.

Wildlife Movement within the Project Site

The Project Site is not located adjacent to extensive native open space habitats and does not represent a wildlife travel route, crossing or regional movement corridor between large open space habitats. The Project Site is bordered on all sites by existing road-networks, residential development and disturbed/isolated habitat.

The Project Site is not located within a MSHCP designated core, extension of existing core, non-contiguous habitat block, constrained linkage, or linkage area.

SENSITIVE BIOLOGICAL RESOURCES

OVERVIEW OF CLASSIFICATIONS

The following discussion describes the plant and wildlife species present, or potentially present, within the property boundaries, that have been afforded special recognition by federal, state, or local resource conservation agencies and organizations, principally due to the species’ declining or limited population sizes, usually resulting from habitat loss. Also discussed are habitats that are unique, of relatively limited distribution, or of particular value to wildlife. Protected sensitive species are classified by either state or federal resource management agencies, or both, as threatened or endangered under provisions of the state and federal Endangered Species Acts. Vulnerable or “at-risk” species that are proposed for listing as threatened or endangered are categorized administratively as "candidates" by the USFWS. The CDFW uses various terminology and classifications to describe vulnerable species. There are additional sensitive species classifications applicable in California. These are described below.

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, or rare. The CDFW, the USFWS, and special groups like the California Native Plant Society (CNPS) maintain watch lists of such resources. For the purpose of this assessment, sources used to determine the sensitive status of biological resources are:

Plants: USFWS (2016), CDFW (2016c, 2016d), CNDDDB (2016a), and CNPS (Skinner and Pavlik 1994).

Wildlife: California Wildlife Habitat Relationships Database System (CWHRDS 1991), USFWS (2016), CDFW (2016b, 2016e), CNDDDB (2016a).

Habitats: CNDDDB (2016a).

Federal Protection and Classifications

The Federal Endangered Species Act of 1973 (FESA) defines an endangered species as “any species that is in danger of extinction throughout all or a significant portion of its range.” Threatened species are defined as “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Under provisions of Section 9(a)(1)(B) of the FESA, it is unlawful to “take” any listed species. “Take” is defined as follows in Section 3(18) of the FESA: “...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Further, the USFWS, through regulation, has interpreted the terms “harm” and “harass” to include certain types of habitat modification as forms of a “take.” These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a federal agency for an action that could affect a federally listed plant and animal species, the property owner and agency are required to consult with the USFWS. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants. Recently, the USFWS instituted changes in the listing status of former candidate species. Former C1 (candidate) species are now simply referred to as candidate species and represent the only candidates for listing. Former C2 species (for which the USFWS had insufficient evidence to warrant listing at this time) and C3 species (either extinct, no longer a valid taxon, or more abundant than was formerly believed) are no longer considered as candidate species. Therefore, these species are no longer maintained in list form by the USFWS, nor are they formally protected. However, some USFWS field offices have issued memoranda stating that former C2 species are henceforth to be considered Federal Species of Concern. This term is employed in this document, but carries no official protections. All references to federally protected species in this report (whether listed, proposed for listing, or a candidate) include the most current published status or candidate category to which each species has been assigned by the USFWS.

For purposes of this assessment, the following acronyms are used for federal status species:

FE	Federal Endangered
FT	Federal Threatened

FPE	Federal Proposed Endangered
FPT	Federal Proposed Threatened
FC	Federal Candidate for Listing

State of California Protection and Classifications

The California Endangered Species Act (CESA) defines an endangered species as “...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.” The State defines a threatened species as “...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species.” Candidate species are defined as “...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list.” Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the federal FESA, the CESA does not include listing provisions for invertebrate species.

Article 3, sections 2080 through 2085 of the CESA addresses the taking of threatened or endangered species by stating “no person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided...” Under the CESA, “take” is defined as “...hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Exceptions authorized by the state to allow “take” require “...permits or memorandums of understanding...” and can be authorized for “...endangered species, threatened species, or candidate species for scientific, educational, or management purposes.” Sections 1901 and 1913 of the California Fish and Game Code provide that notification is required prior to disturbance.

Additionally, some sensitive mammals and birds are protected by the State as Fully Protected Mammals or Fully Protected Birds, as described in the California Fish and Game Code, sections 4700 and 3511, respectively. California Species of Special Concern (“special” animals and plants) listings include special status species, including all state and federal protected and candidate taxa, Bureau of Land Management and U.S.

Forest Service sensitive species, species considered to be declining or rare by the CNPS or National Audubon Society, and a selection of species that are considered to be under population stress but are not formally proposed for listing. This list is primarily a working document for the CDFW CNDDDB project. Informally listed taxa are not protected per se, but warrant consideration in the preparation of biotic assessments. For some species, the CNDDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nest sites. For the purposes of this assessment, the following acronyms are used for state status species:

SE	State Endangered
ST	State Threatened
SCE	State Candidate Endangered
SCT	State Candidate Threatened
SFP	State Fully Protected
SP	State Protected
SR	State Rare
CSC	California Species of Special Concern
WL	California Watch List

California Native Plant Society

The CNPS is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in the state. This organization has compiled an inventory comprised of the information focusing upon geographic distribution and qualitative characterization of rare, threatened, or endangered vascular plant species of California (Tibor 2001). The list serves as the candidate list for listing as threatened and endangered by the CDFW. The CNPS has developed five categories of rarity (California Rare Plant Rank [CRPR]):

CRPR 1A	Presumed extinct in California
CRPR 1B	Rare, threatened, or endangered in California and elsewhere
CRPR 2	Rare, threatened, or endangered in California, but more common elsewhere
CRPR 3	Plants about which we need more information – a review list
CRPR 4	Species of limited distribution in California (i.e., naturally rare in the wild), but whose existence does not appear to be susceptible to threat

As stated by the CNPS:

Threat Rank is an extension added onto the California Rare Plant Rank and designates the level of endangerment by a 1 to 3 ranking with 1 being the most endangered and 3 being the least endangered. A Threat Rank is present for all California Rare Plant Rank 1B, 2, 4, and the majority of California Rare Plant Rank 3. California Rare Plant Rank 4 plants are seldom assigned a Threat Rank of 0.1, as they generally have large enough populations to not have significant threats to their continued existence in California; however, certain conditions exist to make the plant a species of concern and hence be assigned a California Rare Plant Rank. In addition, all California Rare Plant Rank 1A (presumed extinct in California), and some California Rare Plant Rank 3 (need more information) plants, which lack threat information, do not have a Threat Rank extension (CNPS 2012).

0.1	Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
0.2	Fairly threatened in California (20-80 percent occurrences threatened/moderate degree and immediacy of threat)
0.3	Not very threatened in California (<20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

POTENTIALLY SENSITIVE SPECIES/RESOURCES

Determinations of MSHCP sensitive species that could potentially occur on the Project Site are based on one or both of the following: (1) a record reported in the CNDDDB or CNPS inventory and; (2) the Project Site is within the known distribution of a species and contains suitable habitat or species documented onsite.

Sensitive Plant Communities

As stated by CDFG:

“One purpose of the vegetation classification is to assist in determining the level of rarity and imperilment of vegetation types. Ranking of alliances according to their degree of imperilment (as measured by rarity, trends, and threats) follows NatureServe’s Heritage Methodology, in which all alliances are listed with a G (global) and S (state) rank. For alliances with State ranks of S1-S3, all associations within them are also considered to be highly imperiled” (CDFG 2012)

No sensitive plant communities were documented onsite. However, the project applicant shall pay MSHCP Local Development Mitigation fees as established and implemented by the City of Moreno Valley (**BIO-MM1**, MSHCP Local Development Mitigation Fee).

Sensitive Plant Species

The MSHCP has determined that all of the sensitive species potentially occurring onsite have been adequately covered (MSHCP Table 2-2 Species Considered for Conservation Under the MSHCP Since 1999, 2004). However, additional surveys may be required for narrow endemic plants and/or criteria area species if suitable habitat is documented onsite and/or if the property is located within a predetermined “Survey Area” (MSHCP 2004).

The Project Site does not occur within a predetermined Survey Area for MSHCP narrow endemic or criteria area plant species. (RCIP Conservation Summary Report Generator 2016). No additional surveys are warranted.

Oak Tree and Plant Protection and Management

No oak or mature trees were documented within or adjacent to the Project Site.

Sensitive Wildlife Species

The MSHCP has determined that all of the sensitive species potentially occurring onsite have been adequately covered (MSHCP Table 2-2 Species Considered for Conservation Under the MSHCP Since 1999, 2004). However, additional surveys may be required for Criteria Area species and specific wildlife species if suitable habitat is documented onsite and/or if the property is located within a predetermined “Survey Area” (MSHCP 2004).

The Project Site does not occur within a predetermined Survey Area for amphibians or mammals (RCIP Conservation Summary Report Generator 2012).

No suitable habitat for the least Bell’s vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*) or western yellow-billed cuckoo (*Coccyzus americanus*) was detected within or adjacent to the Project Site.

The Project Site occurs completely within a predetermined Survey Area for the burrowing owl. Suitable burrowing owl burrows potentially utilized for refugia and/or nesting including foraging habitat was documented within and adjacent to the Project Site. Focused MSHCP burrowing owl surveys are required to determine the presence, absence and status of the species within and adjacent to the Project Site. A 30-day preconstruction survey will also be required immediately prior to the initiation of construction to ensure protection for this species and compliance with the conservation

goals as outlined in the MSHCP (**BIO-MM2**, MSHCP Focused Survey and 30-Day Burrowing Owl Preconstruction Surveys).

The Project Site falls within the Stephens' kangaroo rat (*Dipodomys stephensi*, SKR) Fee Area outlined in the Riverside County SKR Habitat Conservation Plan (HCP). The project applicant shall pay the fees pursuant to County Ordinance 663.10 for the SKR HCP Fee Assessment Area as established and implemented by the County of Riverside. (**BIO-MM3**, SKR Fee Area)

Nesting Bird Habitat

The non-native vegetation documented onsite represents potential habitat for ground nesting bird species. Potential direct/indirect impacts to regulated nesting birds will require compliance with the federal Migratory Bird Treaty Act (MBTA) (**BIO-MM4**, Federal Migratory Bird Treaty Act).

MSHCP Riparian, Riverine, Vernal Pool Resources

No MSHCP riparian, riverine or vernal pool resources (Section 6.1.2) were documented within or immediately adjacent to the Project Site. Development of a MSHCP Determination of Biological Equivalent or Superior Preservation (DBESP) will not be required.

Jurisdictional Resources

No features regulated by the Santa Ana Regional Water Quality Control Board, California Department of Fish and Wildlife and United States Army Corps of Engineers were documented within or immediately adjacent to the Project Site. No regulatory permits will need to be acquired.

SUMMARY OF CONSISTENCY WITH MSHCP POLICIES

The purpose of this report is to document the existing biological resources, identify general vegetation types, and assess the potential biological and regulatory constraints and impacts associated with the proposed development within the Project Site as outlined by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Specifically, the report is intended to assist the City of Moreno Valley during project review and compliance with MSHCP and regulatory requirements. The following sections summarize the Project Site's relationship to MSHCP Criteria Areas and MSHCP compliance guidelines.

CRITERIA AREAS

The 9.43-acre Project Site is located within the Western Riverside County MSHCP Reche Canyon/Badlands Plan Area and is not located within a Criteria Area and no onsite conservation is required or proposed.

The following outline summarizes the MSHCP conservation goals respective of MSHCP regulated resources.

CRITERIA AREA SPECIES SURVEY AREA

The Project Site does not occur within a predetermined Survey Area for MSHCP Criteria Area plant species. (RCIP Conservation Summary Report Generator 2016). No additional surveys are warranted.

The project is consistent with MSHCP Section 6.3.2.

NARROW ENDEMIC PLANT SPECIES SURVEY AREA

The Project Site does not occur within a predetermined Survey Area for MSHCP narrow endemic plant species. (RCIP Conservation Summary Report Generator 2016). No additional surveys are warranted.

The project is consistent with MSHCP Section 6.1.3

AMPHIBIAN SPECIES SURVEY AREA

The Project Site is not within the Amphibian Species Survey Area; therefore, no surveys are required (RCIP Conservation Summary Report Generator 2015).

The project is consistent with MSHCP Section 6.3.2.

MAMMAL SPECIES SURVEY AREA

The Project Site is not within the Mammal Species Survey Area; therefore, no surveys are required (RCIP Conservation Summary Report Generator 2015).

The project is consistent with MSHCP Section 6.3.2.

BURROWING OWL SURVEY AREA

The Project Site occurs completely within a predetermined Survey Area for the burrowing owl. Suitable burrowing owl burrows potentially utilized for refugia and/or nesting including foraging habitat was documented within and adjacent to the Project Site. Focused MSHCP burrowing owl surveys are required to determine the presence, absence and status of the species within and adjacent to the Project Site. A 30-day

preconstruction survey will also be required immediately prior to the initiation of construction to ensure protection for this species and compliance with the conservation goals as outlined in the MSHCP.

Following submittal, review and approval of the burrowing owl survey reports by the City of Moreno Valley and compliance with all species specific conservation goals, if detected within or adjacent to the Project Site, the project will be consistent with MSHCP Section 6.3.2.

MSHCP RIPARIAN/RIVERINE AREAS AND VERNAL POOLS

No MSHCP riparian, riverine or vernal pool resources (Section 6.1.2) were documented within or immediately adjacent to the Project Site. Development of a MSHCP Determination of Biological Equivalent or Superior Preservation (DBESP) will not be required.

The project is consistent with MSHCP Section 6.1.2.

URBAN/WILDLANDS INTERFACE

The MSHCP Urban/Wildlands Interface guidelines presented in Section 6.1.4 are intended to address indirect effects associated with locating commercial, mixed uses and residential developments in proximity to a MSHCP Conservation Area. The Project Site is not located adjacent to an existing or proposed MSHCP Conservation Area. No mitigation proposed.

The project is consistent with MSHCP Section 6.1.4.

FUELS MANAGEMENT

The fuels management guidelines presented in Section 6.4 of the MSHCP are intended to address brush management activities around new development within or adjacent to MSHCP Conservation Areas. The Project Site is not located adjacent to an existing or proposed MSHCP Conservation Area. No mitigation proposed.

The project is consistent with MSHCP Section 6.4.

MITIGATION MEASURES

Implementation of Mitigation Measures BIO-MM1 through BIO-MM4 would reduce all potential significant unavoidable impacts on biological resources below a level of significance, thereby ensuring compliance with CEQA and MSHCP guidelines.

BIO-MM 1 MSHCP Local Development Mitigation Fee

The project applicant shall pay MSHCP Local Development Mitigation fees as established and implemented by the City of Moreno Valley.

BIO-MM 2 MSHCP Focused Survey and 30-Day Burrowing Owl Preconstruction Surveys

Focused MSHCP burrowing owl surveys will be conducted to determine the presence, absence and status within and adjacent to the Project Site. A report of the findings prepared by a qualified biologist shall be submitted to the City of Moreno Valley for review and approval.

A 30-day burrowing owl preconstruction survey will be conducted immediately prior to the initiation of ground-disturbing construction to ensure protection for this species and compliance with the conservation goals as outlined in the MSHCP. The survey will be conducted in compliance with both MSHCP and CDFW guidelines (MSHCP 2006, CDFW 2012). A report of the findings prepared by a qualified biologist shall be submitted to the City of Moreno Valley prior to any permit or approval for ground disturbing activities.

If burrowing owls are detected onsite during the 30-day preconstruction survey, during the breeding season (February 1st to August 31st) then construction activities shall be limited to beyond 300 feet of the active burrows until a qualified biologist has confirmed that nesting efforts are completed or not initiated. In addition to monitoring breeding activity, if construction is proposed to be initiated during the breeding season or active relocation is proposed, a burrowing owl mitigation plan will be developed based on the County of Riverside Environmental Programs Division, CDFW and USFWS requirements for the relocation of individuals to the Lake Mathews Preserve.

BIO-MM 3 SKR Fee Area

The Project Site falls within the SKR Fee Area outlined in the Riverside County SKR HCP. The project applicant shall pay the fees pursuant to County Ordinance 663.10 for the SKR HCP Fee Assessment Area as established and implemented by the County of Riverside.

BIO-MM 4 Federal Migratory Bird Treaty Act

Mitigation for potential direct/indirect impacts to common and MSHCP covered sensitive ground nesting species will require compliance with the federal Migratory Bird Treaty Act (MBTA). Construction outside the nesting season (between September 16th and January 31st) do not require pre-removal nesting bird surveys. If construction is proposed between February 1st and September 15th, a qualified biologist must conduct a nesting bird survey(s) no more than fourteen (14) days prior to initiation of grading to document the presence or absence of nesting birds within or directly adjacent (100 feet) to the Project Site.

The survey(s) would focus on identifying any passerine nests that would be directly or indirectly affected by construction activities. If active nests are documented, species-specific measures shall be prepared by a qualified biologist and implemented to prevent abandonment of the active nest. At a minimum, grading in the vicinity of a nest shall be deterred until the young birds have fledged. A minimum exclusion buffer of 100 feet shall be maintained during construction, depending on the species and location. The perimeter of the nest setback zone shall be fenced or adequately demarcated with stakes and flagging at 20-foot intervals, and construction personnel and activities restricted from the area. A survey report by a qualified biologist verifying that no active nests are present, or that the young have fledged, shall be submitted to the City of Moreno Valley prior to initiation of grading in the nest-setback zone. The qualified biologist shall serve as a construction monitor during those periods when construction activities occur near active nest areas to ensure that no inadvertent impacts on these nests occur. A report of the findings prepared by a qualified biologist shall be submitted to the City of Moreno Valley prior to construction that has the potential to disturb any active nests during the nesting season.

Any nest permanently vacated for the season would not warrant protection pursuant to the MBTA.

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ATTACHMENTS

E-3 - Biological Report Summary Sheet

E-4 - Level of Significance Checklist

A - Biological Resources Map

B - Current Project Site Photographs

C - Current Project Site Photographs

Certification

"I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge"

Author:  Date: July 15th 2016

Fieldwork Performed by:  Date: July 15th 2016



Attachment A - Biological Resources Map
 MSHCP General Habitat Assessment
 TTM 37060, APN 487-461-006





PHOTOGRAPH 1 - Southeast view of Project Site from northwest corner. The entire property is characterized as disturbed vegetation.



PHOTOGRAPH 2 - Northeast view of Project Site from southwest corner.

Refer to Attachment A for Photographic Key Map

Attachment B - Current Project Site Photographs
MSHCP General Habitat Assessment
TTM 37060, APN 487-461-006





PHOTOGRAPH 3 - Northwest view of Project Site from southeast corner.



PHOTOGRAPH 4 - Southwest view of Project Site from northeast corner.

Refer to Attachment A for Photographic Key Map

Attachment C - Current Project Site Photographs
MSHCP General Habitat Assessment
TTM 37060, APN 487-461-006



BIOLOGICAL REPORT SUMMARY SHEET

Applicant Name: MACJONES Holdings, LLC
 Assessor's Parcel Number (APN): 487-467-006
 Site Location: Section: 9 Township: 3S Range: 3W
 Site Address: South of Cottonwood Avenue, West of Darwin Drive, East of Stacy Lynn Drive
 Related Case Number(s): PA16-009 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)		
X-HA	Arroyo Toad	Yes	<input type="radio"/> No	N/A
X-HA	Blueline Stream(s)	Yes	<input type="radio"/> No	N/A
	Coachella Valley Fringed-Toed Lizard	Yes	No	<input type="radio"/> N/A
X-HA	Coastal California Gnatcatcher	Yes	<input type="radio"/> No	N/A
X-HA	Riversidean Sage Scrub	Yes	<input type="radio"/> No	N/A
	Delhi Sands Flower-Loving Fly	Yes	No	<input type="radio"/> N/A
	Desert Pupfish	Yes	No	<input type="radio"/> N/A
	Desert Slender Salamander	Yes	No	<input type="radio"/> N/A
	Desert Tortoise	Yes	No	<input type="radio"/> N/A
	Flat-Tailed Horned Lizard	Yes	No	<input type="radio"/> N/A
X-HA	Least Bell's Vireo	Yes	<input type="radio"/> No	N/A
X-HA	Oak Woodlands	Yes	<input type="radio"/> No	N/A
X-HA	Quino Checkerspot Butterfly	Yes	<input type="radio"/> No	N/A
X-HA	Riverside/Vernal Pool Fairy Shrimp	Yes	<input type="radio"/> No	N/A
X-HA	Santa Ana River Woollystar	Yes	<input type="radio"/> No	N/A
X-HA	San Bernardino Kangaroo Rat	Yes	<input type="radio"/> No	N/A
X-HA	Slender Horned Spineflower	Yes	<input type="radio"/> No	N/A
X-HA	Stephen's Kangaroo Rat	Yes	<input type="radio"/> No	N/A
X-HA	Vernal Pool	Yes	<input type="radio"/> No	N/A
		Yes	No	N/A

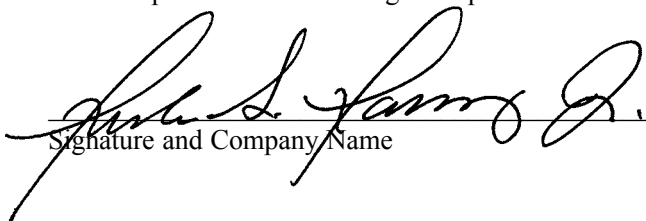
HA - Habitat Assessment Determination

CHECK SPECIES SURVEYED FOR	SPECIES or ENVIRONMENTAL ISSUE OF CONCERN	(Circle Yes, No or N/A regarding species findings on the referenced site)		
X-HA	Burrowing Owl	Yes	No	N/A
X-HA	Southwestern Willow Flycatcher	Yes	No	N/A
X-HA	Western Yellow-billed Cuckoo	Yes	No	N/A
X-HA	Criteria Area Plant Species	Yes	No	N/A
X-HA	Narrow Endemic Plant Species	Yes	No	N/A
		Yes	No	N/A
		Yes	No	N/A
		Yes	No	N/A
		Yes	No	N/A
		Yes	No	N/A
		Yes	No	N/A
		Yes	No	N/A

HA - Habitat Assessment Determination

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 (NDDDB).

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.


Cadre Environmental July 15th 2016
 Signature and Company Name Report Date

 10(a) Permit Number (if applicable) Permit Expiration Date

<i>County Use Only</i>	
Received by: _____	Date: _____
PD-B# _____	

LEVEL OF SIGNIFICANCE CHECKLIST
For Biological Resources

Attachment E-4

Lot/APN No. 487-461-006

Wildlife & Vegetation

a) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan?

Less Than Significant with Mitigation Incorporated (BIO-MM1, BIO-MM2, BIO-MM3)

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)?

No Impact

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?

Less Than Significant with Mitigation Incorporated (BIO-MM2)

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?

Less Than Significant with Mitigation Incorporated (BIO-MM4)

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?

No Impact

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?

No Impact

g) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact

Findings of Fact:

Reference "General MSHCP Habitat Assessment/Consistency Analysis, and Regulatory Constraints Assessment for the 9.43-Acre TTM 37060, City of Moreno Valley, Cadre Environmental - July 15th, 2016.

Proposed Mitigation:

- BIO-MM 1, MSHCP Local Development Mitigation Fee
- BIO-MM 2, MSHCP Focused Survey and 30-day Burrowing Owl Preconstruction Survey
- BIO-MM 3, SKR Fee Area
- BIO-MM 4, Federal Migratory Bird Treaty Act

Monitoring Recommended:

To be Determined

Prepared By:



Date: July 15th 2016

PHASE I CULTURAL RESOURCES SURVEY FOR THE TTM 37060 PROJECT

**CITY OF MORENO VALLEY,
COUNTY OF RIVERSIDE**

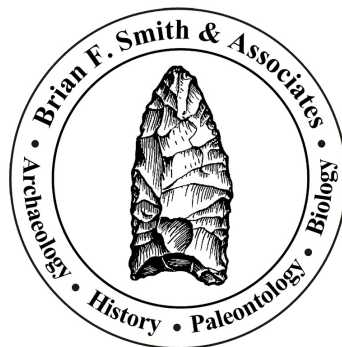
APN 487-461-006

Prepared for:

**MacJones Holdings, LLC
2 Gondoliers Bluff
Newport Coast, California 92657**

Prepared by:

**Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064**



September 8, 2016

Archaeological Database Information

Author(s): Tracy A. Stropes, M.A., RPA and Brian F. Smith

Prepared by: Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064
(858) 484-0915

Report Date: September 8, 2016

Report Title: Phase I Cultural Resources Survey for the TTM 37060 Project,
City of Moreno Valley, County of Riverside

Prepared for: MacJones Holdings, LLC
2 Gondoliers Bluff
Newport Coast, California 92657

Lead Agency Identifier: APN 487-461-006

USGS Quadrangle: Sunnymead, California (7.5 minute)

Study Area: Approximately 9.4 acres

Key Words: Cultural resources survey; City of Moreno Valley; negative survey; no mitigation measures recommended.

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Appendices

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Appendix B – Archaeological Records Search Results*

Appendix C – NAHC Sacred Lands File Search Results

**Deleted for public review and bound separately in the Confidential Appendix*

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1.0 MANAGEMENT SUMMARY/ABSTRACT

The following report describes the results of a Phase I cultural resources assessment conducted by Brian F. Smith and Associates, Inc. (BFSA) for the Tentative Tract Map (TTM) 37060 Project. The survey covered approximately 9.4 acres located within the city of Moreno Valley in Riverside County, California, situated to the northeast of March Air Reserve Base. The development will include grading for residential buildings and associated infrastructure. Excavation at the buildings will likely range from three to five feet below existing ground surface. This depth of excavation will comprise most of the cuts.

Specifically, this project is located within Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 3 South, Range 3 West). The property lies south of Cottonwood Avenue, between Lasselle Street and Darwin Drive. BFSA, in compliance with the California Environmental Quality Act (CEQA) and City of Moreno Valley environmental guidelines, conducted the assessment to locate and record any cultural resources present within the project.

The cultural resources investigation of the subject property also included a review of a records search performed by the Eastern Information Center (EIC) at the University of California at Riverside (UCR) on June 30, 2016 in order to assess previous archaeological studies and identify any previously recorded cultural resources within the project boundaries or in the immediate vicinity. Results of the records search from the EIC indicate that 22 cultural resource properties have been recorded within a one-mile radius of the project, none of which involved the project.

BFSA requested a review of the Sacred Lands File by the Native American Heritage Commission (NAHC) on June 27, 2016. The search results received from the NAHC on June 29, 2016 did not indicate that any Native American religious, ritual, or other special activities occurred at this location. In accordance with the recommendations of the NAHC, BFSA contacted all Native American consultants listed in the NAHC response letter on July 7, 2016. As of the date of this report, responses to the BFSA letters have been received from the Rincon Band of Luiseño Indians, the Agua Caliente Band of Cahuilla Indians, the Pala Band of Mission Indians, and the Morongo Band of Mission Indians. The Morongo Band requested that a copy of the records search be provided to them and a tribal monitor be present for the initial survey of the property. Both the Agua Caliente Band and the Morongo Band noted that the project is within the bounds of Tribal Traditional Use Areas.

The cultural resources survey of the property was conducted on August 10, 2016. Survey conditions were generally good and ground visibility was clear in most areas. Much of the property has been disturbed by grading, agricultural use, and weed abatement in the recent past. Previous impacts to the property include discing across the entire property. No prehistoric or historic cultural resources were identified during the survey. Because no cultural resources were

identified, and no cultural resources are recorded near the subject property, monitoring of grading is not recommended as a condition of approval for the project.

A copy of this report will be permanently filed with the EIC at UCR. All notes, photographs, and other materials related to this project will be curated at the archaeological laboratory of BFSa in Poway, California.

2.0 INTRODUCTION

In response to a request by MacJones Holdings, LLC, BFSa conducted a cultural resources assessment of the TTM 37060 Project, which is situated northeast of March Air Reserve Base, and within the city of Moreno Valley. The cultural resources survey and evaluation program for the project were conducted in order to comply with CEQA and City of Moreno Valley environmental guidelines. The project is located in an area of moderate archaeological sensitivity, as suggested by known site density and predictive modeling.

The project is an approximately 9.4-acre property located in Moreno Valley, Riverside County, California (Figure 2.0–1). The project is identified as Assessor’s Parcel Number (APN) 487-461-006 and is situated south of Cottonwood Avenue, between Lasselle Street and Darwin Drive. Specifically, this project is located within Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 3 South, Range 3 West) (Figure 2.0–2). The current project is a proposed TTM of the property for future development into five residential lots and associated infrastructure. Excavation at the buildings will likely range from three to five feet below existing ground surface (Figure 2.0–3).

Principal Investigator Brian F. Smith directed the Phase I archaeological assessment for the project with assistance from field archaeologist Clarence Hoff. The technical report was prepared by Tracy A. Stropes, M.A., RPA. Elena Goralogia conducted technical editing and report production with assistance from Kristen Caldwell, and Kris Reinicke created the report graphics. Qualifications of key personnel are provided in Appendix A.

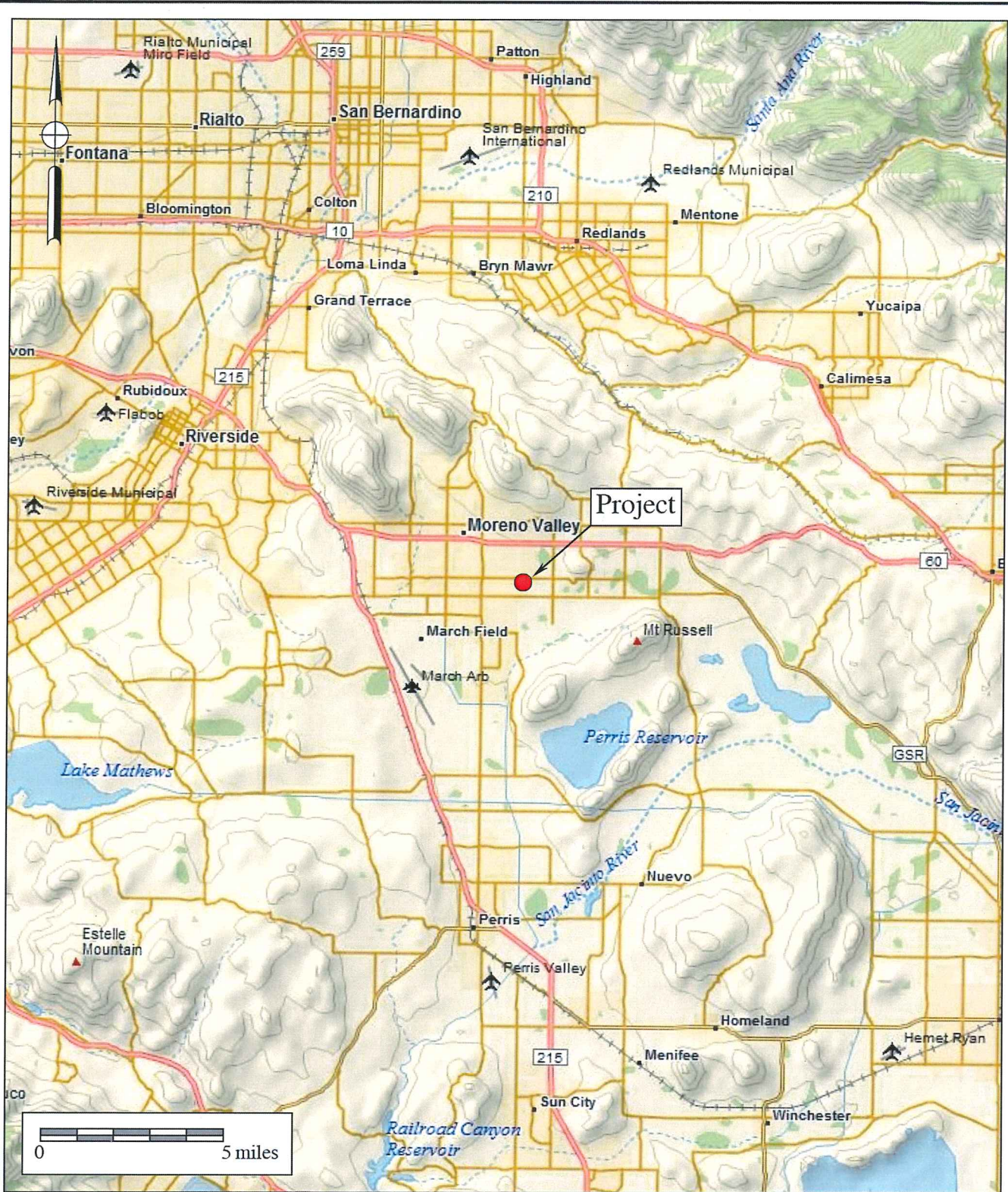


Figure 2.0-1
General Location Map
 The TTM 37060 Project
 DeLorme (1:250,000)



Attachment: Cultural Resources Assessment (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16

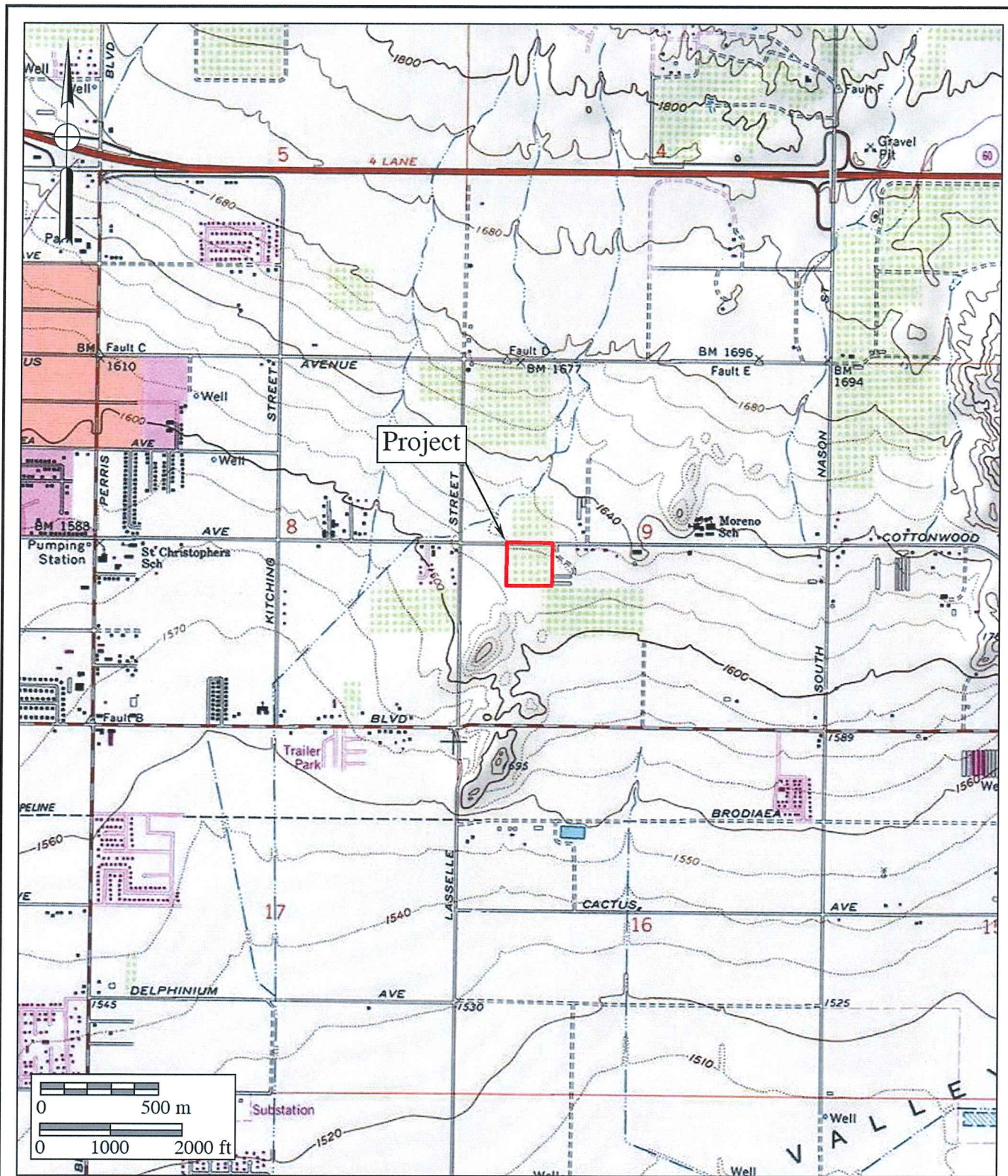


Figure 2.0–2
Project Location Map
The TTM 37060 Project

USGS *Sunnymead* Quadrangle (7.5-minute series)



Attachment: Cultural Resources Assessment (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16

PREPARED FOR:

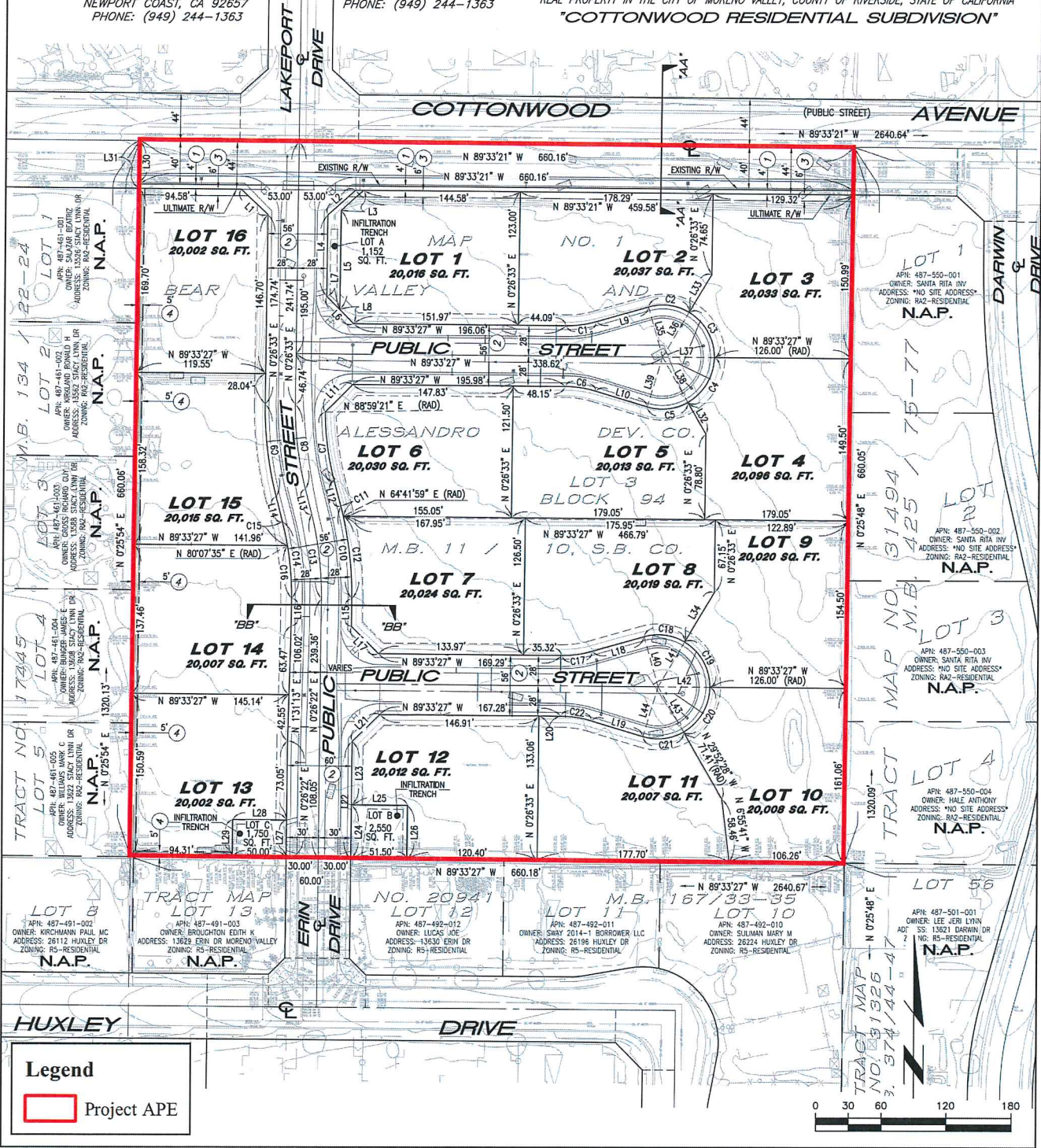
MACJONES HOLDINGS, LLC
2 GONDOLIERS BLUFF
NEWPORT COAST, CA 92657
PHONE: (949) 244-1363

OWNER:

MACJONES HOLDINGS, LLC
2 GONDOLIERS BLUFF
NEWPORT COAST, CA 92657
PHONE: (949) 244-1363

TENTATIVE TRACT NO. 37060

ASSESSORS PARCEL NUMBER: 487-461-006
REAL PROPERTY IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA
"COTTONWOOD RESIDENTIAL SUBDIVISION"



Legend

Project APE



Figure 2.0-3
Project Development Map
The TTM 37060 Project

Attachment: Cultural Resources Assessment (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16

3.0 PROJECT SETTING

The project setting includes the natural physical, geological, and biological contexts of the proposed project, as well as the cultural setting of prehistoric and historic human activities in the general area. The following sections discuss both the environmental and cultural settings at the subject property, the relationship between the two, and the relevance of that relationship to the project.

3.1 Environmental Setting

Riverside County lies in the Peninsular Ranges Geologic Province of southern California. The range, which lies in a northwest to southeast trend through the county, extends approximately 1,000 miles from the Raymond-Malibu Fault Zone in western Los Angeles County to the southern tip of Baja California. The subject property is located just northwest of the Perris Reservoir. The project is relatively flat, with the property's lowest point located at its southeast corner and its highest point located at its northwest corner. Elevations within the project average approximately 1,620 feet above mean sea level (AMSL). The site is generally characterized as a routinely disced field located in an urban area. At the time of the survey, the site had not been recently disced and ruderal and sparse non-native grassland species covered 99 percent of the site.

3.2 Cultural Setting

Paleo Indian, Archaic Period Milling Stone Horizon, and the Late Prehistoric Shoshonean groups are the three general cultural periods represented in Riverside County. The following discussion of the cultural history of Riverside County references the San Dieguito Complex, Encinitas Tradition, Milling Stone Horizon, La Jolla Complex, Pauma Complex, and San Luis Rey Complex, since these culture sequences have been used to describe archaeological manifestations in the region. The Late Prehistoric component present in the Riverside County area was represented by the Cahuilla, Gabrielino, and Luiseño Indians.

Absolute chronological information, where possible, will be incorporated into this discussion to examine the effectiveness of continuing to interchangeably use these terms. Reference will be made to the geological framework that divides the culture chronology of the area into four segments: the late Pleistocene (20,000 to 10,000 YBP [years before the present]), the early Holocene (10,000 to 6,650 YBP), the middle Holocene (6,650 to 3,350 YBP), and the late Holocene (3,350 to 200 YBP).

3.2.1 Paleo Indian Period (Late Pleistocene: 11,500 to circa 9,000 YBP)

The Paleo Indian Period is associated with the terminus of the late Pleistocene (12,000 to 10,000 YBP). The environment during the late Pleistocene was cool and moist, which allowed for glaciation in the mountains and the formation of deep, pluvial lakes in the deserts and basin

lands (Moratto 1984). However, by the terminus of the late Pleistocene, the climate became warmer, which caused the glaciers to melt, sea levels to rise, greater coastal erosion, large lakes to recede and evaporate, extinction of Pleistocene megafauna, and major vegetation changes (Moratto 1984; Martin 1967, 1973; Fagan 1991). The coastal shoreline at 10,000 YBP, depending upon the particular area of the coast, was near the 30-meter isobath, or two to six kilometers further west than its present location (Masters 1983).

Paleo Indians were likely attracted to multiple habitat types, including mountains, marshlands, estuaries, and lakeshores. These people likely subsisted using a more generalized hunting, gathering, and collecting adaptation utilizing a variety of resources including birds, mollusks, and both large and small mammals (Erlandson and Colten 1991; Moratto 1984; Moss and Erlandson 1995).

3.2.2 Archaic Period (Early and Middle Holocene: circa 9,000 to 1,300 YBP)

Between 9,000 and 8,000 YBP, a widespread complex was established in the southern California region, primarily along the coast (Warren and True 1961). This complex is locally known as the La Jolla Complex (Rogers 1939; Moriarty 1966), which is regionally associated with the Encinitas Tradition (Warren 1968) and shares cultural components with the widespread Milling Stone Horizon (Wallace 1955). The coastal expression of this complex appeared in the southern California coastal areas and focused upon coastal resources and the development of deeply stratified shell middens that were primarily located around bays and lagoons. The older sites associated with this expression are located at Topanga Canyon, Newport Bay, Agua Hedionda Lagoon, and some of the Channel Islands. Radiocarbon dates from sites attributed to this complex span a period of over 7,000 years in this region, beginning over 9,000 YBP.

The Encinitas Tradition is best recognized for its pattern of large coastal sites characterized by shell middens, grinding tools that are closely associated with the marine resources of the area, cobble-based tools, and flexed human burials (Shumway et al. 1961; Smith and Moriarty 1985). While ground stone tools and scrapers are the most recognized tool types, coastal Encinitas Tradition sites also contain numerous utilized flakes, which may have been used to pry open shellfish. Artifact assemblages at coastal sites indicate a subsistence pattern focused upon shellfish collection and nearshore fishing. This suggests an incipient maritime adaptation with regional similarities to more northern sites of the same period (Koerper et al. 1986). Other artifacts associated with Encinitas Tradition sites include stone bowls, doughnut stones, discoidals, stone balls, and stone, bone, and shell beads.

The coastal lagoons in southern California supported large Milling Stone Horizon populations circa 6,000 YBP, as is shown by numerous radiocarbon dates from the many sites adjacent to the lagoons. The ensuing millennia were not stable environmentally, and by 3,000 YBP, many of the coastal sites in central San Diego County had been abandoned (Gallegos 1987, 1992). The abandonment of the area is usually attributed to the sedimentation of coastal lagoons and the resulting deterioration of fish and mollusk habitat, a situation well documented at

Batiquitos Lagoon (Miller 1966; Gallegos 1987). Over a period of 2,000 years at Batiquitos Lagoon, dominant mollusk species occurring in archaeological middens shift from deep-water mollusks (*Argopecten* sp.) to species tolerant of tidal flat conditions (*Chione* sp.), indicating water depth and temperature changes (Miller 1966; Gallegos 1987). This situation likely occurred for other small drainages (Buena Vista, Agua Hedionda, San Marcos, and Escondido creeks) along the central San Diego coast where low flow rates did not produce sufficient discharge to flush the lagoons they fed (Buena Vista, Agua Hedionda, Batiquitos, and San Elijo lagoons) (Byrd 1998). Drainages along the northern and southern San Diego coastline were larger and flushed the coastal hydrological features they fed, keeping them open to the ocean and allowing for continued human exploitation (Byrd 1998). Peñasquitos Lagoon exhibits dates as late as 2,355 YBP (Smith and Moriarty 1985) and San Diego Bay showed continuous occupation until the close of the Milling Stone Horizon (Gallegos and Kyle 1988). Additionally, data from several drainages in Camp Pendleton indicate a continued occupation of shell midden sites until the close of the period, indicating that coastal sites were not entirely abandoned during this time (Byrd 1998).

By 5,000 YBP, an inland expression of the La Jolla Complex is evident in the archaeological record, exhibiting influences from the Campbell Tradition from the north. These inland Milling Stone Horizon sites have been termed “Pauma Complex” (True 1958; Warren et al. 1961; Meighan 1954). By definition, Pauma Complex sites share a predominance of grinding implements (manos and metates), lack mollusk remains, have greater tool variety (including atlatl dart points, quarry-based tools, and crescentics), and seem to express a more sedentary lifestyle with a subsistence economy based upon the use of a broad variety of terrestrial resources. Although originally viewed as a separate culture from the coastal La Jolla Complex (True 1980), it appears that these inland sites may be part of a subsistence and settlement system utilized by the coastal peoples. Evidence from the 4S Project in inland San Diego County suggests that these inland sites may represent seasonal components within an annual subsistence round by La Jolla Complex populations (Raven-Jennings et al. 1996). Including both coastal and inland sites of this time period in discussions of the Encinitas Tradition, therefore, provides a more complete appraisal of the settlement and subsistence system exhibited by this cultural complex.

3.2.3 Late Prehistoric Period (Late Holocene: 1,300 YBP to 1790)

Approximately 1,350 YBP, a Shoshonean-speaking group from the Great Basin region moved into Riverside County, marking the transition to the Late Prehistoric Period. This period is characterized by higher population densities and elaborations in social, political, and technological systems. Economic systems diversified and intensified during this period with the continued elaboration of trade networks, the use of shell-bead currency, and the appearance of more labor-intensive, yet effective, technological innovations. Technological developments during this period included the introduction of the bow and arrow between A.D. 400 and 600 and

the introduction of ceramics. Atlatl darts were replaced by smaller arrow darts, including Cottonwood series points. Other hallmarks of the Late Prehistoric Period include extensive trade networks as far-reaching as the Colorado River Basin and cremation of the dead.

3.2.4 Protohistoric Period (Late Holocene: 1790 to Present)

Ethnohistoric and ethnographic evidence indicates that three Shoshonean-speaking groups occupied portions of Riverside County: the Cahuilla, the Gabrielino, and the Luiseño. The geographic boundaries between these groups in pre- and proto-historic times is difficult to place, but the project is located well within the borders of ethnographic Luiseño territory. This group was a seasonal hunting and gathering people with cultural elements that were very distinct from Archaic Period peoples. These distinctions include cremation of the dead, the use of the bow and arrow, and exploitation of the acorn as a main food staple (Moratto 1984). Along the coast, the Luiseño made use of available marine resources by fishing and collecting mollusks for food. Seasonally available terrestrial resources, including acorns and game, were also sources of nourishment for Luiseño groups. Elaborate kinship and clan systems between the Luiseño and other groups facilitated a wide-reaching trade network that included trade of Obsidian Butte obsidian and other resources from the eastern deserts, as well as steatite from the Channel Islands.

According to Charles Handley (1967), the primary settlements of Late Prehistoric Luiseño Indians in the San Jacinto Plain were represented by *Ivah* and *Soboba* near Soboba Springs, *Jusipah* near the town of San Jacinto, *Ararah* in Webster's Canyon en route to Idyllwild, *Pahsitha* near Big Springs Ranch southeast of Hemet, and *Corova* in Castillo Canyon. These locations share features such as the availability of food and water resources. Features of this land use include petroglyphs and pictographs, as well as widespread milling, which is evident in bedrock and portable implements. Groups in the vicinity of the project, neighboring the Luiseño, include the Cahuilla and the Gabrielino. Ethnographic data for the three groups is presented in the following discussion.

Luiseño

When contacted by the Spanish in the sixteenth century, the Luiseño occupied a territory bounded on the west by the Pacific Ocean, on the east by the Peninsular Range mountains at San Jacinto (including Palomar Mountain to the south and Santiago Peak to the north), on the south by Agua Hedionda Lagoon, and on the north by Aliso Creek in present-day San Juan Capistrano. The Luiseño were a Takic-speaking people more closely related linguistically and ethnographically to the Cahuilla, Gabrielino, and Cupeño to the north and east rather than the Kumeyaay who occupied territory to the south. The Luiseño differed from their neighboring Takic speakers in having an extensive proliferation of social statuses, a system of ruling families that provided ethnic cohesion within the territory, a distinct worldview that stemmed from the use of *datura* (a hallucinogen), and an elaborate religion that included the creation of sacred sand

paintings depicting the deity *Chingichngish* (Bean and Shipek 1978; Kroeber 1976).

Subsistence and Settlement

The Luiseño occupied sedentary villages most often located in sheltered areas in valley bottoms, along streams, or along coastal strands near mountain ranges. Villages were located near water sources to facilitate acorn leaching and in areas that offered thermal and defensive protection. Villages were composed of areas that were publicly and privately (by family) owned. Publicly owned areas included trails, temporary campsites, hunting areas, and quarry sites. Inland groups had fishing and gathering sites along the coast that were used intensively from January to March when inland food resources were scarce. During October and November, most of the village would relocate to mountain oak groves to harvest acorns. The Luiseño remained at village sites for the remainder of the year, where food resources were within a day's travel (Bean and Shipek 1978; Kroeber 1976).

The most important food source of the Luiseño was the acorn, of which six different species were used (*Quercus californica*, *Quercus agrifolia*, *Quercus chrysolepis*, *Quercus dumosa*, *Quercus engelmannii*, and *Quercus wislizenii*). Seeds, particularly of grasses, composites, and mints, were also heavily exploited. Seed-bearing species were encouraged through controlled burns, which were conducted at least every third year. A variety of other stems, leaves, shoots, bulbs, roots, and fruits were also collected. Hunting augmented this vegetal diet. Animal species taken included deer, rabbit, hare, woodrat, ground squirrel, antelope, quail, duck, freshwater fish from mountain streams, marine mammals, and other sea creatures such as fish, crustaceans, and mollusks (particularly abalone, or *Haliotis* sp.). In addition, a variety of snakes, small birds, and rodents were eaten (Bean and Shipek 1978; Kroeber 1976).

Social Organization

Social groups within the Luiseño nation consisted of patrilineal families or clans, which were politically and economically autonomous. Several clans comprised a religious party, or *nota*, which was headed by a chief who organized ceremonies and controlled economics and warfare. The chief had assistants who specialized in particular aspects of ceremonial or environmental knowledge and who, with the chief, were part of a cultic social group with special access to supernatural power, particularly that of *Chingichngish*. The positions of chief and assistants were hereditary and the complexity and multiplicity of these specialists' roles likely increased in coastal and larger inland villages (Bean and Shipek 1978; Kroeber 1976; Strong 1929).

Marriages were arranged by the parents, often made to forge alliances between lineages. Useful alliances included those between groups of differing ecological niches and those that resulted in territorial expansion. Residence was patrilocal (Bean and Shipek 1978; Kroeber 1976). Women were primarily responsible for plant gathering, and men principally hunted,

although at times, particularly during acorn and marine mollusk harvests, there was no division of labor. Elderly women cared for children and elderly men participated in rituals, ceremonies, and political affairs. They were also responsible for manufacturing hunting and ritual implements. Children were taught subsistence skills at the earliest age possible (Bean and Shipek 1978; Kroeber 1976).

Material Culture

House structures were conical, partially subterranean, and thatched with reeds, brush, or bark. Ramadas were rectangular, protected workplaces for domestic chores such as cooking. Ceremonial sweathouses were important in purification rituals; these were round and partially subterranean thatched structures covered with a layer of mud. Another ceremonial structure was the *wámkis* (located in the center of the village, serving as the place of rituals), where sand paintings and other rituals associated with the *Chingichngish* cult were performed (Bean and Shipek 1978; Kroeber 1976).

Clothing was minimal; women wore a cedar-bark and netted twine double apron and men wore a waist cord. In cold weather, cloaks or robes of rabbit fur, deerskin, or sea otter fur were worn by both sexes. Footwear included deerskin moccasins and sandals fashioned from yucca fibers. Adornments included bead necklaces and pendants made of bone, clay, stone, shell, bear claw, mica, deer hooves, and abalone shell. Men wore ear and nose piercings made from cane or bone, which were sometimes decorated with beads. Other adornments were commonly decorated with semiprecious stones including quartz, topaz, garnet, opal, opalite, agate, and jasper (Bean and Shipek 1978; Kroeber 1976).

Hunting implements included the bow and arrow. Arrows were tipped with either a carved, fire-hardened wooden tip or a lithic point, usually fashioned from locally available metavolcanic material or quartz. Throwing sticks fashioned from wood were used in hunting small game, while deer head decoys were used during deer hunts. Coastal groups fashioned dugout canoes for nearshore fishing and harvested fish with seines, nets, traps, and hooks made of bone or abalone shell (Bean and Shipek 1978; Kroeber 1976).

The Luiseño had a well-developed basket industry. Baskets were used in resource gathering, food preparation, storage, and food serving. Ceramic containers were shaped by paddle and anvil and fired in shallow, open pits to be used for food storage, cooking, and serving. Other utensils included wooden implements, steatite bowls, and ground stone manos, metates, mortars, and pestles (Bean and Shipek 1978; Kroeber 1976). Additional tools such as knives, scrapers, choppers, awls, and drills were also used. Shamanistic items include soapstone or clay smoking pipes and crystals made of quartz or tourmaline (Bean and Shipek 1978; Kroeber 1976).

Cahuilla

At the time of Spanish contact in the sixteenth century, the Cahuilla occupied territory

that included the San Bernardino Mountains, Orocopia Mountain, and the Chocolate Mountains to the west, Salton Sea and Borrego Springs to the south, Palomar Mountain and Lake Mathews to the west, and the Santa Ana River to the north. The Cahuilla are a Takic-speaking people closely related to their Gabrielino and Luiseño neighbors, although relations with the Gabrielino were more intense than with the Luiseño. They differ from the Luiseño and Gabrielino in that their religion is more similar to the Mohave tribes of the eastern deserts than the *Chingichngish* cult of the Luiseño and Gabrielino. The following is a summary of ethnographic data regarding this group (Bean 1978; Kroeber 1976).

Subsistence and Settlement

Cahuilla villages were typically permanent and located on low terraces within canyons in proximity to water sources. These locations proved to be rich in food resources and also afforded protection from prevailing winds. Villages had areas that were publicly owned and areas that were privately owned by clans, families, or individuals. Each village was associated with a particular lineage and series of sacred sites that included unique petroglyphs and pictographs. Villages were occupied throughout the year; however, during a several-week period in the fall, most of the village members relocated to mountain oak groves to take part in acorn harvesting (Bean 1978; Kroeber 1976).

The use of plant resources by the Cahuilla is well documented. Plant foods harvested by the Cahuilla included Valley oak acorns and single-leaf pinyon pine nuts. Other important plant species included bean and screw mesquite, agave, Mohave yucca, cacti, palm, chia, quail brush, yellowray goldfield, goosefoot, manzanita, catsclaw, desert lily, mariposa lily, and a number of other species such as grass seed. A number of agricultural domesticates were acquired from the Colorado River tribes including corn, bean, squash, and melon grown in limited amounts. Animal species taken included deer, bighorn sheep, pronghorn antelope, rabbit, hare, rat, quail, dove, duck, roadrunner, and a variety of rodents, reptiles, fish, and insects (Bean 1978; Kroeber 1976).

Social Organization

The Cahuilla was not a political nation, but rather a cultural nationality with a common language. Two non-political, non-territorial patrimoieties were recognized, the Wildcats (túktem) and the Coyotes (ístan). Lineage and kinship were memorized at a young age among the Cahuilla, providing a backdrop for political relationships. Clans were composed of three to 10 lineages; each lineage owned a village site and specific resource areas. Lineages within a clan cooperated in subsistence activities, defense, and rituals (Bean 1978; Kroeber 1976).

A system of ceremonial hierarchy operated within each lineage. The hierarchy included the lineage leader, who was responsible for leading subsistence activities, guarding the sacred bundle, and negotiating with other lineage leaders in matters concerning land use, boundary disputes, marriage arrangements, trade, warfare, and ceremonies. The ceremonial assistant to the

lineage leader was responsible for organizing ceremonies. A ceremonial singer possessed and performed songs at rituals and trained assistant singers. The shaman cured illnesses through supernatural powers, controlled natural phenomena, and was the guardian of ceremonies, keeping evil spirits away. The diviner was responsible for finding lost objects, telling future events, and locating game and other food resources. Doctors were usually older women who cured various ailments and illnesses with their knowledge of medicinal herbs. Finally, certain Cahuilla specialized as traders, who ranged as far west as Santa Catalina and as far east as the Gila River (Bean 1978; Kroeber 1976).

Marriages were arranged by parents from opposite moieties. When a child was born, an alliance formed between the families, which included frequent reciprocal exchanges. The Cahuilla kinship system extended to relatives within five generations. Important economic decisions, primarily the distribution of goods, operated within this kinship system (Bean 1978; Kroeber 1976).

Material Culture

Cahuilla houses were dome-shaped or rectangular thatched structures. The home of the lineage leader was the largest, located near the ceremonial house, and situated near the best access to water. Other structures within the village included the men's sweathouse and granaries (Bean 1978; Kroeber 1976).

Cahuilla clothing, like other groups in the area, was minimal. Men typically wore a loincloth and sandals; women wore skirts made from mesquite bark, animal skin, or tules. Babies wore mesquite bark diapers. Rabbit skin cloaks were worn in cold weather (Bean 1978; Kroeber 1976).

Hunting implements included the bow and arrow, throwing sticks, and clubs. Grinding tools used in food processing included manos, metates, and wooden mortars. The Cahuilla were known to use long, wooden grinding implements to process mesquite beans; the mortar was typically a hollowed wooden log buried in the ground. Other tools included steatite arrow shaft straighteners (Bean 1978; Kroeber 1976).

Baskets were made from rush, deer grass, and skunkbrush. Different species and leaves were chosen for different colors in the basket design. Coiled-ware baskets were either flat (for plates, trays, or winnowing), bowl-shaped (for food serving), deep, inverted, and cone-shaped (for transporting), or rounded and flat-bottomed for storing utensils and personal items (Bean 1978; Kroeber 1976).

Cahuilla pottery was made from a thin, red-colored ceramic ware that was often painted and incised. Four basic vessel types are known for the Cahuilla: small-mouthed jars, cooking pots, bowls, and dishes. Additionally, smoking pipes and flutes were fashioned from ceramic (Bean 1978; Kroeber 1976).

Gabrielino

The territory of the Gabrielino at the time of Spanish contact covers much of present-day Los Angeles and Orange counties. The southern extent of this culture area is bounded by Aliso Creek, the eastern extent is located east of present-day San Bernardino along the Santa Ana River, the northern extent includes the San Fernando Valley, and the western extent includes portions of the Santa Monica Mountains. The Gabrielino also occupied several Channel Islands including Santa Barbara Island, Santa Catalina Island, San Nicholas Island, and San Clemente Island. Because of their access to certain resources, including a steatite source from Santa Catalina Island, this group was among the wealthiest and most populous aboriginal groups in all of southern California. Trade of materials and resources controlled by the Gabrielino extended as far north as the San Joaquin Valley, as far east as the Colorado River, and as far south as Baja California (Bean and Smith 1978; Kroeber 1976).

Subsistence and Settlement

The Gabrielino lived in permanent villages and smaller resource-gathering camps occupied at various times of the year depending upon the seasonality of the resource. Larger villages were comprised of several families or clans, while smaller, seasonal camps typically housed smaller family units. The coastal area between San Pedro and Topanga Canyon was the location of primary subsistence villages, while secondary sites were located near inland sage stands, oak groves, and pine forests. Permanent villages were located along rivers and streams and in sheltered areas along the coast. As previously mentioned, the Channel Islands were also the locations of relatively large settlements (Bean and Smith 1978; Kroeber 1976).

Resources procured along the coast and on the islands were primarily marine in nature and included tuna, swordfish, ray and shark, California sea lion, Stellar sea lion, harbor seal, northern elephant seal, sea otter, dolphin and porpoise, various waterfowl species, numerous fish species, purple sea urchin, and mollusks, such as rock scallop, California mussel, and limpet. Inland resources included oak acorn, pine nut, Mohave yucca, cacti, sage, grass nut, deer, rabbit, hare, rodent, quail, duck, and a variety of reptiles such as western pond turtle and numerous snake species (Bean and Smith 1978; Kroeber 1976).

Social Organization

The social structure of the Gabrielino is little known; however, there appears to have been at least three social classes: 1) the elite, which included the rich, chiefs, and their immediate family; 2) a middle class, which included people of relatively high economic status or long-established lineages; and 3) a class of people that included most other individuals in the society. Villages were politically autonomous units comprised of several lineages. During times of the year when certain seasonal resources were available, the village would divide into lineage groups and move out to exploit them, returning to the village between forays (Bean and Smith 1978; Kroeber 1976).

Each lineage had its own leader, with the village chief coming from the dominant lineage.

Several villages might be allied under a paramount chief. Chiefly positions were of an ascribed status, most often passed to the eldest son. Chiefly duties included providing village cohesion, leading warfare and peace negotiations with other groups, collecting tribute from the village(s) under his jurisdiction, and arbitrating disputes within the village(s). The status of the chief was legitimized by his safekeeping of the sacred bundle, a representation of the link between the material and spiritual realms and the embodiment of power (Bean and Smith 1978; Kroeber 1976).

Shamans were leaders in the spirit realm. The duties of the shaman included conducting healing and curing ceremonies, guarding the sacred bundle, locating lost items, identifying and collecting poisons for arrows, and making rain (Bean and Smith 1978; Kroeber 1976).

Marriages were made between individuals of equal social status and, in the case of powerful lineages, marriages were arranged to establish political ties between the lineages (Bean and Smith 1978; Kroeber 1976).

Men conducted the majority of the heavy labor, hunting, fishing, and trading with other groups. Women's duties included gathering and preparing plant and animal resources, and making baskets, pots, and clothing (Bean and Smith 1978; Kroeber 1976).

Material Culture

Gabrielino houses were domed, circular structures made of thatched vegetation. Houses varied in size and could house from one to several families. Sweathouses (semicircular, earth-covered buildings) were public structures used in male social ceremonies. Other structures included menstrual huts and a ceremonial structure called a *yuvar*, an open-air structure built near the chief's house (Bean and Smith 1978; Kroeber 1976).

Clothing was minimal; men and children most often went naked, while women wore deerskin or bark aprons. In cold weather, deerskin, rabbit fur, or bird skin (with feathers intact) cloaks were worn. Island and coastal groups used sea otter fur for cloaks. In areas of rough terrain, yucca fiber sandals were worn. Women often used red ochre on their faces and skin for adornment or protection from the sun. Adornment items included feathers, fur, shells, and beads (Bean and Smith 1978; Kroeber 1976).

Hunting implements included wooden clubs, sinew-backed bows, slings, and throwing clubs. Maritime implements included rafts, harpoons, spears, hook and line, and nets. A variety of other tools included deer scapulae saws, bone and shell needles, bone awls, scrapers, bone or shell flakers, wedges, stone knives and drills, metates, mullers, manos, shell spoons, bark platters, and wooden paddles and bowls. Baskets were made from rush, deer grass, and skunkbush. Baskets were fashioned for hoppers, plates, trays, and winnowers for leaching, straining, and gathering. Baskets were also used for storing, preparing, and serving food, and for keeping personal and ceremonial items (Bean and Smith 1978; Kroeber 1976).

The Gabrielino had exclusive access to soapstone, or steatite, procured from Santa Catalina Island quarries. This highly prized material was used for making pipes, animal

carvings, ritual objects, ornaments, and cooking utensils. The Gabrielino profited well from trading steatite since it was valued so much by groups throughout southern California (Bean and Smith 1978; Kroeber 1976).

3.2.5 Ethnohistoric Period (1769 to Present)

European exploration along the California coast began in 1542 with the landing of Juan Rodriguez Cabrillo and his men at San Diego Bay. Sixty years after the Cabrillo expeditions, an expedition under Sebastian Viscaíno made an extensive and thorough exploration of the Pacific coast. Although the voyage did not extend beyond the northern limits of the Cabrillo track, Viscaíno had the most lasting effect on the nomenclature of the coast. Many of the names he gave to various locations have survived, whereas practically every one of the names given by Cabrillo has faded from use. For instance, Cabrillo gave the name “San Miguel” to the first port he stopped at in what is now the United States; 60 years later, Viscaíno changed it to “San Diego” (Rolle 1969). The early European voyages observed Native Americans living in villages along the coast but did not make any substantial, long-lasting impact. At the time of contact, the Luiseño population was estimated to have ranged from 4,000 to as many as 10,000 individuals (Bean and Shipek 1978; Kroeber 1976).

3.2.6 Historic Period

The historic background of the project area began with the Spanish colonization of Alta California. The first Spanish colonizing expedition reached southern California in 1769 with the intention of converting and civilizing the indigenous populations, as well as expanding the knowledge of and access to new resources in the region (Brigandi 1998). In the late eighteenth century, the San Gabriel (Los Angeles County), San Juan Capistrano (Orange County), and San Luis Rey (San Diego County) missions began colonizing southern California and gradually expanded their use of the interior valley (into what is now western Riverside County) for raising grain and cattle to support the missions (Riverside County n.d.). The San Gabriel Mission claimed lands in what is now Jurupa, Riverside, San Jacinto, and the San Gorgonio Pass, while the San Luis Rey Mission claimed land in what is now Lake Elsinore, Temecula, and Murrieta (American Local History Network: Riverside County, California 1998). The indigenous groups who occupied these lands were recruited by missionaries, converted, and put to work in the missions (Pourade 1964). Throughout this period, the Native American populations were decimated by introduced diseases, a drastic shift in diet resulting in poor nutrition, and social conflicts due to the introduction of an entirely new social order (Cook 1976).

In the mid- to late 1770s, Juan Bautista de Anza passed through much of Riverside County while searching for an overland route from Sonora, Mexico to San Gabriel and Los Angeles, describing fertile valleys, lakes, and sub-desert areas (American Local History Network: Riverside County, California 1998; Riverside County n.d.). In 1797, Father Presidente Lausen, Father Norberto de Santiago, and Corporal Pedro Lissalde led an expedition from

Mission San Juan Capistrano through southwestern Riverside County in search of a new mission site before constructing Mission San Luis Rey in northern San Diego County (Brigandi 1998).

While no missions were ever built in what would become Riverside County (American Local History Network: Riverside County, California 1998), many mission outposts, or *asistencias*, were established in the early years of the nineteenth century to extend the missions' influence to the backcountry (Brigandi 1998). Two outposts located in Riverside County include San Jacinto and Temecula.

Mexico gained independence in 1822 and desecularized the missions in 1832, signifying the end of the Mission Period (Brigandi 1998; Riverside County n.d.). By this time, the missions owned some of the best and most fertile land in southern California. In order for California to develop, the land would have to be made productive enough to turn a profit (Brigandi 1998). The new government began distributing the vast mission holdings to wealthy and politically connected Mexican citizens. The "grants" were called "ranchos," of which Jurupa, El Rincon, La Sierra, El Sobrante de San Jacinto, La Laguna (Lake Elsinore), Santa Rosa, Temecula, Pauba, San Jacinto Nuevo y Potrero, and San Jacinto Viejo were located in present-day Riverside County. Many of these ranchos have lent their names to modern-day locales (American Local History Network: Riverside County, California 1998). The first grant in present-day Riverside County, Rancho Jurupa, was given to Juan Bandini in 1838. These ranchos were all located in the valley environments typical of western Riverside County.

The treatment of Native Americans grew worse during the Rancho Period. Most of the Native Americans were forced off of their land or put to work on the now privately owned ranchos, most often as slave labor. In light of the brutal ranchos, the degree to which Native Americans had become dependent upon the mission system is evident when, in 1838, a group of Native Americans from the San Luis Rey Mission petitioned government officials in San Diego to relieve suffering at the hands of the rancheros:

We have suffered incalculable losses, for some of which we are in part to be blamed for because many of us have abandoned the Mission ... We plead and beseech you ... to grant us a Rev. Father for this place. We have been accustomed to the Rev. Fathers and to their manner of managing the duties. We labored under their intelligent directions, and we were obedient to the Fathers according to the regulations, because we considered it as good for us. (Brigandi 1998:21)

Native American culture had been disrupted to the point where they could no longer rely upon prehistoric subsistence and social patterns. Not only does this illustrate how dependent the Native Americans had become upon the missionaries, but it also indicates a marked contrast in the way the Spanish treated the Native Americans compared to the Mexican and United States ranchers. Spanish colonialism (missions) is based upon utilizing human resources while

integrating them into their society. The Mexican and American ranchers did not accept Native Americans into their social order and used them specifically for the extraction of labor, resources, and profit. Rather than being incorporated, they were either subjugated or exterminated (Cook 1976).

In 1846, war erupted between Mexico and the United States. In 1848, with the signing of the Treaty of Guadalupe Hidalgo, the region was annexed as a territory of the United States, leading to California becoming a state in 1850. These events generated a steady flow of settlers into the area, including gold miners, entrepreneurs, health-seekers, speculators, politicians, adventurers, seekers of religious freedom, and individuals desiring to create utopian colonies.

In early 1852, the Native Americans of southern Riverside County, including the Luiseño and the Cahuilla, thought they had signed a treaty resulting in their ownership of all lands from Temecula to Aguanga east to the desert, including the San Jacinto Valley and the San Geronimo Pass. The Temecula Treaty also included food and clothing provisions for the Indians. However, Congress never ratified the treaties, and the promise of one large reservation was rescinded (Brigandi 1998).

With the completion of the transcontinental railroad in 1869, land speculators, developers, and colonists began to invest in southern California. The first colony in what was to become Riverside County was Riverside itself. Judge John Wesley North, an abolitionist from Tennessee, brought a group of associates and co-investors out to southern California and founded Riverside on part of the Jurupa Rancho. A few years after, the navel orange was planted and found to be such a success that it quickly became the agricultural staple of the region (American Local History Network: Riverside County, California 1998).

By the late 1880s and early 1890s, there was growing discontent between Riverside and San Bernardino, its neighbor 10 miles to the north, due to differences in opinion concerning religion, morality, the Civil War, politics, and fierce competition to attract settlers. After a series of instances in which charges were claimed about unfair use of tax monies to the benefit of the city of San Bernardino only, several people from Riverside decided to investigate the possibility of a new county. In May of 1893, voters living within portions of San Bernardino County (to the north) and San Diego County (to the south) approved the formation of Riverside County. Early business opportunities were linked to the agriculture industry but commerce, construction, manufacturing, transportation, and tourism also provided a healthy local economy. By the time of Riverside County's formation, Riverside had grown to become the wealthiest city per capita in the country due to the successful cultivation of the navel orange (American Local History Network: Riverside County, California 1998; Riverside County n.d.).

Project Area and Vicinity

In 1818, the priests of the San Luis Rey Mission gave Leandro Serrano, the son of a soldier who had accompanied Father Junipero Serra and the Portola expedition to San Diego, a permit to graze his cows in nearby areas. They asked him to live in the Temescal Valley because

he had good relationships with the Native Americans in the area and could prevent trouble between the tribes and the mission. Serrano got along so well with the Native Americans that he even organized hunts with them to exterminate various prowling animals, such as bears and mountain cats, which threatened the mission and its surrounding lands (Gunther 1984).

Rancho Temescal was originally named after the ancient Luiseño Indian *temescal*, or sweathouse, located on what became the rancho land. The original rancho consisted of a corral, some cows, oxen, horses, and a small garden. By 1826, Serrano had constructed an adobe on the property and had supplemented his ranch with fruit trees and additional cattle (Gunther 1984).

Although Serrano never held title to the land, his grazing permit was often used as a land title. Seven years after his death in 1852, Serrano's widow, Josefa Montalva de Serrano, and her children were granted four leagues of land referred to as Temescal based upon honoring Serrano's permit. In 1860, Abel Stearns began purchasing portions of Rancho Temescal in order to mine the tin located on the land. By 1861, Stearns owned the entire rancho (Gunther 1984).

Unfortunately for Stearns, in 1866, the United States Supreme Court ruled that the grazing permit that Serrano had used to prove ownership of his land did not stand. Stearns lost his entire investment in the property and the land was deemed by the court to be public domain. Josefa Montalvo de Serrano then applied for a patent of the land in 1887, which was granted. In 1898, Señora Serrano passed away, leaving the land to her daughters, who sold the land to the Riverside Land and Water Company to pay for the funeral before moving to Los Angeles. The land was later included in the El Sobrante de San Jacinto Rancho by the Supreme Court "floating" its boundaries (Gunther 1984).

3.3 Applicable Regulations

Resource importance is assigned to districts, sites, buildings, structures, and objects that possess exceptional value or quality illustrating or interpreting the heritage of Riverside County in history, architecture, archaeology, engineering, and culture. A number of criteria are used in demonstrating resource importance. Specifically, criteria outlined in CEQA provide the guidance for making such a determination. The following sections detail the CEQA criteria that a resource must meet in order to be determined important.

3.3.1 California Environmental Quality Act

According to CEQA (§15064.5a), the term "historical resource" includes the following:

- 1) A resource listed in or determined to be eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (Public Resources Code SS5024.1, Title 14 CCR. Section 4850 et seq.).
- 2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code, or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public

- Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- 3) Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resources Code SS5024.1, Title 14, Section 4852) including the following:
- a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - b) Is associated with the lives of persons important in our past;
 - c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 - d) Has yielded, or may be likely to yield, information important in prehistory or history.
- 4) The fact that a resource is not listed in, or determined eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Section 5020.1(j) or 5024.1.

According to CEQA (§15064.5b), a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change as:

- 1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
- 2) The significance of an historical resource is materially impaired when a project:

- a) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register of Historical Resources;
- b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant;
- c) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

1. When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).
2. If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, Section 15126.4 of the guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
3. If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21803.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.
4. If an archaeological resource is neither a unique archaeological nor historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or Environmental Impact Report, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5 (d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides:

(d) When an initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC, as provided in Public Resources Code SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC. Action implementing such an agreement is exempt from:

- 1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
- 2) The requirement of CEQA and the Coastal Act.

3.4 Research Design

The primary goal of the research design is to attempt to understand the way in which humans have used the land and resources within the project area through time, as well as to aid in the determination of resource significance. For the current project, the study area under investigation is the western portion of Riverside County and the city of Moreno Valley. The scope of work for the archaeological program conducted for the TTM 37060 Project included the survey of an approximately 9.4-acre area. Given the area involved in this Phase I survey, the research design for this project was limited and general in nature. Since the main objective of the investigation was to identify the presence of and potential impacts to cultural resources, the goal is not necessarily to answer wide-reaching theories regarding the development of early southern California, but to investigate the role and importance of the identified resources. Nevertheless, the assessment of the significance of a resource must take into consideration a variety of characteristics, as well as the ability of the resource to address regional research topics and issues.

Although survey-level investigations are limited in terms of the amount of information available, several specific research questions were developed that could be used to guide the initial investigations of any observed cultural resources. The following research questions take into account the size and location of the project area discussed above.

Research Questions

- Can located cultural resources be situated with a specific time period, population, or individual?

- Do the types of located cultural resources allow a site activity/function to be determined from a preliminary investigation? What are the site activities? What is the site function? What resources were exploited?
- How do the located sites compare to others reported from different surveys conducted in the area?
- How do the located sites fit existing models of settlement and subsistence for valley environments of the region?

Data Needs

At the survey level, the principle research objective is a generalized investigation of changing settlement patterns in both the prehistoric and historic periods within the study area. The overall goal is to understand settlement and resource procurement patterns of the project area occupants. Therefore, adequate information on site function, context, and chronology from an archaeological perspective is essential for the investigation. The fieldwork and archival research were undertaken with these primary research goals in mind:

- 1) To identify cultural resources occurring within the project;
- 2) To determine, if possible, site type and function, context of the deposit, and chronological placement of each cultural resource identified;
- 3) To place each cultural resource identified within a regional perspective; and
- 4) To provide recommendations for the treatment of each of the cultural resources identified.

4.0 METHODOLOGY

The cultural resources assessment conducted for the TTM 37060 Project consisted of a reconnaissance of the property by qualified archaeologists and an institutional records search. This archaeological study conformed to City of Moreno Valley environmental guidelines, and the statutory requirements of CEQA were followed in evaluating potential impacts.

4.1 Field Methodology

The cultural resources survey of the project was conducted on August 10, 2016. The survey of the entire approximately 9.4-acre property was an intensive pedestrian reconnaissance consisting of a series of parallel transects spaced at approximately five-meter intervals, which covered all areas of the project. Approximately 80 percent of the ground surface was visible during the survey. No constraints were encountered. Digital photographs were taken to document project conditions during the survey (see Section 5.2).

4.2 Records Search

The records search conducted by the EIC at UCR on June 30, 2016 was reviewed for an area of one mile surrounding the project in order to determine the presence of any previously recorded cultural resources. Results of the records search are provided in Appendix B and discussed in Section 5.1. The EIC also provided the standard review of the National Register of Historic Places and the Office of Historic Preservation Historic Property Directory. Land patent records held by the Bureau of Land Management (BLM) and accessible through the BLM General Land Office (GLO) website were also reviewed for pertinent project information. In addition, the BFSAs research library was consulted for any relevant historical documents.

4.3 Report Preparation and Recordation

This report contains information regarding previous studies, statutory requirements for the project, and a brief description of the setting, research methods employed, and the overall results of the survey program and impact evaluation. The report includes all appropriate illustrations and tabular information needed to make a complete and comprehensive presentation of these activities, including the methodologies employed and the personnel involved. A copy of this report will be placed at the EIC at UCR. Any newly recorded sites or sites requiring updated information will be recorded on the appropriate Department of Parks and Recreation (DPR) forms, which will be filed with the EIC.

4.4 Native American Consultation

BFSAs requested a review of the Sacred Lands File by the NAHC on June 27, 2016 to determine if any recorded Native American sacred sites or locations of religious or ceremonial importance are present within one mile of the project. The search results received from the

NAHC on June 29, 2016 did not indicate that any Native American religious, ritual, or other special activities occurred at this location. In accordance with the recommendations of the NAHC, BFSa contacted all Native American consultants listed in the NAHC response letter on June 29, 2016. As of the date of this report, responses to the BFSa letters have been received from the Rincon Band of Luiseño Indians, the Agua Caliente Band of Cahuilla Indians, the Pala Band of Mission Indians, and the Morongo Band of Mission Indians. The Morongo Band requested that a copy of the records search be provided to them and a tribal monitor be present for the initial survey of the property. Both the Agua Caliente Band and the Morongo Band noted that the project is within the bounds of Tribal Traditional Use Areas. Results of the review are provided in Appendix C and discussed in Section 5.1.

5.0 REPORT OF FINDINGS

5.1 Results of the Institutional Records Searches

A records search was conducted by the EIC at UCR on June 30, 2016, the results of which were reviewed by BFSa. The EIC reported that there are 22 cultural resources present within a one-mile radius of the project, none of which were recorded within the project boundaries (Table 5.1-1). The records search also indicated that there have been a total of 27 cultural resource studies conducted within a one-mile radius of the project, none of which involved the project.

Table 5.1-1
Cultural Resources Located Within
a One-Mile Radius of the TTM 37060 Project

Site	Description
RIV-857, RIV-3057, RIV-3133, RIV-3134, RIV-3135, RIV-3159, RIV-3223, RIV-3224, RIV-3227, RIV-3228, RIV-3229, RIV-3341, RIV-3342	Bedrock Milling Feature(s)
RIV-3248, RIV-3249	Historic Cistern
RIV-8087	Historic Orchard Complex
P-33-07283, P-33-14210, P-33-14211	Historic House
RIV-7991	Historic Irrigation
RIV-8149	Historic Structures
P-33-16788	Prehistoric Isolate

For the current project, the EIC reviewed the following historic sources:

- The National Register of Historic Places Index
- The Office of Historic Preservation, Archaeological Determinations of Eligibility
- The Office of Historic Preservation, Directory of Properties in the Historic Property Data File
- The 15' USGS *Riverside* topographic map (1901 and 1942)
- The 15' USGS *Perris* topographic map (1943)
- The 30' USGS *Elsinore* topographic map (1901)

These sources did not indicate the presence of any cultural resources within the project area. The nearest recorded resources were identified as either historic structures or bedrock milling features situated east and south of the current Area of Potential Effect (APE). The complete records search results are provided in Appendix B.

A request for a Sacred Lands File search was sent to the NAHC on June 27, 2016. The search results received from the NAHC on June 29, 2016 did not indicate that any Native American religious, ritual, or other special activities occurred at this location; however, the absence of positive results does not necessarily indicate the absence of cultural resources. Consequently, a cultural resources survey was conducted for the project.

Given the valley setting and lack of exposed bedrock outcrops for the project, predictive modeling would suggest that if prehistoric sites are present within the project, they will likely be artifact scatters or specialized resource processing loci that would have developed as a result of prehistoric resource extraction practices. In addition, any historic sites are likely to be surface deposits resulting from rural dumping practices.

5.2 Results of the Field Survey

The cultural resources survey took place on August 10, 2016. The survey was directed by Brian Smith with assistance from Clarence Hoff. The survey of the property was an intensive reconnaissance consisting of a series of parallel survey transects spaced at approximately five-meter intervals, which covered all areas of the project. The entire property was accessible and approximately 80 percent of the ground surface was visible.

The pedestrian survey indicated that the entirety of the project had been disturbed by repeated discing and general weed abatement activities. Photographs were taken to document project conditions at the time of the survey (Plates 5.2–1 and 5.2–2). The survey did not result in the identification of any cultural resources. The potential for buried or masked cultural deposits within the project is considered low based upon the lack of identified resources on this property and previous impacts to the property.



Plate 5.2-1: Overview of the project area, facing north.



Plate 5.2-2: Overview of the project area, facing south.

Attachment: Cultural Resources Assessment (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16

6.0 RECOMMENDED MITIGATION

The Phase I cultural resources study of the TTM 37060 Project did not identify any historic or prehistoric sites within the project. In addition, no registered prehistoric or historic resources were recorded within the property boundaries and no previous surveys have involved portions of the current project based upon the records search results from the EIC at UCR.

The cultural resources study has provided information that forms the basis for the conclusion that the planned development of the TTM 30760 Project will not affect any cultural resources. No resource-specific mitigation measures are recommended as a condition of approval for this project. Mitigation monitoring of the grading of the TTM 37060 Project will not be required due to the absence of identified cultural resources and the very low potential for any buried cultural resources at this location. No additional studies or mitigation measures will be recommended as a result of this cultural resources study.

7.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this archaeological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



Brian F. Smith
Principal Investigator

September 8, 2016

Date

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APPENDIX A
Qualifications of Key Personnel

Brian F. Smith, MA

Owner, Principal Investigator

Brian F. Smith and Associates, Inc.

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Education

Master of Arts, History, University of San Diego, California	1982
Bachelor of Arts, History, and Anthropology, University of San Diego, California	1975

Professional Memberships

Society for California Archaeology

Experience

Principal Investigator Brian F. Smith and Associates, Inc.	1977–Present Poway, California
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Brian F. Smith is the owner and principal historical and archaeological consultant for Brian F. Smith and Associates. Over the past 32 years, he has conducted over 2,500 cultural resource studies in California, Arizona, Nevada, Montana, and Texas. These studies include every possible aspect of archaeology from literature searches and large-scale surveys to intensive data recovery excavations. Reports prepared by Mr. Smith have been submitted to all facets of local, state, and federal review agencies, including the US Army Corps of Engineers, the Bureau of Land Management, the Bureau of Reclamation, the Department of Defense, and the Department of Homeland Security. In addition, Mr. Smith has conducted studies for utility companies (Sempra Energy) and state highway departments (CalTrans).

Professional Accomplishments

These selected major professional accomplishments represent research efforts that have added significantly to the body of knowledge concerning the prehistoric life ways of cultures once present in the Southern California area and historic settlement since the late 18th century. Mr. Smith has been principal investigator on the following select projects, except where noted.

Downtown San Diego Mitigation and Monitoring Reporting Programs: Large numbers of downtown San Diego mitigation and monitoring projects submitted to the Centre City Development Corporation, some of which included Strata (2008), Hotel Indigo (2008), Lofts at 707 10th Avenue Project (2007), Breeza (2007), Bayside at the Embarcadero (2007), Aria (2007), Icon (2007), Vantage Pointe (2007), Aperture (2007), Sapphire Tower (2007), Lofts at 655 Sixth Avenue (2007), Metrowork (2007), The Legend (2006), The Mark (2006), Smart Corner (2006), Lofts at 677 7th Avenue (2005), Aloft on Cortez Hill (2005), Front and

Beech Apartments (2003), Bella Via Condominiums (2003), Acqua Vista Residential Tower (2003), Northblock Lofts (2003), Westin Park Place Hotel (2001), Parkloft Apartment Complex (2001), Renaissance Park (2001), and Laurel Bay Apartments (2001).

Archaeology at the Padres Ballpark: Involved the analysis of historic resources within a seven-block area of the "East Village" area of San Diego, where occupation spanned a period from the 1870s to the 1940s. Over a period of two years, BFSA recovered over 200,000 artifacts and hundreds of pounds of metal, construction debris, unidentified broken glass, and wood. Collectively, the Ballpark Project and the other downtown mitigation and monitoring projects represent the largest historical archaeological program anywhere in the country in the past decade (2000-2007).

4S Ranch Archaeological and Historical Cultural Resources Study: Data recovery program consisted of the excavation of over 2,000 square meters of archaeological deposits that produced over one million artifacts, containing primarily prehistoric materials. The archaeological program at 4S Ranch is the largest archaeological study ever undertaken in the San Diego County area and has produced data that has exceeded expectations regarding the resolution of long-standing research questions and regional prehistoric settlement patterns.

Charles H. Brown Site: Attracted international attention to the discovery of evidence of the antiquity of man in North America. Site located in Mission Valley, in the city of San Diego.

Del Mar Man Site: Study of the now famous Early Man Site in Del Mar, California, for the San Diego Science Foundation and the San Diego Museum of Man, under the direction of Dr. Spencer Rogers and Dr. James R. Moriarty.

Old Town State Park Projects: Consulting Historical Archaeologist. Projects completed in the Old Town State Park involved development of individual lots for commercial enterprises. The projects completed in Old Town include Archaeological and Historical Site Assessment for the Great Wall Cafe (1992), Archaeological Study for the Old Town Commercial Project (1991), and Cultural Resources Site Survey at the Old San Diego Inn (1988).

Site W-20, Del Mar, California: A two-year-long investigation of a major prehistoric site in the Del Mar area of the city of San Diego. This research effort documented the earliest practice of religious/ceremonial activities in San Diego County (circa 6,000 years ago), facilitated the projection of major non-material aspects of the La Jolla Complex, and revealed the pattern of civilization at this site over a continuous period of 5,000 years. The report for the investigation included over 600 pages, with nearly 500,000 words of text, illustrations, maps, and photographs documenting this major study.

City of San Diego Reclaimed Water Distribution System: A cultural resource study of nearly 400 miles of pipeline in the city and county of San Diego.

Master Environmental Assessment Project, City of Poway: Conducted for the City of Poway to produce a complete inventory of all recorded historic and prehistoric properties within the city. The information was used in conjunction with the City's General Plan Update to produce a map matrix of the city showing areas of high, moderate, and low potential for the presence of cultural resources. The effort also included the development of the City's Cultural Resource Guidelines, which were adopted as City policy.

Draft of the City of Carlsbad Historical and Archaeological Guidelines: Contracted by the City of Carlsbad to produce the draft of the City's historical and archaeological guidelines for use by the Planning Department of the City.

The Mid-Bayfront Project for the City of Chula Vista: Involved a large expanse of undeveloped agricultural land situated between the railroad and San Diego Bay in the northwestern portion of the city. The study included the analysis of some potentially historic features and numerous prehistoric sites.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Audie Murphy Ranch, Riverside County, California: Project manager/director of the investigation of 1,113.4 acres and 43 sites, both prehistoric and historic—including project coordination; direction of field crews; evaluation of sites for significance based on County of Riverside and CEQA guidelines; assessment of cupule, pictograph, and rock shelter sites, co-authoring of cultural resources project report. February-September 2002.

Cultural Resources Evaluation of Sites Within the Proposed Development of the Otay Ranch Village 13 Project, San Diego County, California: Project manager/director of the investigation of 1,947 acres and 76 sites, both prehistoric and historic—including project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of San Diego and CEQA guidelines; co-authoring of cultural resources project report. May-November 2002.

Cultural Resources Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County: Project manager/director for a survey of 29 individual sites near the U.S./Mexico Border for proposed video surveillance camera locations associated with the San Diego Border barrier Project—project coordination and budgeting; direction of field crews; site identification and recordation; assessment of potential impacts to cultural resources; meeting and coordinating with U.S. Army Corps of Engineers, U.S. Border Patrol, and other government agencies involved; co-authoring of cultural resources project report. January, February, and July 2002.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee West GPA, Riverside County, California: Project manager/director of the investigation of nine sites, both prehistoric and historic—including project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of Riverside and CEQA guidelines; historic research; co-authoring of cultural resources project report. January-March 2002.

Mitigation of An Archaic Cultural Resource for the Eastlake III Woods Project for the City of Chula Vista, California: Project archaeologist/ director—including direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. September 2001-March 2002.

Cultural Resources Survey and Test of Sites Within the Proposed French Valley Specific Plan/EIR, Riverside County, California: Project manager/director of the investigation of two prehistoric and three historic sites—including project coordination and budgeting; survey of project area; Native American consultation; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Lawson Valley Project, San Diego County, California: Project manager/director of the investigation of 28 prehistoric and two historic sites—including project coordination; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—including project coordination; field survey; assessment of parcel for potentially buried cultural deposits; monitoring of geotechnical borings; authoring of cultural resources project report. Brian F. Smith and Associates, San Diego, California. June 2000.

Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/Cavadias Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—including project coordination; direction of field crews; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. June 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee Ranch, Riverside County, California: Project manager/director of the investigation of one prehistoric and five historic sites—included project coordination and budgeting; direction of field crews; feature recordation; historic structure assessments; assessment of sites for significance based on CEQA guidelines; historic research; co-authoring of cultural resources project report. February-June 2000.

Salvage Mitigation of a Portion of the San Diego Presidio Identified During Water Pipe Construction for the City of San Diego, California: Project archaeologist/director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project, Pacific Beach, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. March-April 2000.

Salvage Mitigation of a Portion of Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project and Caltrans, Carlsbad, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. December 1999-January 2000.

Survey and Testing of Two Prehistoric Cultural Resources for the Airway Truck Parking Project, Otay Mesa, California: Project archaeologist/director—included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; authoring of cultural resources project report, in prep. December 1999-January 2000.

Cultural Resources Phase I and II Investigations for the Tin Can Hill Segment of the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for a survey and testing of a prehistoric quarry site along the border—NRHP eligibility assessment; project coordination and budgeting; direction of field crews; feature recordation; meeting and coordinating with U.S. Army Corps of Engineers; co-authoring of cultural resources project report. December 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Westview High School Project for the City of San Diego, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. October 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Otay Ranch SPA-One West Project for the City of Chula Vista, California: Project archaeologist/director—included direction of field crews; development of data recovery program; management of artifact collections cataloging and curation; assessment of

site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report, in prep. September 1999-January 2000.

Monitoring of Grading for the Herschel Place Project, La Jolla, California: Project archaeologist/monitor—included monitoring of grading activities associated with the development of a single-dwelling parcel. September 1999.

Survey and Testing of a Historic Resource for the Osterkamp Development Project, Valley Center, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; budget development; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Testing of a Prehistoric Cultural Resource for the Proposed College Boulevard Alignment Project, Carlsbad, California: Project manager/director —included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report, in prep. July-August 1999.

Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California: Project archaeologist—included direction of field crews; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Evaluation of Cultural Resources at the Village 2 High School Site, Otay Ranch, City of Chula Vista, California: Project manager/director —management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report. July 1999.

Cultural Resources Phase I, II, and III Investigations for the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for the survey, testing, and mitigation of sites along border—supervision of multiple field crews, NRHP eligibility assessments, Native American consultation, contribution to Environmental Assessment document, lithic and marine shell analysis, authoring of cultural resources project report. August 1997-January 2000.

Phase I, II, and III Investigations for the Scripps Poway Parkway East Project, Poway California: Project archaeologist/project director—included recordation and assessment of multicomponent prehistoric and historic sites; direction of Phase II and III investigations; direction of laboratory analyses including prehistoric and historic collections; curation of collections; data synthesis; coauthorship of final cultural resources report. February 1994; March-September 1994; September-December 1995.

Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System Project, San Elijo, California: Project manager/director —test excavations; direction of artifact identification and analysis; graphics production; coauthorship of final cultural resources report. December 1994-July 1995.

Evaluation of Cultural Resources for the Environmental Impact Report for the Rose Canyon Trunk Sewer Project, San Diego, California: Project manager/Director —direction of test excavations; identification and analysis of prehistoric and historic artifact collections; data synthesis; co-authorship of final cultural resources report, San Diego, California. June 1991-March 1992.

Reports/Papers

Author, coauthor, or contributor to over 2,500 cultural resources management publications, a selection of which are presented below.

- 2015 An Archaeological/Historical Study for the Safari Highlands Ranch Project, City of Escondido, County of San Diego.
- 2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels II Project, Planning Case No. 36962, Riverside County, California.
- 2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels I Project, Planning Case No. 36950, Riverside County, California.
- 2015 Cultural Resource Data Recovery and Mitigation Monitoring Program for Site SDI-10,237 Locus F, Everly Subdivision Project, El Cajon, California.
- 2015 Phase I Cultural Resource Survey for the Woodward Street Senior Housing Project, City of San Marcos, California (APN 218-120-31).
- 2015 An Updated Cultural Resource Survey for the Box Springs Project (TR 33410), APNs 255-230-010, 255-240-005, 255-240-006, and Portions of 257-180-004, 257-180-005, and 257-180-006.
- 2015 A Phase I and II Cultural Resource Report for the Lake Ranch Project, TR 36730, Riverside County, California.
- 2015 A Phase II Cultural Resource Assessment for the Munro Valley Solar Project, Inyo County, California.
- 2014 Cultural Resources Monitoring Report for the Diamond Valley Solar Project, Community of Winchester, County of Riverside.
- 2014 National Historic Preservation Act Section 106 Compliance for the Proposed Saddleback Estates Project, Riverside County, California.
- 2014 A Phase II Cultural Resource Evaluation Report for RIV-8137 at the Toscana Project, TR 36593, Riverside County, California.
- 2014 Cultural Resources Study for the Estates at Del Mar Project, City of Del Mar, San Diego, California (TTM 14-001).
- 2014 Cultural Resources Study for the Aliso Canyon Major Subdivision Project, Rancho Santa Fe, San Diego County, California.
- 2014 Cultural Resources Due Diligence Assessment of the Ocean Colony Project, City of Encinitas.
- 2014 A Phase I and Phase II Cultural Resource Assessment for the Citrus Heights II Project, TTM 36475, Riverside County, California.
- 2013 A Phase I Cultural Resource Assessment for the Modular Logistics Center, Moreno Valley, Riverside County, California.

- 2013 A Phase I Cultural Resources Survey of the Ivey Ranch Project, Thousand Palms, Riverside County, California.
- 2013 Cultural Resources Report for the Emerald Acres Project, Riverside County, California.
- 2013 A Cultural Resources Records Search and Review for the Pala Del Norte Conservation Bank Project, San Diego County, California.
- 2013 An Updated Phase I Cultural Resources Assessment for Tentative Tract Maps 36484 and 36485, Audie Murphy Ranch, City of Menifee, County of Riverside.
- 2013 El Centro Town Center Industrial Development Project (EDA Grant No. 07-01-06386); Result of Cultural Resource Monitoring.
- 2013 Cultural Resources Survey Report for the Renda Residence Project, 9521 La Jolla Farms Road, La Jolla, California.
- 2013 A Phase I Cultural Resource Study for the Ballpark Village Project, San Diego, California.
- 2013 Archaeological Monitoring and Mitigation Program, San Clemente Senior Housing Project, 2350 South El Camino Real, City of San Clemente, Orange County, California (CUP No. 06-065; APN-060-032-04).
- 2012 Mitigation Monitoring Report for the Los Peñasquitos Recycled Water Pipeline.
- 2012 Cultural Resources Report for Menifee Heights (Tract 32277).
- 2012 A Phase I Cultural Resource Study for the Altman Residence at 9696 La Jolla Farms Road, La Jolla, California 92037.
- 2012 Mission Ranch Project (TM 5290-1/MUP P87-036W3): Results of Cultural Resources Monitoring During Mass Grading.
- 2012 A Phase I Cultural Resource Study for the Payan Property Project, San Diego, California.
- 2012 Phase I Archaeological Survey of the Rieger Residence, 13707 Durango Drive, Del Mar, California 92014, APN 300-369-49.
- 2011 Mission Ranch Project (TM 5290-1/MUP P87-036W3): Results of Cultural Resources Monitoring During Mass Grading.
- 2011 Mitigation Monitoring Report for the 1887 Viking Way Project, La Jolla, California.
- 2011 Cultural Resource Monitoring Report for the Sewer Group 714 Project.
- 2011 Results of Archaeological Monitoring at the 10th Avenue Parking Lot Project, City of San Diego, California (APNs 534-194-02 and 03).
- 2011 Archaeological Survey of the Pelberg Residence for a Bulletin 560 Permit Application; 8335 Camino Del Oro; La Jolla, California 92037 APN 346-162-01-00 .
- 2011 A Cultural Resources Survey Update and Evaluation for the Robertson Ranch West Project and an Evaluation of National Register Eligibility of Archaeological sites for Sites for Section 106 Review (NHPA).
- 2011 Mitigation Monitoring Report for the 43rd and Logan Project.

- 2011 Mitigation Monitoring Report for the Sewer Group 682 M Project, City of San Diego Project #174116.
- 2011 A Phase I Cultural Resource Study for the Nooren Residence Project, 8001 Calle de la Plata, La Jolla, California, Project No. 226965.
- 2011 A Phase I Cultural Resource Study for the Keating Residence Project, 9633 La Jolla Farms Road, La Jolla, California 92037.
- 2010 Mitigation Monitoring Report for the 15th & Island Project, City of San Diego; APNs 535-365-01, 535-365-02 and 535-392-05 through 535-392-07.
- 2010 Archaeological Resource Report Form: Mitigation Monitoring of the Sewer and Water Group 772 Project, San Diego, California, W.O. Nos. 187861 and 178351.
- 2010 Pottery Canyon Site Archaeological Evaluation Project, City of San Diego, California, Contract No. H105126.
- 2010 Archaeological Resource Report Form: Mitigation Monitoring of the Racetrack View Drive Project, San Diego, California; Project No. 163216.
- 2010 A Historical Evaluation of Structures on the Butterfield Trails Property.
- 2010 Historic Archaeological Significance Evaluation of 1761 Haydn Drive, Encinitas, California (APN 260-276-07-00).
- 2010 Results of Archaeological Monitoring of the Heller/Nguyen Project, TPM 06-01, Poway, California.
- 2010 Cultural Resource Survey and Evaluation Program for the Sunday Drive Parcel Project, San Diego County, California, APN 189-281-14.
- 2010 Archaeological Resource Report Form: Mitigation Monitoring of the Emergency Garnet Avenue Storm Drain Replacement Project, San Diego, California, Project No. B10062
- 2010 An Archaeological Study for the 1912 Spindrift Drive Project
- 2009 Cultural Resource Assessment of the North Ocean Beach Gateway Project City of San Diego #64A-003A; Project #154116.
- 2009 Archaeological Constraints Study of the Morgan Valley Wind Assessment Project, Lake County, California.
- 2008 Results of an Archaeological Review of the Helen Park Lane 3.1-acre Property (APN 314-561-31), Poway, California.
- 2008 Archaeological Letter Report for a Phase I Archaeological Assessment of the Valley Park Condominium Project, Ramona, California; APN 282-262-75-00.
- 2007 Archaeology at the Ballpark. Brian F. Smith and Associates, San Diego, California. Submitted to the Centre City Development Corporation.
- 2007 Result of an Archaeological Survey for the Villages at Promenade Project (APNs 115-180-007-3, 115-180-049-1, 115-180-042-4, 115-180-047-9) in the City of Corona, Riverside County.
- 2007 Monitoring Results for the Capping of Site CA-SDI-6038/SDM-W-5517 within the Katzer Jamul Center Project; P00-017.
- 2006 Archaeological Assessment for The Johnson Project (APN 322-011-10), Poway, California.

- 2005 Results of Archaeological Monitoring at the El Camino Del Teatro Accelerated Sewer Replacement Project (Bid No. K041364; WO # 177741; CIP # 46-610.6.
- 2005 Results of Archaeological Monitoring at the Baltazar Draper Avenue Project (Project No. 15857; APN: 351-040-09).
- 2004 TM 5325 ER #03-14-043 Cultural Resources.
- 2004 An Archaeological Survey and an Evaluation of Cultural Resources at the Salt Creek Project. Report on file at Brian F. Smith and Associates.
- 2003 An Archaeological Assessment for the Hidden Meadows Project, San Diego County, TM 5174, Log No. 99-08-033. Report on file at Brian F. Smith and Associates.
- 2003 An Archaeological Survey for the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.
- 2003 Archaeological Investigations at the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.
- 2003 Archaeological Monitoring of Geological Testing Cores at the Pacific Beach Christian Church Project. Report on file at Brian F. Smith and Associates.
- 2003 San Juan Creek Drilling Archaeological Monitoring. Report on file at Brian F. Smith and Associates.
- 2003 Evaluation of Archaeological Resources Within the Spring Canyon Biological Mitigation Area, Otay Mesa, San Diego County, California. Brian F. Smith and Associates, San Diego, California.
- 2002 An Archaeological/Historical Study for the Otay Ranch Village 13 Project (et al.). Brian F. Smith and Associates, San Diego, California.
- 2002 An Archaeological/Historical Study for the Audie Murphy Ranch Project (et al.). Brian F. Smith and Associates, San Diego, California.
- 2002 Results of an Archaeological Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County, California. Brian F. Smith and Associates, San Diego, California.
- 2002 A Cultural Resources Survey and Evaluation for the Proposed Robertson Ranch Project, City of Carlsbad. Brian F. Smith and Associates, San Diego, California.
- 2002 Archaeological Mitigation of Impacts to Prehistoric Site SDI-7976 for the Eastlake III Woods Project, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.
- 2002 An Archaeological/Historical Study for Tract No. 29777, Menifee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.
- 2002 An Archaeological/Historical Study for Tract No. 29835, Menifee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.
- 2001 An Archaeological Survey and Evaluation of a Cultural Resource for the Moore Property, Poway. Brian F. Smith and Associates, San Diego, California.
- 2001 An Archaeological Report for the Mitigation, Monitoring, and Reporting Program at the Water and Sewer Group Job 530A, Old Town San Diego. Brian F. Smith and Associates, San Diego, California.

- 2001 A Cultural Resources Impact Survey for the High Desert Water District Recharge Site 6 Project, Yucca Valley. Brian F. Smith and Associates, San Diego, California.
- 2001 Archaeological Mitigation of Impacts to Prehistoric Site SDI-13,864 at the Otay Ranch SPA-One West Project. Brian F. Smith and Associates, San Diego, California.
- 2001 A Cultural Resources Survey and Site Evaluations at the Stewart Subdivision Project, Moreno Valley, County of San Diego. Brian F. Smith and Associates, San Diego, California.
- 2000 An Archaeological/Historical Study for the French Valley Specific Plan/EIR, French Valley, County of Riverside. Brian F. Smith and Associates, San Diego, California.
- 2000 Results of an Archaeological Survey and the Evaluation of Cultural Resources at The TPM#24003–Lawson Valley Project. Brian F. Smith and Associates, San Diego, California.
- 2000 Archaeological Mitigation of Impacts to Prehistoric Site SDI-5326 at the Westview High School Project for the Poway Unified School District. Brian F. Smith and Associates, San Diego, California.
- 2000 An Archaeological/Historical Study for the Meniffee Ranch Project. Brian F. Smith and Associates, San Diego, California.
- 2000 An Archaeological Survey and Evaluation of Cultural Resources for the Bernardo Mountain Project, Escondido, California. Brian F. Smith and Associates, San Diego, California.
- 2000 A Cultural Resources Impact Survey for the Nextel Black Mountain Road Project, San Diego, California. Brian F. Smith and Associates, San Diego, California.
- 2000 A Cultural Resources Impact Survey for the Rancho Vista Project, 740 Hilltop Drive, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.
- 2000 A Cultural Resources Impact Survey for the Poway Creek Project, Poway, California. Brian F. Smith and Associates, San Diego, California.
- 2000 Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project. Brian F. Smith and Associates, San Diego, California.
- 2000 Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/ Cavadias Project. Brian F. Smith and Associates, San Diego, California.
- 2000 Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project. Brian F. Smith and Associates, San Diego, California.
- 2000 Salvage Excavations at Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project, Carlsbad, California. Brian F. Smith and Associates, San Diego, California.
- 2000 Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.
- 2000 Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.
- 2000 A Report for an Archaeological Evaluation of Cultural Resources at the Otay Ranch Village Two SPA, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.
- 2000 An Archaeological Evaluation of Cultural Resources for the Airway Truck Parking Project, Otay Mesa, County of San Diego. Brian F. Smith and Associates, San Diego, California.

- 2000 Results of an Archaeological Survey and Evaluation of a Resource for the Tin Can Hill Segment of the Immigration and Naturalization and Immigration Service Border Road, Fence, and Lighting Project, San Diego County, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological Survey of the Home Creek Village Project, 4600 Block of Home Avenue, San Diego, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological Survey for the Sgobassi Lot Split, San Diego County, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Evaluation of Cultural Resources at the Otay Ranch Village 11 Project. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological/Historical Survey and Evaluation of a Cultural Resource for The Osterkamp Development Project, Valley Center, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological Survey and Evaluation of a Cultural Resource for the Proposed College Boulevard Alignment Project. Brian F. Smith and Associates, San Diego, California.
- 1999 Results of an Archaeological Evaluation for the Anthony's Pizza Acquisition Project in Ocean Beach, City of San Diego (with L. Pierson and B. Smith). Brian F. Smith and Associates, San Diego, California.
- 1996 An Archaeological Testing Program for the Scripps Poway Parkway East Project. Brian F. Smith and Associates, San Diego, California.
- 1995 Results of a Cultural Resources Study for the 4S Ranch. Brian F. Smith and Associates, San Diego, California.
- 1995 Results of an Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System. Brian F. Smith and Associates, San Diego, California.
- 1994 Results of the Cultural Resources Mitigation Programs at Sites SDI-11,044/H and SDI-12,038 at the Salt Creek Ranch Project. Brian F. Smith and Associates, San Diego, California.
- 1993 Results of an Archaeological Survey and Evaluation of Cultural Resources at the Stallion Oaks Ranch Project. Brian F. Smith and Associates, San Diego, California.
- 1992 Results of an Archaeological Survey and the Evaluation of Cultural Resources at the Ely Lot Split Project. Brian F. Smith and Associates, San Diego, California.
- 1991 The Results of an Archaeological Study for the Walton Development Group Project. Brian F. Smith and Associates, San Diego, California.

Tracy A. Stropes, MA, RPA

Senior Project Archaeologist

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Education

Master of Arts, Anthropology, San Diego State University, California	2007
Bachelor of Science, Anthropology, University of California, Riverside	2000

Professional Memberships

Register of Professional Archaeologists
 Society for California Archaeology
 Archaeological Institute of America

Experience

Project Archaeologist Brian F. Smith and Associates, Inc.	March 2009–Present Poway, California
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Project Management of all phases of archaeological investigations for local, state, and federal agencies, field supervision, lithic analysis, National Register of Historic Places (NRHP) and California Environmental Quality Act (CEQA) site evaluations, and authoring/coauthoring of cultural resource management reports.

Archaeological Principal Investigator TRC Solutions	June 2008–February 2009 Irvine, California
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Cultural resource segment of Natural Sciences and Permitting Division; management of archaeological investigations for private companies and local, state, and federal agencies, personnel management, field and laboratory supervision, lithic analysis, Native American consultation and reporting, MRHP and CEQA site evaluations, and authoring/coauthoring cultural resource management reports.

Principal Investigator and Project Archaeologist Archaeological Resource Analysts	June 2006–May 2008 Oceanside, California
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As a sub consultant, served as Principal Investigator and Project Archaeologist for several projects for SRS Inc., including field direction, project and personnel management, lab analysis, and authorship of company reports.

**Project Archaeologist
Gallegos & Associates**

**September 1996–June 2006
Carlsbad, California**

Project management, laboratory management, lithic analysis, field direction, Native American consultation, report authorship/technical editing, and composition of several data recovery/preservation programs for both CEQA and NEPA level compliance.

**Project Archaeologist
Macko Inc.**

**September 1993–September 1996
Santa Ana, California**

Project management, laboratory management, lithic analysis, field supervision, and report authorship/technical editing.

**Archaeological Field Technician
Chambers Group Inc.**

**January 1993–September 1993
Irvine, California**

Archaeological excavation, surveying, monitoring, wet screen facilities management, and project logistics.

**Archaeological Field Technician
John Minch and Associates**

**May 1992–September 1992
San Juan Capistrano, California**

Archaeological excavation, surveying, monitoring, wet screen facilities management, and project logistics.

Reports/Papers

Principal Author

- 2012 A Class III Cultural Resources Study for the USGS Creepmeter Project; July 20, 2012; Tracy Stropes and Brian Smith.
- 2011 Results of the Mitigation Monitoring Program for the Mission Brewery Villas Project City of San Diego (Project No. 52078) / April 9, 2012 / Tracy A. Stropes.
- 2011 Mitigation Monitoring Report for the 43rd and Logan Project; June 7, 2012; Tracy A. Stropes and Brian F. Smith.
- 2011 Mitigation Monitoring Report for the Sewer and Water Group 768 Project; April 10, 2012; Tracy A. Stropes and Brian F. Smith.
- 2010 A Phase I Cultural Resource Study for the Butterfield Residence Project, La Jolla, California / January 17, 2011 / Tracy A. Stropes and Brian F. Smith.
- 2010 A Cultural Resources Literature Review for the 11099 North Torrey Pines Road Project, San Diego, California; November 17, 2010; Tracy A. Stropes and Brian F. Smith.
- 2010 A Cultural Resource Monitoring Report for the Eichen Residence Project, San Diego, California, Project No. 191775 / August 17, 2011 / Tracy A. Stropes.

- 2010 Phase I Cultural Resources Survey for the San Jacinto Poultry Ranch Storage Building Project; November 11, 2010; Tracy Stropes and Brian Smith.
- 2010 Cultural Resource Monitoring Report for the Salvation Army Vehicle Storage Area Project; 1015 West 12th Street, City of San Diego; Project #217113; December 5, 2011, Tracy A. Stropes, Principal Investigator.
- 2010 Cultural Resource Monitoring Report for the Sunset Cliffs Trunk Sewer Project, City of San Diego, Project No. 178901, January 5, 2012, Tracy A. Stropes.
- 2010 Mitigation Monitoring Report for the Sewer Group 682 Project; April 16, 2012; Tracy A. Stropes and Brian F. Smith.
- 2010 A Phase III Cultural Resource Data Recovery Program for CA-SDI-16986, Hidden Meadows, San Diego County, California (TPM 20794) Tracy A. Stropes and Brian F. Smith.
- 2010 Research Design, Data Recovery Program, and Mitigation, Monitoring, and Reporting Program for 1900 Spindrift Drive La Jolla, California; APN 346-44-05; January 26, 2011; Tracy Stropes and Brian F. Smith.
- 2010 An Archaeological Study for the 1912 Spindrift Drive Project La Jolla California, Project No. 214654; L64A-003A; APN 346-44-04; January 26, 2011; Tracy Stropes and Brian F. Smith.
- 2009 An Archaeological Assessment for the Rivera-Placentia Project, City of Riverside, California. Prepared for Riverside Construction Company.
- 2009 Cultural Resource Data Recovery Plan for the North Ocean Beach Gateway Project. Prepared for the City of San Diego and KTU+A.
- 2009 Cultural Resource Letter Report for the Borrego Substation Feasibility Study, Borrego Springs, California. Prepared for RBF Consulting.
- 2009 A Cultural Resource Study for the Gatto Residence Project, La Jolla, California. Prepared for Marengo Martin Architects Inc.
- 2008 Phase I Cultural Resource Survey for the 28220 Highridge Road Development Project, Rancho Palos Verdes, California. Prepared for REC Development.
- 2008 Wild Goose Expansion 3 Project Butte County, California Colusa County, California. Prepared for Niska Gas Storage LLC.
- 2008 Class III Cultural Resource Survey for the Burlington Northern Santa Fe Four Railway Bridge Renewal Project San Bernardino County, California. Prepared for BNSF Railway Company.
- 2008 I-80 Colfax Site Cultural Resource Records Search Report, Placer County California. Prepared for Granite Construction Company.
- 2008 I-80 Gold Run Site Cultural Resource Records Search Report, Placer County California. Prepared for Granite Construction Company.
- 2008 Cultural Resource Monitoring at 31431 Camino Capistrano, San Juan Capistrano California. Prepared for Herman Weisker, Inc.

- 2008 Cultural Resource Inventory for the Snow White Pumice Mine, Hinkley California. Prepared for U.S. Mining and Minerals Corporation.
- 2007 Nodule Industries of North Coastal San Diego: Change and Stasis in 10,000 Years of Lithic Technology. Masters Thesis on file, San Diego State University.
- 2007 Cultural Resource Inventory for Empire Homes (APN 104-180-04), Lake Forest, California. Prepared for Empire Homes.
- 2007 Phase I Archaeological Assessment for APN 104-200-09, Beumont, California. Prepared for Mary Chan.
- 2007 Cultural Resource Inventory for Empire Homes (APN 104-180-04), Lake Forest, California. Prepared for Empire Homes.
- 2006 Carlsbad Municipal Golf Course Data Recovery Program for CA-SDI-8694, and Indexing and Preservation Program Study for CA-SDI-8303 and CA-SDI-8797 Locus C, City of Carlsbad, CA. Prepared for City of Carlsbad.
- 2005 Grand Pacific Resorts Data Recovery and Index Sample Program for CA-SDI-8797, Area A, City of Carlsbad, CA. Prepared for Grand Pacific Resorts Inc.
- 2004 "Near the Harris Site Quarry" Cultural Resource Data Recovery and Preservation Program for CA-SDI-13028, San Diego County, California. Prepared for Harbrecht Development, L.P.
- 2004 Cultural Resource Survey and Boundary Test Report for the Lilac Ranch Project, San Diego County, California. Prepared for Empire Companies.
- 2003 Cultural Resource Data Recovery and Preservation Program for CA-SDI-12027, San Diego County, California. Prepared for Harbrecht Development Inc.
- 2002 Data Recovery Program for the Pacbell Site CA-SDI-5633, San Marcos, California. Prepared for Joseph Wong Design Associates.
- 2001 McCrink Ranch Cultural Resource Test Program Additional Information for Selected Sites, San Diego County, California. Prepared for Shapouri & Associates.
- 2001 The Quail Ridge Project Cultural Resource Test Program, San Diego County, California. Prepared for Helix Environmental Planning, Inc.
- 2000 Cultural Resource Survey and Evaluation for the North Sand Sheet Full Buildout Program, Owens Lake, California. Prepared for CH2MHill.
- 1995 Final Report: Archaeological Investigations Conducted for the Abalone Cove Dewatering Wells, City of Rancho Palos Verdes Los Angeles County, California. Prepared for the City of Rancho Palos Verdes, Environmental Services.
- 1995 Final Report: A Class III Intensive Survey of a 100-Acre Sand and Gravel Mining Area, Imperial County, California. Prepared for the Lilburn Corporation.
- 1994 Final Report: Data Recovery Excavations at Five Late Prehistoric Archaeological Sites Along the Los Trancos Access Road, Newport Coast Planned Community, Orange County, California. Prepared for the Coastal Community Builders, a division of The Irvine Company.

Contributing Author

- 2008 Lithic Analysis for Thirteen Sites Along the Transwestern Phoenix Expansion Project, Loops A and B. Prepared for Transwestern Pipeline Company, LLC.
- 2005 Cultural Resource Survey and Testing for the Star Ranch Property, San Diego, California.
- 2004 Cultural Resource Test Report for the Palomar Point Project: Site CA-SDI-16205, Carlsbad, California. Prepared for Lanikai Management Corp.
- 2004 Cultural Resource Survey and Test Report for the Canyon View Project, Carlsbad, California. Prepared for Shapouri & Associates.
- 2004 Cultural Resource Test Report for the Yamamoto Property: Site SDM-W-2046, Carlsbad, California. Prepared for Cunningham Consultants, Inc.
- 2004 Historical Resources Report for the Kuta and Mascari Properties, Otay Mesa, California. Prepared for Centex Homes.
- 2004 Cultural Resource Monitor and Test Report for the Encina Power Plant Project, Carlsbad, California. Prepared for Haley & Aldrich, Inc.
- 2004 Cultural Resource Test Report for Site CA-SDI-16788, Otay Mesa, California. Prepared for Otay Mesa Property, L.P.
- 2004 Cultural Resource Survey and Test Report for the Lonestar Project, Otay Mesa, San Diego County, California. Prepared for Otay Mesa Property, L.P.
- 2003 Cultural Resource Mitigation Program for the Torrey Ranch Site CA-SDI-5325, San Diego, California. Prepared for Garden Communities.
- 2003 Cultural Resource Survey and Test Report for the Johnson Canyon Parcel, Otay Mesa, San Diego County, California. Prepared for Otay Mesa Property, L.P.
- 2002 Cultural Resource Data Recovery Plan for the Shaw Project: Sites CA-SDI-13025 and CA-SDI-13067, San Diego County, California. Prepared for Shapouri & Associates.
- 2001 Archaeological Test Program for CA-SDI-14112 Mesa Norte Project, San Diego, California. Prepared for Hunsaker & Associates.
- 2001 The Vista-Oceanside Cultural Resource Survey and Test Program, Vista, California. Prepared for Shapouri & Associates.
- 2001 Cultural Resource Test Program for the Wilson Property, Carlsbad, California. Prepared for the City of Carlsbad.
- 2001 Cultural Resource Test Plan for the Oceanside-Escondido Project, County of San Diego, California. Prepared for Dudek & Associates.
- 2001 Cultural Resource Test Program for the Kramer Junction Expansion Project Adelanto, California. Prepared for AMEC.
- 2001 Cultural Resource Test Program for CA-SDI-12508 San Diego, California (LDR. No. 99-1331). Prepared for Garden Communities.

- 2000 Archaeological Testing of Prehistoric Sites CASDI-14115 and CA-SDI-14116 for The Mesa Grande Project, San Diego, California. Prepared for Solana Mesa Partners, LLC.
- 2000 Cultural Resource Survey and Test Report for the Wetmore Property, Otay Mesa, San Diego County, California. Prepared for Mr. Andy Campbell.
- 2000 The Torrey Ranch Cultural Resource Test Program, San Diego County, California. Prepared for Garden Communities.
- 2000 Cultural Resource Test Results for the Otay Mesa Generating Project. Prepared for the California Energy Commission and Otay Mesa Generating Company, LCC.
- 2000 The Eternal Hills Cultural Resource Survey and Test Program, City of Oceanside, California. Prepared for Eternal Hills Memorial Park.
- 2000 The Quail Ridge Cultural Resource Test Program, San Diego County, California. Prepared for Helix Environmental Planning Inc.
- 2000 Cultural Resource Testing Program for CA-SDI-5652/H and CA-SDI-9474H SR 78/Rancho Del Oro Interchange Project, Oceanside, California. Prepared for Tetrattech Inc.
- 2000 Cultural Resource Test Results for a Portion of CA-SDI-8654 (Kuebler Ranch) Otay Mesa, San Diego County, California. Prepared for Shapouri & Associates.
- 2000 Historical/Archaeological Monitoring and Data Recovery Program for Prehistoric Site CA-SDI-48, Locus C Naval Base Point Loma, San Diego, California. Prepared for Department of the Navy, Southwest Division.
- 2000 Cultural Resource Evaluation Report for the Palomar College Science Building Project San Marcos, California. Prepared for Parsons Engineering Science Inc.
- 1999 Cultural Resource Monitoring Report for the Village of Ystagua Water Main Break City of San Diego, California. Prepared for the City of San Diego Water Department.
- 1999 The Effect of Projectile Point Size on Atlatl Dart Efficiency in Lithic Technology Vol. 24, No 1 p (27-37).
- 1999 Cultural Resource Evaluation Report for the Oceanside-Escondido Bikeway Project, San Marcos, California. Prepared for City of San Marcos.
- 1999 5000 Years of Occupation: Cultural Resource Inventory and Assessment Program for the Carlsbad Municipal Golf Course Project City of Carlsbad, California. Prepared or Cotton/Beland/Associates, Inc.
- 1999 Silver Oaks Estates Cultural Resource Enhanced Survey and Test Report for a Portion of CA-SDI-7202 San Diego, California. Prepared for Helix Environmental Planning Inc.
- 1999 Historical Archaeological Test of a portion of CA-SDI-8303 for the Faraday Road Extension Carlsbad, California. Prepared for the City of Carlsbad.
- 1999 Cultural Resource Literature Review for the North Coast Transportation Study Arterial Streets Alternative San Diego County, California. Prepared for MLF/San Diego Association of Govt.

- 1998 Archaeological Test Report for a Portion of CA-SDI-9115/SDM-W-122 Carlsbad, California. Prepared for Industrial Developments International.
- 1998 Rainforest Ranch Cultural Resource Survey and Significance Test for Prehistoric Sites CA-SDI-14932, CA-SDI-14937, CA-SDI-14938, and CA-SDI-14946 County of San Diego, California. Prepared for Boys and Girls Club of Inland North County.
- 1998 Cultural Resource Evaluation Report for the Oceanside-Escondido Bikeway Project San Marcos, California.
- 1998 Final Report: Cultural Resource Survey Report for the Sterling Property, Carlsbad, California. Prepared for SPT Holdings LCC.
- 1996 Final Report: Archaeological Survey and Test for the Huber Property Carlsbad, California. Prepared for Gene Huber.
- 1996 Final Report: Results of Phase II Test Excavations and Phase III Data Recovery Excavations at Nine Archaeological Sites Within the Newport Coast Planned Community Phase III Entitlement Area, San Joaquin Hills, Orange County, California. Prepared for Coastal Community Builders, a division of The Irvine Company.
- 1995 Preliminary Report: Phase II Test Results From Nine Prehistoric Archaeological Sites Within The Proposed Upper Newport Bay Regional County Park. Prepared for EDAW, Inc.
- 1995 Final Report: A Phase II Test Excavation at CA-ORA-136, Block 800 City of Newport Beach, Orange County California. Prepared for the Irvine Apartment Communities, a division of The Irvine Company.

Presentations

- 2004 Guest Lecturer and Flintknapping Demonstration Mission San Luis Rey Band of Mission Indians Annual Inter-tribal Pow-Wow. Mark Mojado, Tribal Contact.
- 2003 Steep Edge Unifacial Tools of Otay Mesa: An Analysis of Edge Types from CA SDI-7215 SCA Southern California Data Sharing Meetings
- 2001 Identification of Late Period Behavior Patterns in Elfin Forest: Three Sites in Northern San Diego County.
- 2001 Society for California Archaeology Data Sharing Meetings, San Luis Obispo, California.
- 1996 Trans-Tehachapian Lithic Trade at the Canebreak/Sawtooth Transition. Thirteenth Annual Meeting, Society of California Archaeology, Bakersfield, California.
- 1994 Point Size and Atlatl Dart Efficiency. Twenty Fourth Annual Meeting, Great Basin Anthropological Conference, Elko, Nevada.
- 1994/96 Guest Lecturer and Flint Knapping Instruction - Archaeological Field Class Fall Semester ,Cypress College, Cypress, California. Paul Langenwalter/Henry C. Koerper, Directors.
- 1994/95 Annual Guest Lecturer - "Living History Days" at the Mission, Mission San Juan Capistrano, San Juan Capistrano, California.

APPENDIX B

Archaeological Records Search Results

(Deleted for Public Review; Bound Separately)

APPENDIX C

NAHC Sacred Lands File Search Results



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 27, 2016

For: Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, California 95814

From: Kris Reinicke
Brian F. Smith and Associates Inc.
14010 Poway Rd. Suite A
Poway, CA 92064

Re: Request for a Sacred Lands File records search for the TTM 37060 Project,
Moreno Valley, California.

I am writing to request a record search of the Sacred Lands File and a list of appropriate Native American contacts for the TTM 37060 (16-125) Project: an archaeological assessment requested by the City of Moreno Valley for development of a residential subdivision on a 9.4 acre parcel. The project is located south of Cottonwood Avenue, between Lasselle Street and Darwin Drive in Moreno Valley, Riverside County, California. Specifically, the property is located in Section 9 of Township 03 South and Range 03 West in the USGS *Sunnymead* Quadrangle (APN: 487-461-006). A copy of the project map showing the project area and a 1 mile search radius buffer as well as the corresponding shapefile depicted thereon, has been included for your records.

Sincerely,

Kris Reinicke
Archaeologist/GIS Specialist
Phone: 858-484-0915
Email: kris@bfsa-ca.com

Attachments:

- USGS 7.5 *Sunnymead*, California topographic maps with project area delineated.
- Project Area Shapefile (.zip)

Sacred Lands File & Native American Contacts List Request
NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364 Sacramento, CA 95814 (916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: The TTM 37060 Project

County: Riverside

USGS Quadrangle Name: *Sunnymead*

Township: 03S Range: 03W

Company/Firm/Agency: Brian F. Smith and Associates Inc.

Contact Person: Kris Reinicke

Street Address: 14010 Poway Road, Suite A

City: Poway Zip: 92064

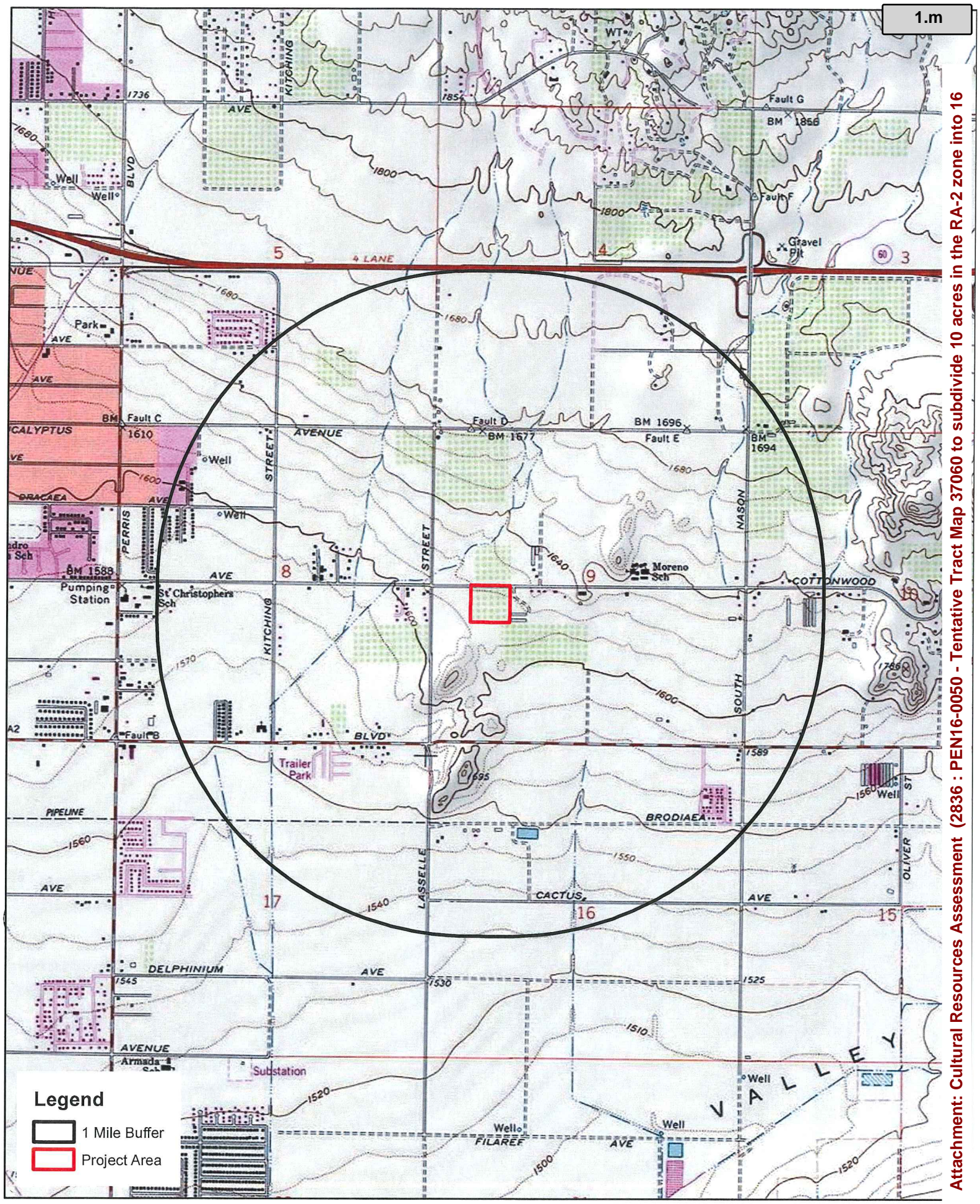
Phone: 858-484-0915

Fax: 858-679-9896

Email: kris@bfsa-ca.com

Project Description:

The project is for the TTM 37060 (16-125) Project: an archaeological assessment requested by the City of Moreno Valley for development of a residential subdivision on a 9.4 acre parcel. The project is located south of Cottonwood Avenue, between Lasselle Street and Darwin Drive in Moreno Valley, Riverside County, California. Specifically, the property is located in Section 9 of Township 03 South and Range 03 West in the USGS *Sunnymead* Quadrangle (APN: 487-461-006). A copy of the project map showing the project area and a 1 mile search radius buffer as well as the corresponding shapefile depicted thereon, has been included for your records.



Attachment: Cultural Resources Assessment (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16

The TTM 37060 Project

USGS Sunnymead Quadrangle (7.5 minute map)

0 1,000 2,000 Feet

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
Fax (916) 373-5471



June 29, 2016

Kris Reinicke
Brian F. Smith and Associates, Inc

Sent by Email: kris@bfsa-ca.com

RE: Proposed TTM 37060 Archaeological Assessment Project, City of Moreno Valley;
Sunnymead USGS Quadrangle, Riverside County, California

Dear Ms. Reinicke:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Gayle Totton".

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

**Native American Contact List
Riverside County
June 28, 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
Pala , CA 92059 Cupeno
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
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(951) 770-8100

(951) 506-9491 Fax

Ramona Band of Cahuilla Mission Indians
Daniel Salgado, Chairman
P.O. Box 391670 Cahuilla
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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
San Jacinto , CA 92581 Cahuilla
carrieg@soboba-nsn.gov
(951) 654-2765

(951) 654-4198 Fax

Torres-Martinez Desert Cahuilla Indians
Mary Resvaloso, Chairperson
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(760) 397-0300

(760) 397-8146 Fax

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person or agency of statutory responsibility as defined in Public Resources Code Sections 21080.3.1 Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed TTM 37060 Project; City of Moreno Valley; Sunnymead USGS Quadrangle, Riverside County, California.

**Native American Contact List
Riverside County
June 28, 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

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 Cahuilla
Coachella , CA 92236
(760) 398-4722
(760) 369-7161 Fax

Morongo Band of Mission Indians
Denisa Torres, Cultural Resources Manager
12700 Pumarra Road Cahuilla
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dtorres@morongo-nsn.gov
(951) 849-8807
(951) 572-6004 Fax
(951) 572-6004 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

Pauma Band of Luiseno Indians - Pauma & Yuima
Bennae Calac
P.O. Box 369 Luiseno
Pauma Valley , CA 92061
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Bo Mazzetti, Chairperson
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(760) 749-5144

Cabazon Band of Mission Indians
Judy Stapp, Director of Cultural Affairs
84-245 Indio Springs Parkway Cahuilla
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(760) 342-2593

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(760) 782-2701 Fax

Los Coyotes Band of Cahuilla and Cupeno Indians
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(760) 782-2730 Fax

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(951) 763-4325 Fax

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**Native American Contact List
Riverside County
June 28, 2016**

Ramona Band of Mission Indians
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Tribal Council
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San Luis Rey Band of Mission Indians
Cultural Department
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Pechanga Band of Mission Indians
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Santa Rosa Band of Mission Indians
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La Jolla Band of Luiseno Indians
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(760) 742-3779 Fax

Kupa Cultural Center (Pala Band)
Shasta Gaughen, Assistant Director
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Serrano Nation of Mission Indians
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(909) 528-9027
(909) 528-9032

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**Native American Contact List
Riverside County
June 28, 2016**

Agua Caliente Band of Cahuilla Indians THPO
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(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
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(760) 742-3422 Fax

Cahuilla Band of Indians
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Pechanga Cultural Resources Department
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(951) 654-4198 Fax

Pala Band of Mission Indians
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Torres-Martinez Desert Cahuilla Indians
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P.O. Box 1160 Cahuilla
Thermal , CA 92274
mmirelez@tmdci.org
(760) 399-0022, Ext. 1213

(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 TTM 37060 Project; City of Moreno Valley; Sunnymead USGS Quadrangle, Riverside County, California.

Attachment: Cultural Resources Assessment (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Judy Stapp
 Director of Cultural Affairs
 Cabazon Band of Mission Indians
 84-245 Indio Springs Parkway
 Indio, California 92203

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

Dear Ms. Stapp:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Karen Kupcha
 Augustine Band of Cahuilla Mission Indians
 P.O. Box 849
 Coachella, California 92236

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Ms. Kupcha:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Lynn Valbuena
 Chairwoman
 San Manuel Band of Mission Indians
 26569 Community Center Drive
 Highland, California 92346

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Ms. Valbuena:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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July 7, 2016

Amanda Vance
 Chairperson
 Augustine Band of Cahuilla Mission Indians
 P.O. Box 846
 Coachella, California 92236

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

Dear Ms. Vance:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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July 7, 2016

Anna Hoover
Cultural Analyst
Pechanga Cultural Resources Department
P.O. Box 2183
Temecula, California 92593

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Ms. Hoover:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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July 7, 2016

Bennae Calac
 Pauma Band of Luiseño Indians – Pauma & Yuima
 P.O. Box 369
 Pauma Valley, California 92061

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Ms. Calac:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Bo Mazzetti
Chairperson
Rincon Band of Mission Indians
1 West Tribal Road
Valley Center, California 92082

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Mazzetti:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Carrie Garcia
Cultural Resources Manager
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, California 92581

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
Riverside County, California

Dear Ms. Garcia:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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July 7, 2016

Charles Devers
Cultural Committee
Pauma Band of Luiseño Indians – Pauma & Yuima
P.O. Box 369
Pauma Valley, California 92061

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Devers:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Daniel McCarthy, M.S.
 Director – CRM Department
 San Manuel Band of Mission Indians
 26569 Community Center Drive
 Highland, California 92346

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. McCarthy:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Daniel Salgado
Chairman
Ramona Band of Cahuilla Mission Indians
P.O. Box 391670
Anza, California 92539

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Salgado:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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July 7, 2016

Denisa Torres
Cultural Resources Manager
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, California 92220

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Ms. Torres:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Doug Welmas
Chairperson
Cabazon Band of Mission Indians
84-245 Indio Springs Parkway
Indio, California 92203

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
Riverside County, California

Dear Mr. Welmas:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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July 7, 2016

Goldie Walker
Chairperson
Serrano Nation of Mission Indians
P.O. Box 343
Patton, California 92369

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Ms. Walker:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Janice Elzendnga
 Tribal Administrator
 Los Coyotes Band of Cahuilla and Cupeño Indians
 P.O. Box 189
 Warner Springs, California 92086

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

Dear Ms. Elzendnga:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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July 7, 2016

Jeff Grubbe
Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, California 92264

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Grubbe:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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July 7, 2016

Jim McPherson
Tribal Historic Preservation Officer
Rincon Band of Mission Indians
1 West Tribal Road
Valley Center, California 92082

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. McPherson:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

John Gomez
 Environmental Coordinator
 Ramona Band of Mission Indians
 P.O. Box 391670
 Anza, California 92539

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Gomez:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

John Perada
 Environmental Director
 Los Coyotes Band of Cahuilla and Cupeño Indians
 P.O. Box 189
 Warner Springs, California 92086

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Perada:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Joseph Ontiveros
Cultural Resource Department
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, California 92581

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Ontiveros:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Manuel Hamilton
 Vice Chairperson
 Ramona Band of Cahuilla Indians
 P.O. Box 391670
 Anza, California 92539

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Hamilton:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Mark Macarro
Chairperson
Pechanga Band of Mission Indians
P.O. Box 1477
Temecula, California 92593

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Macarro:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Mary Resvaloso
 Chairperson
 Torres-Martinez Desert Cahuilla Indians
 P.O. Box 1160
 Thermal, California 92274

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

Dear Ms. Resvaloso:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Michael Mirelez
 Cultural Resource Coordinator
 Torres-Martinez Desert Cahuilla Indians
 P.O. Box 1160
 Thermal, California 92274

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Mirelez:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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July 7, 2016

Patricia Garcia-Plotkin
 Director
 Agua Caliente Band of Cahuilla Indians THPO
 5401 Dinah Shore Drive
 Palm Springs, California 92264

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

Dear Ms. Garcia-Plotkin:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Paul Macarro
Cultural Resources Manager
Pechanga Band of Mission Indians
P.O. Box 1477
Temecula, California 92593

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
Riverside County, California

Dear Mr. Macarro:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Robert H. Smith
Chairperson
Pala Band of Mission Indians
12196 Pala Mission Road
Pala, California 92059

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Smith:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Robert Martin
 Chairperson
 Morongo Band of Mission Indians
 12700 Pumarra Road
 Banning, California 92220

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Martin:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Shane Chapparosa
 Chairman
 Los Coyotes Band of Mission Indians
 P.O. Box 189
 Warner Springs, California 92086

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

Dear Mr. Chapparosa:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Shasta Gaughen
 Assistant Director
 Kupa Cultural Center (Pala Band)
 35008 Pala Temecula Road, PMB 50
 Pala, California 92059

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

Dear Ms. Gaughen:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Shasta Gaughen, Ph.D.
 Tribal Historic Preservation Officer
 Pala Band of Mission Indians
 35008 Pala Temecula Road, PMB 50
 Pala, California 92059

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

Dear Ms. Gaughen:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Steven Estrada
Chairman
Santa Rosa Band of Mission Indians
P.O. Box 391820
Anza, California 92539

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
Riverside County, California

Dear Mr. Estrada:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Temet Aguilar
 Chairperson
 Pauma Band of Luiseño Indians – Pauma and Yuima
 P.O. Box 369
 Pauma Valley, California 92061

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

Dear Mr. Aguilar:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

Thomas Rodriguez
 Chairperson
 La Jolla Band of Luiseño Indians
 22000 Highway 76
 Pauma Valley, California 92061

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Rodriguez:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Terry Hughes
Tribal Administrator
Santa Rosa Band of Mission Indians
P.O. Box 391820
Anza, California 92593

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Hughes:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

San Luis Rey Band of Mission Indians
 Tribal Council
 1889 Sunset Drive
 Vista, California 92081

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
 Riverside County, California

To Whom It May Concern:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



July 7, 2016

San Luis Rey Band of Mission Indians
Cultural Department
1889 Sunset Drive
Vista, California 92081

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project,
Riverside County, California

To Whom It May Concern:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

July 7, 2016

Daniel Salgado
 Chairperson
 Cahuilla Band of Indians
 P.O. Box 391760
 Anza, California 92539

Subject: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear Mr. Salgado:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the TTM 37060 Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in Riverside County, California, and includes the development of an approximately 9.4-acre parcel into a residential subdivision. The lot is currently undeveloped. The project area can be found south of Cottonwood Avenue, between Lasselle Street and Darwin Drive, in the city of Moreno Valley, California. Specifically, this project is located in Section 9 of the USGS 7.5-minute *Sunnymead, California* topographic quadrangle (Township 03 South, Range 03 West). Please find enclosed sections of the USGS *Sunnymead* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate TTM 37060 Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of Moreno Valley directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
 Senior Project Archaeologist
 tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Sunnymead, California* topographic map with project area delineated

**PALA TRIBAL HISTORIC
PRESERVATION OFFICE**

PMB 50, 35008 Pala Temecula Road
Pala, CA 92059
760-891-3510 Office | 760-742-3189 Fax



July 12, 2016

Tracy A. Stropes
Brian F. Smith and Associates, Inc.
14010 Poway Rd., Suite A
Poway, CA 92064

Re: TTM 37060 Project

Dear Mr. Stropes:

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Therefore, we have no objection to the continuation of project activities as currently planned and we defer to the wishes of Tribes in closer proximity to the project area.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone at 760-891-3515 or by e-mail at sgaughen@palatribe.com.

Sincerely,

Shasta C. Gaughen, PhD
Tribal Historic Preservation Officer
Pala Band of Mission Indians

ATTENTION: THE PALA TRIBAL HISTORIC PRESERVATION OFFICE IS RESPONSIBLE FOR ALL REQUESTS FOR CONSULTATION. PLEASE ADDRESS CORRESPONDENCE TO **SHASTA C. GAUGHEN** AT THE ABOVE ADDRESS. IT IS NOT NECESSARY TO ALSO SEND NOTICES TO PALA TRIBAL CHAIRMAN ROBERT SMITH.

**MORONGO CULTURAL
HERITAGE PROGRAM**

12700 PUMARRA RD BANNING, CA 92220
OFFICE 951-755-5025 FAX 951-572-6004



Date: July 25, 2016

Re: Information regarding Native American cultural resources on or near the TTM 37060 Project, Riverside County, California

Dear,
Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
Brian F. Smith and Associates

Thank you for contacting the Morongo Band of Mission Indians regarding the above referenced project(s). The tribe greatly appreciates the opportunity to comment on the project. After reviewing our records and consulting with our tribal elders and cultural experts, we would like to respectfully offer the following comments and/or recommendations:

- The project is outside of the Tribe's current reservation boundaries and is not within an area considered to be a traditional use area or one in which the Tribe has cultural ties (i.e. Cahuilla or Serrano Territory). We recommend contacting the appropriate tribes who have cultural affiliation to the project area. We have no further comments at this time.
- The project is outside of the Tribe's current reservation boundaries but within in an area considered to be a traditional use area or one in which the Tribe has cultural ties (i.e. Cahuilla or Serrano Territory). At this time, we are not aware of any cultural resources on the property; however, that is not to say there is nothing present. At this time, we ask that you impose specific conditions regarding all cultural and/or archaeological resources and buried cultural materials on any development plans or entitlement applications (see Standard Development Conditions attachment).
- The project is outside of the Tribe's current reservation boundaries but within in an area considered to be a traditional use area or one in which the Tribe has cultural ties (i.e. Cahuilla or Serrano Territory). At this time we ask that you impose specific conditions regarding all cultural and/or archaeological resources and buried cultural materials on any development plans or entitlement applications (see Standard Development Conditions attachment). Furthermore, we would like to formally request the following:
 - A thorough records search be conducted by contacting one of the CHRIS (California Historical Resources Information System) Archaeological Information Centers and have a copy of the search results be provided to the tribe.
 - A comprehensive archaeological survey be conducted of the proposed project property and any APE's (Areas of Potential Effect) within the property. We would also like to request that a tribal monitor be present during the initial pedestrian survey and that a copy of the results be provided to the tribe as soon as it can be made available.

___ Morongo would like to request that our tribal monitors be present during any test pit or trenching activities and any subsequent ground disturbing activities during the construction phase of the project.

___ The project is located with the current boundaries of the Morongo Band of Mission Indians Reservation. Please contact the Morongo Band of Mission Indians planning department for further details.

Once again, the Morongo Band of Mission Indians appreciates the opportunity to comment on this project. Please be aware that receipt of this letter does not constitute “meaningful” tribal consultation nor does it conclude the consultation process. This letter is merely intended to initiate consultation between the tribe and lead agency, which may be followed up with additional emails, phone calls or face-to-face consultation if deemed necessary. If you should have any further questions with regard to this matter, please do not hesitate to contact me at your convenience.

Very truly yours,

Raymond Huaute
Cultural Resource Specialist
Morongo Band of Mission Indians
Email: rhuaute@morongo-nsn.gov
Phone: (951) 755-5025

MORONGO
BAND OF
MISSION
INDIANS



A SOVEREIGN NATION

Standard Development Conditions

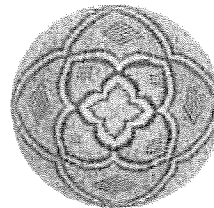
The Morongo Band of Mission Indians asks that you impose specific conditions regarding cultural and/or archaeological resources and buried cultural materials on any development plans or entitlement applications as follows:

1. If human remains are encountered during grading and other construction excavation, work in the immediate vicinity shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5.
2. In the event that Native American cultural resources are discovered during project development/construction, all work in the immediate vicinity of the find shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the overall project may continue during this assessment period.
 - a. If significant Native American cultural resources are discovered, for which a Treatment Plan must be prepared, the developer or his archaeologist shall contact the Morongo Band of Mission Indians.
 - b. If requested by the Tribe¹, the developer or the project archaeologist shall, in good faith, consult on the discovery and its disposition (e.g. avoidance, preservation, return of artifacts to tribe, etc.).

¹ The Morongo Band of Mission Indians realizes that there may be additional tribes claiming cultural affiliation to the area; however, Morongo can only speak for itself. The Tribe has no objection if the archaeologist wishes to consult with other tribes and if the city wishes to revise the condition to recognize other tribes.

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION



03-024-2016-005

July 11, 2016

[VIA EMAIL TO:tstropes@bfsa-ca.com]
 Brian F. Smith and Associates, Inc.
 Ms. Tracy Stropes
 14-010 Poway Road, Suites A
 Poway, CA 92064

Re: TTM 37060

Dear Ms. Tracy Stropes,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Cottonwood Residential Subdivision project. A records check of the ACBCI cultural registry revealed that the project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area (TUA). Since the project is in an area where the ground surface has been highly disturbed by past development and there are no known cultural resources in the area, we have no concerns regarding this project. This letter shall conclude our consultation efforts.

*At this time ACBCI defers to Soboba. This letter shall conclude our consultation efforts.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760)699-6829. You may also email me at acbc-thpo@aguacaliente.net.

Cordially,

Katie Croft
 Archaeologist
 Tribal Historic Preservation Office
 AGUA CALIENTE BAND
 OF CAHUILLA INDIANS

RINCON BAND OF LUISEÑO INDIANS

Cultural Resources Department

1 W. Tribal Road · Valley Center, California 92082 ·
(760) 297-2635 Fax:(760) 749-2639



July 11, 2016

Tracy Stropes
Brian F. Smith and Associates
14010 Poway Road, Suite A
Poway, CA 92064

Re: TTM 37060 Project

Dear Ms. Stropes:

This letter is written on behalf of Rincon Band of Luiseño Indians. We have received your notification regarding the TTM 37060 Project and we thank you for the consultation notification. The location you have identified is within the Territory of the Luiseño people.

Embedded in the Luiseño Territory are Rincon's history, culture and identity. The project is within the Luiseño Aboriginal Territory of the Luiseño people however, it is not within Rincon's Historic Boundaries. We do not have any additional information regarding this project but, we defer this project to the Pechanga Band of Luiseño Indians or Soboba Band of Luiseño Indians who are located closer to your project area.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Vincent Whipple
Manager
Rincon Cultural Resources Department

Bo Mazzetti
Tribal Chairman

Stephanie Spencer
Vice Chairwoman

Steve Stallings
Council Member

Laurie E. Gonzalez
Council Member

Alfonso Kolb
Council Member

Attachment: Cultural Resources Assessment (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16



**PROJECT SPECIFIC PRELIMINARY
WATER QUALITY MANAGEMENT PLAN
(P-WQMP)**

FOR:
COTTONWOOD RESIDENTIAL SUBDIVISION
COTTONWOOD AVENUE AND LAKEPORT DRIVE
MORENO VALLEY, CALIFORNIA
APN: 487-461-006

PREPARED FOR:
MAC JONES HOLDINGS, LLC.
2 GONDOLIERS BLUFF
NEWPORT COAST, CA 92657
PHONE: (949) 509-5004
CONTACT: DANIEL WEBB

JANUARY 12, 2016 r1
OCTOBER 3, 2016 r2
OCT-DEC 2016 (EMAIL) r3
MARCH 9, 2017 r4
APRIL 28, 2017 r5

JOB NO. 3357b

PREPARED BY:
THIENES ENGINEERING
14349 FIRESTONE BLVD.
LA MIRADA, CALIFORNIA 90638
PHONE: (714) 521-4811
FAX: (714) 521-4173
CONTACT: VICKY LI (vicky@thieneseng.com)

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

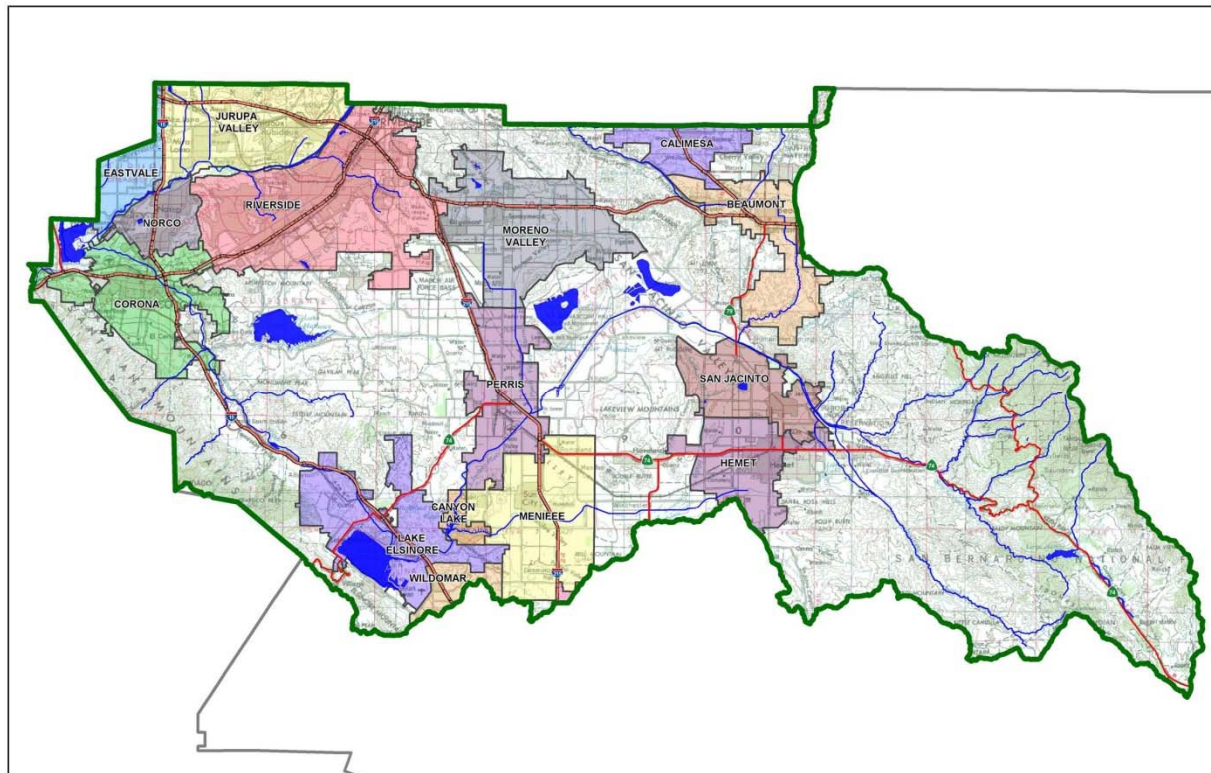
Project Specific Water Quality Management Plan

A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County

Project Title: Cottonwood Residential Subdivision

Development No: 487-461-006

Design Review/Case No: PA16-0009



- Preliminary
 Final

Original Date Prepared: January 12, 2016

Revision Date(s): October 3, 2016

Oct – Dec 2016 (email)

March 9, 2017

April 28, 2017

Prepared for Compliance with

*Regional Board Order No. **R8-2010-0033***

Contact Information:

Prepared for:

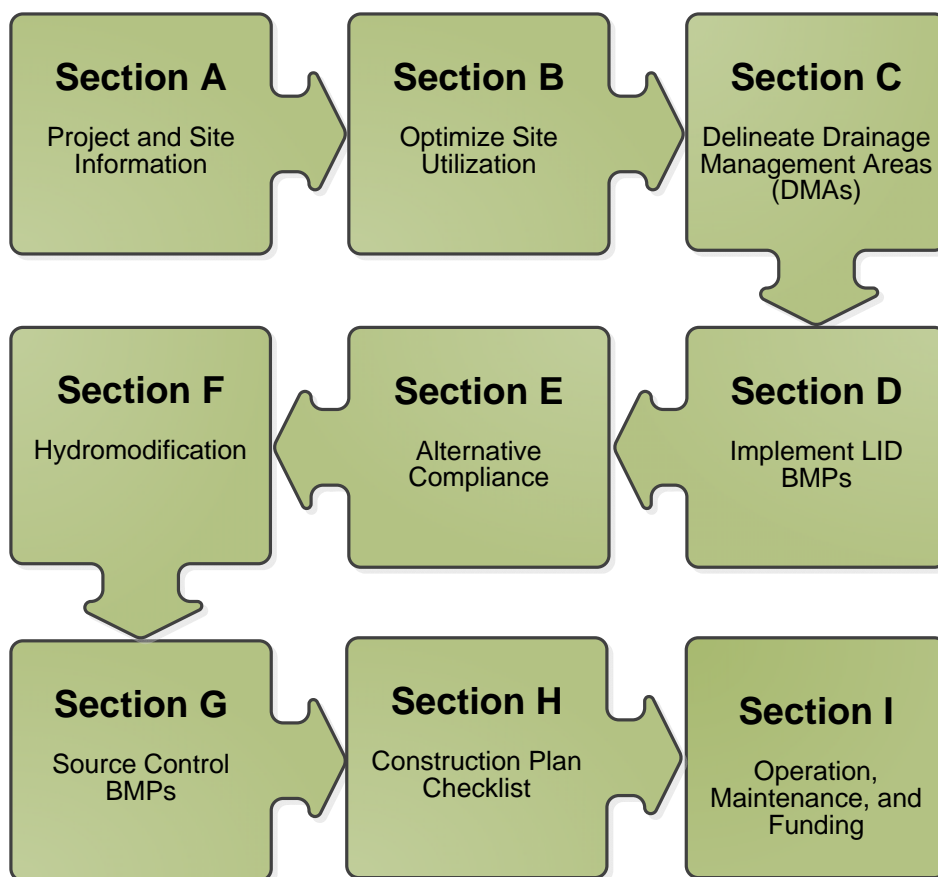
MacJones Holdings, LLC
 22 Gondoliers Bluff
 Newport Coast, CA 92657
 (949) 509-5004
 Contact: Daniel Webb

Prepared by:

Thienes Engineering, Inc.
 14349 Firestone Boulevard
 La Mirada, CA 90638
 (714) 521-4811
 Contact: Vicky Li (vicky@thieneseng.com)
 Job No. 3357b

A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your “how-to” manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for **MacJones Holdings, LLC** by Thienes Engineering, Inc. for the **Cottonwood Residential Subdivision** project.

This WQMP is intended to comply with the requirements of **Moreno Valley** for **PA16-0009** 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 **Moreno Valley** Water Quality Ordinance (Municipal Code Section 8.10).

"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."

Daniel Webb
Owner's Signature

5/1/17
Date

Daniel Webb
Owner's Printed Name

Member
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."

Haidook I. Aghaian
Preparer's Signature

5/1/17
Date

Haidook I. Aghaian
Preparer's Printed Name

Senior Civil Engineer
Preparer's Title/Position

Preparer's Licensure:



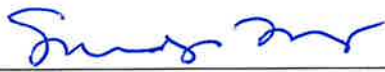
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss
COUNTY OF ORANGE)

On May 1, 2017, before me, Sandy Jung, a Notary Public, personally appeared Daniel L. Webb, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Notary Public



Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

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Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	Single-family Residential
Planning Area:	Residential Subdivision
Community Name:	N/A
Development Name:	Cottonwood Residential Subdivision
PROJECT LOCATION	
Latitude & Longitude (DMS): 33.923620, -117.205777	
Project Watershed and Sub-Watershed: Santa Ana River & San Jacinto	
APN(s): 487-461-006	
Map Book and Page No.: Assessor's Map BK.487 PG.46	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	Residential
Proposed or Potential SIC Code(s)	n/a
Area of Project Footprint (SF)	435,749 (10.00 acres)
Total Area of <u>proposed</u> Impervious Surfaces within the Project Limits (SF)/or Replacement	149,628 (3.43 acres)
Does the project consist of offsite road improvements?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Does the project propose to construct unpaved roads?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Is the project part of a larger common plan of development (phased project)?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
EXISTING SITE CHARACTERISTICS	
Total area of <u>existing</u> Impervious Surfaces within the project limits (SF)	0
Is the project located within any MSHCP Criteria Cell?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
If so, identify the Cell number:	Not a Part
Are there any natural hydrologic features on the project site?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Is a Geotechnical Report attached?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	Soil Type A
What is the Water Quality Design Storm Depth for the project?	0.675
PROJECT DESCRIPTION	
The proposed project site is located near the intersection of Cottonwood Avenue and Lakeport Drive and encompasses approximately 10.00 acres. Currently, the site is a rough graded dirt lot. Runoff from the site and the southerly half of Cottonwood Avenue generally flows southwesterly towards Erin Drive.	
Proposed improvements to the site include the construction of 16 single-family homes, public streets, sidewalk and utility improvements. The site will continue to drain southerly towards Erin Drive. Three infiltration LID BMPs are proposed, one infiltration trench and two hybrid-bioretenion facilities with dry wells will be utilized as the proposed structural BMPs for offsite road improvements and onsite properties, respectively.	

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a 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
Perris Valley Storm Drain	None	None	Not classified as a RARE waterbody.
San Jacinto River, Reach 3	None	AGR, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Canyon Lake (aka San Jacinto River, Reach 2)	Nutrients, Pathogens	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
San Jacinto River, Reach 1	None	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Lake Elsinore	Nutrients, Organic Enrichment/Low Dissolved Oxygen, PCBs (polychlorinated biphenyls), Sediment Toxicity, Unknown Toxicity	REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Temescal Creek, Reach 6	Indicator Bacteria	GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Temescal Creek, Reach 5	None	AGR, GWR, REC1, REC2, WARM, WILD, RARE	23 miles
Temescal Creek, Reach 4	None	AGR, GWR, REC1, REC2, WARM, WILD, RARE	29 miles
Temescal Creek, Reach 3 (aka Lee Lake)	None	AGR, IND, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Temescal Creek, Reach 2	None	AGR, IND, GWR, REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Temescal Creek, Reach 1	pH	REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Santa Ana River, Reach 3	Pathogens, Nitrate, Copper, and Lead	AGR, GWR, REC1, REC2, WARM, WILD, RARE	46 miles

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
The Prado Basin Management Zone	Pathogens	REC1, REC2, WARM, WILD, RARE	46 miles
Santa Ana River, Reach 2	Indicator Bacteria	AGR, GWR, REC1, REC2, WARM, WILD, RARE	51 miles
Santa Ana River, Reach 1	None	REC1, REC2, WARM, WILD	Not classified as a RARE waterbody.
Tidal Prism of Santa Ana River and Newport Slough	Enterococcus, Fecal Coliform, Total Coliform	REC1, REC2, COMM, WILD, RARE, MAR	77 miles
Pacific Ocean Near shore Zone	None	IND, NAV, REC1, REC2, COMM, WILD, RARE, SPWN, MAR, SHEL	77 miles
Pacific Ocean Offshore Zone	None	IND, NAV, REC1, REC2, COMM, WILD, RARE, SPWN, MAR	78 miles

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	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
US Army Corps of Engineers, CWA Section 404 Permit	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N
Statewide Construction General Permit Coverage	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Statewide Industrial General Permit Coverage	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Other (please list in the space below as required) City of Moreno Valley Grading Permit	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Other (please list in the space below as required) City of Moreno Valley Building Permit	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, constraints might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. Opportunities might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

- *There are no creeks, wetlands, or riparian habitats nearby.*
- *Existing drainage patterns flows southwesterly. Proposed condition drainage patterns mimic pre-development conditions.*

Did you identify and protect existing vegetation? If so, how? If not, why?

- *Not applicable, there are no sensitive areas.*
- *Not applicable, there are no existing trees or vegetation to preserve.*

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

- *Infiltration LID BMPs proposed to maximize natural infiltration rates.*

Did you identify and minimize impervious area? If so, how? If not, why?

- *Impervious area on the site has been minimized to County/City standards.*
- *Single-family homes are built up to landscaping.*
- *The entire Design Capture Volume (DCV) is handled by the proposed BMPs. Permeable pavement is not utilized to meet the DCV. Cottonwood Avenue utilizes an infiltration trench as an infiltration LID BMP. Erin Drive utilizes two hybrid-bioretention facilities with dry wells as an infiltration LID BMPs.*

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

- *Roof runoff is directed to adjacent landscaping.*
- *The site is not on a hillside.*
- *All stormwater runoff will sheet flow from landscape to the street and ultimately to their respective LID BMPs. Cottonwood Avenue utilizes an infiltration trench as a LID BMP.*

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.)	Area (Acres)	DMA Type
A	Concrete or Asphalt	29,025	0.67	Type D
B1	Roofs	37,980	0.87	Type D
B2	Concrete or Asphalt	54,638	1.25	Type D
B3	Ornamental Landscaping	214,483	4.92	Type D
C1	Roofs	12,660	0.29	Type D
C2	Concrete or Asphalt	15,325	0.35	Type D
C3	Ornamental Landscaping	71,638	1.64	Type D

¹Reference Table 2-1 in the WQMP Guidance Document to populate this column

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
n/a	n/a	n/a	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) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]
n/a	n/a	n/a	n/a	n/a	n/a	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	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
A	Infiltration Trench (LID "A")
B1	Hybrid-Bioretenention with Dry Well (LID "B")
B2	Hybrid-Bioretenention with Dry Well (LID "B")
B3	Hybrid-Bioretenention with Dry Well (LID "B")
C1	Hybrid-Bioretenention with Dry Well (LID "C")
C2	Hybrid-Bioretenention with Dry Well (LID "C")
C3	Hybrid-Bioretenention with Dry Well (LID "C")

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 Copermitttee 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? If Yes, list affected DMAs:		X
...have any DMAs located within 100 feet of a water supply well? If Yes, list affected DMAs:		X
...have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact? If Yes, list affected DMAs:		X
...have measured in-situ infiltration rates of less than 1.6 inches / hour? If Yes, list affected DMAs:		X
...have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface? If Yes, list affected DMAs:		X
...geotechnical report identifies other site-specific factors that would preclude effective and safe infiltration? Describe here:		X
...have areas of known soil or groundwater contamination (unless with written authorization from the Regional Board Executive Officer) If yes, list affected DMAs: The entire project site is located within the vicinity of a groundwater plume area.		X

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: N/A

Type of Landscaping (Conservation Design or Active Turf): N/A

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: N/A

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: N/A

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: N/A

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)
N/A	N/A

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: N/A

Project Type: N/A

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: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-2 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: N/A

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: N/A

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)
N/A	N/A

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.

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: N/A

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: N/A

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: N/A

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: N/A

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)
N/A	N/A

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.

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				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First, calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second, design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

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)
	[A]		[B]	[C]	[A] x [C]			
A	29,025	Concrete or Asphalt	1.00	0.89	25,890.3	0.675	1456.3	1,458
TOTAL	29,025				25,890		1,456	
B1	37,980	Roofs	1.00	0.89	33,878.2	0.675	1905.6	6,035
B2	54,638	Concrete or Asphalt	1.00	0.89	48,737.1	0.675	2741.5	
B3	214,483	Ornamental Landscaping	0.10	0.11	23,691.4	0.675	1332.6	
TOTAL	307,101				106,307		5,980	
C1	12,660	Roofs	1.00	0.89	11,292.7	0.675	635.2	2,369
C2	15,325	Concrete or Asphalt	1.00	0.89	13,669.9	0.675	768.9	
C3	71,638	Ornamental Landscaping	0.10	0.11	7,913.0	0.675	445.1	
TOTAL	99,623				32,876		1,849	
GRAND TOTAL	435,749				165,073	0.675	9,285	9,862

[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

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

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
<input checked="" type="checkbox"/> Detached Residential Development	P	N	P	P	N	P	P	P
<input type="checkbox"/> Attached Residential Development	P	N	P	P	N	P	P	P ⁽²⁾
<input type="checkbox"/> Commercial/Industrial Development	P ⁽³⁾	P	P ⁽¹⁾	P ⁽¹⁾	P ⁽⁵⁾	P ⁽¹⁾	P	P
<input type="checkbox"/> Automotive Repair Shops	N	P	N	N	P ^(4, 5)	N	P	P
<input type="checkbox"/> Restaurants (>5,000 ft ²)	P	N	N	N	N	N	P	P
<input type="checkbox"/> Hillside Development (>5,000 ft ²)	P	N	P	P	N	P	P	P
<input type="checkbox"/> Parking Lots (>5,000 ft ²)	P ⁽⁶⁾	P	P ⁽¹⁾	P ⁽¹⁾	P ⁽⁴⁾	P ⁽¹⁾	P	P
<input type="checkbox"/> Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern⁽⁷⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

⁽⁷⁾ Pollutants that are listed for the development type, and also are on the 303(d) list or have adopted TMDLs, are considered Pollutants of Concern.

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
N/A	
Total Credit Percentage¹	

¹Cannot Exceed 50%

²Obtain 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)	Post-Project Surface Type	Effective Imp Fraction, I _f	DMA Runoff Factor	DMA Area x Runoff Factor				
	[A]		[B]	[C]	[A] x [C]				
N/A	N/A	N/A	N/A	N/A	N/A	Design Storm Depth (in)	Minimum Design Capture Volume (cubic feet)	Total Storm Water Credit % Reduction	Proposed Volume or Flow on Plans (cubic feet or cfs)
						N/A	N/A	N/A	N/A

[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

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High:** equal to or greater than 80% removal efficiency
- **Medium:** between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

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
n/a	n/a	n/a

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.

⁴ Medium/High removal effectiveness as documented in Appendix E of "Design Handbook for Low Impact Development Best Management Practices" by Riverside County Flood Control and Water Conservation District (rev. 9/11). Percentages as documented in TC-40 for Media Filter of "New Development and Redevelopment Handbook" by CASQA (January 2003).

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermitttee 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 concentration¹ 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	N/A	N/A
Volume (Cubic Feet)	N/A	N/A	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 adequate sumps that apply to the project site are Canyon Lake, Lake Elsinore, Prado Dam, and the Santa Ana River. Runoff from the project site will drain to Perris Valley Storm Drain, Canyon Lake, Lake Elsinore, Prado Dam and the Santa Ana River, which are engineered and regularly maintained. These waterbodies are not sensitive stream habitats. No stream habitat areas will be affected by the development.

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.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and “housekeeping”, that must be implemented by the site’s occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. **Identify Pollutant Sources:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.
2. **Note Locations on Project-Specific WQMP Exhibit:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.
3. **Prepare a Table and Narrative:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.
4. **Identify Operational Source Control BMPs:** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
A. On-site storm drain inlets	<ul style="list-style-type: none"> Mark all inlets with the words “Only Rain Down the Storm Drain” or similar. 	<ul style="list-style-type: none"> Maintain and periodically repaint or replace inlet markings annually. Provide stormwater pollution prevention information to new site owners, lessees, or operators upon occupancy and annually thereafter. See CASQA fact sheet SC-44 for “Drainage System Maintenance,” included in Appendix of this document. Include the following lease agreements: “Tenant shall not allow anyone to discharge anything to storm drain or to store or deposit materials so as to create a potential discharge to storm drains.”

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
<p>D2. Landscape / Outdoor Pesticide Use</p>	<ul style="list-style-type: none"> • Landscape plans will 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. • Pest-resistant plans will be used adjacent to hardscape. • The landscape plans will consider plants appropriate to the site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions. 	<ul style="list-style-type: none"> • Maintain landscaping only using minimum pesticides, when needed. • See Appendix 10 for “Landscape and Gardening” brochure by RCFlood. • Provide Integrated Pest Management (IPM) information to new owners, lessees and operators upon occupancy and annually thereafter. IPM is an effective and environmentally sensitive approach to pest management.
<p>P. Plazas, sidewalks, and parking lots</p>		<ul style="list-style-type: none"> • Sweep plazas, sidewalks, and parking lots monthly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	Latitude	Longitude
D2	Landscape / Outdoor Pesticide Use	On-site Landscape Improvement Plans	---	---
G	Refuse Areas	WQMP Site Map	---	---
LID "A"	Infiltration Trench	WQMP Site Map	33.9243860	-117.206038
LID "B"	Hybrid-Bioretention with Dry Well	WQMP Site Map	33.9229300	-117.206043
LID "C"	Hybrid-Bioretention with Dry Well	WQMP Site Map	33.9228630	-117.206360

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: City of Moreno Valley:
 Stormwater Treatment Device and Control Measure Access and
 Maintenance Covenant

Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

Y N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



← FLOW

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VICINITY MAP

FOR

COTTONWOOD RESIDENTIAL SUBDIVISION

it Update: 12/9/15
 3300

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060



← FLOW

RECEIVING WATERS MAP

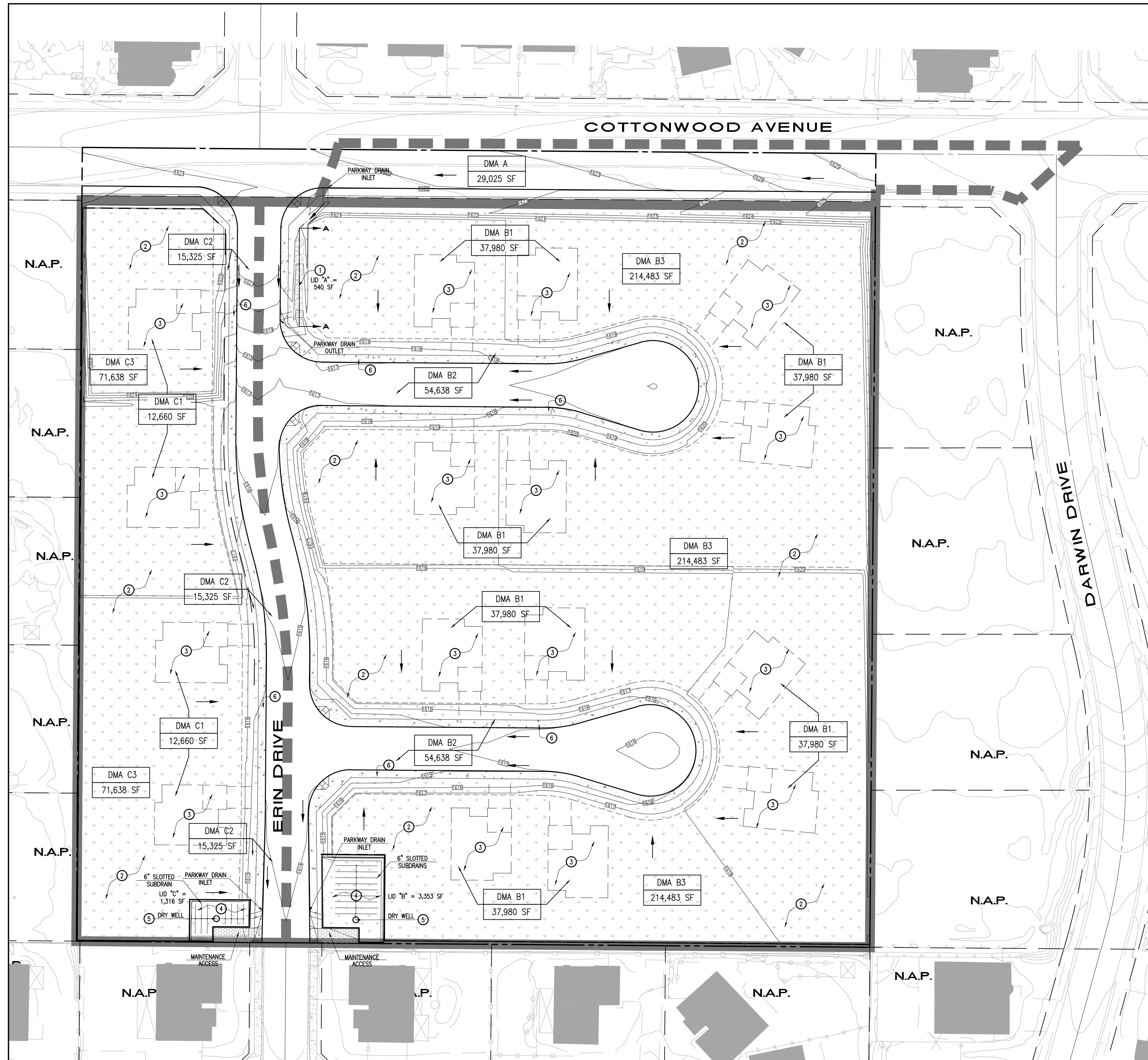
FOR

COTTONWOOD RESIDENTIAL SUBDIVISION

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Update: 12/9/15
 3300

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060



LEGEND

- 1 INFILTRATION TRENCH
- 2 LANDSCAPE
- 3 SINGLE-FAMILY RESIDENTIAL HOME
- 4 HYBRID-BIORETENTION
- 5 DRY WELL
- 6 CONCRETE/SIDEWALK

——— BOUNDARY
 ——— SUBAREA
 → FLOW DIRECTION
 [Pattern] LANDSCAPE/EFFICIENT IRRIGATION
 [Pattern] CONCRETE/SIDEWALK

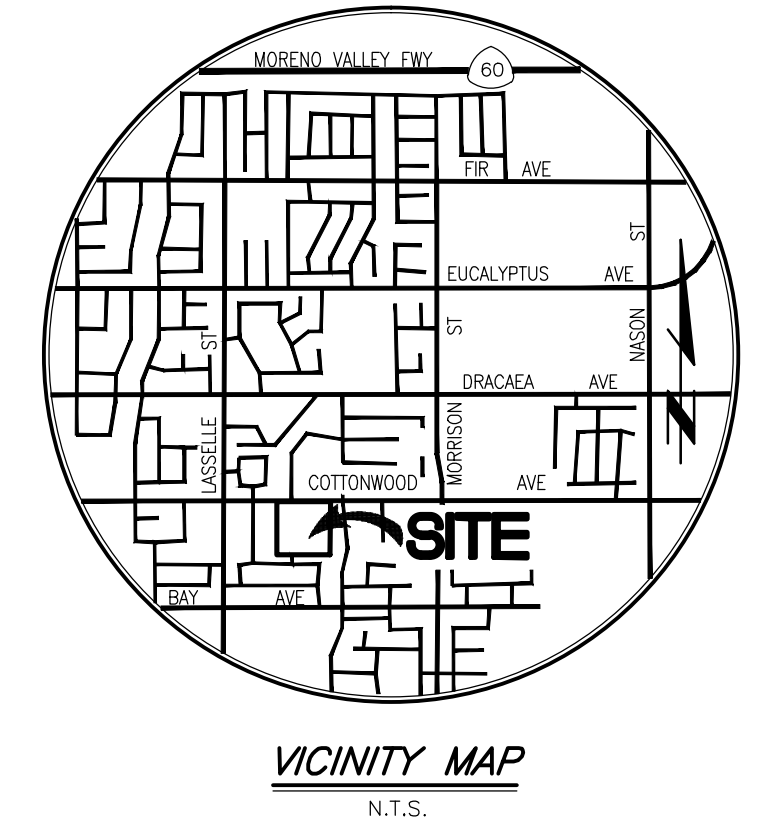
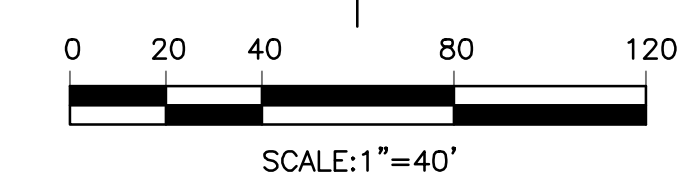
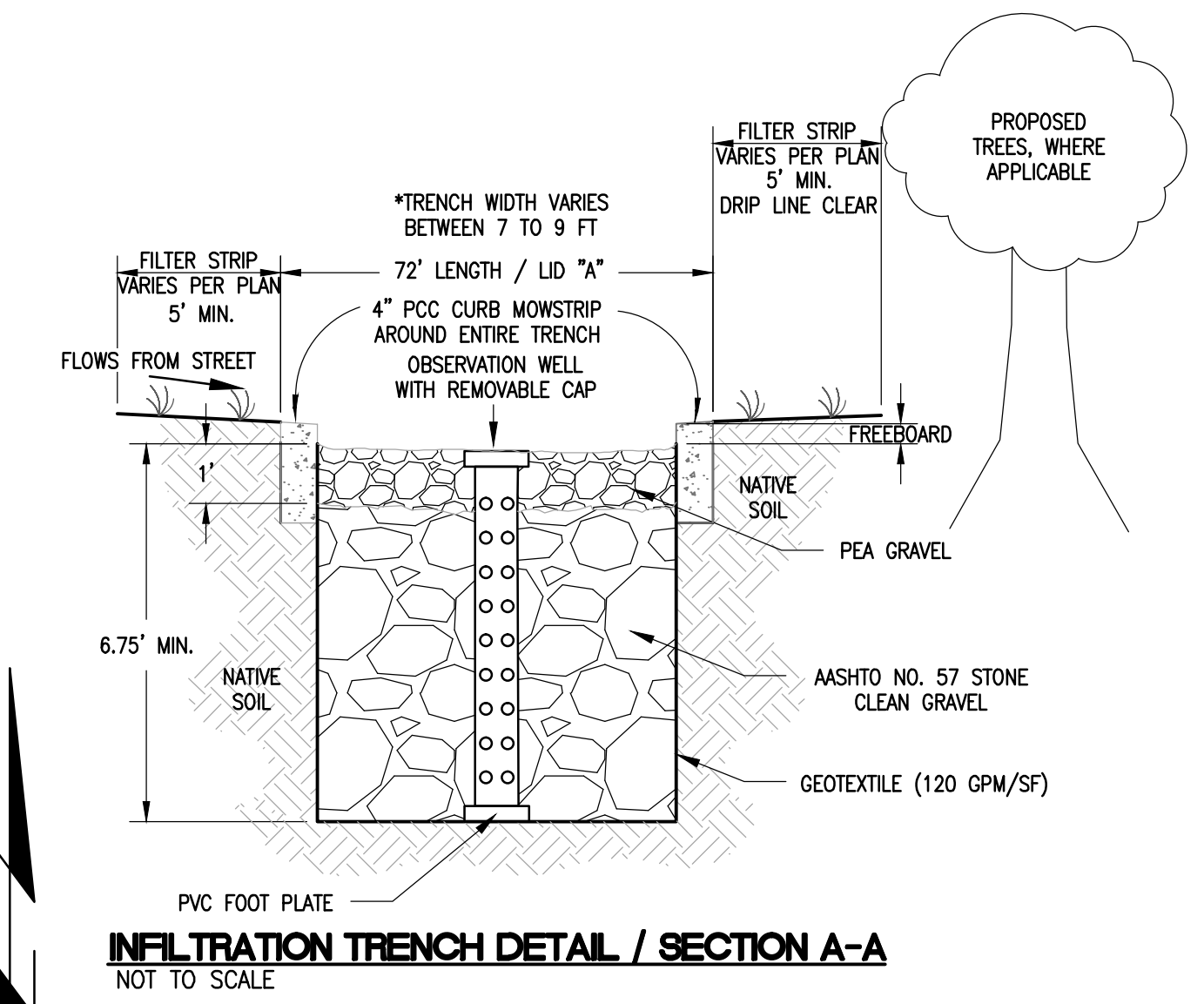
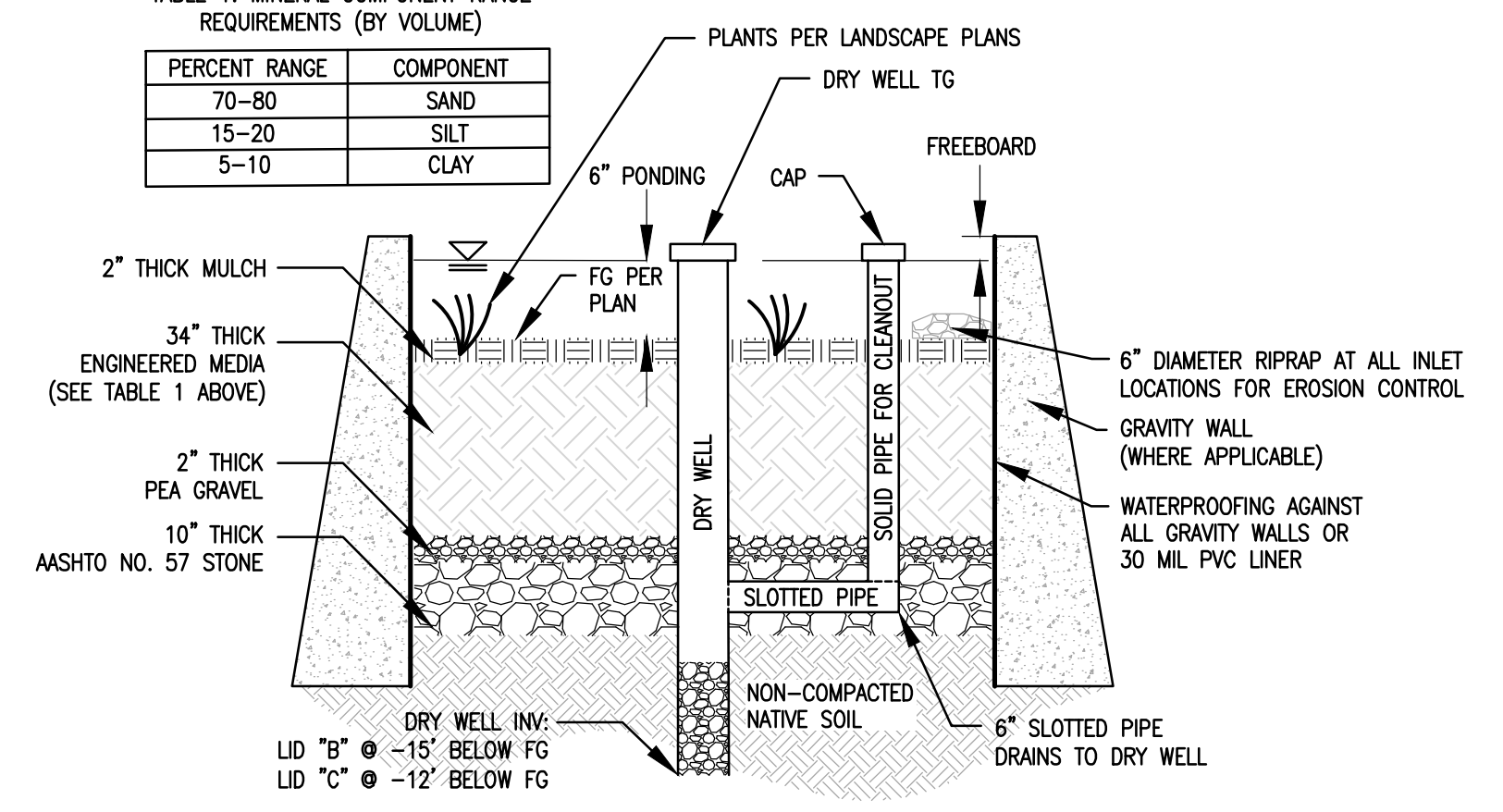


TABLE 1: MINERAL COMPONENT RANGE REQUIREMENTS (BY VOLUME)

PERCENT RANGE	COMPONENT
70-80	SAND
15-20	SILT
5-10	CLAY



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CITY OF MORENO VALLEY
PUBLIC WORKS DEPARTMENT

WOMP SITE MAP
COTTONWOOD RESIDENTIAL SUBDIVISION
COTTONWOOD AVE. and LAKEPORT DR.

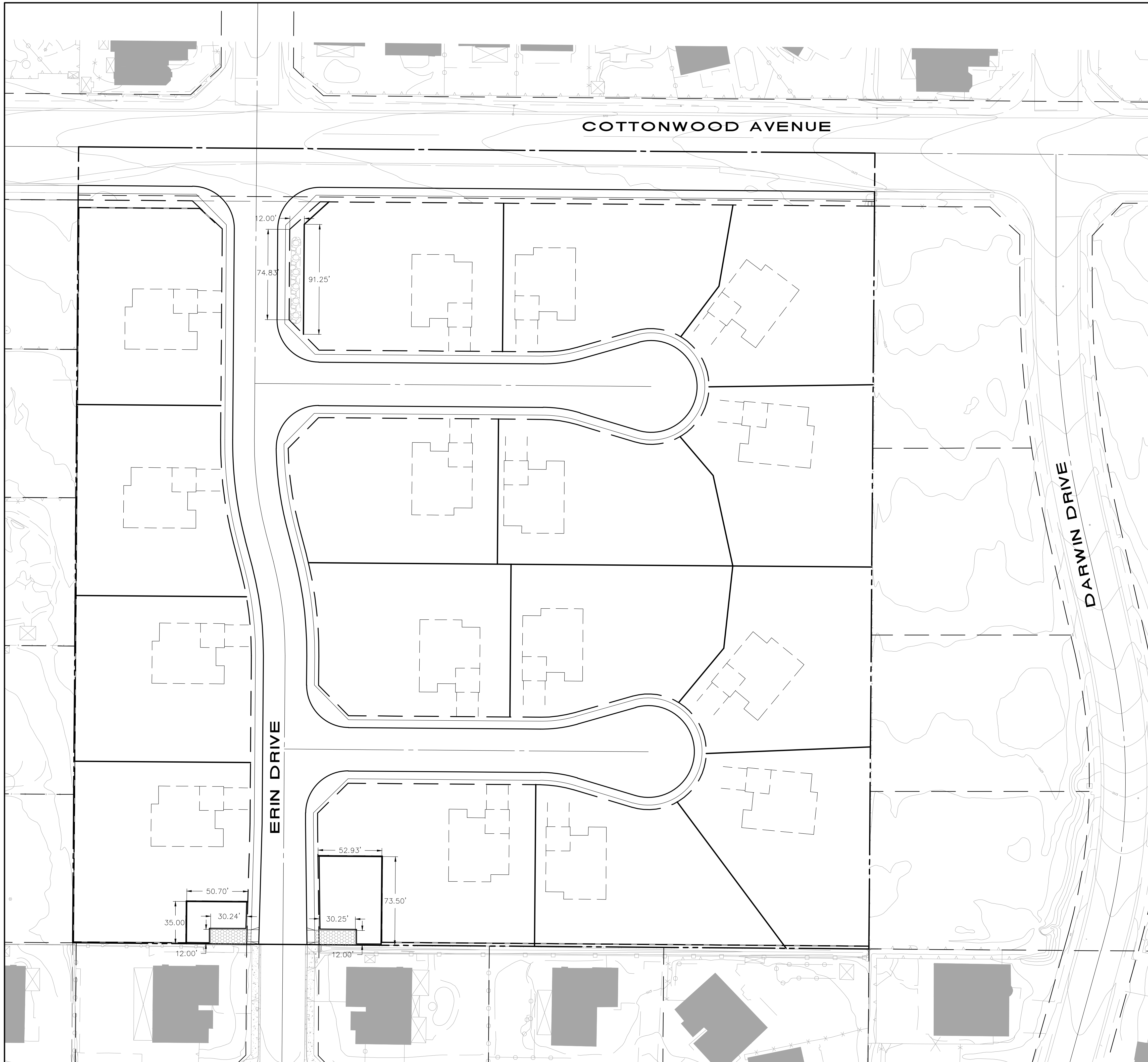
Designed by _____ Date _____
Checked by _____ Date _____
Approved by _____ Date _____
Public Works Director _____ R.C.E. _____
Date _____

Sheet **1** of **2** Sheets

JN: 3357b

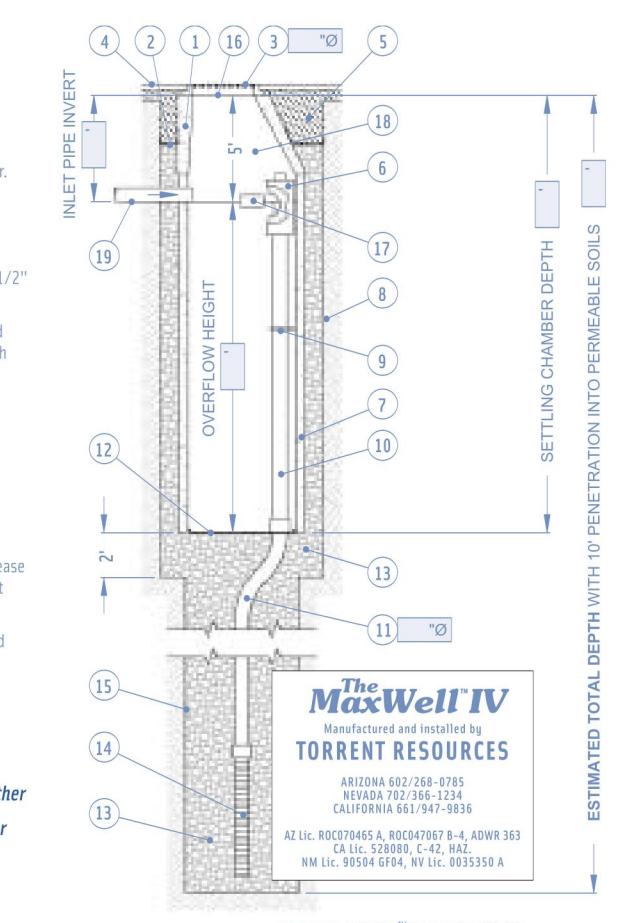
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Attachment: Preliminary Water Quality Management Plan (2836 - PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone into 16 single-family)



MAXWELL™ IV DRAINAGE SYSTEM DETAIL AND SPECIFICATIONS

- ITEM NUMBERS**
1. Manhole Cover - Modified Flat Bottom.
 2. Manhole Membrane - 6 MIL. Plastic. Place securely against exterior cone and hole sidewall.
 3. Bolted Ring & Gasket - Diameter as shown. Clean cast iron with working "Storm Water Only" to raised letters. Bolted in 2 locations and secured to cone with mortar. Rim elevation +0.00' at finish.
 4. Gasket Basin or Ring (By Other).
 5. PureFlo™ Debris Shield - Rolled 16 ga. steel x 24" length with vented anti-siphon and internal .250" Max. SWD flattened expanded steel screen x 12" length. Fusion bonded epoxy coated.
 6. Pre-set Liner - 4000 PSI concrete 48" ID, x 54" OD. Center to hole and align sections to maximize bearing surface.
 7. Min. 6" Ø Drilled Shaft.
 8. Support Bracket - Formed 12 Ga. steel. Fusion bonded epoxy coated.
 9. Overflow Pipe - Sch. 40 PVC mated to drainage pipe at base level.
 10. Drainage Pipe - ADS highway grate with TRI-A coupler. Suspending pipe during backfill operations to prevent buckling or breakage. Diameter as noted.
 11. Base Seal - Geosynthetic poly liner or concrete slurry.
 12. Back - Clean and washed, screen between 3/8" and 1/2" to best complement soil conditions.
 13. FloFast™ Drainage Screen - Sch. 40 PVC 6.120" slotted well screen with 25 slots per row/ft. 80" overall length with TRI-B coupler.
 14. Min. 4" Ø Shaft - Drilled to maintain permeability of drainage soils.
 15. Fabric Seal - 1/2" resistant geosynthetic - to be removed by customer at project completion.
 16. Absorbent - Hydrophobic Petrochemical Sponge. Min. 120 cc. capacity.
 17. Freeboard Depth Veries with inlet pipe elevation. Increase settling chamber depth as needed to maintain all inlet pipe elevations above overflow pipe inlet.
 18. Optional Inlet Pipe (Maximum 4" by Other). Second manhole membrane and compacted base material or 1 sack slurry backfill below pipe invert.



The referenced drawing and specifications are available on CAD either through our office or web site. Ask for Drawing TRI-1104 IV. This detail is copyrighted (2004) but may be used as is in construction plans without further release. For information on product application, individual project specifications or site evaluation, contact our Design Staff for no-charge assistance in any phase of your planning.

CALCULATING MAXWELL IV REQUIREMENTS

The type of property, soil permeability, rainfall intensity and local drainage ordinances determine the number and design of MaxWell Systems. For general applications draining retained storm water, use one standard Type IV MaxWell per the instructions below for up to 3 acres of landscaped contributory area, and up to 1 acre of paved surface. For larger paved surfaces, subdivision drainage, nuisance water drainage, connecting pipes larger than 4" Ø from catch basins or underground storage, or other demanding applications, refer to our MaxWell Plus System. For industrial drainage, including gasoline service stations, our Envivo™ System may be recommended. For additional considerations, please refer to "Design Suggestions For Retention And Drainage Systems" or consult our Design Staff.

COMPLETING THE MAXWELL IV DRAWING

To apply the MaxWell IV drawing to your specific project, simply fill in the blue boxes per instructions below. For assistance, please consult our Design Staff.

ESTIMATED TOTAL DEPTH

The Estimated Total Depth is the approximate depth required to achieve 10 continuous feet of penetration into permeable soils. Torrent's specialized "crowd" equipped drill rigs can penetrate even cemented soils to reach permeable materials at depths up to 180 feet. Our extensive database of drilling logs and soils information is available for use as a reference. Please contact our Design Staff for site-specific information on your project.

SETTLING CHAMBER DEPTH

On MaxWell IV systems of over 30 feet overall depth and up to 0.25cfs design rate, the standard Settling Chamber Depth is 18 feet. For systems exposed to greater contributory area than noted above, extreme service conditions, or that require higher design rates, chamber depths up to 25 feet are recommended.

OVERFLOW HEIGHT

The Overflow Height and Settling Chamber Depth determine the effectiveness of the settling process. The higher the overflow pipe, the deeper the chamber, the greater the settling capacity. For normal drainage applications, an overflow height of 13 feet is used with the standard settling chamber depth of 18 feet. Sites with higher design rates than noted above, heavy debris loading or unusual service conditions require greater settling capacities.

DRAINAGE PIPE

This dimension also applies to the PureFlo™ Debris Shield, the FloFast™ Drainage Screen, and fittings. The size selected is based upon system design rates, soil conditions, and the need for adequate venting. Choices are 6", 8", or 12" diameter. Refer to "Design Suggestions For Retention and Drainage Systems" for recommendations on which size best matches your application.

BOLTED RING & GRATE

Standard models are quality cast iron and available to fit 24" Ø or 30" Ø manhole openings. All units are bolted in two locations with working "Storm Water Only" in raised letters. For other surface treatments, please refer to "Design Suggestions For Retention and Drainage Systems."

INLET PIPE INVERT

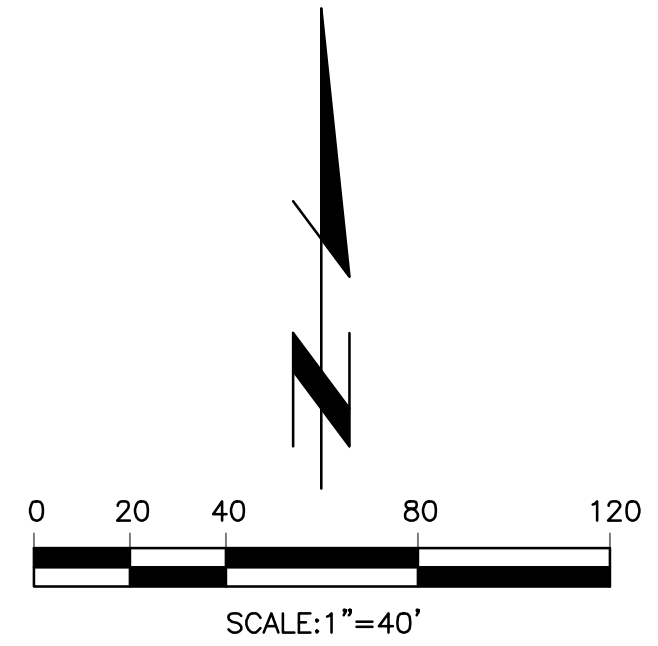
Pipes up to 4" in diameter from catch basins, underground storage, etc. may be connected into the settling chamber. Inverts deeper than 4 feet will require additional settling chamber depth to maintain effective overflow height.

AZ Lic. RC0070465 A, RC0047067 B-4, ADWR 363
CA Lic. 528080 A, C-42, HAZ - HV Lic. 0035350 A - AM Lic. 90504 GR4
An evolution of McCrackin Drilling

1509 East Elwood Street, Phoenix Arizona 85040-1391
phone 602-268-0795 fax 602-268-0820
California 661-947-9836 Nevada 702-366-1234
www.TorrentResources.com



DRY WELL (TYP.)
NOT TO SCALE.



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PREPARED FOR: MAC JONES HOLDINGS, LLC. 2 CONDOLERS BLUFF NEWPORT COAST, CA 92657 PHONE: (949) 509-5004 CONTACT: DANIEL WEBB		CITY OF MORENO VALLEY PUBLIC WORKS DEPARTMENT	
PREPARED BY: Thien Engineering, Inc. CIVIL ENGINEERING • LAND SURVEYING 14349 FIRESTONE BOULEVARD LA HABRA, CALIFORNIA 90630 PH: (714) 521-4811 FAX: (714) 521-4173		WOMP SITE MAP COTTONWOOD RESIDENTIAL SUBDIVISION COTTONWOOD AVE. and LAKEPORT DR.	
Designed by _____	Approved by _____	Date _____	Date _____
Checked by _____	Public Works Director _____	R.C.E. XXXXXX	
Designed by _____			
Date _____			
Checked by _____			
Date _____			
Sheet 2 of 2 Sheets		JN: 3357b	

Appendix 2: Construction Plans

Grading and Drainage Plans (PROVIDED WITH F-WQMP)

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

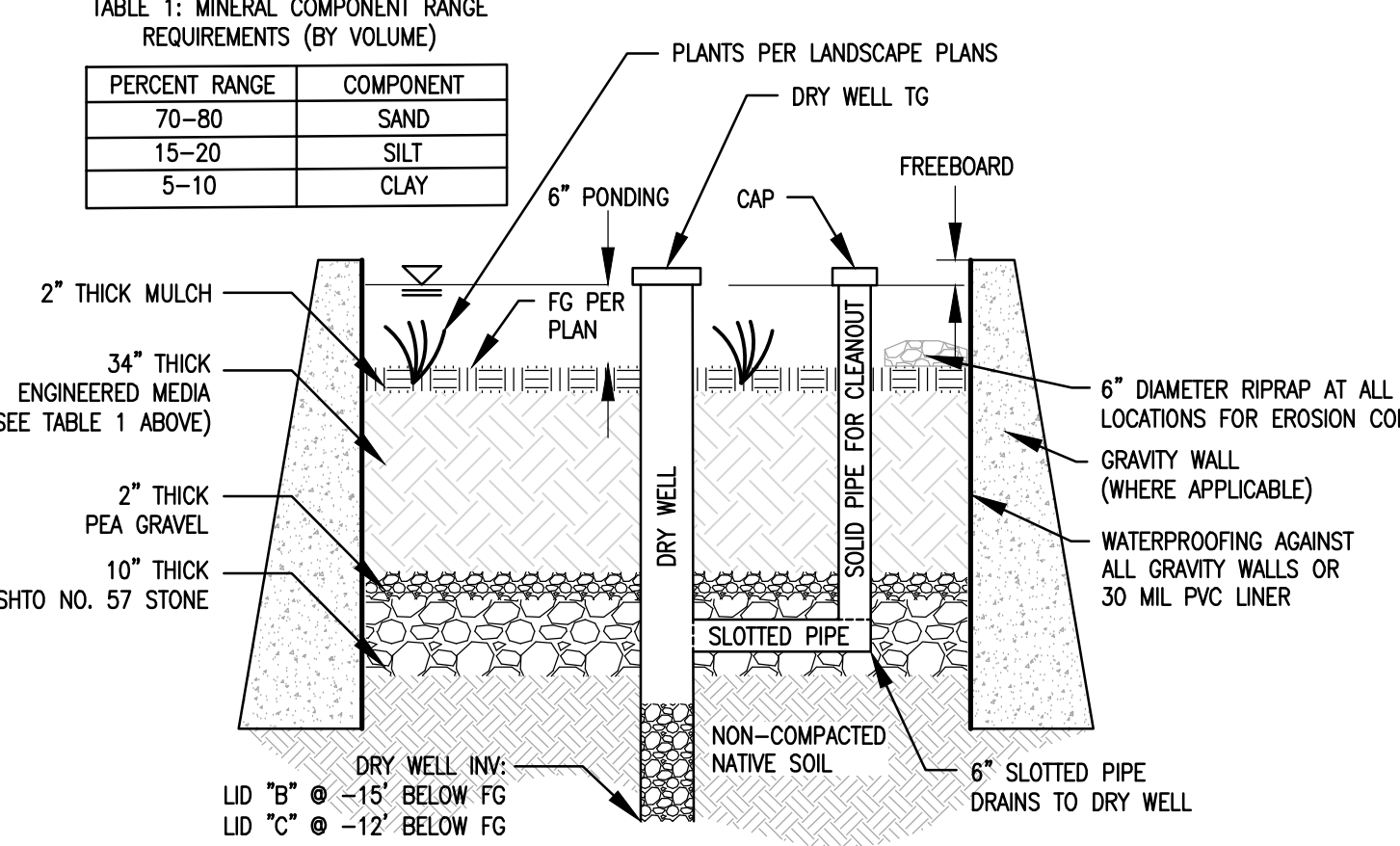
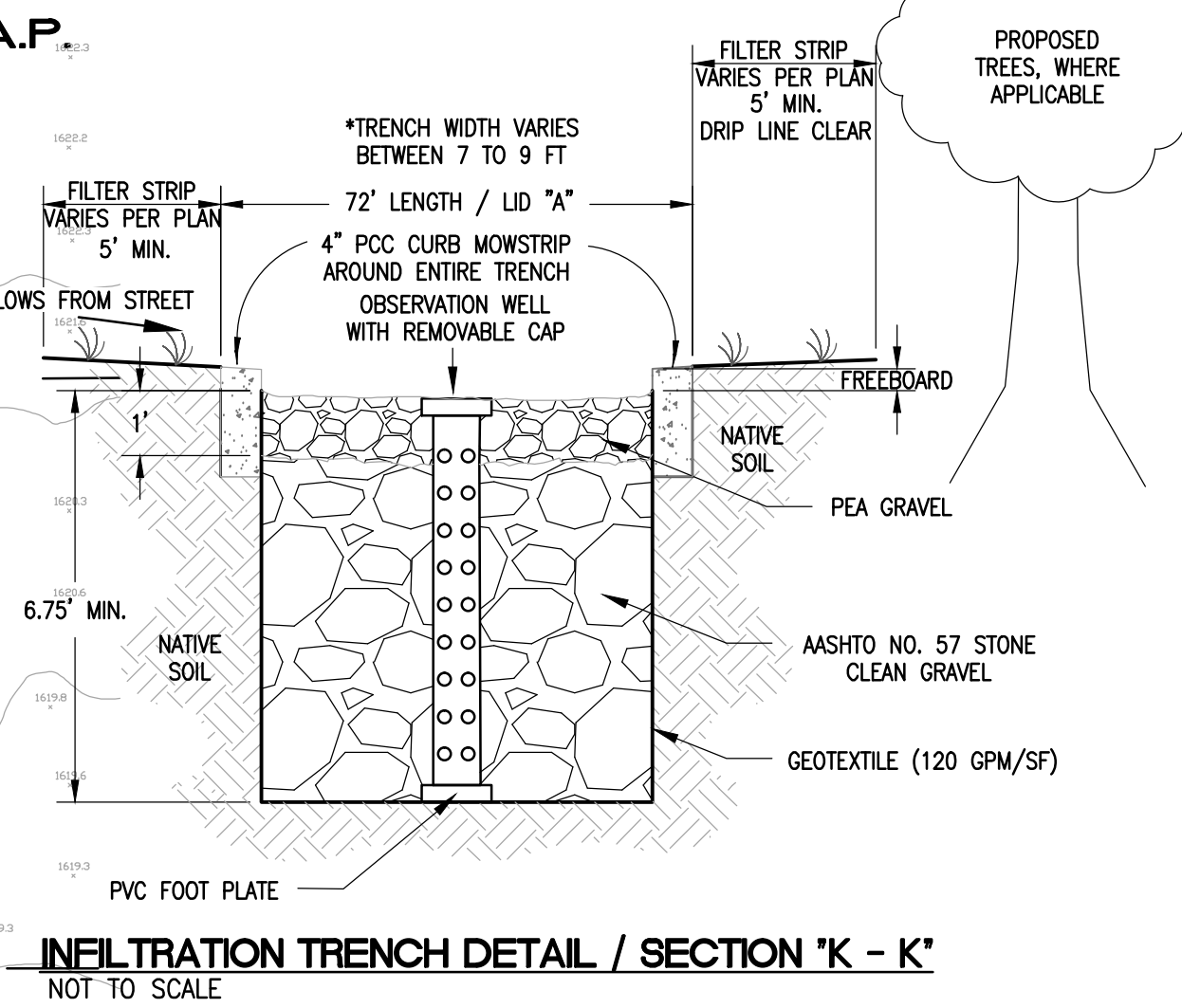
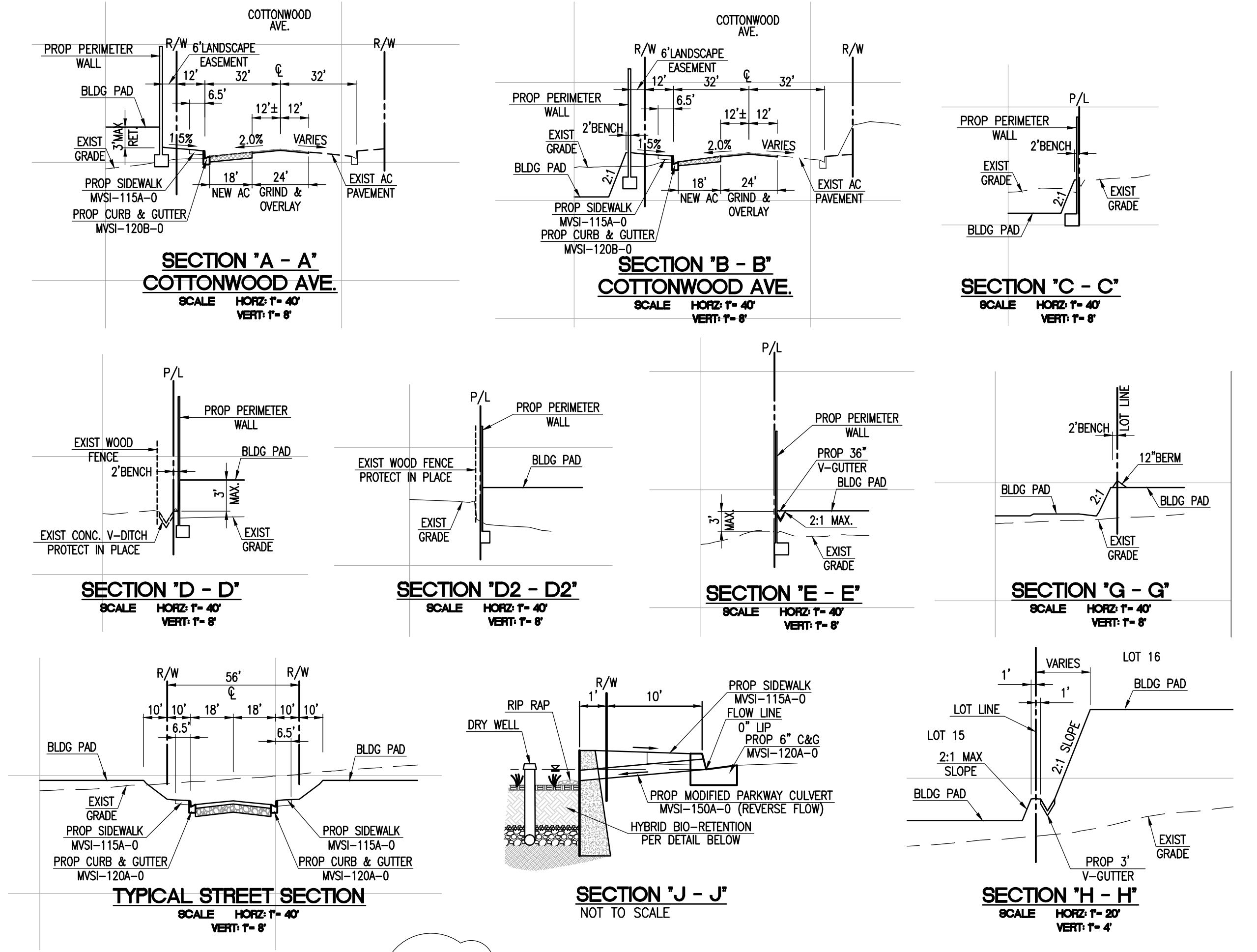
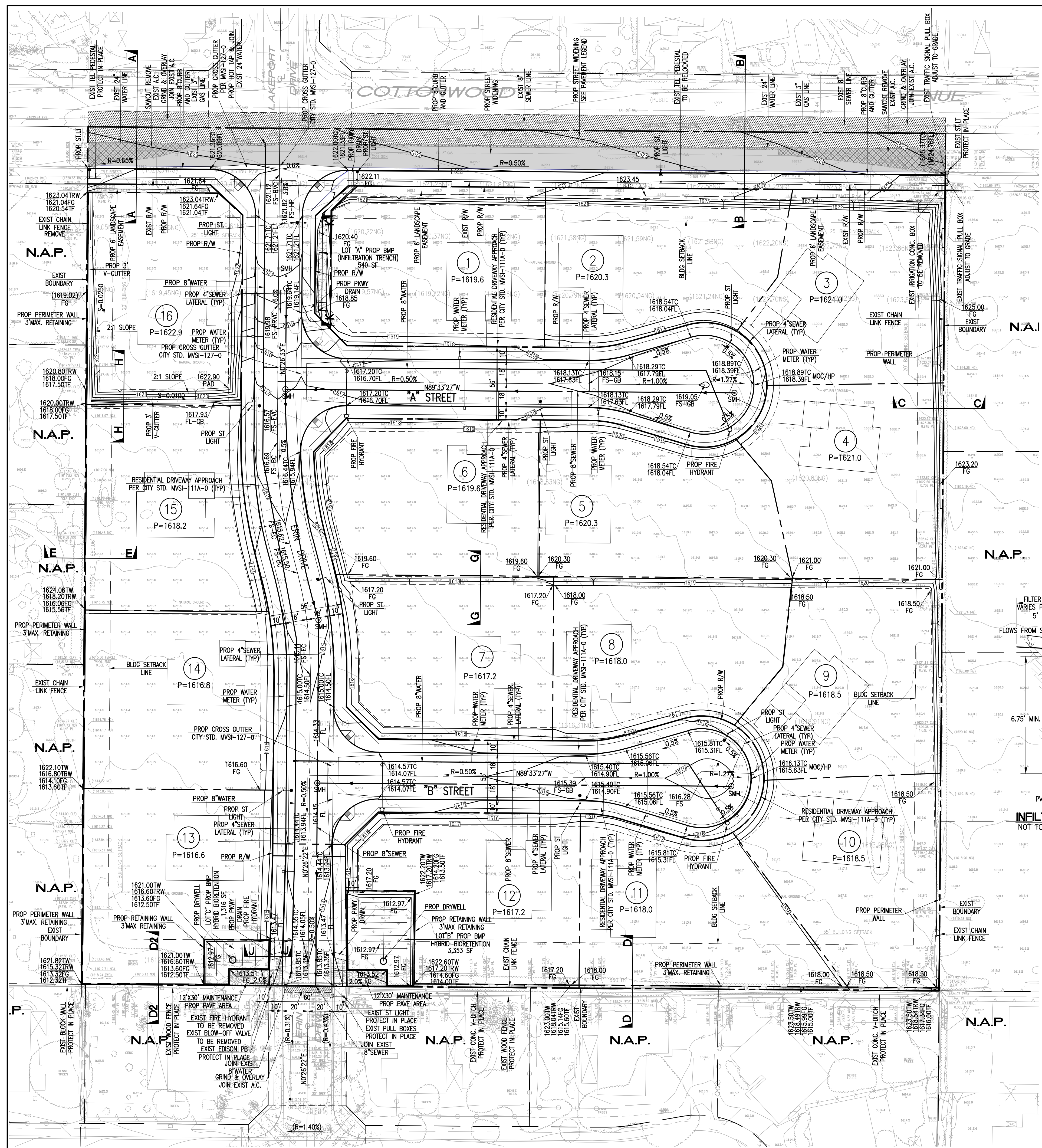


TABLE 1: MINERAL COMPONENT RANGE REQUIREMENTS (BY VOLUME)

PERCENT RANGE	COMPONENT
70-80	SAND
15-20	SILT
5-10	CLAY

PAVEMENT LEGEND:

- SAW CUT & REMOVE EXISTING AC PAVE
- CONSTRUCT NEW ASPHALT PAVEMENT AS INDICATES IN SECTION
- GRIND AND OVERLAY EXISTING AC.

PRELIMINARY EARTHWORK ANALYSIS:

SITE AREA:		STREET AREA:	
406,749	S.F.	80,251	
MATERIAL AVAILABLE (CUY)		MATERIAL REQUIRED (FILL)	
CUT	7,900 C.Y.	FILL	15,500 C.Y.
ASSUMED 8' ONSITE STREET SECTION	2,378 C.Y.	OVER-EX FILL	30,130 C.Y.
ASSUMED 0.15' GRIND/OVERLAY O/S STREET (15,843 SF)	88 C.Y.	STRIPPING (ft)	0 C.Y.
ASSUMED 1.25' FULL SECTION O/S STREET (11,726 SF)	543 C.Y.	SUBSIDENCE (ft)	1,883 C.Y.
ASSUMED 24" OVER EX WHOLE SITE	30,130 C.Y.	ASSUMED SHRINKAGE	10.0% 1,028 C.Y.
		OVER-EX SHRINKAGE	10.0% 3,013 C.Y.
TOTAL	41,038 C.Y.	TOTAL	51,553 C.Y.
		APPROX. (IMPORT) OR EXPORT:	(10,515) C.Y.

NOTE: EARTHWORK FIGURES SHOWN ARE APPROXIMATE FIGURES, AND ARE TO BE USED BY BUILDING DEPARTMENT ONLY. CONTRACTOR SHALL CALCULATE HIS OWN EARTHWORK QUANTITIES AND BID A COMPLETE JOB.

PREPARED FOR:
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NEWPORT COAST, CA 92657
PHONE: 949)509-5004
CONTACT: DANIEL WEBB

CITY OF MORENO VALLEY
PUBLIC WORKS DEPARTMENT

CONCEPTUAL GRADING PLAN
COTTONWOOD RESIDENTIAL SUBDIVISION
COTTONWOOD AVE. and LAKEPORT DR.

Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
Checked by _____ Date _____

Approved by _____ Date _____
Public Works Director R.C.E. XXXXXX

Sheet **1** of **1** Sheets

JN: 3357b
Date: April 28, 2017
PLOT DATE: _____

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LA MIRADA, CALIFORNIA 90638
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Last Update: 3/10/17
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Attachment: Preliminary Water Quality Management Plan (2836 - PEN16-0050 - Tentative Tract Map 37000 to subdivide 10 acres in the RA-2 zone into 16 single-family)

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Riverside County SWCT² Stormwater & Water Conservation Tracking Tool

TOC Choose search item from list Enter Value Locate Clear

Clear All Metadata

Base Maps

- Topo Map
- Street Map
- Aerial Photo
- USGS Maps

Base Data

Stormwater Data

Groundwater Data

- SAR Groundwater Management Zones
- SMR Groundwater Management Zones
- WWR Groundwater Management Zones
- Wholesaler (Water Districts)
- Retailer (Water Districts)
- Geotracker Locations
- Ground Water Elevations
- Soils

Hydro Groups

- Hydro Group A
- Hydro Group A/D
- Hydro Group B
- Hydro Group B/D
- Hydro Group C
- Hydro Group C/D
- Hydro Group D
- No Hydro Group

Plumes

- U.S. Fish and Wildlife Critical Habitat
- WRMSHCP Potential Survey Areas
- SKRHCP
- CVMSHCP Survey Data and Conservation Areas

Identify Features

Click on map to view data.

06065C_654974 (Fema Flood Zones)

OBJECTID_1	1106
DFIRM_ID	06065C
VERSION_ID	1.1.1.0
FLOOD ID	06065C_654974
STUDY_TYP	NP
ZONE_SUBTY	AREA OF MINIMAL FLOOD HA
AR_SUBTRV	
DUAL_ZONE	
FLOOD_ZONE	UNSHADED X
RULEID	10
Shape.STArea()	11471785886.947632
Shape.STLength()	3045601.555573

100m 500ft

RBF

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone

RON BARTO

GROUND WATER CONSULTANT

Specializing in Hydrogeology and Ground Water Surveys
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Report 1387
dwebb@alereinc.com
(949) 509-5004
Vicky@thieneseng.com

April 28, 2017

Daniel Webb
Alere Property Group
Mac Jones Holdings, LLC
2 Gondoliers Bluff
Newport Coast, CA 92650

Subject: Report on Double Ring Infiltration Testing for the Proposed Cottonwood Residential Facility near the Southwest Corner and near the Northwest Corner of Cottonwood Avenue and Darwin Drive in Moreno Valley, CA
Property Assessment Number 487461006-8

Dear Daniel,

As per our proposal/contract dated February 13, 2017, Ron Barto - Ground Water Consultant, is pleased to submit this report detailing the results of our double ring infiltration testing. In order to capture and retain most of the rainwater that falls on the Subject Site, Riverside County requires the design and construction of on-site water retention basins or ponds. It is our understanding that this is the case for the Subject Site.

PROPRIETARY INFORMATION

This Infiltration Report contains "proprietary information" and shall not be released to the general public or industry professionals without the written permission of the Owner.

PROFESSIONAL QUALIFICATIONS

A State Certified Engineering Geologist (C.E.G.), Ron Barto, PO Box 6909, Big Bear Lake, CA 92315, was on-site to describe the soil profile, conducted the infiltration testing, and prepared this report.

INTRODUCTION

The Subject Property is situated about 1 mile south of the State Highway 60 and about 5 miles east of I-215 Freeway in Moreno Valley (**Figures 1 and 2**). The rectangular shaped parcel covers about 9.4 acres. This is vacant land which slopes to the southwest on the order of a few feet or approximately 1.5 percent (13 feet vertically / 855 feet horizontally). The site has no structures currently but it is our understanding that the Owner plans to construct about sixteen new residences (**Figure 3**).

The site is located along the south side of Cottonwood Avenue just west of Darwin Drive in Moreno Valley. The north-south trending Erin Drive will be connected through the property at both ends.



Figure 1- Location Map (Source: Hoffman Company)

The site has been previously tested by NorCal Engineers using double ring testing techniques. Our testing and report covers two separate areas; first, the area immediately east of the extension of Erin Drive near the southern edge of the property and second, the area also east of Erin Drive near the northern edge of the property.

According to Vicky Li's (Thienes Engineering, Inc), the soils in the project site need to have a minimum infiltration rate of 1.6 inches per hour (in/hr) via infiltration testing as described in Appendix A – Infiltration Testing of the Riverside County – Low Impact Development BMP Design Handbook. The previous testing by NorCal in three nearby areas of the site showed infiltration rates ranging between 4.2 and 4.5 in/hr.



Figure 2 – Aerial View of Property showing our test locations and the north arrow (Source: Hoffman Company)

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

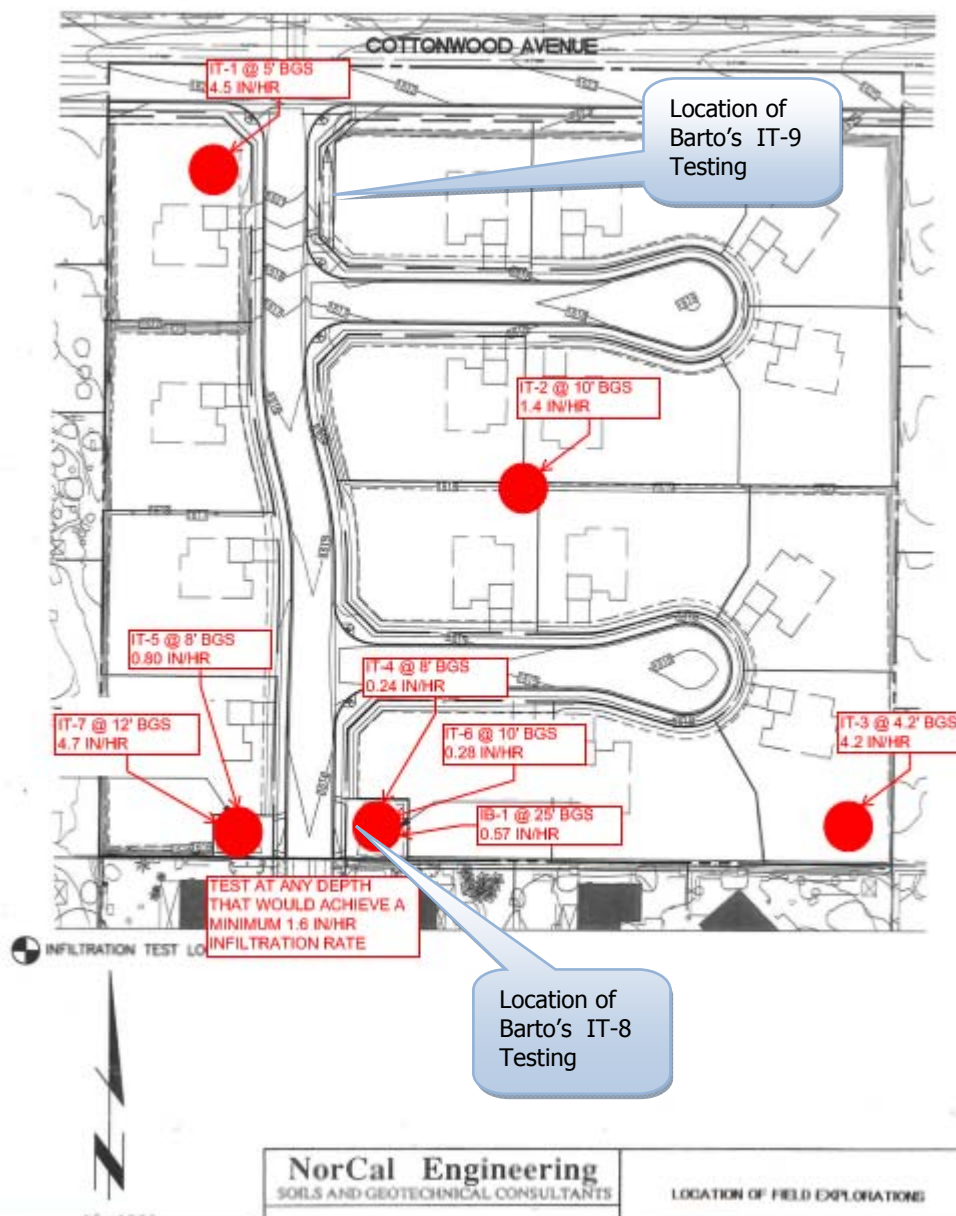


Figure 3 – Site Plan showing locations and test results of the previous testing conducted by NorCal Engineering

According to the information provided by Thienes Engineering, the Infiltration Trench Site and the Bio Hybrid West of Erin Site both have acceptable test results. However, the third site, Bio Hybrid East of Erin site, had not been able to achieve the necessary minimum infiltration rate prior to our testing. Additionally, the infiltration basin originally situated along the west side of Erin Drive (where IT-1 is

located) has been shifted to the east and now lies along the east side of Erin Drive. Because of this relocation, the City is now requiring a new test in the new area.

SITE TESTING

The fieldwork was conducted on Friday, February 24, 2017. This current testing consisted of one (1) location at a depth of 15 feet shown on **Figure 4**. The second day of testing was accomplished on April 25, 2017 to a depth of 5 feet.

All work was conducted in a professional manner by a State Certified Engineering Geologist and as prescribed by the County of Riverside and ASTM 3385 Procedure.

The current testing consisted of using the double ring infiltrometer at two (2) locations to determine the infiltration rates of the proposed retention basins. (Note: NorCal tested the site using sequential numbers IT-1 through IT-7. Therefore, it seemed logical for us to just continue this same sequence and refer our test numbers as IT-8 and IT-9).

The Client's Engineer preselected the testing site but it was our decision as to the depth of testing which was based upon what soils we encountered in the field. Our test consisted of excavating in the proposed retention basin area to a depth of 15 feet for IT-8 (about the maximum depth that a backhoe can reach) and 5 feet for IT-9, installing the double rings, presoaking, and testing for two hours until equilibrium was reached. The excavation were laid back to about a 1:1 slope by using an extend-a-hoe backhoe and thus, requiring no shoring. Bennett Excavating from Crestline supplied the backhoe and operator. We appreciate and acknowledge the professional work that Sean and Aaron Bennett provided for us.

SOILS ENCOUNTERED

Previously, NorCal drilled a borehole to a depth of 25 feet deep (IB-1). The log of the soils that they encountered are presented in **Appendix A** and summarized below. As part of this investigation, we logged the soils of the open 15-foot excavation used in the infiltrometer testing pit along with the shallow 5-foot deep IT-9 excavation. The following logs for IT-8 and IT-9 represent our observations of these soils:

IB-1

- 0' – 1' Sandy Clayey SILT, with rootlets, brown, soft, moist (fill material)
- 1' – 14' Clayey, Sandy SILT, brown, stiff, moist brown (native)
- 14' – 23' Sandy CLAY, brown, very stiff, damp
- 23' – 25' Clayey SAND, brown, dense, damp

TD= 25' No bedrock or ground water encountered

IT-8

- 0' – 1' Sandy Clayey SILT, with rootlets, brown, soft, wet (fill material ?)
- 1' – 10' Clayey, Sandy SILT, brown, stiff, moist brown, occasional gravel (native)
- 10' – 12' Clay SAND, brown, very stiff, damp
- 12' – 15' Silty SAND, brown, dense, damp

TD= 15' No bedrock or ground water encountered

IT-9

- 0' – 1' Sandy Clayey SILT, with rootlets, brown, soft, wet (top soil)
- 1' – 5' Silty SAND, brown, dense, damp

TD= 5' No bedrock or ground water encountered

Mac Jones Holdings
Infiltration Testing
Cottonwood Residential
April 28, 2017

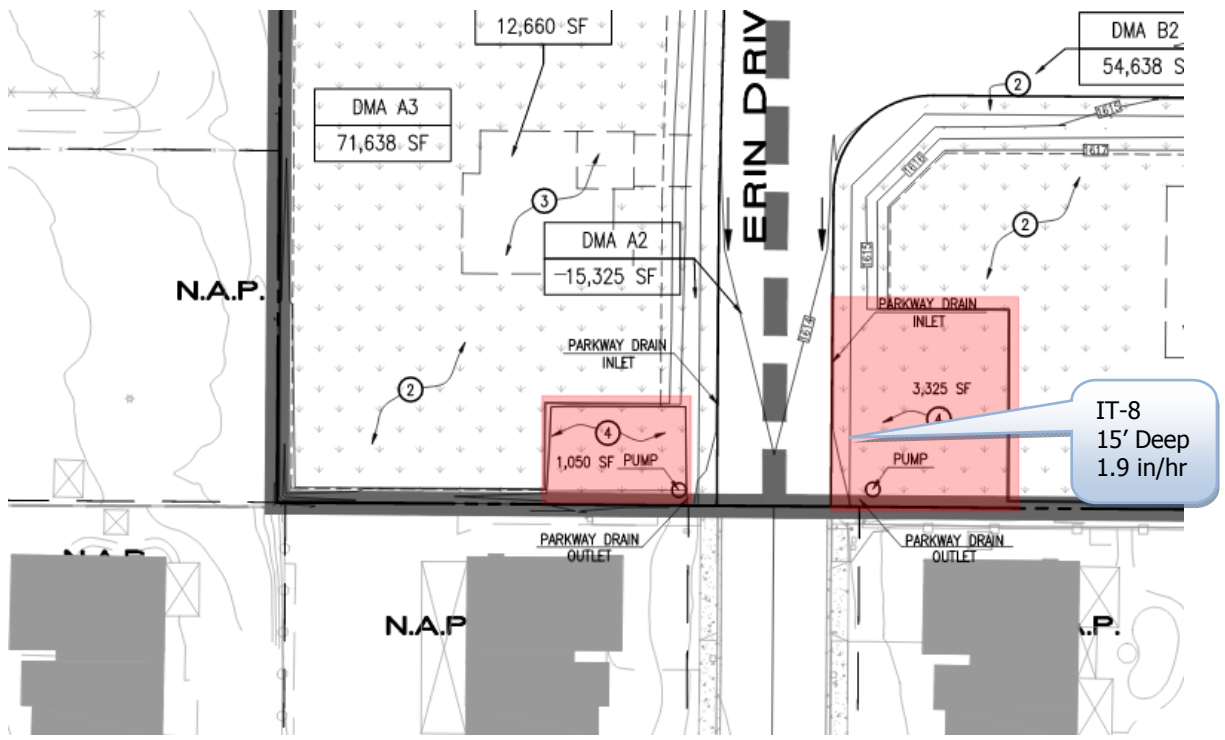


Figure 4 – Location of IT-8

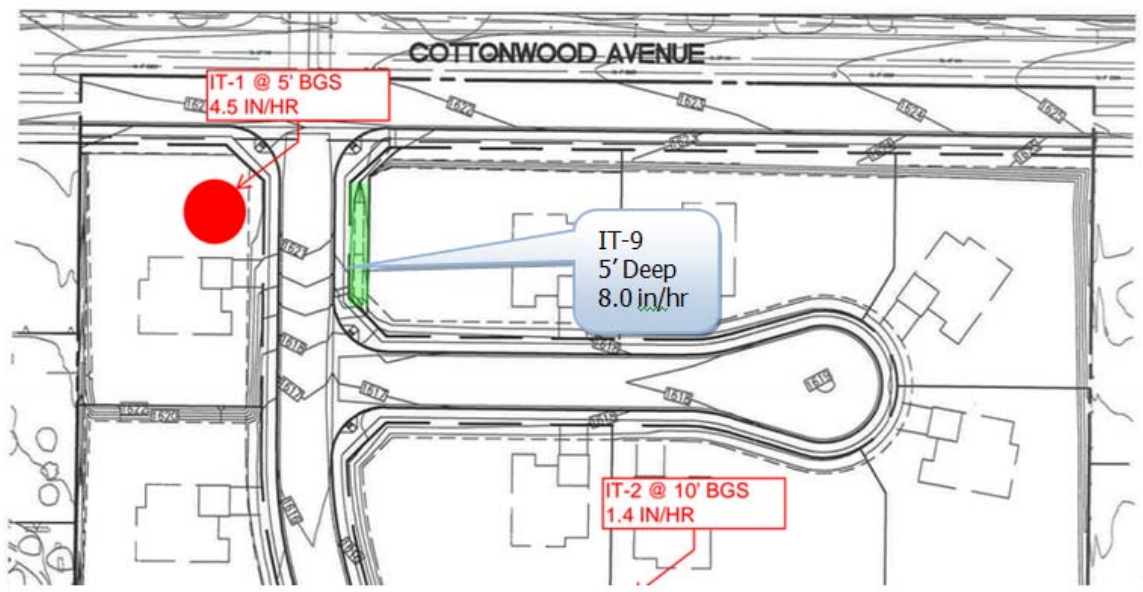


Figure 5 – Location of IT-9

GROUND WATER

The California Department of Water Resources (DWR) monitors ground water information for the Moreno Valley basin. Utilizing the DWR website (<http://www.water.ca.gov/waterdatalibrary/>) we determined that there are no wells within a mile of the Subject Site (Figure 6).

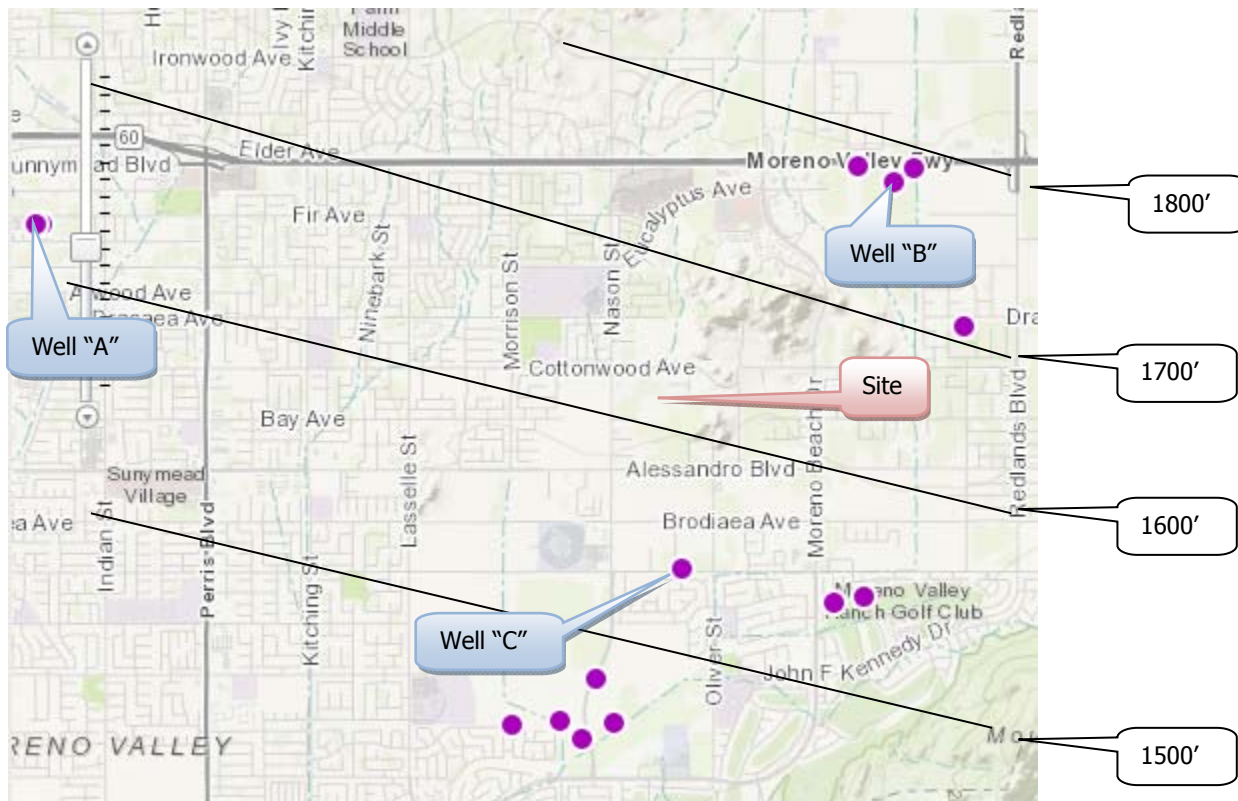


Figure 6 – Well Location Map (Source: DWR) showing approximate ground water elevations

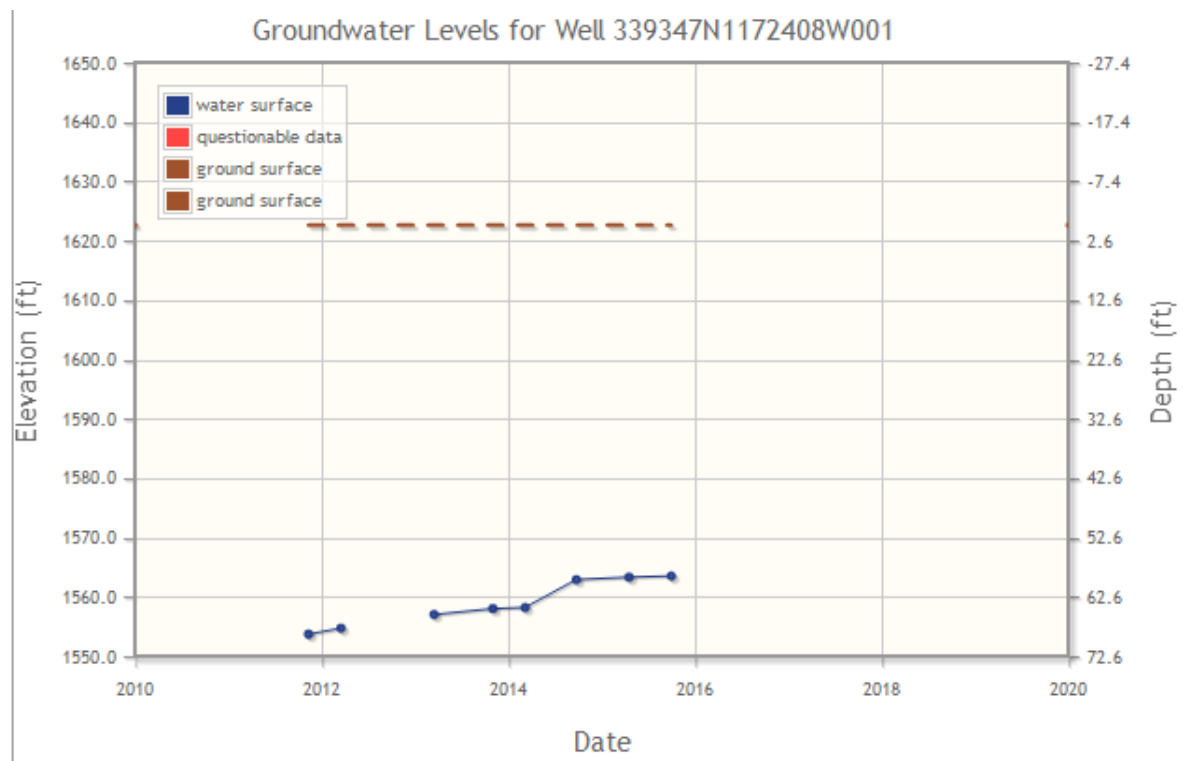


Figure 7 – Hydrograph of Well “A” Located About 2 Miles West of Property

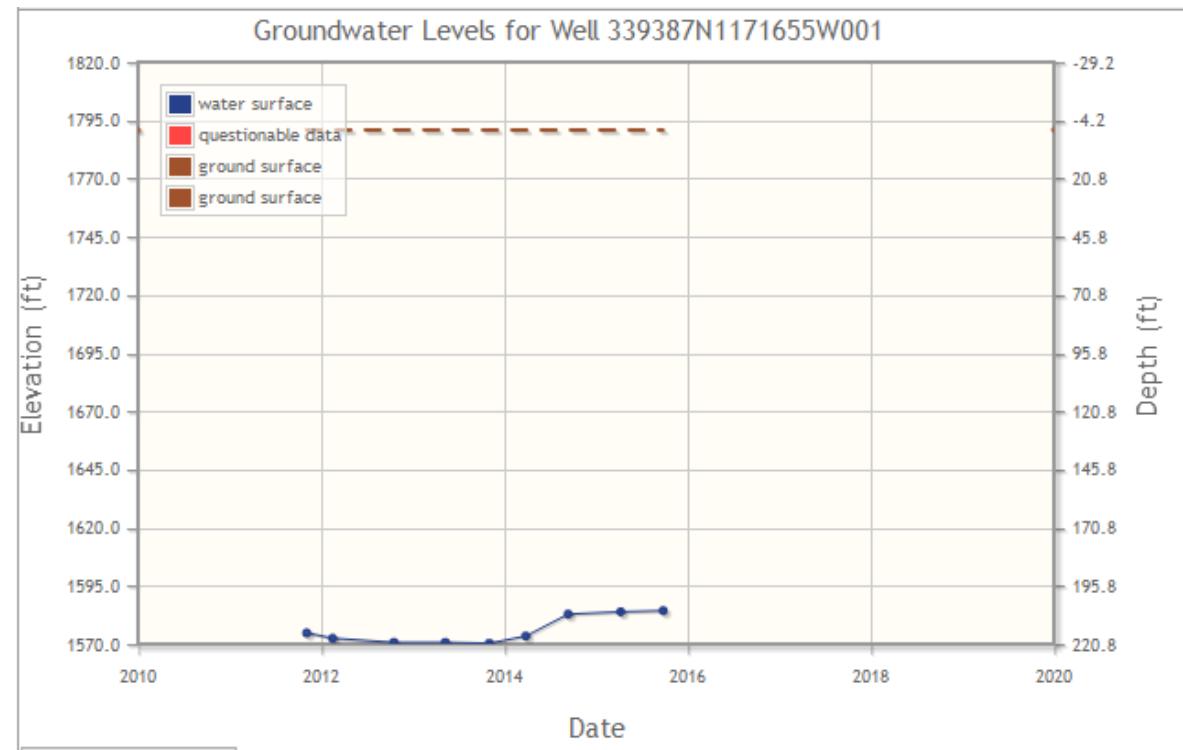


Figure 8 – Hydrograph of Well “B” Located About 2 ½ Miles East of Property

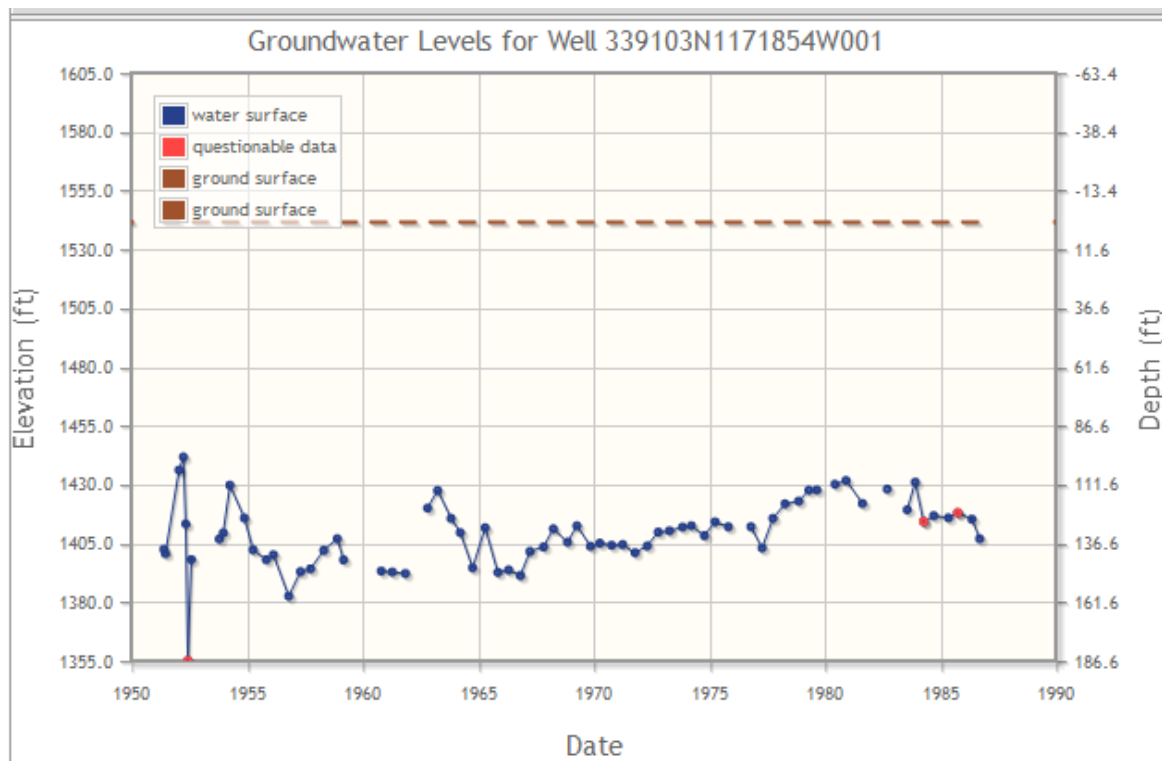


Figure 9 – Hydrograph of Well “C” Located About 1 ½ Miles Southeast of Property

INFILTRATION TEST PROCEDURE AND RESULTS

As stated in the Riverside County Handbook for Infiltration Testing, there is a difference between percolation rates and infiltration rates. “While the percolation rate is related to the infiltration rate, percolation rate tends to overestimate infiltration rates and can be off by a factor of 10 or more.” Infiltration rates measure the vertical component of percolation. To accomplish this and determining the vertical rate, the double ring infiltrometer is used for testing.

ASTM Method D3385 describes the double ring test method as follows:

“The double ring infiltrometer method consists of driving two open cylinders, one inside the other, into the ground, partially filling the ring with water or other liquid, and then maintaining the liquid at a constant level. The volume of liquid added to the inner ring, to maintain the liquid level constant is the measure of the volume of liquid that infiltrates the soil. The

volume infiltrated during timed intervals is converted to an incremental infiltration velocity, usually expressed in centimeters per hour or inches per hour and plotted versus elapsed time. The maximum-steady state or average incremental infiltration velocity, depending on the purpose/application of the test is equivalent to the infiltration rate."

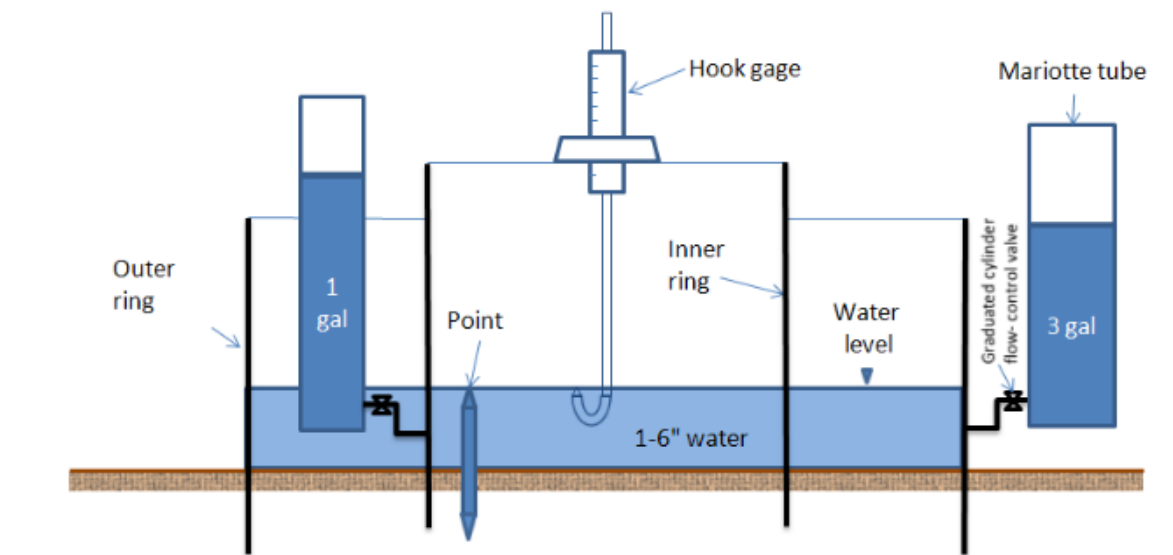


Figure 10 – Typical Double Ring Installation with Mariotte Tubes

The purpose of the outer ring is to promote one-dimensional and vertical flow beneath the inner ring forcing the water contained in the inside ring to percolate straight downward and not to the sides (**Figure 10**). As rule of thumb, horizontal permeability is ten times greater than vertical permeability depending on the environment of deposition. By measuring the vertical permeability, we have determined the most conservative infiltration rate.

The percolation/infiltration test pit for IT-8 was dug to a depth of about 15 feet in the proposed infiltration areas while It-9 was excavated to 5 feet deep. The floor of the excavation was about 3 to 4 feet square, while the footprint at the ground surface was about 30 feet square for the deepest holes. Then, by using an impact-absorbing hammer, we inserted the dual infiltration rings about 5 cm vertically into the soil.

The Riverside County Handbook states, "While there are two operational techniques used with double ring infiltrometers, the constant head method and the falling head method, ASTM D3385 mandates the use of the constant head method."

In order to maintain a constant head of water or a constant level in the two rings, Mariotte tubes, also referred to as "bubblers", were used at this sites. As necessary, water was added manually to the bubbles and then the amount of water used during the short period of about 5 to 10 minutes was measured by reading the calibration on the external tubes with each set of measurements to determine the rate of constant head infiltration. Liquid levels were maintained at about the same level in both the inner ring and annular space between rings throughout the test, to prevent flow of water from one ring to the other.

The volume of liquid used during each measured time interval was converted into an incremental infiltration velocity of the inner ring using the following equations:

For the **inner ring** calculated as follows:

$$V_{ir} = \Delta V_{ir} / (A_{ir} \Delta t)$$

where:

- V_{ir} = inner ring incremental infiltration velocity, cm/hr
- ΔV_{ir} = volume of liquid used during time interval to maintain constant head in the inner ring, cm³
- A_{ir} = internal area of the inner ring, cm²
- Δt = time interval, hr

We used the last reading of a particular site as the design rate. The testing data sheets for the one new site along with the data sheets from Norcal's tests are attached in **Appendix B**, summarized in **Table 1**.

TABLE 1
Summary of Infiltration Tests

Test #	Depth Tested (feet)	Earth Material	Infiltration Rate (cm/hr)	Infiltration Rate (in/hr)
IT-1	5'	Clayey Sandy SILT	11.4	4.5
IT-3	7.5'	Clayey Sandy SILT	10.2	4.0
IT-7	12'	Silty SAND	10.8	4.3
IT-8	15'	Silty SAND	4.6	1.9
IT-9	5'	Silty SAND	20.3	8.0
		Average	11.5	4.5

DISCUSSION OF RESULTS

Photo 1 through **10** show pictures of the excavated soils and testing of the IT-8 test sites, starting with five picture panorama of the property on the day of our testing. When including the original three tests along with the current test, the test results indicate wide variations in permeability ranging between 4.6 to 11.4 cm/hr (1.9 and 4.5 in/hr) for an average of 9.3 cm/hr (3.7 in/hr). All 4 tests exceed the required 1.6 in/min and are considered good infiltration rates.

IT-8 was the deepest of the excavations and was tested in native Silty SAND materials. It was also the slowest infiltration rate of 4.6 cm/hr (1.9 in/hr). IT-1 had the fastest rate of 11.4 cm/hr (4.5 in/hr) and at 5 feet deep was the shallowest of the excavations. Even the slowest infiltration rates at this site which are included herein are still considered acceptable and will adequately dispose of rain water.

Photos 11 through **13** were taken on the second day of testing and show the testing of the IT-9 site. IT-9 had the greatest infiltration rate of all the test sites being 8.0 in/hr.

It is our understanding that Thienes Engineering has discussed with the City the proposed use of a hybrid drywell bio-retention infiltration system where in two of the areas will utilize dry wells collect the surface water and convey it to underlying more permeable soils at depth (**Figure 11**). Because much of the shallow soils have low to moderate infiltration rates, in some cases it may be difficult to achieve the necessary rates to adequately get the storm waters to percolate through these soils. By installing the dry well, these waters would bypass the shallow less permeable soils and then allow to be absorbed at the deeper more permeable depths. As a California Certified Hydrogeologist and Certified Engineering Geologist, I totally agree with this concept and recommend making it a part of the project.

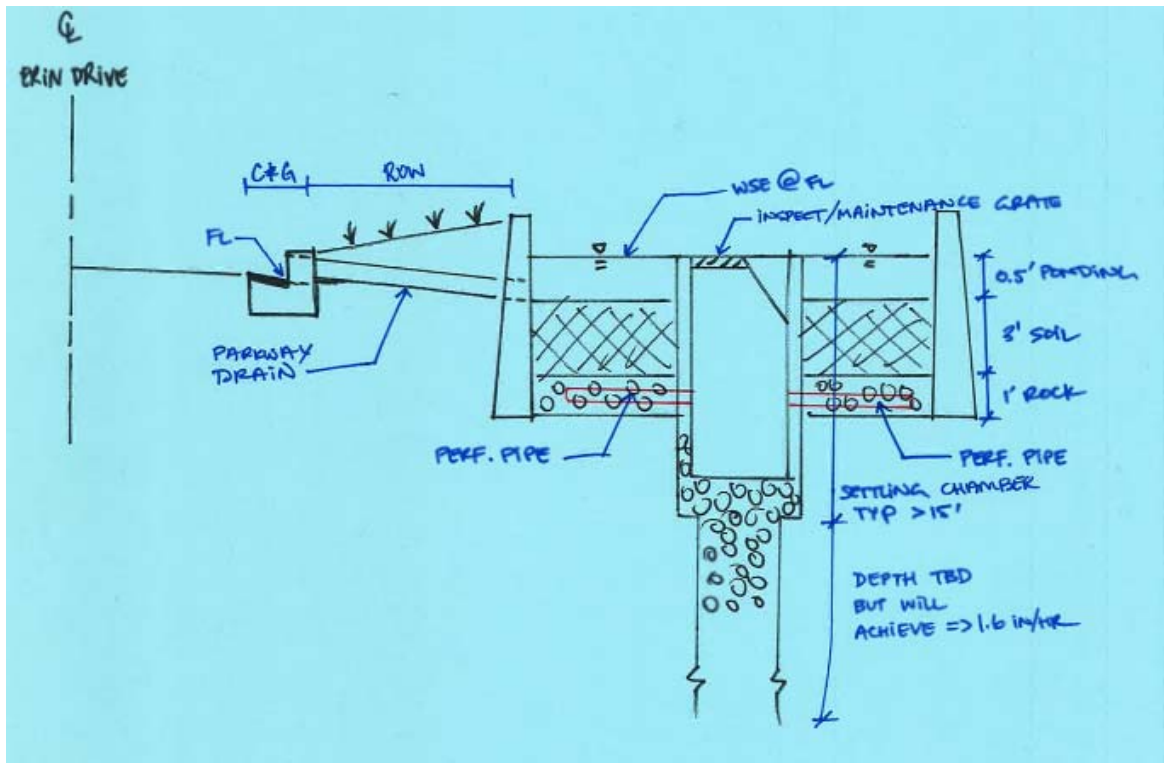


Figure 11 – Diagram of the proposed hybrid drywell bio-retention infiltration systems (Source: Thienes Engineers)



Photo 1 – Looking West Along Southern Property Line at IT-7



Photo 2 – Looking Northwest Along Western Property Line



Photo 3 – Looking North at the Excavation for IT-8



Photo 4 – Looking Northeast across the Property



Photo 5 – Looking East Along Southern Property Line



Photo 6 – Looking at the Soils Encountered at IT-8



Photo 7 – Looking at the Excavated Soils from IT-8



Photo 8 – Looking at the wall of the excavation for IT-8 before it was over excavated for safety

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



Photo 9 – Double Ring Equipment during Presoaking of IT-8. Mariotte Tubes were used for testing but not for presoaking



Photo 10 – Double Ring Testing of IT-8.



Photo 11 – Looking South across Cottonwood Ave at IT-9



Photo 12 – Looking South at IT-9 along eastern side of Erin Dr

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Photo 13 – Looking South at the Excavation and testing for IT-9

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

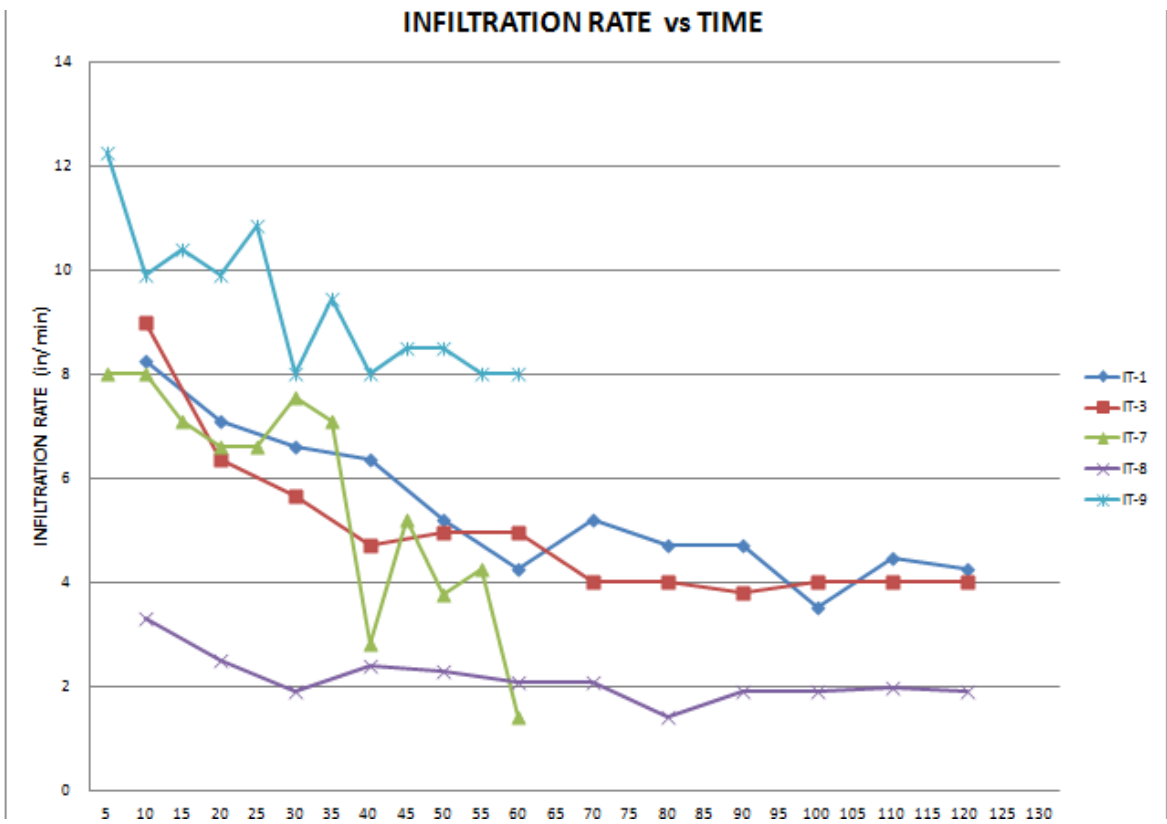


Figure 12 - Graphical Results of Double Ring Testing

Table 2 presents a list of comparable permeabilities for various soil types. As can be seen from our testing, percolation rates of soils that are a mixture of sand, silt, and clay and have a permeability of 4.6 to 20.3 cm/hr (0.16 to 0.67 feet per hour) generally represent poor aquifers.

TABLE 2
Comparable Permeabilities

Material	Flow characteristic	cm/sec	ft/hr
Clean Gravel	Good aquifer	1 to 10 ²	10 ² to 10 ⁴
Mix of clean sands and gravel	Good aquifer	1 to 10 ³	10 ² to 10 ⁵
Coarse sand, very well sorted	Good aquifer	3.7 x 10 ¹	4.4 x 10 ³
Clean Sands	Good aquifer	10 ⁻³ to 1	10 ⁻¹ to 10 ²
Medium sand, very well sorted	Moderate aquifer	2.2 x 10 ⁻¹	2.6 x 10 ¹
Very fine sands, silts	Poor aquifer	10 ⁻⁴ to 1	10 ⁻² to 10 ²
Mix of sand silt & clay	Poor aquifer	10 ⁻⁴ to 1	10 ⁻² to 10 ²
Glacial till	Poor aquifer	10 ⁻⁴ to 1	10 ⁻² to 10 ²
Stratified clays	Poor aquifer	10 ⁻⁴ to 1	10 ⁻² to 10 ²
Very fine sand, very well sorted	Poor aquifer	8.4 x 10 ⁻³	1
Clayey sands, fine sands	Poor to impervious	10 ⁻⁶ to 10 ⁻³	10 ⁻⁴ to 10 ⁻¹
Sandstone	Poor to impervious	10 ⁻⁵ to 10 ⁻³	10 ⁻³ to 10 ⁻¹

For comparison purpose, **Table 3** is included to show a similar chart of coefficient of permeability for different soil type classifications that is in the LA County Department of Public Works "Guidelines for Design, Investigation, and Reporting Low Impact Development Stormwater Infiltration." Their minimum acceptable infiltration rate is 0.3 in/hr or 0.025 ft/hr. The permeability rates for our site ranged between 1.35 x 10⁻⁵ to 3.2 x 10⁻⁵ m/sec which is considered as to be at the lower end of "good drainage" using **Table 3**.

TABLE 3
Permeability Ranges Used by the LA County DPW

		Coefficient of Permeability <i>k</i> (m/s)											
		10 ⁰	10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	10 ⁻⁵	10 ⁻⁶	10 ⁻⁷	10 ⁻⁸	10 ⁻⁹	10 ⁻¹⁰	10 ⁻¹¹
Drainage		Good					Poor			Practically Impervious			
Soil types		Clean gravel	Clean sands, clean sand and gravel mixtures			Very fine sands, organic and inorganic silts, mixtures of sand silt and clay, glacial till, stratified clay deposits, etc.			"Impervious" soils, e.g., homogeneous clays below zone of weathering				
					"Impervious" soils modified by effects of vegetation and weathering								

Permeability and Drainage Characteristics of Soils from Terzaghi and Peck

SUMMARY

The testings at this site were conducted at five separate times over the past two years. As can be seen from our report, infiltration rates were measure at rates ranging between 1.9 and 8.0 in/hr. All materials represent good drainage materials.

According to the Riverside County Handbook, the Final Report shall include the following information:

- 1) Location of Test Site
Cottonwood Residential Facility near the Southwest Corner of Cottonwood Avenue and Darwin Drive in Moreno Valley, CA
Property Assessment Number 487461006-8
- 2) Date of test, start to finish
February 24, 2017 and April 25, 2017
- 3) Weather conditions
Cool about 60° F, clear, slight breeze in afternoon on 2/24/17
Warm about 80° F, clear, slight breeze in afternoon on 4/25/17
- 4) Name(s) of technicians
Ron Barto, PG, CEG, CHG;
Darissa K. Barto, Geologic Technician; and
Devin Keller, Geologic Technician
- 5) Descriptions of test site, including assessment of boring profile and USCS soil classification
Sandy SILT (ML) and Silty SAND (SM) with thin stringers of sand and gravel
- 6) Depth of the water table and a description of the soil to a depth of at least 10 feet below proposed infiltration surface
Depth to water minimum of 35 feet.
Clayey SAND was encountered at 25 feet, 10 feet below infiltration
- 7) Type of equipment used to construct the boreholes or test holes
Backhoe with 24" bucket
- 8) Area of the rings or test hole diameter
12" and 24" (30 cm and 60 cm) diameter rings

- 9) Volume constants for graduated cylinder or Mariotte tube
38.46 cm²/cm and 153.86 cm²/cm
- 10) Complete field results in tabular format
Presented in Appendix B
- 11) A plot of infiltration rate versus total elapsed time
Presented in **Figure 12**
- 12) A labeled keymap showing test and boring locations
Presented in **Figures 2, 3, and 4**
- 13) Confirmation that the soil was pre-saturated
Presoaked for 1 hr

STATEMENT OF RESPONSIBILITY


I, Ron Barto, am duly registered in the State of California and hereby attest that I personally prepared this report and assume full professional responsibility for its validity, and for any errors or omissions herein.

Very truly yours,

RON BARTO - GROUND WATER CONSULTANT

Celebrating Over 50 Years of Hydrogeologic Expertise

Ron Barto



exp. 10-31-17

Ron Barto, MS
Professional Geologist (PG 3356)
Certified Engineering Geologist (CEG 966)
Certified Hydrogeologist (CHG 923)
Registered Geologist in AZ (PG 60056)

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APPENDIX A

Soil Log

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Daniel Webb 17911-15			Log of Boring IB-1				
Boring Location: Cottonwood & Darwin, Moreno Valley							
Date of Drilling: 2/1/17							
Drilling Method: Drill Rig							
Hammer Weight: 140 lbs							
Drop: 30"							
Surface Elevation: Not Measured							
Depth (feet)	Lith- ology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	Relative Compaction
0	GVT not encountered	FILL SOILS Sandy clayey SILT with rootlets Brown, soft, moist					
5		NATURAL SOILS Clayey sandy SILT Brown, stiff, moist					
15		Sandy CLAY Brown, very stiff, damp					
20			⊗	50+			
25		Clayey SAND Brown, dense, damp	⊗	31/34			
Boring completed at depth of 25'							
30							
35							
NorCal Engineering			1				

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\1791115-2\Log Date: 2/3/2017

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

APPENDIX B

Soil Double Ring Infiltrometer Tests

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

DOUBLE RING INFILTRATION TEST							IT-8 @15' Deep							
Owner/Project				Alere Group - Cottonwood, Moreno Valley				APN				487461006-8		
Date Tested				2/24/2017				Comments				Silty SAND		
Inner Ring	Diam.	30 cm		Area	707 cm ²		Liquid of I	4.4 c		Bubbler Vol	38.46 cm ² /cm			
Outer Ring	Diam.	60 cm		Area	2826 cm ²		Liquid of I	4.6 c		Bubbler Vol	153.86 cm ² /cm			
Time	Change	Cumula	Inner	Inner	Inner	Outer	Outer	Outer	Outer	Inner	Outer	Inner	Outer	
(hr/min)	(min)	(min)	Ring	Ring	Ring	Ring	Ring	Ring	Ring	Ring	Ring	Ring	Ring	
			Reading	Change	Flow	Reading	Change	Flow	Flow	af Rate	af Rate	af Rate	af Rate	
			(cm)	(cm)	(cc)	(cm)	(cm)	(cc)	(cm/hr)	(cm/hr)	(in/hr)	(in/hr)	(in/hr)	
1	12:20		170.0			175.5								
	12:30	10	144.4	25.6	985	148.9	26.6	4093	8.36	8.69	3.29	3.42		
2	12:30		144.4			148.9								
	12:40	10	124.2	20.2	777	128.7	20.2	3108	6.59	6.60	2.50	2.60		
3	12:40		124.2			128.7								
	12:50	10	109.4	14.8	569	112.4	16.3	2508	4.83	5.32	1.90	2.10		
4	12:50		109.4			112.4								
	1:00	10	90.7	18.7	719	94.7	17.7	2723	6.10	5.78	2.40	2.28		
5	1:00		90.7			94.8								
	1:10	10	72.8	17.9	689	76.3	18.4	2837	5.84	6.02	2.30	2.37		
6	1:10		72.8			76.3								
	1:20	10	56.5	16.3	627	60.0	16.3	2508	5.32	5.32	2.09	2.10		
7	1:25		170.0			170.0								
	1:35	10	153.7	16.3	627	150.7	19.3	2969	5.32	6.30	2.09	2.48		
8	1:35		153.7			150.7								
	1:45	10	142.6	11.1	427	136.1	14.6	2246	3.62	4.77	1.43	1.88		
9	1:45		142.6			136.1								
	1:55	10	127.8	14.8	569	120.2	15.9	2446	4.83	5.19	1.90	2.04		
10	1:55		127.8			120.2								
	2:05	10	112.8	15.0	577	105.0	15.2	2339	4.90	4.97	1.93	1.95		
11	2:05		112.8			105.0								
	2:15	10	97.2	15.6	600	89.2	15.8	2431	5.09	5.16	2.00	2.03		
12	2:15		97.2			89.2								
	2:25	10	82.3	14.9	573	74.1	15.1	2323	4.86	4.93	1.91	1.94		

Conducted by Ron Barto Ground Water Consultant

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

DOUBLE RING INFILTRATION TEST										CotRes IT-9 @ 5' deep			
Owner/Project		Alere Group - Cottonwood, Moreno Valley						APN					
Date Tested		#####		Comments				Silty SAND					
Inner Ring	Diam.	30 cm	Area	707 cm	Liquid of D	4.4 c	Bubbler Vol.	38.46 cm ² /cm					
Outer Ring	Diam.	60 cm	Area	2826 cr	Liquid of D	4.6 c	Bubbler Vol.	153.86 cm ² /cm					
Time	Change	Cumul.	Inner Ring Reading	Inner Ring Change	Inner Ring Flow	Outer Ring Reading	Outer Ring Change	Outer Ring Flow	Inner Ring Rate	Outer Ring Rate	Inner Ring Rate	Outer Ring Rate	
(hr/min)	(min)	(min)	(cm)	(cm)	(cc)	(cm)	(cm)	(cc)	(cm/hr)	(cm/hr)	(in/hr)	(in/hr)	
1	1:00		170.0			179.0							
	1:05	5	122.3	47.7	1835	131.1	47.9	7370	31.14	31.29	12.26	12.32	
2	1:05		122.3			131.1							
	1:10	5	83.7	38.6	1485	92.3	38.8	5970	25.20	25.35	9.92	9.98	
3	1:10		83.7			92.3							
	1:15	5	43.3	40.4	1554	51.8	40.5	6231	26.38	26.46	10.38	10.42	
4	1:15		43.3			51.8							
	1:20	5	5.1	38.2	1469	13.6	38.2	5877	24.94	24.96	9.82	9.83	
5	1:25		175.0			180.0							
	1:30	5	132.7	42.3	1627	137.6	42.4	6524	27.62	27.70	10.87	10.91	
6	1:30		132.7			137.6							
	1:35	5	101.5	31.2	1200	106.2	31.4	4831	20.37	20.51	8.02	8.08	
7	1:35		101.5			106.2							
	1:40	5	64.8	36.7	1412	69.3	36.9	5677	23.96	24.11	9.43	9.49	
8	1:40		64.8			69.3							
	1:45	5	33.6	31.2	1200	37.9	31.4	4831	20.37	20.51	8.02	8.08	
9	1:45		170.0			180.0							
	1:50	5	137.0	33.0	1269	146.8	33.2	5108	21.54	21.69	8.48	8.54	
10	1:50		137.0			146.8							
	1:55	5	105.9	31.1	1196	113.6	33.2	5108	20.30	21.69	7.99	8.54	
11	1:55		105.9			113.6							
	2:00	5	72.9	33.0	1269	80.3	33.3	5124	21.54	21.76	8.48	8.57	
12	2:00		72.9			80.3							
	2:05	5	41.9	31.0	1192	49.3	31.0	4770	20.24	20.25	7.97	7.97	

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS
10641 HUMBOLT STREET LOS ALAMITOS, CA 90720
(562)799-9469 FAX (562)799-9459

Project: Daniel Webb
Project No.: 17911-15
Date: 1/31/15

Test No.: IT-1
Depth: 5'
Tested By: D.R.

	Time (hr/min)	Change Time (min)	Cumulative Time (min)	Inner Ring Reading (cm)	Inner Ring Change (cm)	Inner Ring Flow (cc)	Outer Ring Reading (cm)	Outer Ring Change (cm)	Outer Ring Flow (cc)	Inner Ring Inf Rate (cm/hr)	Outer Ring Inf Rate (cm/hr)	Inner Ring Inf Rate (ft/hr)
1	7:45			128.3			103.3					
	7:55	10	10	131.8	3.5		107.0	3.7				
2	7:55			127.4			101.8					
	8:05	10	20	130.4	3.0		105.3	3.5				
3	8:05			130.4			105.2					
	8:15	10	30	133.2	2.8		108.0	2.7				
4	8:15			128.1			101.9					
	8:25	10	40	130.8	2.7		104.7	2.8				
5	8:25			130.8			104.7					
	8:35	10	50	133.0	2.2		107.2	2.5				
6	8:35			133.0			107.2					
	8:45	10	60	134.8	1.8		109.2	2.0		10.8	12.0	
7	8:45			127.8			101.6					
	8:55	10	70	130.0	2.2		104.0	2.4		13.2	14.4	
8	8:55			130.0			104.0					
	9:05	10	80	132.0	2.0		106.2	2.2		12.0	13.2	
9	9:05			132.0			106.2					
	9:15	10	90	134.0	2.0		108.1	1.9		12.0	11.4	
10	9:15			134.0			108.1					
	9:25	10	100	135.5	1.5		109.9	1.8		9.0	10.8	
11	9:25			128.5			103.4					
	9:35	10	110	130.4	1.9		105.4	2.0		11.4	12.0	
12	9:35			130.4			105.4					
	9:45	10	120	132.2	1.8		107.2	1.8		10.8	10.8	

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS
10641 HUMBOLT STREET LOS ALAMITOS, CA 90720
(562)799-9469 FAX (562)799-9459

Project: Daniel Webb
Project No.: 17911-15
Date: 1/31/15

Test No.: IT-3
Depth: 7.5'
Tested By: D.R.

	Time (hr/min)	Change Time (min)	Cumulative Time (min)	Inner Ring Reading (cm)	Inner Ring Change (cm)	Inner Ring Flow (cc)	Outer Ring Reading (cm)	Outer Ring Change (cm)	Outer Ring Flow (cc)	Inner Ring Inf Rate (cm/hr)	Outer Ring Inf Rate (cm/hr)	Inner Ring Inf Rate (ft/hr)
1	10:10			128.6			101.5					
	10:20	10	10	132.4	3.8		104.9	3.4				
2	10:20			127.2			100.9					
	10:30	10	20	129.9	2.7		103.5	2.6				
3	10:30			129.9			103.5					
	10:40	10	30	132.3	2.4		105.8	2.3				
4	10:40			132.3			105.8					
	10:50	10	40	134.3	2.0		107.9	2.1				
5	10:50			128.5			101.9					
	11:00	10	50	130.6	2.1		104.0	2.1				
6	11:00			130.6			104.0					
	11:10	10	60	132.7	2.1		106	2.0		12.6	12.0	
7	11:10			132.7			106					
	11:20	10	70	134.4	1.7		107.8	1.8		10.2	10.8	
8	11:20			128.2			100.5					
	11:30	10	80	129.9	1.7		102.8	2.3		10.2	13.8	
9	11:30			129.9			102.8					
	11:40	10	90	131.5	1.6		104.7	1.9		9.6	11.4	
10	11:40			131.5			104.7					
	11:50	10	100	133.2	1.7		106.5	1.8		10.2	10.8	
11	11:50			133.2			106.5					
	12:00	10	110	134.9	1.7		108.1	1.6		10.2	9.6	
12	12:00			133.0			106.4					
	12:10	10	120	134.7			108	1.6		10.2	9.6	

Mac Jones Holdings
 Infiltration Testing
 Cottonwood Residential
 April 28, 2017



SOILS AND GEOTECHNICAL CONSULTANTS

Project: Alere Property Group
Project No: 17911-15
Date: 1/11/17
Test No. IT-7
Depth: 12'
Tested By: J.S.

	TIME (hr:min)	CHANGE TIME (min)	CUMULATIVE TIME (min)	INNER RING READING (cm)	INNER RING CHANGE	INNER RING FLOW (cc)	OUTER RING READING (cm)	OUTER RING CHANGE (cm)	OUTER RING FLOW (cc)	INNER RING INF RATE (cm/hr)	OUTER RING INF RATE (cm/hr)	INNER RING INF RATE (ft/hr)
1	1:40			43.8			107.3					
	1:45	5	5	45.5	1.7		109.8	2.5				
2	1:45			45.5			109.8					
	1:50	5	10	47.2	1.7		111.6	1.8				
3	1:50			47.2			111.6					
	1:55	5	15	48.7	1.5		113.4	1.8				
4	1:55			42.7			106.5					
	2:00	5	20	44.1	1.4		108.4	1.9				
5	2:00			44.1			108.4					
	2:05	5	25	45.6	1.5		110.3	1.9				
6	2:05			45.6			110.3					
	2:10	5	30	47.2	1.6		112.3	2.0		19.2	24.0	
7	2:10			44.2			105.7					
	2:15	5	35	45.7	1.5		107.5	1.8		18.0	21.6	
8	2:15			42.8			104.8					
	2:20	5	40	43.4	0.6		105.8	1.0		7.2	12.0	
9	2:20			43.4			105.8					
	2:25	5	45	44.5	1.1		107.2	1.4		13.2	16.8	
10	2:25			44.5			107.2					
	2:30	5	50	45.3	0.8		108.0	0.8		9.6	9.6	
11	2:30			45.3			108.0					
	2:35	5	55	46.2	0.9		109.2	1.2		10.8	14.4	
12	2:35			46.2			109.2					
	2:40	5	60	46.5	0.3		110.4	1.2		3.6	14.4	

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

NorCal Engineering
Soils and Geotechnical Consultants
10641 Humbolt Street Los Alamitos, CA 90720
(562) 799-9469 Fax (562) 799-9459

February 3, 2017

Project Number 17911-15

Daniel Webb
c/o Alere Property Group
100 Bayview Circle, Suite 310
Newport Beach, California 92660

RE: **Third Supplemental Soil Infiltration Study** - Proposed Residential Development - Located near the Southwest Corner of Cottonwood Avenue and Darwin Drive, in the City of Moreno Valley, California

Dear Mr. Webb:

Pursuant to your request, this firm has performed a third Supplemental Soil Infiltration Study for the above referenced project. The purpose of this study is to further evaluate the feasibility of on-site drainage disposal systems at specific locations on the site. Previous reports dated February 16, 2015, August 29, 2016 and January 17, 2017 provide results for seven previous tests. Due to low infiltration rates in the shallow soils, the current test included the placement of a test boring to analyze deeper soils. The scope of current work included the following: 1) site reconnaissance; 2) subsurface geotechnical exploration; 3) deep boring testing at one location; 4) engineering analysis of field test data; and 5) preparation of this report.

It is proposed to install detention/infiltration basins/systems to dispose of on-site water runoff.

Site Description

The rectangular shaped subject property is located westerly of the southwest corner of Cottonwood Avenue and Darwin Drive, Moreno Valley, as illustrated on Figure 1, Vicinity Map.

The property is currently vacant and covered with low vegetation growth. The site topography descends very gradually from north to south and drainage is via sheetflow in this direction.

Supplemental Field Exploration and Testing

The excavations were completed on February 1, 2017 and testing was completed on that day. The boring consisted of a 6-inch diameter test hole. A 3-inch diameter perforated PVC casing with solid end cap was installed in the boring and then surrounded with gravel materials to prevent caving. The infiltration hole was carefully filled with clean water and refilled after two initial readings. Based upon the initial rate of infiltration at the location, test measurements were taken at 10-minute intervals thereafter. The measurements were obtained by using an electronic tape measure with 1/16-inch divisions and timed with a stopwatch.

Detailed descriptions of the subsurface soils are given on the attached test boring log in Appendix B. The boring was backfilled and tamped at the conclusion of testing.

In general, the test area was found to be underlain by minor amounts of surficial fill and native soils. The soils at test locations consisted of sandy SILT with clay. These soils were noted to be medium dense/stiff to stiff and damp. Sand, silt and clay content varied slightly with depth of explorations. Very dense clayey SAND to sandy CLAY was encountered at 14 feet; sand content increased with depth thereafter.

Groundwater

Groundwater was not encountered in any of the previous or current test locations. Seeping groundwater, which may be a perched condition, was encountered at a depth of approximately 35 feet in a boring placed during our geotechnical investigation work at the site (NorCal report dated February 13, 2015, Project Number 17911-15). High groundwater in the vicinity has been recorded deeper than 50 feet at wells in the vicinity of the subject site, based upon information from the California Department of Water Resources database <http://www.water.ca.gov/waterdatalibrary/>.

Discussion of Supplemental Deep Boring Test Results

The use of on-site stormwater disposal system by means of retention/infiltration basins or other system appears to be geotechnically feasible for future development provided the rates given below are utilized in the system design. Based upon the results of our testing, the following design rates should be used in the infiltration area:

<u>Test No.</u>	<u>Depth (feet bgs)</u>	<u>Soil Type</u>	<u>Infiltration Rate (in/hr)</u>
IB-1	25.0	silty, clayey SAND	0.57

It is our opinion that the site is suitable for stormwater infiltration without increasing the potential of settlement of proposed and existing structures or adversely affecting retaining/basement walls located either on or adjacent to the subject site. In addition, the potential for hydro-consolidation and the susceptibility for any ground settlements are considered low. All systems shall meet the California Regional Water Quality Control Board (CRWQCB) requirements.

February 3, 2017
Page 4

Project Number 17911-15

Closure

The recommendations and conclusions contained in this report are based upon the soil conditions uncovered in our test excavations. No warranty of the soil condition between our excavations is implied. NorCal Engineering should be notified for possible further recommendations if unexpected to unfavorable conditions are encountered during construction phase. This firm should have the opportunity to review the final plans to verify that all our recommendations are incorporated.

This report and all conclusions are subject to the review of the controlling authorities for the project. Our representative should be present during the grading operations and construction phase to certify that such recommendations are complied within the field.

This infiltration study has been conducted in a manner consistent with the level of care and skill exercised by members of our profession currently practicing under similar conditions in the Southern California area. All work was performed under the supervision of the Geotechnical Engineer. No other warranty, expressed or implied is made. No other warranty, expressed or implied is made.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING

Keith D. Tucker

Keith D. Tucker
Project Engineer
R.G.E. 841



Mark A. Burkholder

Mark A. Burkholder
Project Manager

NorCal Engineering

List of Appendices
(in order of appearance)

Appendix A

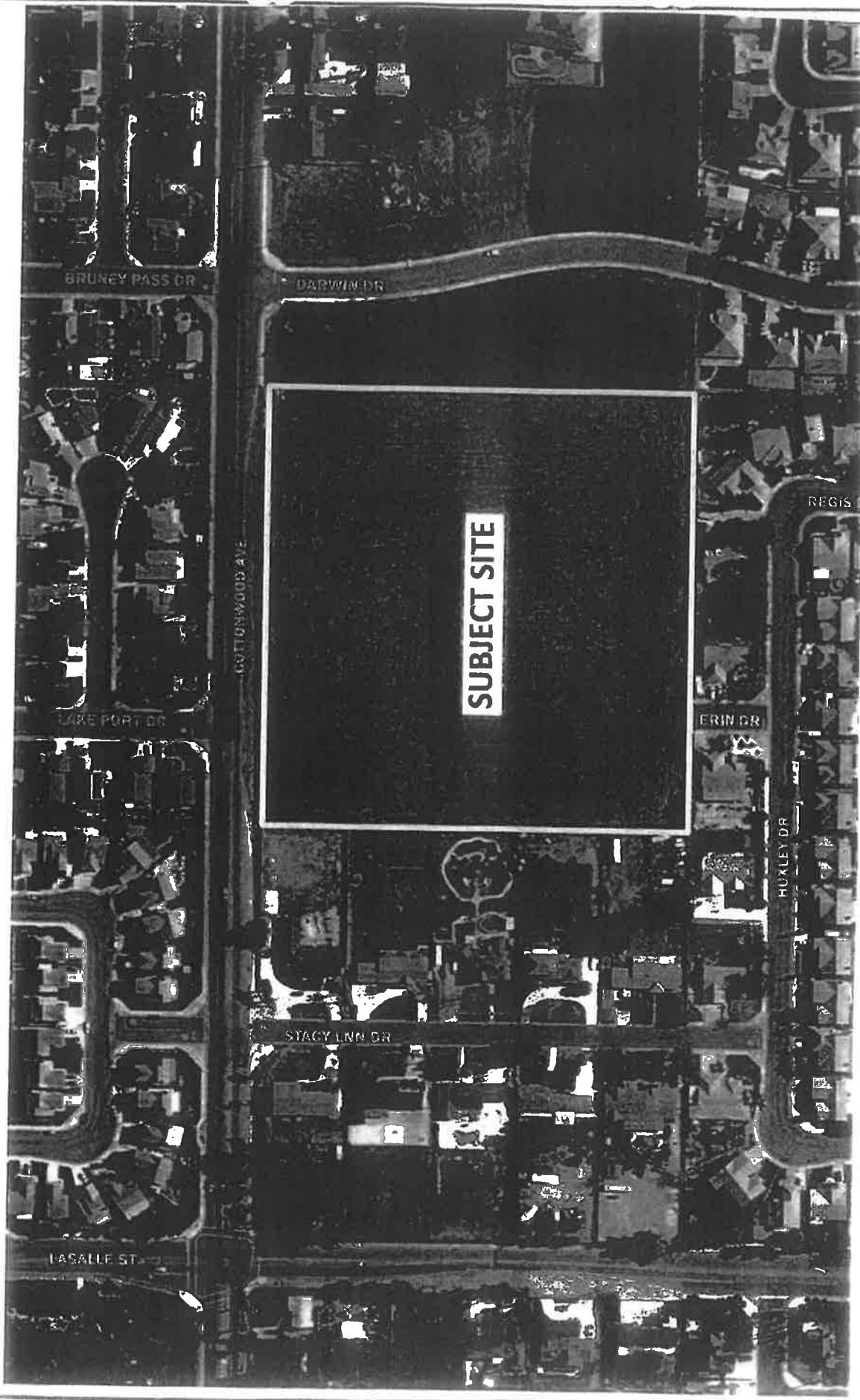
Vicinity Map – Figure 1
Location of Test Boring – Figure 2

Appendix B

Logs of Test Boring IB-1
Field Test Data
Calculations

Appendix A

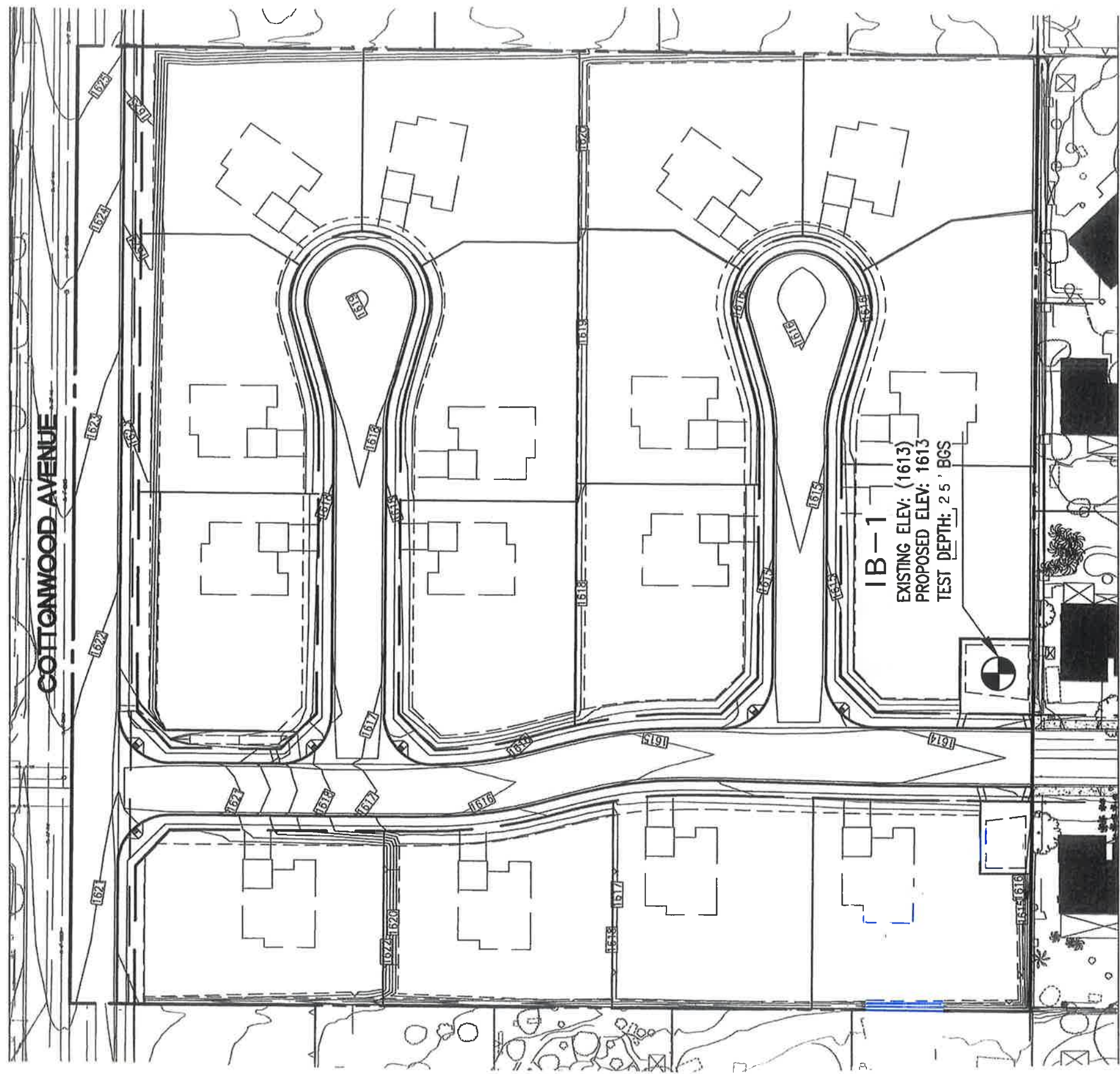
Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



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VICINITY MAP

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



INFLTRATION TEST LOCATIONS



1" = 100'

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LOCATION OF FIELD EXPLORATIONS

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

FIGURE 2

Appendix B

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS			
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL, SAND MIXTURES, LITTLE OR NO FINES			
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES			
		MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES		
					GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES		
	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES			
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES			
		MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES		
					SC	CLAYEY SANDS, SAND-CLAY MIXTURES		
			FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 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 SILTY CLAYS OF LOW PLASTICITY						
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS			
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS			
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS			
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS			

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

UNIFIED SOIL CLASSIFICATION SYSTEM

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

KEY:

- Indicates 2.5-inch Inside Diameter. Ring Sample.
- ☒ Indicates 2-inch OD Split Spoon Sample (SPT).
- ☐ Indicates Shelby Tube Sample.
- Indicates No Recovery.
- ▣ Indicates SPT with 140# Hammer 30 in. Drop.
- ☑ Indicates Bulk Sample.
- ▤ Indicates Small Bag Sample.
- ▢ Indicates Non-Standard
- ⊠ Indicates Core Run.

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4.5mm)
Sand	No. 4 (4.5mm) to No. 200 (0.074mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

COMPONENT PROPORTIONS

DESCRIPTIVE TERMS	RANGE OF PROPORTION
Trace	1 - 5%
Few	5 - 10%
Little	10 - 20%
Some	20 - 35%
And	35 - 50%

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
DAMP	Some perceptible moisture; below optimum
MOIST	No visible water; near optimum moisture content
WET	Visible free water, usually soil is below water table.

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N -VALUE

COHESIONLESS SOILS		COHESIVE SOILS		
Density	N (blows/ft)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	Very Soft	0 to 2	< 250
Loose	4 to 10	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	Very Stiff	15 to 30	2000 - 4000
		Hard	over 30	> 4000

**Daniel Webb
17911-15**

Log of Boring IB-1

Boring Location: Cottonwood & Darwin, Moreno Valley	
Date of Drilling: 2/1/17	Groundwater Depth: None Encountered
Drilling Method: Drill Rig	
Hammer Weight: 140 lbs	Drop: 30"
Surface Elevation: Not Measured	

Depth (feet)	Lithology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	Relative
0	GWT not encountered	FILL SOILS Sandy clayey SILT with rootlets Brown, soft, moist					
5		NATURAL SOILS Clayey sandy SILT Brown, stiff, moist					
15		Sandy CLAY Brown, very stiff, damp					
20			⊗	50+			
25		Clayey SAND Brown, dense, damp	⊗	31/34			
Boring completed at depth of 25'							
30							
35							

NorCal Engineering

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\1791115-2.log Date: 2/3/2017

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



SOILS AND GEOTECHNICAL CONSULTANTS

PERCOLATION TEST DATA SHEET							
Project: Daniel Webb				Date: 2/1/17			
Project No: 17911-15				Tested By: J.S.			
Test Hole No: IB-1				USCS Soil Classification:			
Depth of Test Hole, Dr: 25'				Sides (if rectangular):			
Test Hole Dimensions (inches)				Length:			
Diameter (if round) = 6"				Width:			
Sandy Soil Criteria Test*							
TRIAL NO.	START TIME	STOP TIME	TIME INTERVAL (min)	INITIAL DEPTH TO WATER (in)	FINAL DEPTH TO WATER (in)	CHANGE IN WATER LEVEL (in)	GREATER THAN OR EQUAL TO 6"
1	9:41	10:06	25.0	222.0	256.5	34.5	
2	10:06	10:31	25.0	222.5	240.0	17.5	
*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25".							
TRIAL NO.	START TIME	STOP TIME	Δt TIME INTERVAL (min)	D_o INITIAL DEPTH TO WATER (in)	D_f FINAL DEPTH TO WATER (in)	ΔD CHANGE IN WATER LEVEL (in)	PERCOLATION RATE (min/in)
1	10:31	10:41	10	222.0	234.0	14.0	
2	10:41	10:51	10	222.0	230.0	8.0	
3	10:51	11:01	10	222.5	228.0	5.5	
4	11:01	11:11	10	223.0	228.0	5.0	
5	11:11	11:21	10	223.0	228.5	5.5	
6	11:21	11:31	10	223.0	228.0	5.0	
7							
8							
9							
10							
11							
12							
13							
14							
15							
COMMENTS:							

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

SOIL PERMEABILITY CALC S \Rightarrow Inverse Borehole Method

- Location: IB-1
- Depth = 25.0'
 - Hole Dia. = 6"
 - Drop = ΔH = 5"
 - Time = Δt = 10 min
Interval
 - Average Head = H_{ave} = 77"
 - Infiltration Rate = I_t = 0.57 in/hr

$$\text{Infiltration Rate} = I_t = \frac{\Delta H}{\Delta t} \frac{(60 \cdot r)}{(r + 2 \cdot H_{ave})} \quad \text{where } r = \text{hole radius}$$

$r = 3 \text{ in}$

NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS

DATE

NorCal Engineering
Soils and Geotechnical Consultants
10641 Humbolt Street Los Alamitos, CA 90720
(562) 799-9469 Fax (562) 799-9459

January 17, 2017

Project Number 17911-15

Daniel Webb
c/o Alere Property Group
100 Bayview Circle, Suite 310
Newport Beach, California 92660

RE: **Second Supplemental Soil Infiltration Study** - Proposed Residential Development - Located near the Southwest Corner of Cottonwood Avenue and Darwin Drive, in the City of Moreno Valley, California

Dear Mr. Webb:

Pursuant to your request, this firm has performed a second Supplemental Soil Infiltration Study for the above referenced project. The purpose of this study is to further evaluate the feasibility of on-site drainage disposal systems at specific locations on the site. Previous reports dated February 16, 2015 and August 29, 2016 provide results for five previous tests. The location and depth of the tests were given by Thienes Engineering. The scope of current work included the following: 1) site reconnaissance; 2) subsurface geotechnical exploration; 3) double ring infiltration testing at two locations; 4) engineering analysis of field test data; and 5) preparation of this report.

It is proposed to install detention/infiltration basins/systems to dispose of on-site water runoff. No precise location or depth of systems is available at this date.

Site Description

The rectangular shaped subject property is located westerly of the southwest corner of Cottonwood Avenue and Darwin Drive, Moreno Valley, as illustrated on Figure 1, Vicinity Map.

The property is currently vacant and covered with low vegetation growth. The site topography descends very gradually from north to south and drainage is via sheetflow in this direction.

Supplemental Field Exploration

The excavations were completed on January 11, 2017 and testing was completed on that day. The testing consisted of using the double ring infiltrometer at both locations to determine the infiltration rate of the proposed retention/infiltration basins or systems. The locations of the tests are shown on the attached Figure 2. The test locations were excavated by extension backhoe to depths of 10 and 12 feet below existing ground surface (bgs). Excavations were trimmed at 1:1 (horizontal to vertical) inclinations in order to provide safe entry into the excavations. No significant caving occurred to the depths of these test excavations. Detailed description of the subsurface soils is shown on the attached test excavations logs in Appendix B. The excavations were backfilled at the conclusion of testing with the soil cuttings and tamped, but were *not* compacted to 90% relative compaction.

In general, the test areas were found to be underlain by minor amounts of surficial fill and native soils. The soils at test locations consisted of silty SANDS with clay to sandy SILT with clay. These soils were noted to be medium dense/stiff to stiff and damp. Sand, silt and clay content varied slightly with depth of explorations. Very dense clayey SAND to sandy CLAY was encountered at 14 feet.

Groundwater

Groundwater was not encountered in any of the previous or current test locations. Seeping groundwater, which may be a perched condition, was encountered at a depth of approximately 35 feet in a boring placed during our geotechnical investigation work at the site (NorCal report dated February 13, 2015, Project Number 17911-15). High groundwater in the vicinity has been recorded deeper than 50 feet at wells in the vicinity of the subject site, based upon information from the California Department of Water Resources database <http://www.water.ca.gov/waterdatalibrary/>.

Supplemental Infiltration Testing

The infiltration test consisted of the double ring infiltration test per ASTM Method D 3385. The double ring infiltrometer method consists of driving two open cylinders, one inside the other, into the ground, partially filling the ring with water or other liquid, and then maintaining the liquid at a constant level. The volume of liquid added to the inner ring, to maintain the liquid level constant is the measure of the volume of liquid that infiltrates into the soil.

The volume infiltrated during timed intervals is converted to an incremental infiltration velocity, usually expressed in centimeters per hour or inches per hour and plotted versus elapsed time. The maximum-steady state or average incremental infiltration velocity, depending on the purpose/application of the test is equivalent to the infiltration rate.

Along the bottom of the infiltration test pits, dual infiltration rings were inserted 7 cm vertically into the soil by an impact-absorbing hammer. Guelph tubes, also referred to as bubblers were installed to maintain constant water level in each of the rings. Water levels were maintained at a constant level in both the inner ring and annular space between rings throughout the test, to prevent flow of water from one ring to the other.

The volume of liquid used during each measured time interval was converted into an incremental infiltration velocity of both the inner ring in the annular space using the following equations:

For the inner ring calculated as follows:

$$V_{ir} = \Delta V_{ir} / (A_{ir} \Delta t)$$

where:

V_{ir} = inner ring incremental infiltration velocity, cm/hr

ΔV_{ir} = volume of water used during time interval to maintain constant head in the inner ring, cm³

A_{ir} = internal area of the inner ring, cm²

Δt = time interval, hr

The last reading obtained was used for design purposes in each of the basin. The testing data sheets are attached in Appendix B and summarized in the *Discussion of Results* section below.

Discussion of Supplemental Test Results

The use of on-site disposal system by means of retention/infiltration basins or other system appears to be geotechnically feasible for future development provided the rates given above are utilized in the basin design. Based upon the results of our testing, the following design rates should be used in the two infiltration areas:

<u>Test No.</u>	<u>Depth (feet bgs)</u>	<u>Soil Type</u>	<u>Infiltration Rate</u>	
			<u>(cm/hr)</u>	<u>(in/hr)</u>
IT-6	10.0	silty SAND with clay	0.7	0.28
IT-7	12.0	sandy SILT with clay	11.7	4.7

It is our opinion that the site is suitable for stormwater infiltration without increasing the potential of settlement of proposed and existing structures or adversely affecting retaining/basement walls located either on or adjacent to the subject site. In addition, the potential for hydro-consolidation and the susceptibility for any ground settlements are considered low. All systems shall meet the California Regional Water Quality Control Board (CRWQCB) requirements.

Closure

The recommendations and conclusions contained in this report are based upon the soil conditions uncovered in our test excavations. No warranty of the soil condition between our excavations is implied. NorCal Engineering should be notified for possible further recommendations if unexpected to unfavorable conditions are encountered during construction phase. This firm should have the opportunity to review the final plans to verify that all our recommendations are incorporated.

This report and all conclusions are subject to the review of the controlling authorities for the project. Our representative should be present during the grading operations and construction phase to certify that such recommendations are complied within the field.

This infiltration study has been conducted in a manner consistent with the level of care and skill exercised by members of our profession currently practicing under similar conditions in the Southern California area. All work was performed under the supervision of the Geotechnical Engineer. No other warranty, expressed or implied is made. No other warranty, expressed or implied is made.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING

Keith D. Tucker
Keith D. Tucker
Project Engineer
R.G.E. 841



Mark A. Burkholder
Project Manager

List of Appendices
(in order of appearance)

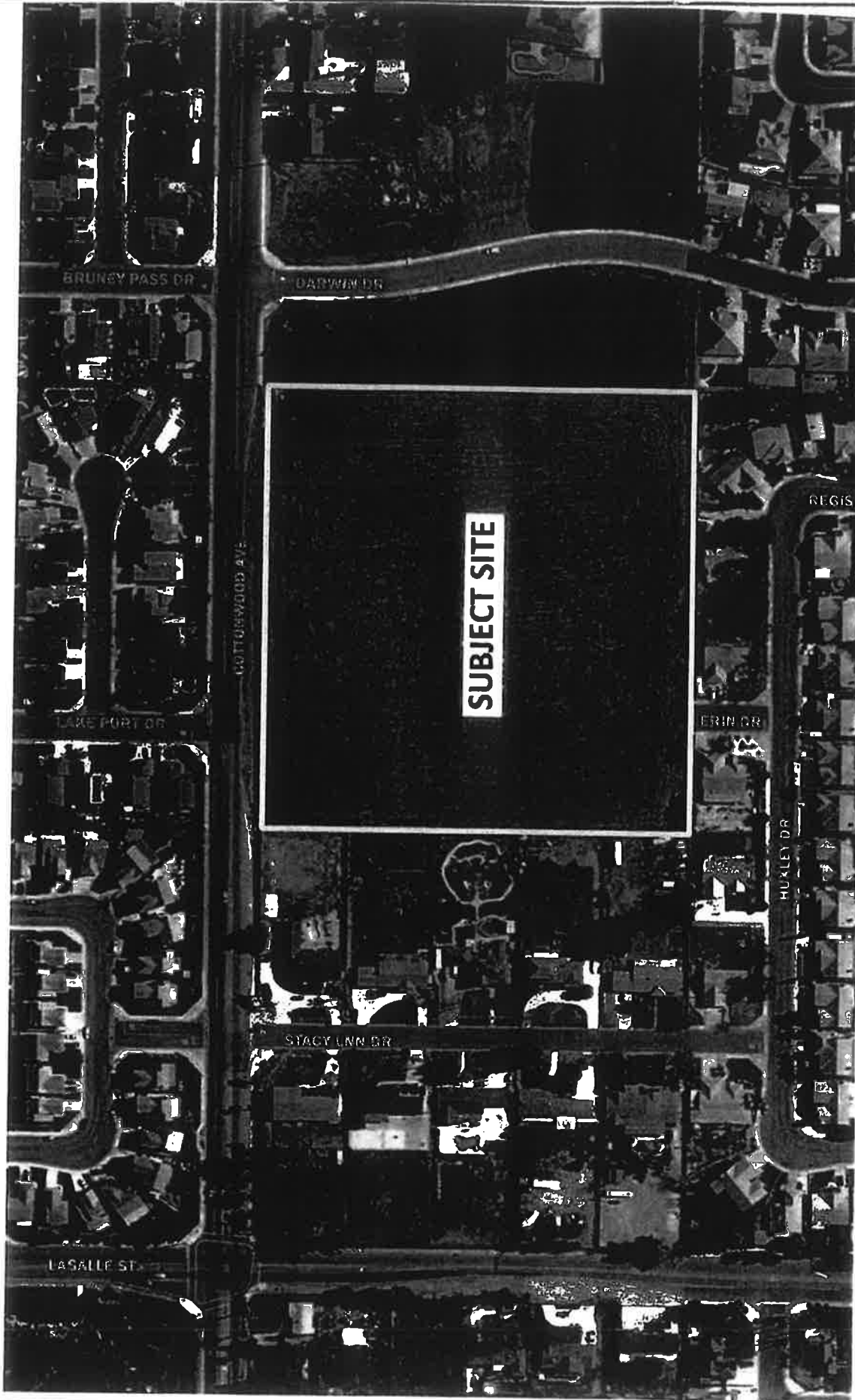
Appendix A

Vicinity Map – Figure 1
Locations of Test Excavations – Figure 2

Appendix B

Logs of Test Pits IT-4 to IT-5
Field Test Data
Calculations

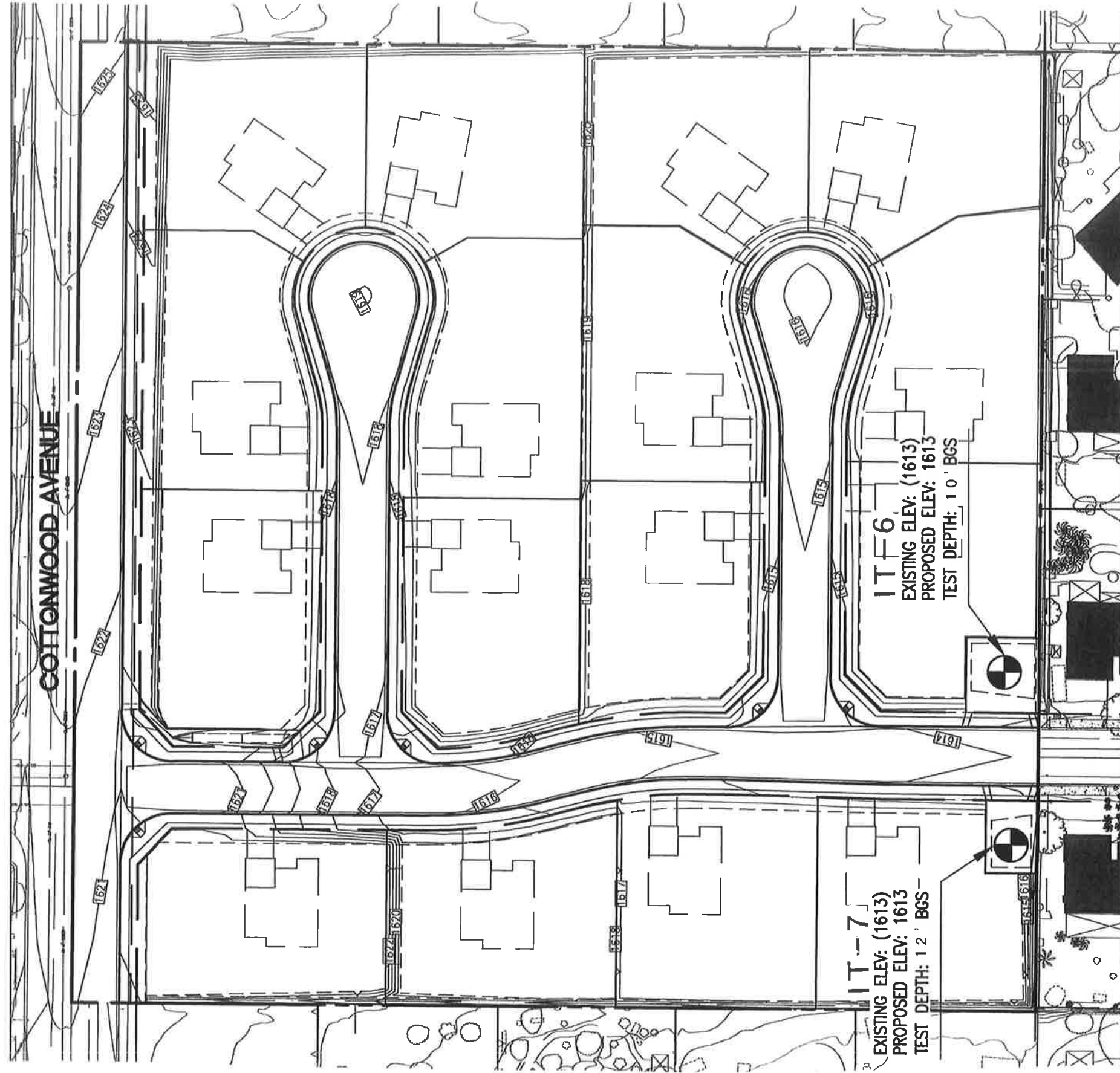
Appendix A



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 SOILS AND GEOTECHNICAL CONSULTANTS

VICINITY MAP

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



IT-7
 EXISTING ELEV: (1613)
 PROPOSED ELEV: 1613
 TEST DEPTH: 1.2' BGS

IT-6
 EXISTING ELEV: (1613)
 PROPOSED ELEV: 1613
 TEST DEPTH: 1.0' BGS

INfiltration TEST LOCATIONS



1" = 100'

NorCal Engineering
 SOILS AND GEOTECHNICAL CONSULTANTS

PROJECT: 17014 4F DATE: 1/2017

LOCATION OF FIELD EXPLORATIONS

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

FIGURE 2

1.5

Appendix B

MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	
		SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-CLAY MIXTURES
					ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
	FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
				MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
SILTS AND CLAYS		LIQUID LIMIT GREATER THAN 50		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS		

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

UNIFIED SOIL CLASSIFICATION SYSTEM

KEY:

- Indicates 2.5-inch Inside Diameter. Ring Sample.
- ☒ Indicates 2-inch OD Split Spoon Sample (SPT).
- ☐ Indicates Shelby Tube Sample.
- ▢ Indicates No Recovery.
- ▣ Indicates SPT with 140# Hammer 30 in. Drop.
- ☑ Indicates Bulk Sample.
- ▤ Indicates Small Bag Sample.
- ▥ Indicates Non-Standard
- ☒ Indicates Core Run.

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4.5mm)
Sand	No. 4 (4.5mm) to No. 200 (0.074mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

COMPONENT PROPORTIONS

DESCRIPTIVE TERMS	RANGE OF PROPORTION
Trace	1 - 5%
Few	5 - 10%
Little	10 - 20%
Some	20 - 35%
And	35 - 50%

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
DAMP	Some perceptible moisture; below optimum
MOIST	No visible water; near optimum moisture content
WET	Visible free water, usually soil is below water table.

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N -VALUE

COHESIONLESS SOILS		COHESIVE SOILS		
Density	N (blows/ft)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	Very Soft	0 to 2	< 250
Loose	4 to 10	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	Very Stiff	15 to 30	2000 - 4000
		Hard	over 30	> 4000

Daniel Webb
17911-15

Log of Trench IT-6

Boring Location: Cottonwood & Darwin, Moreno Valley	
Date of Drilling: 1/11/17	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lithology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	Relative
0		FILL SOILS Sandy clayey SILT with rootlets Brown, soft, moist NATURAL SOILS Clayey sandy SILT with occasional gravel Brown, stiff, damp					
5							
10		Silty SAND with clay with occasional gravel Brown, dense, damp to moist Sandy SILT with clay Brown, stiff, moist					
15		Sandy CLAY Brown, stiff to very stiff, damp NOTE: Double ring test performed at 10 feet in depth Trench completed at depth of 15'					
20							
25							
30							
35							

NorCal Engineering

3

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\1791115-1.log Date: 1/19/2017

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Daniel Webb
17911-15

Log of Trench IT-7

Boring Location: Cottonwood & Darwin, Moreno Valley	
Date of Drilling: 1/11/17	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lithology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	Relative
0	GWT not encountered	FILL SOILS Clayey sandy SILT with occasional gravel and rootlets Brown, soft, moist					
5		NATURAL SOILS Clayey sandy SILT with occasional gravel Brown, stiff, damp					
10		Silty SAND with clay with occasional gravel Brown, dense, damp to moist					
15		Clayey SAND Brown, very stiff, damp NOTE: Double ring test performed at 12 feet in depth Trench completed at depth of 15'					
20							
25							
30							
35							

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SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\179115-1.log Date: 1/19/2017

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



SOILS AND GEOTECHNICAL CONSULTANTS

Project: Alere Property Group

Project No: 17911-15

Date: 1/11/17

Test No. IT-6

Depth: 10'

Tested By: J.S.

	TIME (hr/min)	CHANGE TIME (min)	CUMULATIVE TIME (min)	INNER RING READING (cm)	INNER RING CHANGE	INNER RING FLOW (cc)	OUTER RING READING (cm)	OUTER RING CHANGE (cm)	OUTER RING FLOW (cc)	INNER RING INF RATE (cm/hr)	OUTER RING INF RATE (cm/hr)	INNER RING INF RATE (ft/hr)
1	11:09			44.2			104.0					
	11:19	10	10	44.4	0.2		106.6	2.6				
2	11:19			44.4			106.6					
	11:29	10	20	44.7	0.3		107.1	0.5				
3	11:29			44.7			107.1					
	11:39	10	30	44.8	0.1		107.6	0.5				
4	11:39			44.9			107.6					
	11:49	10	40	44.9	0.1		108.0	0.4				
5	11:49			44.9			108.0					
	11:59	10	50	45.0	0.1		108.2	0.2				
6	11:59			45.0			108.2					
	12:09	10	60	45.3	0.3		108.5	0.3		1.8	1.8	
7	12:09			45.3			108.5					
	12:19	10	70	45.3	0.0		109.0	0.5		0.0	3.0	
8	12:19			45.3			109.0					
	12:29	10	80	45.4	0.1		109.4	0.4		0.6	2.4	
9	12:29			45.4			109.4					
	12:39	10	90	46.0	0.6		109.8	0.4		1.8	2.4	
10	12:39			46.0			109.8					
	12:49	10	100	46.0	0.0		110.1	0.3		0.0	1.8	
11	12:49			46.0			110.1					
	12:59	10	110	46.1	0.1		110.4	0.3		0.6	1.8	
12	12:59			46.1			110.4					
	1:09	10	120	46.1	0.0		110.5	0.1		0.0	0.6	

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



SOILS AND GEOTECHNICAL CONSULTANTS

Project: Alere Property Group**Project No:** 17911-15**Date:** 1/11/17**Test No.** IT-7**Depth:** 12'**Tested By:** J.S.

	TIME (hr/min)	CHANGE TIME (min)	CUMULATIVE TIME (min)	INNER RING READING (cm)	INNER RING CHANGE	INNER RING FLOW (cc)	OUTER RING READING (cm)	OUTER RING CHANGE (cm)	OUTER RING FLOW (cc)	INNER RING INF RATE (cm/hr)	OUTER RING INF RATE (cm/hr)	INNER RING INF RAT (ft/hr)
1	1:40			43.8			107.3					
	1:45	5	5	45.5	1.7		109.8	2.5				
2	1:45			45.5			109.8					
	1:50	5	10	47.2	1.7		111.6	1.8				
3	1:50			47.2			111.6					
	1:55	5	15	48.7	1.5		113.4	1.8				
4	1:55			42.7			106.5					
	2:00	5	20	44.1	1.4		108.4	1.9				
5	2:00			44.1			108.4					
	2:05	5	25	45.6	1.5		110.3	1.9				
6	2:05			45.6			110.3					
	2:10	5	30	47.2	1.6		112.3	2.0		19.2	24.0	
7	2:10			44.2			105.7					
	2:15	5	35	45.7	1.5		107.5	1.8		18.0	21.6	
8	2:15			42.8			104.8					
	2:20	5	40	43.4	0.6		105.8	1.0		7.2	12.0	
9	2:20			43.4			105.8					
	2:25	5	45	44.5	1.1		107.2	1.4		13.2	16.8	
10	2:25			44.5			107.2					
	2:30	5	50	45.3	0.8		108.0	0.8		9.6	9.6	
11	2:30			45.3			108.0					
	2:35	5	55	46.2	0.9		109.2	1.2		10.8	14.4	
12	2:35			46.2			109.2					
	2:40	5	60	46.5	0.3		110.4	1.2		3.6	14.4	

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

NorCal Engineering
Soils and Geotechnical Consultants
10641 Humbolt Street Los Alamitos, CA 90720
(562) 799-9469 Fax (562) 799-9459

January 17, 2017

Project Number 17911-15

Daniel Webb
c/o Alere Property Group
100 Bayview Circle, Suite 310
Newport Beach, California 92660

RE: **Second Supplemental Soil Infiltration Study** - Proposed Residential Development - Located near the Southwest Corner of Cottonwood Avenue and Darwin Drive, in the City of Moreno Valley, California

Dear Mr. Webb:

Pursuant to your request, this firm has performed a second Supplemental Soil Infiltration Study for the above referenced project. The purpose of this study is to further evaluate the feasibility of on-site drainage disposal systems at specific locations on the site. Previous reports dated February 16, 2015 and August 29, 2016 provide results for five previous tests. The location and depth of the tests were given by Thienes Engineering. The scope of current work included the following: 1) site reconnaissance; 2) subsurface geotechnical exploration; 3) double ring infiltration testing at two locations; 4) engineering analysis of field test data; and 5) preparation of this report.

It is proposed to install detention/infiltration basins/systems to dispose of on-site water runoff. No precise location or depth of systems is available at this date.

Site Description

The rectangular shaped subject property is located westerly of the southwest corner of Cottonwood Avenue and Darwin Drive, Moreno Valley, as illustrated on Figure 1, Vicinity Map.

The property is currently vacant and covered with low vegetation growth. The site topography descends very gradually from north to south and drainage is via sheetflow in this direction.

Supplemental Field Exploration

The excavations were completed on January 11, 2017 and testing was completed on that day. The testing consisted of using the double ring infiltrometer at both locations to determine the infiltration rate of the proposed retention/infiltration basins or systems. The locations of the tests are shown on the attached Figure 2. The test locations were excavated by extension backhoe to depths of 10 and 12 feet below existing ground surface (bgs). Excavations were trimmed at 1:1 (horizontal to vertical) inclinations in order to provide safe entry into the excavations. No significant caving occurred to the depths of these test excavations. Detailed description of the subsurface soils is shown on the attached test excavations logs in Appendix B. The excavations were backfilled at the conclusion of testing with the soil cuttings and tamped, but were *not* compacted to 90% relative compaction.

In general, the test areas were found to be underlain by minor amounts of surficial fill and native soils. The soils at test locations consisted of silty SANDS with clay to sandy SILT with clay. These soils were noted to be medium dense/stiff to stiff and damp. Sand, silt and clay content varied slightly with depth of explorations. Very dense clayey SAND to sandy CLAY was encountered at 14 feet.

Groundwater

Groundwater was not encountered in any of the previous or current test locations. Seeping groundwater, which may be a perched condition, was encountered at a depth of approximately 35 feet in a boring placed during our geotechnical investigation work at the site (NorCal report dated February 13, 2015, Project Number 17911-15). High groundwater in the vicinity has been recorded deeper than 50 feet at wells in the vicinity of the subject site, based upon information from the California Department of Water Resources database <http://www.water.ca.gov/waterdatalibrary/>.

Supplemental Infiltration Testing

The infiltration test consisted of the double ring infiltration test per ASTM Method D 3385. The double ring infiltrometer method consists of driving two open cylinders, one inside the other, into the ground, partially filling the ring with water or other liquid, and then maintaining the liquid at a constant level. The volume of liquid added to the inner ring, to maintain the liquid level constant is the measure of the volume of liquid that infiltrates into the soil.

The volume infiltrated during timed intervals is converted to an incremental infiltration velocity, usually expressed in centimeters per hour or inches per hour and plotted versus elapsed time. The maximum-steady state or average incremental infiltration velocity, depending on the purpose/application of the test is equivalent to the infiltration rate.

Along the bottom of the infiltration test pits, dual infiltration rings were inserted 7 cm vertically into the soil by an impact-absorbing hammer. Guelph tubes, also referred to as bubblers were installed to maintain constant water level in each of the rings. Water levels were maintained at a constant level in both the inner ring and annular space between rings throughout the test, to prevent flow of water from one ring to the other.

The volume of liquid used during each measured time interval was converted into an incremental infiltration velocity of both the inner ring in the annular space using the following equations:

For the inner ring calculated as follows:

$$V_{ir} = \Delta V_{ir} / (A_{ir} \Delta t)$$

where:

V_{ir} = inner ring incremental infiltration velocity, cm/hr

ΔV_{ir} = volume of water used during time interval to maintain constant head in the inner ring, cm³

A_{ir} = internal area of the inner ring, cm²

Δt = time interval, hr

The last reading obtained was used for design purposes in each of the basin. The testing data sheets are attached in Appendix B and summarized in the *Discussion of Results* section below.

Discussion of Supplemental Test Results

The use of on-site disposal system by means of retention/infiltration basins or other system appears to be geotechnically feasible for future development provided the rates given above are utilized in the basin design. Based upon the results of our testing, the following design rates should be used in the two infiltration areas:

<u>Test No.</u>	<u>Depth (feet bgs)</u>	<u>Soil Type</u>	<u>Infiltration Rate</u>	
			<u>(cm/hr)</u>	<u>(in/hr)</u>
IT-6	10.0	silty SAND with clay	0.7	0.28
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It is our opinion that the site is suitable for stormwater infiltration without increasing the potential of settlement of proposed and existing structures or adversely affecting retaining/basement walls located either on or adjacent to the subject site. In addition, the potential for hydro-consolidation and the susceptibility for any ground settlements are considered low. All systems shall meet the California Regional Water Quality Control Board (CRWQCB) requirements.

Closure

The recommendations and conclusions contained in this report are based upon the soil conditions uncovered in our test excavations. No warranty of the soil condition between our excavations is implied. NorCal Engineering should be notified for possible further recommendations if unexpected to unfavorable conditions are encountered during construction phase. This firm should have the opportunity to review the final plans to verify that all our recommendations are incorporated.

This report and all conclusions are subject to the review of the controlling authorities for the project. Our representative should be present during the grading operations and construction phase to certify that such recommendations are complied within the field.

This infiltration study has been conducted in a manner consistent with the level of care and skill exercised by members of our profession currently practicing under similar conditions in the Southern California area. All work was performed under the supervision of the Geotechnical Engineer. No other warranty, expressed or implied is made. No other warranty, expressed or implied is made.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING

Keith D. Tucker
Keith D. Tucker
Project Engineer
R.G.E. 841



Mark A. Burkholder
Project Manager

List of Appendices
(in order of appearance)

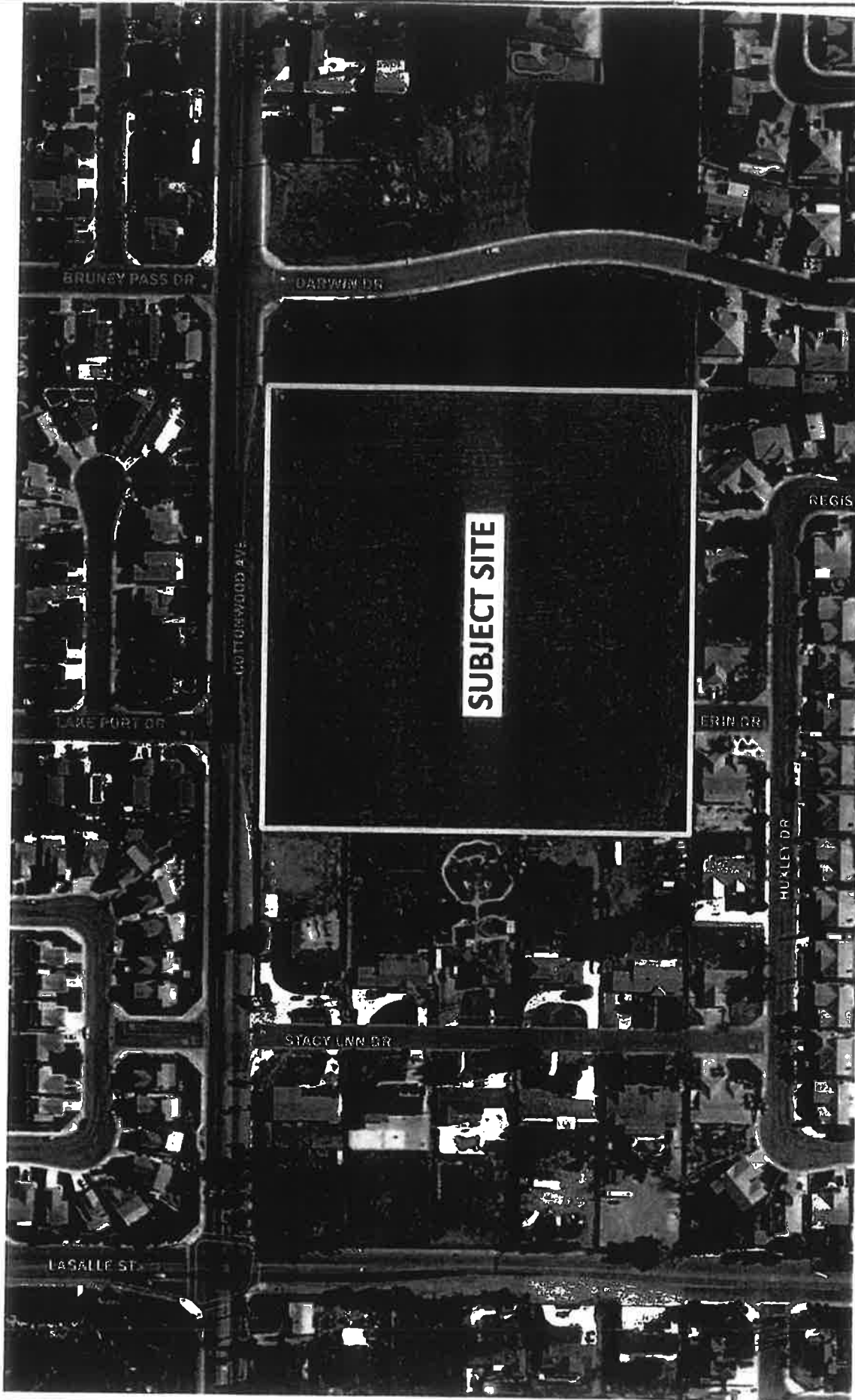
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Vicinity Map – Figure 1
Locations of Test Excavations – Figure 2

Appendix B

Logs of Test Pits IT-4 to IT-5
Field Test Data
Calculations

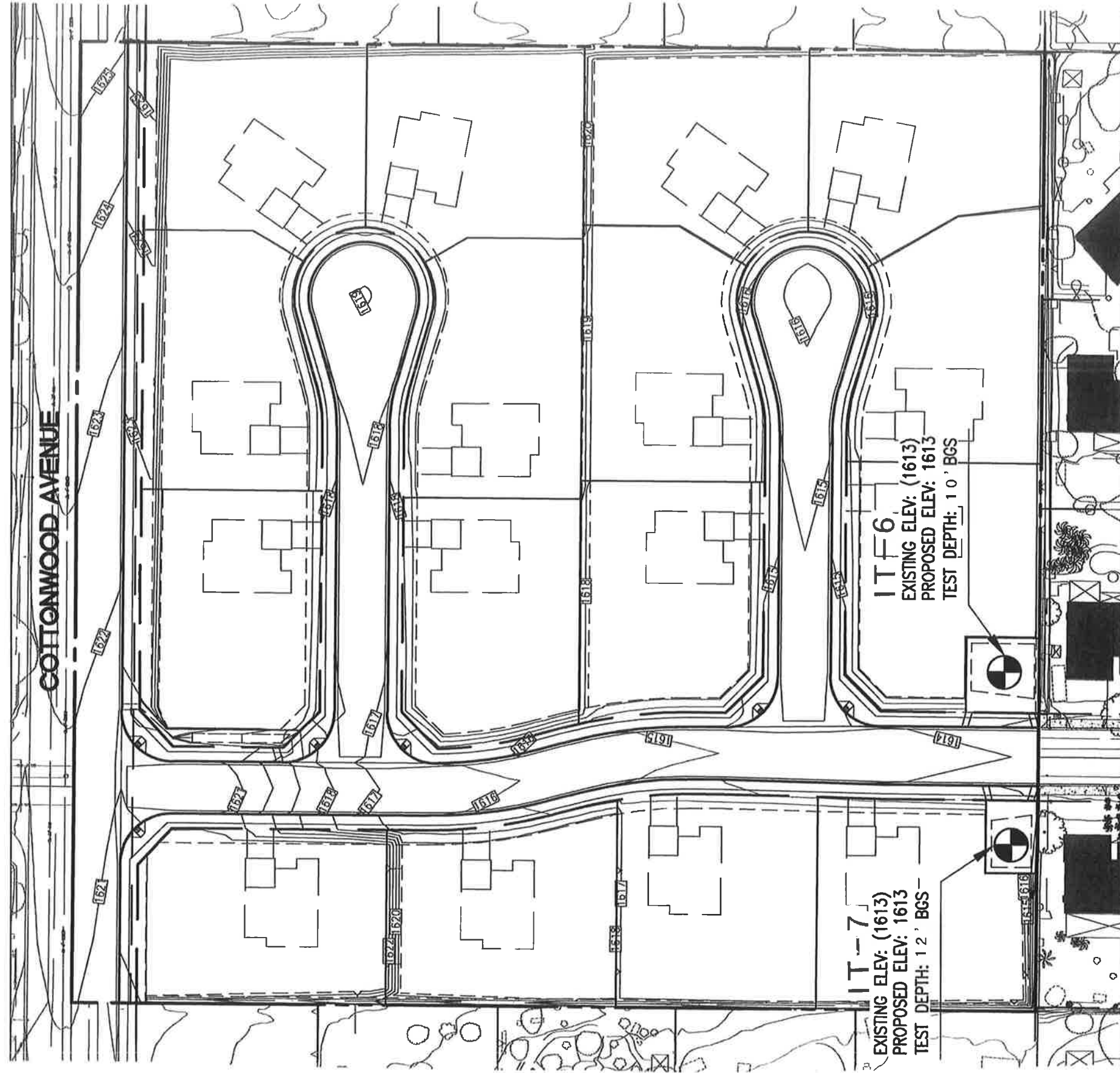
Appendix A



NorCal Engineering
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VICINITY MAP

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



☉ INFILTRATION TEST LOCATIONS



1" = 100'

NorCal Engineering
 SOILS AND GEOTECHNICAL CONSULTANTS

PROJECT: 17014 4F DATE: 1/2017

LOCATION OF FIELD EXPLORATIONS

1.5

FIGURE 2

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix B

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	
	SAND AND SANDY SOILS		CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES	
	FINE GRAINED SOILS			SILTS AND CLAYS	LIQUID LIMIT LESS THAN 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 SILTY CLAYS OF LOW PLASTICITY			
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE		SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
					CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
					OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

UNIFIED SOIL CLASSIFICATION SYSTEM

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

KEY:

- Indicates 2.5-inch Inside Diameter. Ring Sample.
- ☒ Indicates 2-inch OD Split Spoon Sample (SPT).
- ☐ Indicates Shelby Tube Sample.
- ▨ Indicates No Recovery.
- ▩ Indicates SPT with 140# Hammer 30 in. Drop.
- ☑ Indicates Bulk Sample.
- ▧ Indicates Small Bag Sample.
- ▭ Indicates Non-Standard
- ☒ Indicates Core Run.

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4.5mm)
Sand	No. 4 (4.5mm) to No. 200 (0.074mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

COMPONENT PROPORTIONS

DESCRIPTIVE TERMS	RANGE OF PROPORTION
Trace	1 - 5%
Few	5 - 10%
Little	10 - 20%
Some	20 - 35%
And	35 - 50%

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
DAMP	Some perceptible moisture; below optimum
MOIST	No visible water; near optimum moisture content
WET	Visible free water, usually soil is below water table.

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N -VALUE

COHESIONLESS SOILS		COHESIVE SOILS		
Density	N (blows/ft)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	Very Soft	0 to 2	< 250
Loose	4 to 10	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	Very Stiff	15 to 30	2000 - 4000
		Hard	over 30	> 4000

Daniel Webb
17911-15

Log of Trench IT-6

Boring Location: Cottonwood & Darwin, Moreno Valley	
Date of Drilling: 1/11/17	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lithology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	Relative
0		<p>FILL SOILS Sandy clayey SILT with rootlets Brown, soft, moist</p> <p>NATURAL SOILS Clayey sandy SILT with occasional gravel Brown, stiff, damp</p>					
10		<p>Silty SAND with clay with occasional gravel Brown, dense, damp to moist</p> <p>Sandy SILT with clay Brown, stiff, moist</p>					
15		<p>Sandy CLAY Brown, stiff to very stiff, damp</p> <p>NOTE: Double ring test performed at 10 feet in depth Trench completed at depth of 15'</p>					

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Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Daniel Webb
17911-15

Log of Trench IT-7

Boring Location: Cottonwood & Darwin, Moreno Valley	
Date of Drilling: 1/11/17	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lithology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	Relative
0		FILL SOILS Clayey sandy SILT with occasional gravel and rootlets Brown, soft, moist NATURAL SOILS Clayey sandy SILT with occasional gravel Brown, stiff, damp					
5							
10							
12			Silty SAND with clay with occasional gravel Brown, dense, damp to moist				
15			Clayey SAND Brown, very stiff, damp NOTE: Double ring test performed at 12 feet in depth Trench completed at depth of 15'				
20							
25							
30							
35							

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Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



SOILS AND GEOTECHNICAL CONSULTANTS

Project: Alere Property Group**Project No:** 17911-15**Date:** 1/11/17**Test No.** IT-6**Depth:** 10'**Tested By:** J.S.

	TIME (hr/min)	CHANGE TIME (min)	CUMULATIVE TIME (min)	INNER RING READING (cm)	INNER RING CHANGE	INNER RING FLOW (cc)	OUTER RING READING (cm)	OUTER RING CHANGE (cm)	OUTER RING FLOW (cc)	INNER RING INF RATE (cm/hr)	OUTER RING INF RATE (cm/hr)	INNER RING INF RATE (ft/hr)
1	11:09			44.2			104.0					
	11:19	10	10	44.4	0.2		106.6	2.6				
2	11:19			44.4			106.6					
	11:29	10	20	44.7	0.3		107.1	0.5				
3	11:29			44.7			107.1					
	11:39	10	30	44.8	0.1		107.6	0.5				
4	11:39			44.9			107.6					
	11:49	10	40	44.9	0.1		108.0	0.4				
5	11:49			44.9			108.0					
	11:59	10	50	45.0	0.1		108.2	0.2				
6	11:59			45.0			108.2					
	12:09	10	60	45.3	0.3		108.5	0.3		1.8	1.8	
7	12:09			45.3			108.5					
	12:19	10	70	45.3	0.0		109.0	0.5		0.0	3.0	
8	12:19			45.3			109.0					
	12:29	10	80	45.4	0.1		109.4	0.4		0.6	2.4	
9	12:29			45.4			109.4					
	12:39	10	90	46.0	0.6		109.8	0.4		1.8	2.4	
10	12:39			46.0			109.8					
	12:49	10	100	46.0	0.0		110.1	0.3		0.0	1.8	
11	12:49			46.0			110.1					
	12:59	10	110	46.1	0.1		110.4	0.3		0.6	1.8	
12	12:59			46.1			110.4					
	1:09	10	120	46.1	0.0		110.5	0.1		0.0	0.6	

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



SOILS AND GEOTECHNICAL CONSULTANTS

Project: Alere Property Group**Project No:** 17911-15**Date:** 1/11/17**Test No.** IT-7**Depth:** 12'**Tested By:** J.S.

	TIME (hr/min)	CHANGE TIME (min)	CUMULATIVE TIME (min)	INNER RING READING (cm)	INNER RING CHANGE	INNER RING FLOW (cc)	OUTER RING READING (cm)	OUTER RING CHANGE (cm)	OUTER RING FLOW (cc)	INNER RING INF RATE (cm/hr)	OUTER RING INF RATE (cm/hr)	INNER RING INF RAT (ft/hr)
1	1:40			43.8			107.3					
	1:45	5	5	45.5	1.7		109.8	2.5				
2	1:45			45.5			109.8					
	1:50	5	10	47.2	1.7		111.6	1.8				
3	1:50			47.2			111.6					
	1:55	5	15	48.7	1.5		113.4	1.8				
4	1:55			42.7			106.5					
	2:00	5	20	44.1	1.4		108.4	1.9				
5	2:00			44.1			108.4					
	2:05	5	25	45.6	1.5		110.3	1.9				
6	2:05			45.6			110.3					
	2:10	5	30	47.2	1.6		112.3	2.0		19.2	24.0	
7	2:10			44.2			105.7					
	2:15	5	35	45.7	1.5		107.5	1.8		18.0	21.6	
8	2:15			42.8			104.8					
	2:20	5	40	43.4	0.6		105.8	1.0		7.2	12.0	
9	2:20			43.4			105.8					
	2:25	5	45	44.5	1.1		107.2	1.4		13.2	16.8	
10	2:25			44.5			107.2					
	2:30	5	50	45.3	0.8		108.0	0.8		9.6	9.6	
11	2:30			45.3			108.0					
	2:35	5	55	46.2	0.9		109.2	1.2		10.8	14.4	
12	2:35			46.2			109.2					
	2:40	5	60	46.5	0.3		110.4	1.2		3.6	14.4	

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

NorCal Engineering
Soils and Geotechnical Consultants
10641 Humbolt Street Los Alamitos, CA 90720
(562) 799-9469 Fax (562) 799-9459

August 29, 2016

Project Number 17911-15

Daniel Webb
c/o Alere Property Group
100 Bayview Circle, Suite 310
Newport Beach, California 92660

RE: **Supplemental Soil Infiltration Study** - Proposed Residential Development - Located near the Southwest Corner of Cottonwood Avenue and Darwin Drive, in the City of Moreno Valley, California

Dear Mr. Webb:

Pursuant to your request, this firm has performed a Supplemental Soil Infiltration Study for the above referenced project. The purpose of this study is to further evaluate the feasibility of on-site drainage disposal systems at specific locations on the site. The location and depth of the tests were given by Thienes Engineering. The scope of current work included the following: 1) site reconnaissance; 2) subsurface geotechnical exploration; 3) double ring infiltration testing at two locations; 4) engineering analysis of field test data; and 5) preparation of this report.

It is proposed to install detention/infiltration basins/systems to dispose of on-site water runoff. No precise location or depth of systems is available at this date.

Site Description

The rectangular shaped subject property is located westerly of the southwest corner of Cottonwood Avenue and Darwin Drive, Moreno Valley, as illustrated on Figure 1, Vicinity Map.

The property is currently vacant and covered with low vegetation growth. The site topography descends very gradually from north to south and drainage is via sheetflow in this direction.

Supplemental Field Exploration

The excavations were completed on August 26, 2016 and testing was completed on that day. The testing consisted of using the double ring infiltrometer at both locations to determine the infiltration rate of the proposed retention/infiltration basins or systems. The locations of the tests are shown on the attached Figure 2. The test locations were excavated by extension backhoe to a depth of 8 feet below existing ground surface (bgs). Excavations were trimmed at 1:1 (horizontal to vertical) inclinations in order to provide safe entry into the excavations. No significant caving occurred to the depths of these test excavations. Detailed description of the subsurface soils is shown on the attached test excavations logs in Appendix B. The excavations were backfilled at the conclusion of testing with the soil cuttings and tamped, but were not compacted to 90% relative compaction.

In general, the test areas were found to be underlain by minor amounts of surficial fill and native soils. The soils at test locations consisted of sandy, clayey SILTS. These soils were noted to be medium stiff to stiff and damp. Sand, silt and clay content varied slightly with depth of explorations.

Groundwater

Groundwater was not encountered in any of the previous or current test locations. Seeping groundwater, which may be a perched condition, was encountered at a depth of approximately 35 feet in a boring placed during our geotechnical investigation work at the site (NorCal report dated February 13, 2015, Project Number 17911-15). High groundwater in the vicinity has been recorded deeper than 50 feet at wells in the vicinity of the subject site, based upon information from the California Department of Water Resources database <http://www.water.ca.gov/waterdatalibrary/>.

Supplemental Infiltration Testing

The infiltration test consisted of the double ring infiltration test per ASTM Method D 3385. The double ring infiltrometer method consists of driving two open cylinders, one inside the other, into the ground, partially filling the ring with water or other liquid, and then maintaining the liquid at a constant level. The volume of liquid added to the inner ring, to maintain the liquid level constant is the measure of the volume of liquid that infiltrates into the soil.

The volume infiltrated during timed intervals is converted to an incremental infiltration velocity, usually expressed in centimeters per hour or inches per hour and plotted versus elapsed time. The maximum-steady state or average incremental infiltration velocity, depending on the purpose/application of the test is equivalent to the infiltration rate.

Along the bottom of the infiltration test pits, dual infiltration rings were inserted 7 cm vertically into the soil by an impact-absorbing hammer. Guelph tubes, also referred to as bubblers were installed to maintain constant water level in each of the rings. Water levels were maintained at a constant level in both the inner ring and annular space between rings throughout the test, to prevent flow of water from one ring to the other.

The volume of liquid used during each measured time interval was converted into an incremental infiltration velocity of both the inner ring in the annular space using the following equations:

For the inner ring calculated as follows:

$$V_{ir} = \Delta V_{ir} / (A_{ir} \Delta t)$$

where:

V_{ir} = inner ring incremental infiltration velocity, cm/hr

ΔV_{ir} = volume of water used during time interval to maintain constant head in the inner ring, cm³

A_{ir} = internal area of the inner ring, cm²

Δt = time interval, hr

The last reading obtained was used for design purposes in each of the basin. The testing data sheets are attached in Appendix B and summarized in the *Discussion of Results* section below.

Discussion of Supplemental Test Results

The use of on-site disposal system by means of retention/infiltration basins or other system appears to be geotechnically feasible for future development provided the rates given above are utilized in the basin design. Based upon the results of our testing, the following design rates should be used in the two infiltration areas:

<u>Test No.</u>	<u>Depth (feet bgs)</u>	<u>Soil Type</u>	<u>Infiltration Rate</u>	
			<u>(cm/hr)</u>	<u>(in/hr)</u>
IT-4	8.0	sandy, clayey SILT	0.6	0.24
IT-5	8.0	sandy, clayey SILT	2.1	0.8

It is our opinion that the site is suitable for stormwater infiltration without increasing the potential of settlement of proposed and existing structures or adversely affecting retaining/basement walls located either on or adjacent to the subject site. In addition, the potential for hydro-consolidation and the susceptibility for any ground settlements are considered low. All systems shall meet the California Regional Water Quality Control Board (CRWQCB) requirements.

Closure

The recommendations and conclusions contained in this report are based upon the soil conditions uncovered in our test excavations. No warranty of the soil condition between our excavations is implied. NorCal Engineering should be notified for possible further recommendations if unexpected to unfavorable conditions are encountered during construction phase. This firm should have the opportunity to review the final plans to verify that all our recommendations are incorporated.

This report and all conclusions are subject to the review of the controlling authorities for the project. Our representative should be present during the grading operations and construction phase to certify that such recommendations are complied within the field.

This infiltration study has been conducted in a manner consistent with the level of care and skill exercised by members of our profession currently practicing under similar conditions in the Southern California area. All work was performed under the supervision of the Geotechnical Engineer. No other warranty, expressed or implied is made. No other warranty, expressed or implied is made.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted
NORCAL ENGINEERING



Keith D. Tucker
Project Engineer
R.G.E. 841



Mark A. Burkholder
Project Manager

List of Appendices
(in order of appearance)

Appendix A

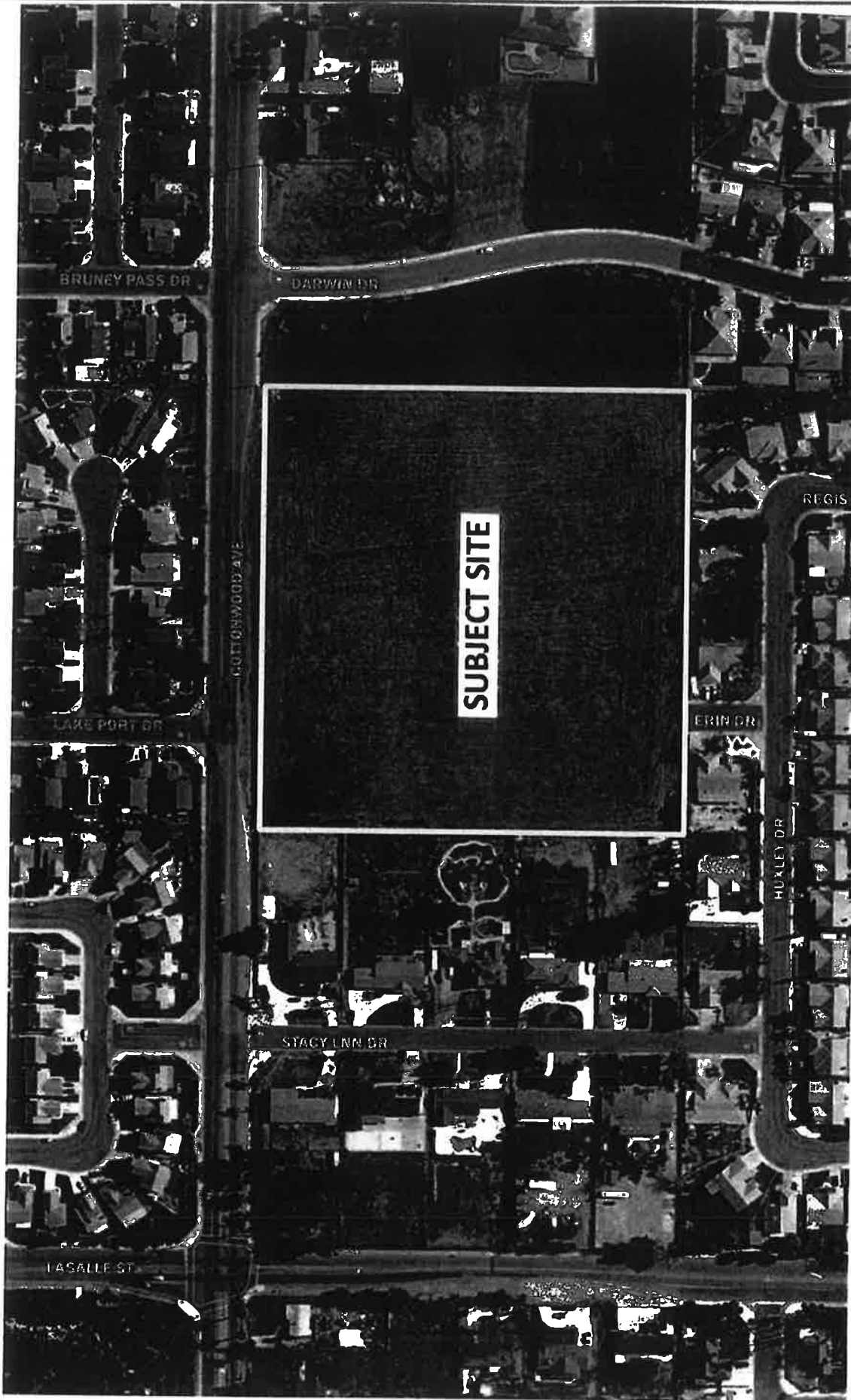
Vicinity Map – Figure 1
Locations of Test Excavations – Figure 2

Appendix B

Logs of Test Pits IT-4 to IT-5
Field Test Data
Calculations

Appendix A

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



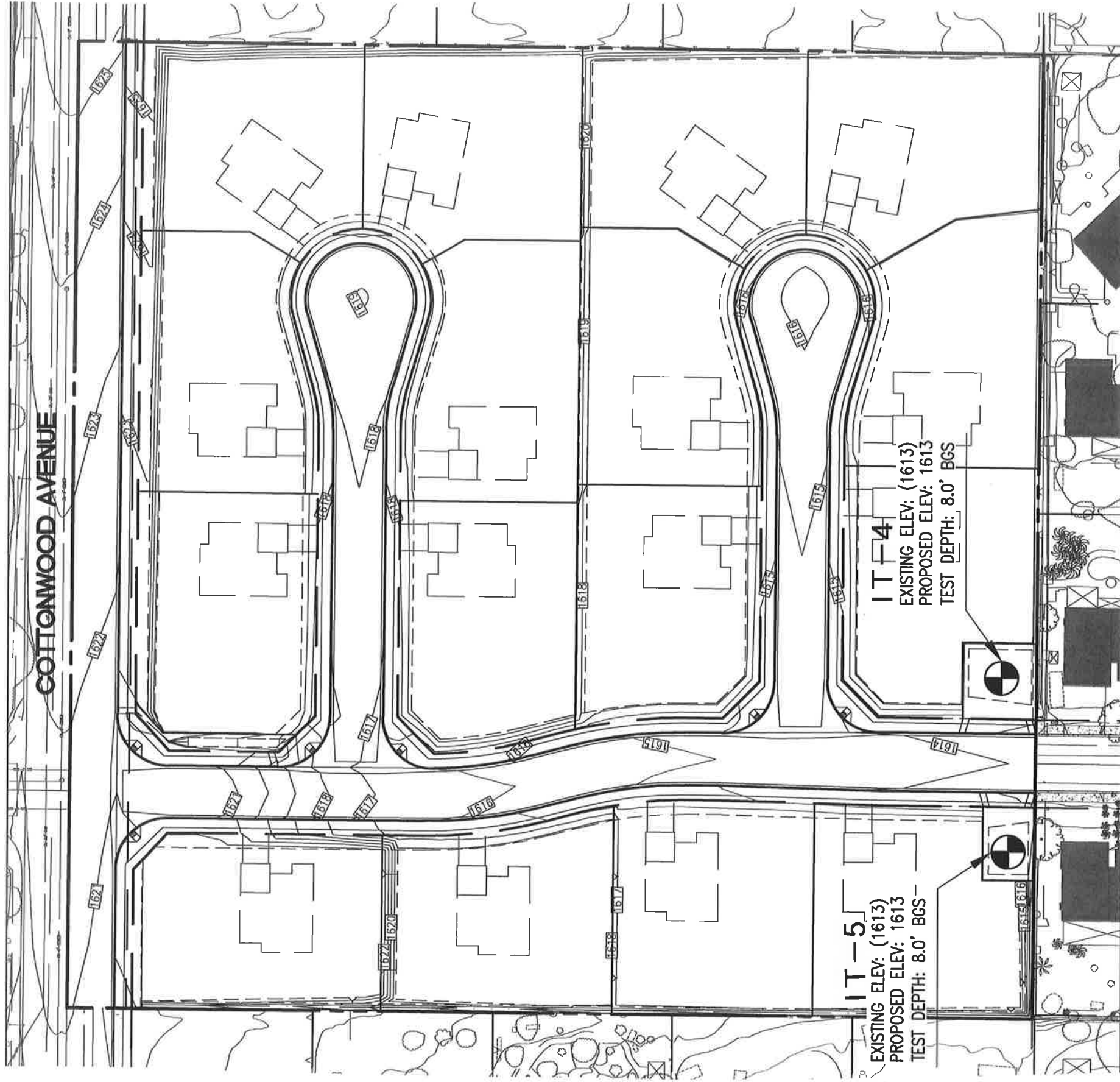
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VICINITY MAP

PROJECT 17911-15 | DATE 8 / 2016

FIGURE 4

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



☉ INFILTRATION TEST LOCATIONS



1" = 100'

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LOCATION OF FIELD EXPLORATIONS

PROJECT 17911-15 DATE 8 / 2016

FIGURE 2

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Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix B

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

MAJOR DIVISION			GRAPHIC SYMBOI	LETTER SYMBOI	TYPICAL DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	
		SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-CLAY MIXTURES
	FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 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 SILTY CLAYS OF LOW PLASTICITY	
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE		SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
					CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
					OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

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- ☑ Indicates Bulk Sample.
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- ▢ Indicates Non-Standard
- ☒ Indicates Core Run.

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DESCRIPTIVE TERMS	RANGE OF PROPORTION
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Little	10 - 20%
Some	20 - 35%
And	35 - 50%

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
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Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4,5mm)
Sand	No. 4 (4.5 mm) to No. 200 (0.074mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
DAMP	Some perceptible moisture; below optimum
MOIST	No visible water; near optimum moisture content
WET	Visible free water, usually soil is below water table.

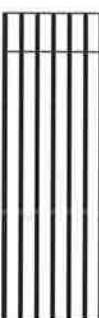
RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N -VALUE

COHESIONLESS SOILS		COHESIVE SOILS		
Density	N (blows/ft)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	Very Soft	0 to 2	< 250
Loose	4 to 10	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	Very Stiff	15 to 30	2000 - 4000
		Hard	over 30	> 4000

Daniel Webb
17911-15

Log of Trench IT-4

Boring Location: Cottonwood & Darwin, Moreno Valley	
Date of Drilling: 8/26/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	Relative
0	 GWT not encountered	DISTURBED TOP SOILS Sandy clayey SILT with occasional gravel and organics Brown, soft, dry					
5		NATURAL SOILS Sandy clayey SILT Brown, medium stiff to stiff, damp					
		Boring completed at depth of 8'					
10							
15							
20							
25							
30							
35							

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Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Daniel Webb
17911-15

Log of Trench IT-5

Boring Location: Cottonwood & Darwin, Moreno Valley	
Date of Drilling: 8/26/16	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lith-ology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	Relative
0	| | | | | GWT not encountered	DISTURBED TOP SOILS Sandy clayey SILT with occasional gravel and organics Brown, soft, dry					
5		NATURAL SOILS Sandy clayey SILT Brown, medium stiff to stiff, damp					
		Boring completed at depth of 8'					
10							
15							
20							
25							
30							
35							

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SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\1791116-1.log Date: 8/29/2016

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



SOILS AND GEOTECHNICAL CONSULTANTS

Project:	Daniel Webb
Project No:	17911-15
Date:	8/26/16
Test No.	IT-4
Depth:	8'
Tested By:	J.S.

	TIME (hr/min)	CHANGE TIME (min)	CUMULATIVE TIME (min)	INNER RING READING (cm)	INNER RING CHANGE	INNER RING FLOW (cc)	OUTER RING READING (cm)	OUTER RING CHANGE (cm)	OUTER RING FLOW (cc)	INNER RING INF RATE (cm/hr)	OUTER RING INF RATE (cm/hr)	INNER RING INF RAT (ft/hr)
1	8:15			103.7			48.8					
	8:30	15	15	104.2	0.5		49.5	0.7				
2	8:30			104.2			49.5					
	8:45	15	30	104.8	0.6		49.5	0.0				
3	8:45			104.8			49.5					
	9:00	15	45	105.1	0.3		49.8	0.3				
4	9:00			105.1			49.8					
	9:15	15	60	105.4	0.3		50.1	0.3				
5	9:15			105.4			50.1					
	9:30	15	75	105.8	0.4		50.4	0.3				
6	9:30			105.8			50.4					
	9:45	15	90	105.8	0.0		50.5	0.1		0.0	0.4	
7	9:45			105.8			50.5					
	10:00	15	105	105.9	0.1		50.6	0.1		0.4	0.4	
8	10:00			105.9			50.6					
	10:15	15	120	106.2	0.3		50.9	0.3		1.2	1.2	
9	10:15			106.2			50.9					
	10:30	15	135	106.5	0.3		51.2	0.3		1.2	1.2	
10	10:30			106.5			51.2					
	10:45	15	150	106.6	0.1		51.5	0.3		0.4	1.2	
11	10:45			106.6			51.5					
	11:00	15	165	106.8	0.2		51.7	0.2		0.8	0.8	
12	11:00			106.8			51.7					
	11:15	15	180	106.9	0.1		51.8	0.1		0.4	0.4	



SOILS AND GEOTECHNICAL CONSULTANTS

Project:	Daniel Webb
Project No:	17911-15
Date:	8/26/16
Test No.	IT-5
Depth:	8'
Tested By:	J.S.

	TIME (hr/min)	CHANGE TIME (min)	CUMULATIVE TIME (min)	INNER RING READING (cm)	INNER RING CHANGE	INNER RING FLOW (cc)	OUTER RING READING (cm)	OUTER RING CHANGE (cm)	OUTER RING FLOW (cc)	INNER RING INF RATE (cm/hr)	OUTER RING INF RATE (cm/hr)	INNER RING INF RAT (ft/hr)
1	11:23			99.4			41.7					
	11:33	10	10	99.7	0.3		41.8	0.1				
2	11:33			99.7			41.8					
	11:43	10	20	99.9	0.2		42.0	0.2				
3	11:43			99.9			42.0					
	11:53	10	30	100.1	0.2		42.1	0.1				
4	11:53			100.1			42.1					
	12:03	10	40	100.4	0.3		42.3	0.2				
5	12:03			100.4			42.3					
	12:13	10	50	100.7	0.3		42.5	0.2				
6	12:13			100.7			42.5					
	12:23	10	60	101.0	0.3		42.8	0.3		1.8	1.8	
7	12:23			101.0			42.8					
	12:33	10	70	101.3	0.3		43.0	0.2		1.8	1.2	
8	12:33			101.3			43.0					
	12:43	10	80	101.6	0.3		43.2	0.2		1.8	1.2	
9	12:43			101.6			43.2					
	12:53	10	90	102.0	0.4		43.4	0.2		2.4	1.2	
10	12:53			102.0			43.4					
	1:03	10	100	102.4	0.4		43.6	0.2		2.4	1.2	
11	1:03			102.4			43.6					
	1:13	10	110	102.7	0.3		43.8	0.2		1.8	1.2	
12	1:13			102.7			43.8					
	1:23	10	120	103.1	0.4		44.1	0.3		2.4	1.8	

NorCal Engineering
Soils and Geotechnical Consultants
10641 Humbolt Street Los Alamitos, CA 90720
(562) 799-9469 Fax (562) 799-9459

February 16, 2015

Project Number 17911-15

Daniel Webb
c/o Alere Property Group
100 Bayview Circle, Suite 310
Newport Beach, California 92660

RE: **Soil Infiltration Study** - Proposed Residential Development -
Located near the Southwest Corner of Cottonwood Avenue and
Darwin Drive, in the City of Moreno Valley, California

Dear Mr. Webb:

Pursuant to your request, this firm has performed a Soil Infiltration Study for the above referenced project. The purpose of this study is to evaluate the feasibility of on-site drainage disposal systems at various locations on the subject lots. The scope of current work included the following: 1) site reconnaissance; 2) subsurface geotechnical exploration; 3) double ring infiltration testing at seventeen locations; 4) engineering analysis of field test data; and 5) preparation of this report.

It is proposed to install detention/infiltration basins/systems to dispose of on-site water runoff. No precise location or depth of systems is available at this date.

Site Description

The rectangular shaped subject property is located westerly of the southwest corner of Cottonwood Avenue and Darwin Drive, Moreno Valley, as illustrated on Figure 1, Vicinity Map.

The property is currently vacant and covered with low vegetation growth. The site topography descends very gradually from north to south and drainage is via sheetflow in this direction.

Field Exploration

The excavations were completed on January 31, 2015 and testing was completed on that day. The testing consisted of using the double ring infiltrometer at all three locations to determine the infiltration rate of the proposed retention/infiltration basins or systems. The locations of the tests are shown on the attached Figure 2. The test locations were excavated by extension backhoe to depths ranging from 5 to 10 feet below existing ground surface (bgs). Excavations were trimmed at 1:1 (horizontal to vertical) inclinations in order to provide safe entry into the excavations. No significant caving occurred to the depths of these test excavations. Detailed description of the subsurface soils is shown on the attached test excavations logs in Appendix B. The excavations were backfilled at the conclusion of testing with the soil cuttings and tamped, but were not compacted to 90% relative compaction.

In general, the test areas were found to be underlain by minor amounts of surficial fill and native soils. The soils at test locations consisted of sandy, clayey SILTS. These soils were noted to be medium stiff to stiff and damp to moist. Sand, silt and clay content varied with depth of explorations.

Groundwater

Groundwater was not encountered in any of the three test locations. Seeping groundwater, which may be a perched condition, was encountered at a depth of approximately 35 feet in a boring placed during our geotechnical investigation work at the site (NorCal report dated February 13, 2015, Project Number 17911-15). High groundwater in the vicinity has been recorded deeper than 50 feet at wells in the vicinity of the subject site, based upon information from the California Department of Water Resources database <http://www.water.ca.gov/waterdatalibrary/>.

Infiltration Test Procedure and Results

The infiltration test consisted of the double ring infiltration test per ASTM Method D 3385. The double ring infiltrometer method consists of driving two open cylinders, one inside the other, into the ground, partially filling the ring with water or other liquid, and then maintaining the liquid at a constant level. The volume of liquid added to the inner ring, to maintain the liquid level constant is the measure of the volume of liquid that infiltrates into the soil.

The volume infiltrated during timed intervals is converted to an incremental infiltration velocity, usually expressed in centimeters per hour or inches per hour and plotted versus elapsed time. The maximum-steady state or average incremental infiltration velocity, depending on the purpose/application of the test is equivalent to the infiltration rate.

Along the bottom of the infiltration test pits, dual infiltration rings were inserted 7 cm vertically into the soil by an impact-absorbing hammer. Guelph tubes, also referred to as bubblers were installed to maintain constant water level in each of the rings. Water levels were maintained at a constant level in both the inner ring and annular space between rings throughout the test, to prevent flow of water from one ring to the other.

The volume of liquid used during each measured time interval was converted into an incremental infiltration velocity of both the inner ring in the annular space using the following equations:

For the inner ring calculated as follows:

$$V_{ir} = \Delta V_{ir} / (A_{ir} \Delta t)$$

where:

V_{ir} = inner ring incremental infiltration velocity, cm/hr

ΔV_{ir} = volume of water used during time interval to maintain constant head in the inner ring, cm^3

A_{ir} = internal area of the inner ring, cm^2

Δt = time interval, hr

The last reading obtained was used for design purposes in each of the basin. The testing data sheets are attached in Appendix B and summarized in the *Discussion of Results* section below.

Discussion of Results

The use of on-site disposal system by means of retention/infiltration basins or other system appears to be geotechnically feasible for future development provided the rates given above are utilized in the basin design. Based upon the results of our testing, the following design rates should be used in the two infiltration areas:

<u>Test No.</u>	<u>Depth (feet bgs)</u>	<u>Soil Type</u>	<u>Infiltration Rate</u>	
			<u>(cm/hr)</u>	<u>(in/hr)</u>
IT-1	5.0	sandy, clayey SILT	11.3	4.5
IT-2	10.0	sandy, clayey SILT	3.4	1.4
IT-3	7.5	sandy, clayey SILT	10.5	4.2

It is our opinion that the site is suitable for stormwater infiltration without increasing the potential of settlement of proposed and existing structures or adversely affecting retaining/basement walls located either on or adjacent to the subject site. In addition, the potential for hydro-consolidation and the susceptibility for any ground settlements are considered low. All systems shall meet the California Regional Water Quality Control Board (CRWQCB) requirements.

Closure

The recommendations and conclusions contained in this report are based upon the soil conditions uncovered in our test excavations. No warranty of the soil condition between our excavations is implied. NorCal Engineering should be notified for possible further recommendations if unexpected to unfavorable conditions are encountered during construction phase. This firm should have the opportunity to review the final plans to verify that all our recommendations are incorporated.

This report and all conclusions are subject to the review of the controlling authorities for the project. Our representative should be present during the grading operations and construction phase to certify that such recommendations are complied within the field.

This infiltration study has been conducted in a manner consistent with the level of care and skill exercised by members of our profession currently practicing under similar conditions in the Southern California area. All work was performed under the supervision of the Geotechnical Engineer. No other warranty, expressed or implied is made. No other warranty, expressed or implied is made.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING



Keith D. Tucker
Project Engineer
R.G.E. 841



Mark A. Burkholder
Project Manager

List of Appendices
(in order of appearance)

Appendix A

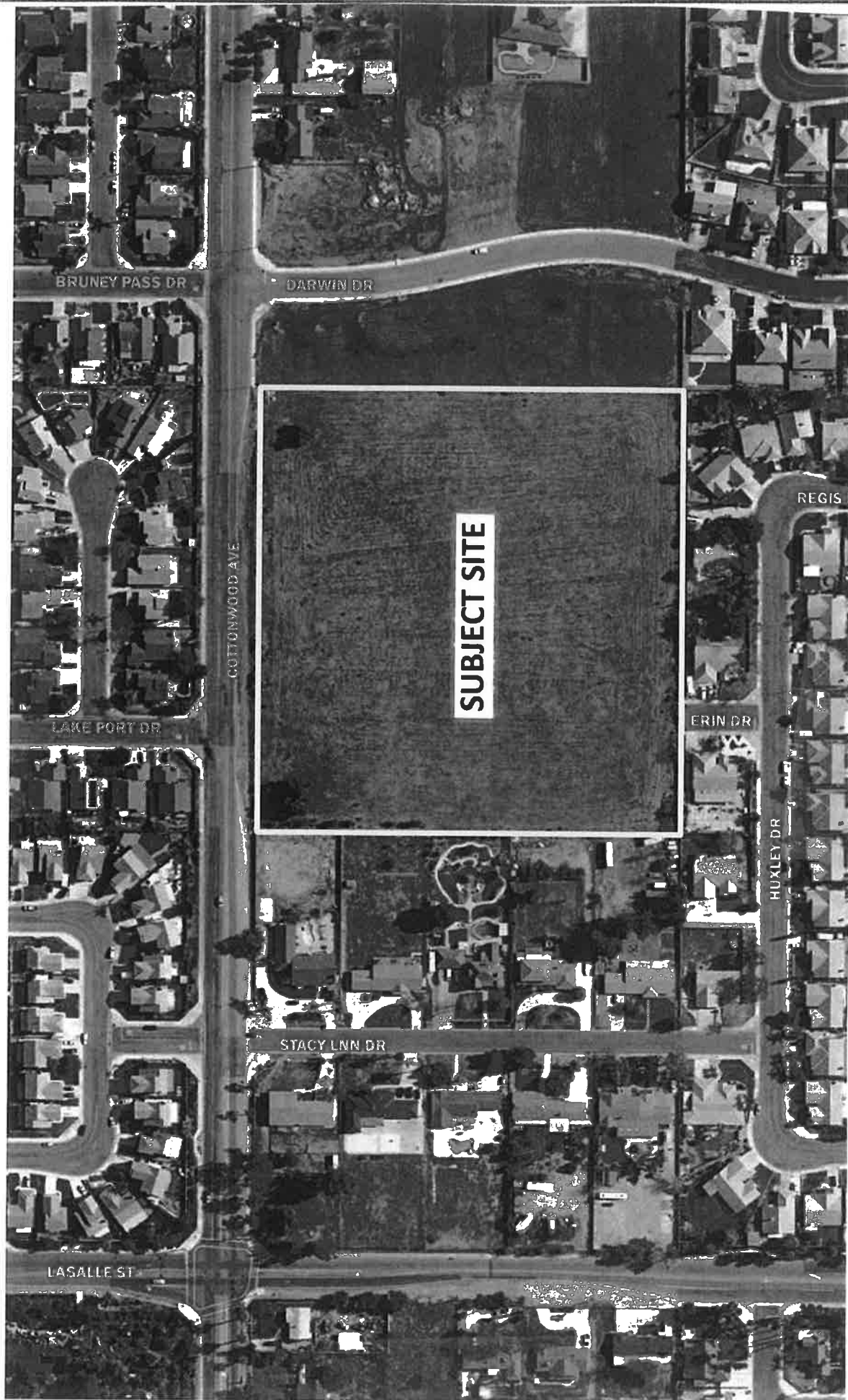
Vicinity Map – Figure 1
Locations of Test Excavations – Figure 2

Appendix B

Logs of Test Pits IT-1 to IT-3
Field Test Data
Calculations

Appendix A

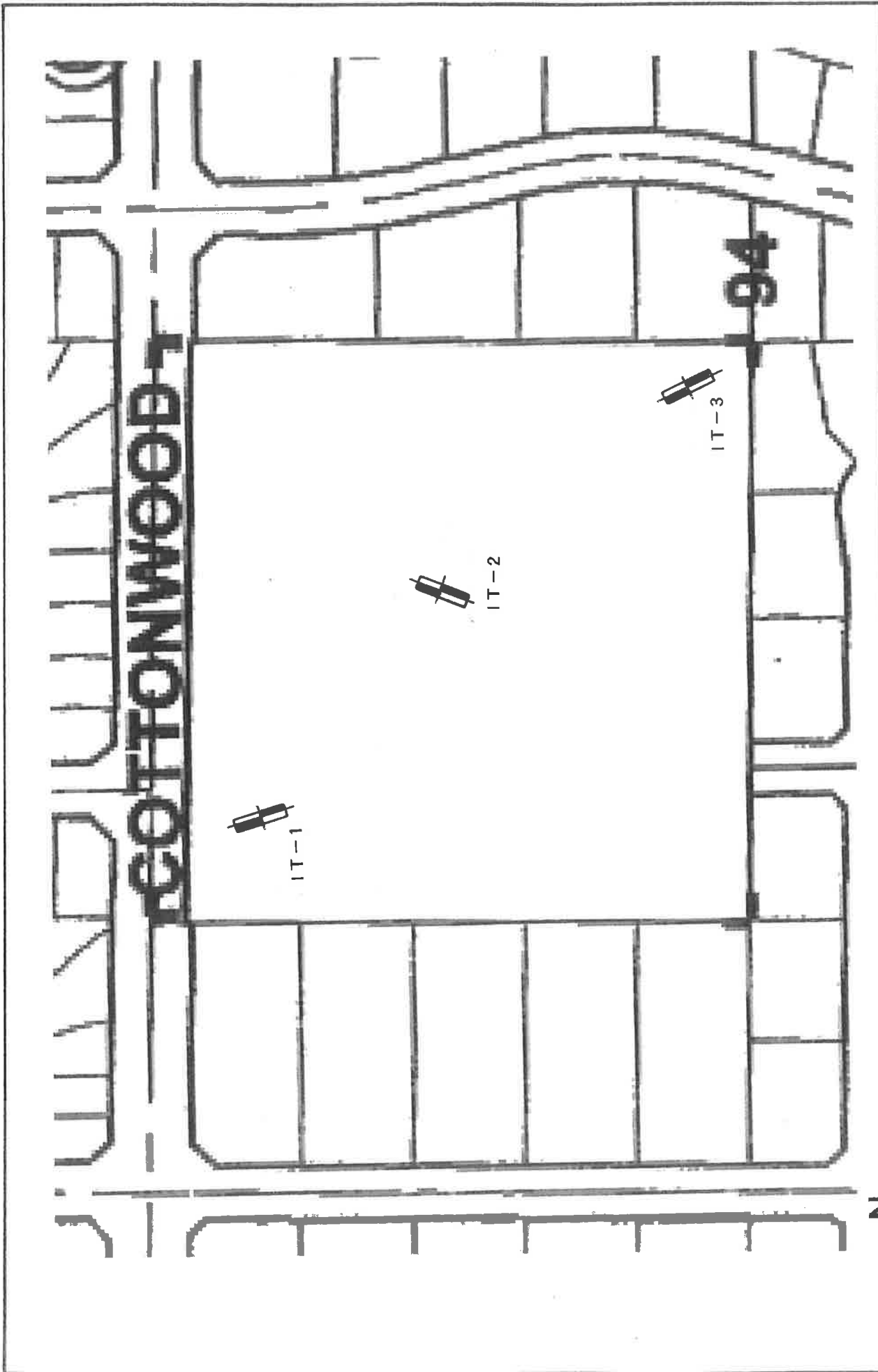
Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



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VICINITY MAP

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2



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APPROXIMATE LOCATIONS OF SOIL BORINGS

Appendix B

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		MORE THAN 50% OF COARSE FRACTION <u>RETAINED</u> ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	
	SAND AND SANDY SOILS		CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
		MORE THAN 50% OF MATERIAL IS <u>LARGER</u> THAN NO. 200 SIEVE SIZE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES	
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT <u>LESS</u> THAN 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 SILTY CLAYS OF LOW PLASTICITY	
	MORE THAN 50% OF MATERIAL IS <u>SMALLER</u> THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT <u>GREATER</u> THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
					CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
					OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

UNIFIED SOIL CLASSIFICATION SYSTEM

KEY:

- Indicates 2.5-inch Inside Diameter. Ring Sample.
- ☒ Indicates 2-inch OD Split Spoon Sample (SPT).
- ☑ Indicates Shelby Tube Sample.
- ▢ Indicates No Recovery.
- ▣ Indicates SPT with 140# Hammer 30 in. Drop.
- ☐ Indicates Bulk Sample.
- ▤ Indicates Small Bag Sample.
- ▥ Indicates Non-Standard
- ☒ Indicates Core Run.

COMPONENT PROPORTIONS

DESCRIPTIVE TERMS	RANGE OF PROPORTION
Trace	1 - 5%
Few	5 - 10%
Little	10 - 20%
Some	20 - 35%
And	35 - 50%

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4.5mm)
Sand	No. 4 (4.5mm) to No. 200 (0.074mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074 mm)

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
DAMP	Some perceptible moisture; below optimum
MOIST	No visible water; near optimum moisture content
WET	Visible free water, usually soil is below water table.

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N -VALUE

COHESIONLESS SOILS		COHESIVE SOILS		
Density	N (blows/ft)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	Very Soft	0 to 2	< 250
Loose	4 to 10	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	Very Stiff	15 to 30	2000 - 4000
		Hard	over 30	> 4000

Daniel Webb
17911-15

Log of Trench IT-1

Boring Location: Cottonwood & Darwin

Date of Drilling: 1/31/15

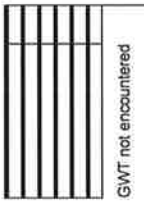
Groundwater Depth: None Encountered

Drilling Method: Backhoe

Hammer Weight:

Drop:

Surface Elevation: Not Measured

Depth (feet)	Lithology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	% Passing
0		SURFICIAL FILL Sandy clayey SILT with roots, occasional gravel, asphalt pieces Brown, soft, damp					
5		NATURAL SOILS Clayey sandy SILT Brown, medium stiff to stiff, damp Trench completed at depth of 5'					
10							
15							
20							
25							
30							
35							

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Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Daniel Webb
17911-15

Log of Trench IT-2

Boring Location: Cottonwood & Darwin

Date of Drilling: 1/31/15

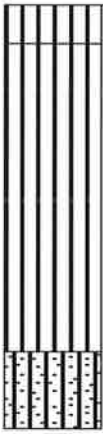
Groundwater Depth: None Encountered

Drilling Method: Backhoe

Hammer Weight:

Drop:

Surface Elevation: Not Measured

Depth (feet)	Lithology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	% Passing
0	 GWT not encountered	DISTURBED TOP SOILS Sandy clayey SILT with roots, occasional gravel, asphalt pieces Brown, soft, damp					
5		NATURAL SOILS Clayey sandy SILT Brown, medium stiff, damp to moist					
10		Silty SAND Brown, dense, damp Trench completed at depth of 11'					
15							
20							
25							
30							
35							

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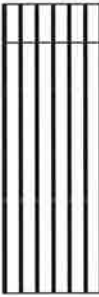
Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

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Daniel Webb
17911-15

Log of Trench IT-3

Boring Location: Cottonwood & Darwin	
Date of Drilling: 1/31/15	Groundwater Depth: None Encountered
Drilling Method: Backhoe	
Hammer Weight:	Drop:
Surface Elevation: Not Measured	

Depth (feet)	Lithology	Material Description	Samples		Laboratory		
			Type	Blow Counts	Moisture	Dry Density	% Passing
0	 GWT not encountered	DISTURBED TOP SOILS Sandy clayey SILT with roots, occasional gravel Brown, soft, damp NATURAL SOILS Clayey sandy SILT Brown, medium stiff to stiff, damp					
7.5		Trench completed at depth of 7.5'					
10							
15							
20							
25							
30							
35							

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SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECT\17911-15.log Date: 2/13/2015

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

NorCal Engineering
 SOILS AND GEOTECHNICAL CONSULTANTS
 10641 HUMBOLT STREET LOS ALAMITOS, CA 90720
 (562)799-9469 FAX (562)799-9459

Project: Daniel Webb
 Project No.: 17911-15
 Date: 1/31/15

Test No.: IT-1
 Depth: 5'
 Tested By: D.R.

	Time (hr/min)	Change Time (min)	Cumulative Time (min)	Inner Ring Reading (cm)	Inner Ring Change (cm)	Inner Ring Flow (cc)	Outer Ring Reading (cm)	Outer Ring Change (cm)	Outer Ring Flow (cc)	Inner Ring Inf Rate (cm/hr)	Outer Ring Inf Rate (cm/hr)	Inner Ring Inf Rate (ft/hr)
1	7:45			128.3			103.3					
	7:55	10	10	131.8	3.5		107.0	3.7				
2	7:55			127.4			101.8					
	8:05	10	20	130.4	3.0		105.3	3.5				
3	8:05			130.4			105.2					
	8:15	10	30	133.2	2.8		108.0	2.7				
4	8:15			128.1			101.9					
	8:25	10	40	130.8	2.7		104.7	2.8				
5	8:25			130.8			104.7					
	8:35	10	50	133.0	2.2		107.2	2.5				
6	8:35			133.0			107.2					
	8:45	10	60	134.8	1.8		109.2	2.0		10.8	12.0	
7	8:45			127.8			101.6					
	8:55	10	70	130.0	2.2		104.0	2.4		13.2	14.4	
8	8:55			130.0			104.0					
	9:05	10	80	132.0	2.0		106.2	2.2		12.0	13.2	
9	9:05			132.0			106.2					
	9:15	10	90	134.0	2.0		108.1	1.9		12.0	11.4	
10	9:15			134.0			108.1					
	9:25	10	100	135.5	1.5		109.9	1.8		9.0	10.8	
11	9:25			128.5			103.4					
	9:35	10	110	130.4	1.9		105.4	2.0		11.4	12.0	
12	9:35			130.4			105.4					
	9:45	10	120	132.2	1.8		107.2	1.8		10.8	10.8	

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 SOILS AND GEOTECHNICAL CONSULTANTS
 10641 HUMBOLT STREET LOS ALAMITOS, CA 90720
 (562)799-9469 FAX (562)799-9459

Project: Daniel Webb
 Project No.: 17911-15
 Date: 1/31/15

Test No.: IT-2
 Depth: 10'
 Tested By: D.R.

	Time (hr/min)	Change Time (min)	Cumulative Time (min)	Inner Ring Reading (cm)	Inner Ring Change (cm)	Inner Ring Flow (cc)	Outer Ring Reading (cm)	Outer Ring Change (cm)	Outer Ring Flow (cc)	Inner Ring Inf Rate (cm/hr)	Outer Ring Inf Rate (cm/hr)	Inner Ring Inf Rate (ft/hr)
1	12:00			127.9			102.4					
	12:10	10	10	129.8	1.9		103.7	1.3				
2	12:10			129.8			103.7					
	12:20	10	20	131.1	1.3		104.4	0.7				
3	12:20			131.1			104.4					
	12:30	10	30	132.1	1.0		105.4	1.0				
4	12:30			128.1			105.4					
	12:40	10	40	129.0	0.9		106.2	0.8				
5	12:40			129.0			106.4					
	12:50	10	50	129.8	0.8		107.1	0.7				
6	12:50			129.8			102.7					
	1:00	10	60	130.5	0.7		103.2	0.5		4.2	3.0	
7	1:00			128.5			103.2					
	1:10	10	70	129.4	0.9		103.8	0.6		5.4	3.6	
8	1:10			129.4			103.8					
	1:20	10	80	130.0	0.6		104.3	0.5		3.6	3.0	
9	1:20			130.0			104.3					
	1:30	10	90	130.8	0.8		104.8	0.5		4.8	3.0	
10	1:30			130.8			104.8					
	1:40	10	100	131.2	0.4		105.3	0.5		2.4	3.0	
11	1:40			131.2			105.3					
	1:50	10	110	131.5	0.3		105.7	0.4		1.8	2.4	
12	1:50			131.5			105.7					
	2:00	10	120	131.8	0.3		106.1	0.4		1.8	2.4	

NorCal Engineering

SOILS AND GEOTECHNICAL CONSULTANTS
10641 HUMBOLT STREET LOS ALAMITOS, CA 90720
(562)799-9469 FAX (562)799-9459

Project: Daniel Webb
Project No.: 17911-15
Date: 1/31/15

Test No.: IT-3
Depth: 7.5'
Tested By: D.R.

	Time (hr/min)	Change Time (min)	Cumulative Time (min)	Inner Ring Reading (cm)	Inner Ring Change (cm)	Inner Ring Flow (cc)	Outer Ring Reading (cm)	Outer Ring Change (cm)	Outer Ring Flow (cc)	Inner Ring Inf Rate (cm/hr)	Outer Ring Inf Rate (cm/hr)	Inner Ring Inf Rate (ft/hr)
1	10:10			128.6			101.5					
	10:20	10	10	132.4	3.8		104.9	3.4				
2	10:20			127.2			100.9					
	10:30	10	20	129.9	2.7		103.5	2.6				
3	10:30			129.9			103.5					
	10:40	10	30	132.3	2.4		105.8	2.3				
4	10:40			132.3			105.8					
	10:50	10	40	134.3	2.0		107.9	2.1				
5	10:50			128.5			101.9					
	11:00	10	50	130.6	2.1		104.0	2.1				
6	11:00			130.6			104.0					
	11:10	10	60	132.7	2.1		106	2.0		12.6	12.0	
7	11:10			132.7			106					
	11:20	10	70	134.4	1.7		107.8	1.8		10.2	10.8	
8	11:20			128.2			100.5					
	11:30	10	80	129.9	1.7		102.8	2.3		10.2	13.8	
9	11:30			129.9			102.8					
	11:40	10	90	131.5	1.6		104.7	1.9		9.6	11.4	
10	11:40			131.5			104.7					
	11:50	10	100	133.2	1.7		106.5	1.8		10.2	10.8	
11	11:50			133.2			106.5					
	12:00	10	110	134.9	1.7		108.1	1.6		10.2	9.6	
12	12:00			133.0			106.4					
	12:10	10	120	134.7			108	1.6		10.2	9.6	

Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use (NOT APPLICABLE)

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis (NOT APPLICABLE)

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Vicky Li

From: Rae Beimer <raeb@moval.org>
Sent: Wednesday, December 14, 2016 11:03 AM
To: Vicky Li
Subject: RE: PA16-0009 / Cottonwood Residential

Vicky,

The City requires the drywell to be well within the project limits and as far away from public infrastructure as possible. While there is no documentation requiring "dedicated parking," reaching from a public street, across a side walk, etc. is not acceptable.

From: Vicky Li [mailto:Vicky@thieneseng.com]
Sent: Monday, December 12, 2016 11:28 AM
To: Rae Beimer
Cc: Sakarin Srivongse; Duke Aghaian; Hoang Nguyen
Subject: RE: PA16-0009 / Cottonwood Residential
Importance: High

Rae,

Please let us know asap.. the dry well will be situated close to Erin Drive, within reach of a maintenance truck's hose when parked along the street. Erin Drive has street parking. Is it absolutely necessary to provide dedicated parking for an infrequent maintenance vehicle?

Vicky Li
 Project Engineer

THIENES
ENGINEERING, INC.

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 90638
 Telephone: (714) 521-4811 x253 | Fax:
 (714) 521-4173
 vicky@thieneseng.com



From: Vicky Li
Sent: Wednesday, December 07, 2016 1:55 PM
To: 'Rae Beimer' <raeb@moval.org>
Cc: Sakarin Srivongse <Sakarin@thieneseng.com>; Duke Aghaian <Duke@thieneseng.com>; Hoang Nguyen <hoangn@moval.org>
Subject: RE: PA16-0009 / Cottonwood Residential

Rae,

All was good except for the second item.



From: Rae Beimer [<mailto:raeb@moval.org>]
Sent: Wednesday, December 07, 2016 12:04 PM
To: Vicky Li <Vicky@thieneseng.com>
Cc: Sakarin Srivongse <Sakarin@thieneseng.com>; Duke Aghaian <Duke@thieneseng.com>; Hoang Nguyen <hoangn@moval.org>
Subject: RE: PA16-0009 / Cottonwood Residential

Conceptually, the system is acceptable with the following assumptions:

- Assuming, during the current stage, borings and testing are done to verify the depth and extent of the reported sand layer and its capacity to take in storm water. **Yes, we will provide deeper tests with rates >= 1.6 in/hr for the use of a dry well.**
- Assuming the drywell would be located in or directly adjacent to a private side paved parking lot or drive aisle capable of supporting a Vactor Truck, at appropriate elevation to service the dry well. **Private side? Are you saying we can't park the maintenance vehicle on Erin Drive to conduct the maintenance?**
- Assuming that the manufacturer will provide engineering calculations that prove, with appropriate safety factors, that the drywell will dispose of the BFR underdrain effluent. **Yes, this will be provided.**
- A gravity overflow, valve or gate controlled, to the storm drain is provided in case the well fails or lacks capacity to function per the design. **There isn't a storm drain.. the bioretention's WSE would reach the flow line in the gutter and flowby when the bioretention has reached capacity or failed.**
- There are no water supply wells or septic fields or brownsfields located in the area of influence of the dry well. **Of course.**

From: Vicky Li [<mailto:Vicky@thieneseng.com>]
Sent: Friday, December 02, 2016 4:38 PM
To: Rae Beimer
Cc: Sakarin Srivongse; Duke Aghaian; Hoang Nguyen
Subject: RE: PA16-0009 / Cottonwood Residential

Hi Rae,

Thanks for looking into this. Before we get the geotech out there to re-test at deeper depths, I just want to get the documentation within the WQMP report clarified with you.

This is a hybrid infiltration system that will utilize a bioretention facility sized to store/pretreat the required DCV. The bioretention will utilize an underdrain that discharges into the dry well (sample dry well attached with the ability to inspect

and maintain). The dry well will be used to achieve 1.6 in/hr at a deeper depth so that it can be considered an *infiltration* BMP and therefore bypass the need to analyze harvest and use feasibility.

We are going to place the dry well in the middle of the bioretention area as shown in the attached. Only pretreated DCV will be able to enter the dry well and resolves the issue of being a “stacked system.”

Let me know if the WQMP documentation portion is OK and if you have any other dry well concerns.

Thanks,
Vicky Li
Project Engineer



-----Original Message-----

From: Rae Beimer [<mailto:raeb@moval.org>]
Sent: Thursday, December 01, 2016 10:44 AM
To: Vicky Li <Vicky@thieneseng.com>
Cc: Sakarin Srivongse <Sakarin@thieneseng.com>; Duke Aghaian <Duke@thieneseng.com>
Subject: Re: PA16-0009 / Cottonwood Residential

Vicky,

I finally got some clarity and direction. A hybrid design would be acceptable if the infiltration explorations came back with favorable rates. Although, there are a few caveats...

1. There has to be a 5ft separation for the bottom of the impermeable layer and the bottom of the drywell.
2. There can not be a stacked system. You can have the bioretention area discharge to a drywell (basically using it as a pretreatment system, which is required for drywells anyway). One of the main concerns is for observation and maintenance of the drywell.

I hope these are reasonably achievable for you. Please let me know if you have any questions.

Rae Beimer
Stormwater Program Manager

On Nov 30, 2016, at 11:52 AM, Vicky Li <Vicky@thieneseng.com<<mailto:Vicky@thieneseng.com>>> wrote:

Rae,

Any luck?

From: Vicky Li
Sent: Monday, November 28, 2016 11:52 AM
To: 'Rae Beimer' <raeb@moval.org<<mailto:raeb@moval.org>>>
Cc: Sakarin Srivongse <Sakarin@thieneseng.com<<mailto:Sakarin@thieneseng.com>>>; Duke Aghaian <Duke@thieneseng.com<<mailto:Duke@thieneseng.com>>>
Subject: RE: PA16-0009 / Cottonwood Residential

Okay, and thank you for the update

From: Rae Beimer [mailto:raeb@moval.org]
 Sent: Monday, November 28, 2016 11:12 AM
 To: Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>>
 Subject: RE: PA16-0009 / Cottonwood Residential

Vicky,
 I am trying to get you an answer today. The rep from CASC that I need concurrence from was out on vacation. I will let you know what we determine.

From: Vicky Li [mailto:Vicky@thieneseng.com]
 Sent: Monday, November 21, 2016 3:04 PM
 To: Rae Beimer
 Cc: Rae Beimer; Sakarin Srivongse; Hoang Nguyen; Duke Aghaian
 Subject: RE: PA16-0009 / Cottonwood Residential

Rae,

Any updates?

Vicky Li
 Project Engineer

<image001.png>

THIENES ENGINEERING, INC.
 14349 Firestone Blvd. | La Mirada, CA | 90638
 Telephone: (714) 521-4811 x253 | Fax: (714) 521-4173 vicky@thieneseng.com<mailto:vicky@thieneseng.com>

<image002.png>

From: Vicky Li
 Sent: Tuesday, November 15, 2016 11:57 AM
 To: 'Rae Beimer' <raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>>
 Cc: Rae Beimer <raeb@moval.org<mailto:raeb@moval.org>>; Sakarin Srivongse
 <Sakarin@thieneseng.com<mailto:Sakarin@thieneseng.com>>; Hoang Nguyen
 <hoangn@moval.org<mailto:hoangn@moval.org>>; Duke Aghaian
 <Duke@thieneseng.com<mailto:Duke@thieneseng.com>>
 Subject: RE: PA16-0009 / Cottonwood Residential

Sounds good, thank you

From: Rae Beimer [mailto:raebeimer@caaprofessionals.com]
 Sent: Tuesday, November 15, 2016 11:33 AM
 To: Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>>
 Cc: Rae Beimer <raeb@moval.org<mailto:raeb@moval.org>>; Sakarin Srivongse
 <Sakarin@thieneseng.com<mailto:Sakarin@thieneseng.com>>; Hoang Nguyen
 <hoangn@moval.org<mailto:hoangn@moval.org>>; Duke Aghaian
 <Duke@thieneseng.com<mailto:Duke@thieneseng.com>>
 Subject: Re: PA16-0009 / Cottonwood Residential

Got it. You said it several times and I missed it. This is the City of LA Manual, not the County of LA. I am not totally against this approach but let me speak with a few City staff as well as CASC (since they are ultimately approving the concept) and I will get back to you.

Rae Beimer
 Charles Abbott Associates, Inc.
 Director of Environmental Services
 27401 Los Altos, Suite 220
 Mission Viejo, CA 92691
 Phone: 714-788-6936
 [http://portal.mxlogic.com/images/transparent.gif]

Please refrain from printing this e-mail unless absolutely necessary.

On Tue, Nov 15, 2016 at 11:10 AM, Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>> wrote:
Rae,

<http://www.lastormwater.org/green-la/low-impact-development/lid-documents/>

It is part of the current LID manual dated May 9, 2016 (5th edition). Excerpt from LID Manual attached.

Vicky Li
Project Engineer

<image001.png>

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vicky@thieneseng.com<mailto:vicky@thieneseng.com>

<image002.png>

From: Rae Beimer [mailto:raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>]
Sent: Tuesday, November 15, 2016 11:05 AM

To: Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>>
Cc: Rae Beimer <raeb@moval.org<mailto:raeb@moval.org>>; Sakarin Srivongse
<Sakarin@thieneseng.com<mailto:Sakarin@thieneseng.com>>; Hoang Nguyen
<hoangn@moval.org<mailto:hoangn@moval.org>>; Duke Aghaian
<Duke@thieneseng.com<mailto:Duke@thieneseng.com>>
Subject: Re: PA16-0009 / Cottonwood Residential

Can you attach the fact sheet? I do not see it in the current manual. Is this part of the older manual?

Rae Beimer
Charles Abbott Associates, Inc.
Director of Environmental Services
27401 Los Altos, Suite 220
Mission Viejo, CA 92691
Phone: 714-788-6936<tel:714-788-6936>
[<http://portal.mxlogic.com/images/transparent.gif>]

Please refrain from printing this e-mail unless absolutely necessary.

On Tue, Nov 15, 2016 at 11:03 AM, Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>> wrote:
Rae,

City of Los Angeles LID Manual.

Vicky Li
Project Engineer

<image001.png>

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vicky@thieneseng.com<mailto:vicky@thieneseng.com>

<image002.png>

From: Rae Beimer [mailto:raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>]
Sent: Tuesday, November 15, 2016 10:26 AM

To: Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>>
Cc: Rae Beimer <raeb@moval.org<mailto:raeb@moval.org>>; Sakarin Srivongse
<Sakarin@thieneseng.com<mailto:Sakarin@thieneseng.com>>; Hoang Nguyen
<hoangn@moval.org<mailto:hoangn@moval.org>>; Duke Aghaian
<Duke@thieneseng.com<mailto:Duke@thieneseng.com>>
Subject: Re: PA16-0009 / Cottonwood Residential

Vicky,
Where did you get that description and schematic? It is not in the current LA County LID Manual.

Rae Beimer
Charles Abbott Associates, Inc.
Director of Environmental Services
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Mission Viejo, CA 92691
Phone: 714-788-6936<tel:714-788-6936>
[http://portal.mxlogic.com/images/transparent.gif]

Please refrain from printing this e-mail unless absolutely necessary.

On Mon, Nov 7, 2016 at 3:11 PM, Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>> wrote:
Rae,

One more question, if better infiltration rates can be located at a lower depth, will the City allow the use of a dry well to reach those rates? A hybrid BMP that's classified as infiltration as depicted in the City of Los Angeles LID Manual (shown below):

<image003.png>

Vicky Li
Project Engineer

<image004.png>

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vicky@thieneseng.com<mailto:vicky@thieneseng.com>

<image002.png>

From: Vicky Li
Sent: Monday, November 07, 2016 2:59 PM
To: 'raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>'<raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>>
Cc: Rae Beimer <raeb@moval.org<mailto:raeb@moval.org>>; Sakarin Srivongse
<Sakarin@thieneseng.com<mailto:Sakarin@thieneseng.com>>; Hoang Nguyen
<hoangn@moval.org<mailto:hoangn@moval.org>>; Duke Aghaian
<Duke@thieneseng.com<mailto:Duke@thieneseng.com>>
Subject: RE: PA16-0009 / Cottonwood Residential

Rae,

Okay, we will let our client know that the City is not allowing LID principles on private property and we must use harvest and use because we can't prove that it's infeasible.

Is the City ready for implementation of harvest and use? For example, all paperwork regarding health codes, encroachment of private irrigation pipes through public streets into private properties, maintenance agreements and any other legalities? If not, please start this process while we begin our redesign so as to not delay the project any further.

Thank you,
Vicky Li
Project Engineer

<image001.png>

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vicky@thieneseng.com<mailto:vicky@thieneseng.com>

<image002.png>

From: raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>
[mailto:raebeimer@caaprofessionals.com]
Sent: Monday, November 07, 2016 1:13 PM

To: Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>>
Cc: Rae Beimer <raeb@moval.org<mailto:raeb@moval.org>>; Sakarin Srivongse
<Sakarin@thieneseng.com<mailto:Sakarin@thieneseng.com>>; Hoang Nguyen
<hoangn@moval.org<mailto:hoangn@moval.org>>; Duke Aghaian
<Duke@thieneseng.com<mailto:Duke@thieneseng.com>>
Subject: Re: PA16-0009 / Cottonwood Residential

All landscaping within the project area must be included. Omitting is not an option if the landscape is in fact going to be installed. If by including the landscaping, it proves harvest and use feasible, then it must be utilized. We are not allowing individual lot BMPs but that does not inhibit the development from incorporating a regional type BMP.

~Rae Beimer

On Nov 7, 2016, at 12:23 PM, Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>> wrote:
Rae,

Okay, then this goes back to my very first email of this thread. City's instructions were that we cannot propose a BMP at each SFR. We have prepared a WQMP and claimed harvest and use as infeasible; by omitting landscaping from private SFRs as irrigable areas since we cannot propose a BMP at each SFR. However, the DCV is calculated with private landscaping for sizing of the bioretention facilities. Omitting these areas proved that harvest and use is infeasible since the public landscaped areas did not have enough demand.

Not to mention the fact that any harvested stormwater would need to be used to irrigate every single SFR, which then places reclaimed irrigation lines at every single SFR and this contradicts the City's instructions of not placing a BMP at each SFR. Side note: we would have to irrigate everybody's home, we can't irrigate just one home since they will all be paying the HOA to maintain the BMP. It wouldn't be fair for some homes to reap in the benefits of free irrigation that is paid for by the entire neighborhood.

This seems like a simple logic to get around the harvest and use feasibility section. CASC's comment was to count the private landscaping. Please let CASC know that we shouldn't count the private landscaping since we cannot place a BMP on private landscaping.

Vicky Li
Project Engineer

<image004.png>

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vicky@thieneseng.com<mailto:vicky@thieneseng.com>

<image002.png>

From: Rae Beimer [mailto:raebeimer@caaprofessionals.com]
 Sent: Monday, November 07, 2016 8:56 AM
 To: Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>>
 Cc: Rae Beimer <raeb@moval.org<mailto:raeb@moval.org>>; Sakarin Srivongse
 <Sakarin@thieneseng.com<mailto:Sakarin@thieneseng.com>>; Hoang Nguyen
 <hoangn@moval.org<mailto:hoangn@moval.org>>; Duke Aghaian
 <Duke@thieneseng.com<mailto:Duke@thieneseng.com>>
 Subject: Re: PA16-0009 / Cottonwood Residential

Vicky,

After review of the project and many conversations with City staff and legal, we are not able to approve individual lot rain barrels to satisfy the harvest and use requirement. While harvest and use must be considered, and if feasible, must be implemented, projects in the City must consider a regional approach to compliance. The City is required to monitor and ensure maintenance is being conducted on each post-construction BMP to ensure efficacy for the life of the BMP and the City does not have a mechanism to ensure long term maintenance on an individual lot basis. Please let me know if you have any other questions.

Rae Beimer
 Charles Abbott Associates, Inc.
 Director of Environmental Services
 27401 Los Altos, Suite 220
 Mission Viejo, CA 92691
 Phone: 714-788-6936<tel:714-788-6936>
 [http://portal.mxlogic.com/images/transparent.gif]

Please refrain from printing this e-mail unless absolutely necessary.

On Mon, Nov 7, 2016 at 8:38 AM, Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>> wrote:
 Rae,

Please provide an update. This project needs to move forward asap.

Vicky Li
 Project Engineer

<image001.png>

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 vicky@thieneseng.com<mailto:vicky@thieneseng.com>

<image002.png>

From: Vicky Li
 Sent: Tuesday, November 01, 2016 8:18 AM
 To: 'Rae Beimer' <raeb@moval.org<mailto:raeb@moval.org>>; Rae Beimer
 (raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>)
 <raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>>
 Cc: Sakarin Srivongse <Sakarin@thieneseng.com<mailto:Sakarin@thieneseng.com>>; Hoang Nguyen
 <hoangn@moval.org<mailto:hoangn@moval.org>>
 Subject: RE: PA16-0009 / Cottonwood Residential

Rae,

Do you have an update for us?

Vicky Li

<image001.png>

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Telephone: (714) 521-4811<tel:%28714%29%20521-4811> x253 | Fax: (714) 521-4173<tel:%28714%29%20521-4173>
vicky@thieneseng.com<mailto:vicky@thieneseng.com>

<image002.png>

From: Rae Beimer [mailto:raeb@moval.org]
Sent: Wednesday, October 26, 2016 10:13 AM
To: Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>>
Subject: RE: PA16-0009 / Cottonwood Residential

Vicky,
I will not be able to reach a conclusion today. I do have to send this issue through our legal department. Since this is the first project in the City that demonstrates feasible harvest and use capabilities, we are really going to be setting a precedence and want to make sure there are no issues with individual lot compliance. I will let you know what I find out. Hopefully it won't take longer than a few days.

From: Vicky Li [mailto:Vicky@thieneseng.com]
Sent: Wednesday, October 26, 2016 8:58 AM
To: Rae Beimer; Rae Beimer (raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>)
Cc: Sakarin Srivongse; Hoang Nguyen
Subject: RE: PA16-0009 / Cottonwood Residential

Rae,

If I include the landscape area from private property as part of the harvest and use calcs, it makes harvest and use feasible. There is a lot more landscaping compared to impervious area on these homes. If we show feasible, will the City allow us to bypass it and move onto bioretention? I imagined if it proved feasible, CASC wouldn't let us bypass it.

Vicky Li
Project Engineer

<image001.png>

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vicky@thieneseng.com<mailto:vicky@thieneseng.com>

<image002.png>

From: Rae Beimer [mailto:raeb@moval.org]
Sent: Wednesday, October 26, 2016 8:50 AM
To: Vicky Li <Vicky@thieneseng.com<mailto:Vicky@thieneseng.com>>; Rae Beimer (raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>)<raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>>
Cc: Sakarin Srivongse <Sakarin@thieneseng.com<mailto:Sakarin@thieneseng.com>>; Hoang Nguyen <hoangn@moval.org<mailto:hoangn@moval.org>>
Subject: RE: PA16-0009 / Cottonwood Residential

Vicky,
I just got off the phone with CASC and they stated that they were not necessarily requiring that private landscaping be considered for irrigable area, they were simple requesting that the Harvest and Use calcs be revised to accurately reflect the newly proposed layout. I have not seen all iterations but they said the latest submittal had a different layout that incorporated more landscaped areas but the Harvest and Use feasibility calcs were not revised.

From: Vicky Li [mailto:Vicky@thieneseng.com]

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Sent: Tuesday, October 18, 2016 6:12 PM

To: Rae Beimer (raebeimer@caaprofessionals.com<mailto:raebeimer@caaprofessionals.com>); Rae Beimer

Cc: Sakarin Srivongse; Hoang Nguyen

Subject: PA16-0009 / Cottonwood Residential

Importance: High

Hi Rae,

We've received plan check comments from CASC that conflicts with original instructions from the City and need clarification asap.

Summary of conflict:

- Three BMPs are proposed for the project.
 - o One infiltration trench at the north to infiltrate the DCV from disturbance of Cottonwood Avenue.
 - o Two bioretention facilities for treatment of the proposed residential lots. Areas scored less than 0.8 in/hr.
- City's instructions were that we cannot propose a BMP at each SFR.
- Thienes has revised the site plan to provide three separate lots that are dedicated for BMPs and will be maintained by a HOA. The site plan has been reviewed and OK'd by Planning and the Special Districts, per Jeff Bradshaw.
- Thienes has prepared a WQMP and claimed harvest and use as infeasible; by omitting landscaping from private SFRs as irrigable areas since we cannot propose a BMP at each SFR. (However, the DCV is calculated with private landscaping for sizing of the bioretention facilities.) Omitting these areas proved that harvest and use is infeasible since the public landscaped areas did not have enough demand.
- CASC requires that private landscaping be considered for irrigable areas, which essentially makes harvest and use feasible given the ratio of impervious to pervious areas. This idea conflicts with the original City instruction that there may not be a BMP on each SFR. Harvested stormwater will need reclaimed piping to each SFR since each property will be paying the HOA for O&M of this system.

Please advise asap.

Thank you,
Vicky Li
Project Engineer

<image008.png>

THIENES ENGINEERING, INC.
14349 Firestone Blvd. | La Mirada, CA | 90638
Telephone: (714) 521-4811<tel:%28714%29%20521-4811> x253 | Fax: (714) 521-4173<tel:%28714%29%20521-4173>
vicky@thieneseng.com<mailto:vicky@thieneseng.com>

JN 3357
<image002.png>

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Infiltration Trench - Design Procedure		BMP ID LID "A"	Legend:	Required Entries
				Calculated Cells
Company Name:	Thienes Engineering, Inc.		Date:	28-Apr
Designed by:	Luis Prado		County/City Case No.:	PA16-0009
Design Volume				
Enter the area tributary to this feature, Max = 10 acres			$A_t =$	0.67 acres
Enter V_{BMP} determined from Section 2.1 of this Handbook			$V_{BMP} =$	1,456 ft ³
Calculate Maximum Depth of the Reservoir Layer				
Enter Infiltration rate			$I =$	8.0 in/hr
Enter Factor of Safety, FS (unitless)			$FS =$	3
<i>Obtain from Table 1, Appendix A: "Infiltration Testing" of this BMP Handbook</i>				
Calculate D_1 .			$n =$	40 %
$D_1 = \frac{I \text{ (in/hr)} \times 72 \text{ hrs}}{12 \text{ (in/ft)} \times (n/100) \times FS}$			$D_1 =$	40.00 ft
Enter depth to historic high groundwater mark (measured from finished grade)				50 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			$D_2 =$	39.0 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 $\leq D_{MAX}$			$D_R =$	6.75 ft
Calculate the design depth of water, d_w				
$\text{Design } d_w = (D_R) \times (n/100)$			$\text{Design } d_w =$	2.70 ft
Minimum Surface Area, A_S			$A_S =$	539 ft ²
$A_S = \frac{V_{BMP}}{d_w}$				
Proposed Design Surface Area			$A_D =$	540 ft ²
Minimum Width = $D_R + 1$ foot pea gravel				7.75 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.				

Santa Ana Watershed - BMP Design Volume, V_{BMP}
 (Rev. 10-2011)

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: Thienes Engineering, Inc. Date: 3/9/2017
 Designed by: Vicky Li Case No: PA16-0009
 Company Project Number/Name: Cottonwood Residential Subdivision

BMP Identification

BMP NAME / ID: LID "B" / Hybrid-Bioretenion with Dry Well / Lot B
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 $D_{85} =$ 0.675 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)
B1	37,980	Roofs	1	0.89	33878.2			
B2	54,638	Concrete or Asphalt	1	0.89	48737.1			
B3	214,483	Ornamental Landscaping	0.1	0.11	23691.4			
Total					106306.7	0.68	5979.8	6035

Notes:

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Bioretention Facility - Design Procedure		BMP ID LID "B"	Legend:	Required Entries
Company Name:		Thienes Engineering, Inc.	Date:	9-Mar
Designed by:		Vicky Li	County/City Case No.:	PA16-0009
Design Volume				
Enter the area tributary to this feature			$A_T =$	7.05 acres
Enter V_{BMP} determined from Section 2.1 of this Handbook			$V_{BMP} =$	5,980 ft ³
Type of Bioretention Facility Design				
<input type="radio"/> Side slopes required (parallel to parking spaces or adjacent to walkways) <input checked="" type="radio"/> No side slopes required (perpendicular to parking space or Planter Boxes)				
Bioretention Facility Surface Area				
Depth of Soil Filter Media Layer			$d_S =$	3.0 ft
Top Width of Bioretention Facility, excluding curb			$w_T =$	48.0 ft
Total Effective Depth, d_E				
$d_E = [(0.3) \times d_S + (0.4) \times 1] + 0.5$			$d_E =$	1.80 ft
Minimum Surface Area, A_m				
$A_M (ft^2) = \frac{V_{BMP} (ft^3)}{d_E (ft)}$			$A_M =$	3,323 ft ²
Proposed Surface Area			$A =$	3,353 ft ²
Minimum Required Length of Bioretention Facility, L			$L =$	69.2 ft
Bioretention Facility Properties				
Side Slopes in Bioretention Facility			$z =$	0 :1
Diameter of Underdrain				6 inches
Longitudinal Slope of Site (3% maximum)				2 %
6" Check Dam Spacing				25 feet
Describe Vegetation:				Shrubs
Notes: Volume = Proposed Surface Area x Effective Depth = 6,035 CF				
Bioretention will utilize a dry well to percolate stormwater at a deeper depth.				

Bioretention Facility - Design Procedure		BMP ID LID "C"	Legend:	Required Entries
Company Name:		Thienes Engineering, Inc.		Date: 9-Mar
Designed by:		Vicky Li	County/City Case No.: PA16-0009	
Design Volume				
Enter the area tributary to this feature			$A_T =$	2.29 acres
Enter V_{BMP} determined from Section 2.1 of this Handbook			$V_{BMP} =$	1,850 ft ³
Type of Bioretention Facility Design				
<input type="radio"/> Side slopes required (parallel to parking spaces or adjacent to walkways) <input checked="" type="radio"/> No side slopes required (perpendicular to parking space or Planter Boxes)				
Bioretention Facility Surface Area				
Depth of Soil Filter Media Layer			$d_S =$	3.0 ft
Top Width of Bioretention Facility, excluding curb			$w_T =$	48.0 ft
Total Effective Depth, d_E				
$d_E = [(0.3) \times d_S + (0.4) \times 1] + 0.5$			$d_E =$	1.80 ft
Minimum Surface Area, A_m				
$A_M (ft^2) = \frac{V_{BMP} (ft^3)}{d_E (ft)}$			$A_M =$	1,028 ft ²
Proposed Surface Area			$A =$	1,396 ft ²
Minimum Required Length of Bioretention Facility, L			$L =$	21.4 ft
Bioretention Facility Properties				
Side Slopes in Bioretention Facility			$z =$	0 :1
Diameter of Underdrain				6 inches
Longitudinal Slope of Site (3% maximum)				2 %
6" Check Dam Spacing				25 feet
Describe Vegetation:			Shrubs	
Notes: Volume = Proposed Surface Area x Effective Depth = 2,512 CF				
Bioretention will utilize a dry well to percolate stormwater at a deeper depth.				

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Riverside County SWCT² Stormwater & Water Conservation Tracking Tool

TOC Choose search item from list Enter Value Locate Clear

Clear All Metadata

- Base Maps
- Base Data
- Stormwater Data
 - Hydromodification Susceptibility Mapping
 - 2010 - 303d/TMDL
 - Hydromodification Exemption Areas
 - Potentially Not Exempt
 - Potentially Exempt
 - District Facilities
 - District Facilities
 - Proposed District Facilities
 - Basin
 - Detention Basin
 - Retention Basin
 - Debris Basin
 - Dam
 - Levee
 - Spreading Grounds
 - Other
 - Permit Areas
 - Hydrologic Unit Codes (HUC)
 - Topographic Drainage Boundary
 - Drainage Area Boundaries
 - City Storm Drains
 - WQMP 85% Design Isohyetal Map
 - CRP (Contol Release Point)
 - FEMA Flood Plain
 - Flood Plain - Other Special Studies
 - As-Built Plans
 - Groundwater Data
 - U.S. Fish and Wildlife Critical Habitat
 - WRMSHCP Potential Survey Areas
 - SKRHCP
 - CVMSHCP Survey Data and Conservation Areas

1000ft

Identify Features
Click on map to view data.

06065C_654974 (Fema Flood Zones)

OBJECTID_1	1106
DFIRM_ID	06065C
VERSION_ID	1.1.1.0
FLOOD ID	06065C_654974
STUDY_TYP	NP
ZONE_SUBTY	AREA OF MINIMAL FLOOD HA
AR_SUBTRV	
DUAL_ZONE	
FLOOD_ZONE	UNSHADED X
RULEID	10
Shape.STArea()	11471785886.947632
Shape.STLength()	3045601.555573

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2 zone

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1 on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

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
<input checked="" type="checkbox"/> A. On-site storm drain inlets	<input type="checkbox"/> Locations of inlets.	<input checked="" type="checkbox"/> 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.	<input checked="" type="checkbox"/> Maintain and periodically repaint or replace inlet markings. <input checked="" type="checkbox"/> Provide stormwater pollution prevention information to new site owners, lessees, or operators. <input checked="" type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-44, “Drainage System Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com <input type="checkbox"/> 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.”
<input type="checkbox"/> B. Interior floor drains and elevator shaft sump pumps		<input type="checkbox"/> State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	<input type="checkbox"/> Inspect and maintain drains to prevent blockages and overflow.
<input type="checkbox"/> C. Interior parking garages		<input type="checkbox"/> State that parking garage floor drains will be plumbed to the sanitary sewer.	<input type="checkbox"/> Inspect and maintain drains to prevent blockages and overflow.

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060

STORMWATER 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
<input type="checkbox"/> D1. Need for future indoor & structural pest control		<input type="checkbox"/> Note building design features that discourage entry of pests.	<input type="checkbox"/> Provide Integrated Pest Management information to owners, lessees, and operators.
<input checked="" type="checkbox"/> D2. Landscape/ Outdoor Pesticide Use	<input type="checkbox"/> Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained. <input type="checkbox"/> Show self-retaining landscape areas, if any. <input type="checkbox"/> Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)	<p>State that final landscape plans will accomplish all of the following.</p> <input type="checkbox"/> Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. <input checked="" type="checkbox"/> 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. <input checked="" type="checkbox"/> Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. <input checked="" type="checkbox"/> Consider using pest-resistant plants, especially adjacent to hardscape. <p>To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.</p>	<input checked="" type="checkbox"/> Maintain landscaping using minimum or no pesticides. <input checked="" type="checkbox"/> See applicable operational BMPs in “What you should know for.....Landscape and Gardening” at http://rcflood.org/stormwater/Error! <small>Hyperlink reference not valid.</small> <input type="checkbox"/> Provide IPM information to new owners, lessees and operators.

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060

STORMWATER 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
<input type="checkbox"/> E. Pools, spas, ponds, decorative fountains, and other water features.	<input type="checkbox"/> 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 Environmental 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.	<input type="checkbox"/> See applicable operational BMPs in “Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain” at http://rcflood.org/stormwater/
<input type="checkbox"/> F. Food service	<input type="checkbox"/> 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. <input type="checkbox"/> On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.	<input type="checkbox"/> Describe the location and features of the designated cleaning area. <input type="checkbox"/> Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.	<input type="checkbox"/> 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.
<input type="checkbox"/> G. Refuse areas	<input type="checkbox"/> 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. <input type="checkbox"/> 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. <input type="checkbox"/> Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.	<input type="checkbox"/> State how site refuse will be handled and provide supporting detail to what is shown on plans. <input type="checkbox"/> State that signs will be posted on or near dumpsters with the words “Do not dump hazardous materials here” or similar.	<input type="checkbox"/> 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

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060

STORMWATER 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
<input type="checkbox"/> H. Industrial processes.	<input type="checkbox"/> Show process area.	<input type="checkbox"/> 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.”	<input type="checkbox"/> See Fact Sheet SC-10, “Non-Stormwater Discharges” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com See the brochure “Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities” at http://rcflood.org/stormwater/

STORMWATER 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
<p><input type="checkbox"/> I. Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)</p>	<p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p>	<p>Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.</p> <p>Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for:</p> <ul style="list-style-type: none"> ▪ 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 <p>www.cchealth.org/groups/hazmat/</p>	<p><input type="checkbox"/> 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</p>

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060

STORMWATER 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
<p><input type="checkbox"/> J. Vehicle and Equipment Cleaning</p>	<p><input type="checkbox"/> Show on drawings as appropriate:</p> <p>(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.</p> <p>(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).</p> <p>(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.</p> <p>(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.</p>	<p><input type="checkbox"/> If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.</p>	<p>Describe operational measures to implement the following (if applicable):</p> <p><input type="checkbox"/> 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/</p> <p><input type="checkbox"/> Car dealerships and similar may rinse cars with water only.</p>

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STORMWATER 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
<ul style="list-style-type: none"> <input type="checkbox"/> K. Vehicle/Equipment Repair and Maintenance 	<ul style="list-style-type: none"> <input type="checkbox"/> 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. <input type="checkbox"/> 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. <input type="checkbox"/> 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. 	<ul style="list-style-type: none"> <input type="checkbox"/> State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area. <input type="checkbox"/> 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. <input type="checkbox"/> 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. 	<p>In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 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. <input type="checkbox"/> 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. <input type="checkbox"/> 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. <p>Refer to "Automotive Maintenance & 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/</p> <p>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/</p>

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060

STORMWATER 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
<ul style="list-style-type: none"> <input type="checkbox"/> L. Fuel Dispensing Areas 	<ul style="list-style-type: none"> <input type="checkbox"/> Fueling areas⁶ 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. <input type="checkbox"/> 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 area¹.] The canopy [or cover] shall not drain onto the fueling area. 		<ul style="list-style-type: none"> <input type="checkbox"/> The property owner shall dry sweep the fueling area routinely. <input type="checkbox"/> See the Fact Sheet SD-30 , “Fueling Areas” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

⁶ 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.

STORMWATER 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
<input type="checkbox"/> M. Loading Docks	<input type="checkbox"/> 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. <input type="checkbox"/> 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. <input type="checkbox"/> Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.		<input type="checkbox"/> Move loaded and unloaded items indoors as soon as possible. <input type="checkbox"/> See Fact Sheet SC-30, “Outdoor Loading and Unloading,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

STORMWATER 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
<input type="checkbox"/> N. Fire Sprinkler Test Water		<input type="checkbox"/> Provide a means to drain fire sprinkler test water to the sanitary sewer.	<input type="checkbox"/> See the note in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
<p>O. Miscellaneous Drain or Wash Water or Other Sources</p> <input type="checkbox"/> Boiler drain lines <input type="checkbox"/> Condensate drain lines <input type="checkbox"/> Rooftop equipment <input type="checkbox"/> Drainage sumps <input type="checkbox"/> Roofing, gutters, and trim. <input type="checkbox"/> Other sources		<input type="checkbox"/> Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. <input type="checkbox"/> 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. <input type="checkbox"/> Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. <input type="checkbox"/> 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.	

STORMWATER 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
<input type="checkbox"/> P. Plazas, sidewalks, and parking lots.			<input type="checkbox"/> Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Operation and Maintenance Plan

Project Title: Cottonwood Residential Subdivision

Original Date Prepared: April 28, 2017

Revision Date(s): _____

Revision Date(s): _____

Revision Date(s): _____

Revision Date(s): _____

Contact Information:

Prepared for:

MACJONES HOLDINGS, LLC
22 GONDOLIERS BLUFF
NEWPORT COAST, CA 92657
(949) 509-5004
CONTACT: DAVID WEBB

Prepared by:

THIENES ENGINEERING, INC.
14349 FIRESTONE BLVD.
LA MIRADA, CALIFORNIA 90638
(714) 521-4811
CONTACT: Vicky Li (vicky@thieneseng.com)
JOB NO. 3357b

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

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- Appendix 3: Maintenance Mechanism
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- Appendix 5: Site Plan and Details
- Appendix 6: “As-Built” Drawings
- Appendix 7: Manufacturer Information
- Appendix 8: Service Agreement Information

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

III. Introduction

The proposed project site is located near the intersection of Cottonwood Avenue and Lakeport Drive and encompasses approximately 10.00 acres. Currently, the site is a rough graded dirt lot. Runoff from the site and the southerly half of Cottonwood Avenue generally flows southwesterly towards Erin Drive.

Proposed improvements to the site include the construction of 16 single-family homes, public streets, sidewalk and utility improvements. The site will continue to drain southerly towards Erin Drive. Three infiltration LID BMPs are proposed, one infiltration trench and two hybrid-bioretention facilities with dry wells will be utilized as the proposed structural BMPs for offsite road improvements and onsite properties, respectively.

Existing Condition Hydrology

The site is currently a rough graded dirt lot. Runoff from the site generally flows southwesterly towards Erin Drive.

Proposed Condition Hydrology

The site will continue to drain towards Erin Drive.

IV. Responsibility for Maintenance

IV.A General

Funding will be provided by the owner:

MacJones Holdings, LLC
2 Gondoliers Bluff
Newport Coast, CA 92657
(949) 509-5004
Contact: Daniel Webb

A copy of the Covenant Agreement will be attached in Appendix 3 of this O&M Plan.

IV.B Staff Training Program

Staff training records and descriptions will be inserted in Appendix 4 of this O&M Plan.

IV.C Records

Maintenance records are to be inserted chronologically in Appendix 1 of this O&M Plan.

IV.D Safety

All maintenance procedures shall comply with the latest OSHA standards.

V. Summary of Drainage Management Areas and Stormwater BMPs

V.A Drainage Areas

See Appendix 5 of this O&M Plan for WQMP site map.

DMA Name or ID	Surface Type(s) ¹	Area (Sq. Ft.)	Area (Acres)	DMA Type
A	Concrete or Asphalt	29,025	0.67	Type D
B1	Roofs	37,980	0.87	Type D
B2	Concrete or Asphalt	54,638	1.25	Type D
B3	Ornamental Landscaping	214,483	4.92	Type D
C1	Roofs	12,660	0.29	Type D
C2	Concrete or Asphalt	15,325	0.35	Type D
C3	Ornamental Landscaping	71,638	1.64	Type D

Geo-location of the BMPs using latitude and longitude coordinates.

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	Latitude	Longitude
D2	Landscape / Outdoor Pesticide Use	On-site Landscape Improvement Plans	---	---
G	Refuse Areas	WQMP Site Map	---	---
LID "A"	Infiltration Trench	WQMP Site Map	33.9243860	-117.206038
LID "B"	Hybrid-Bioretention with Dry Well	WQMP Site Map	33.9229300	-117.206043
LID "C"	Hybrid-Bioretention with Dry Well	WQMP Site Map	33.9228630	-117.206360

V.B Structural Post-Construction BMPs

See Appendix 5 of this O&M Plan for WQMP site map.

Additional BMP details are available in Appendix 10 of the WQMP.

V.C Self-Retaining Areas or Other

Not applicable.

VI. Stormwater BMP Design Documentation

VI.A “As-Built” Drawings of each Stormwater BMP

See Appendix 6 of this O&M Plan for “as-built” drawings.

VI.B Manufacturer’s Data, Manuals, and Maintenance Requirements

Not applicable, there are no manufactured stormwater BMPs.

VI.C Specific Operation and Maintenance Concerns and Troubleshooting

Not applicable.

VII. Maintenance Schedule or Matrix

VII.A Maintenance Schedule

Schedule (Bioretention)	Inspection and Maintenance Activity (Bioretention)
Ongoing	<ul style="list-style-type: none"> Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance activities. Remove trash and debris Replace damaged grass and/or plants Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
After storm events	<ul style="list-style-type: none"> Inspect areas for ponding
Annually	<ul style="list-style-type: none"> Inspect/clean inlets and outlets Conduct maintenance on dry wells per manufacturer's specifications provided in Appendix 10 of this WQMP.

Schedule (Infiltration Trench)	Inspection and Maintenance Activity (Infiltration Trench)
Every two weeks, or as often as necessary to maintain a pleasant appearance	<ul style="list-style-type: none"> Maintain adjacent landscaped areas. Remove clippings from landscape maintenance activities. Remove trash and debris
3 days after Major Storm Events	<ul style="list-style-type: none"> Check for surface ponding. If ponding is only above the trench, remove, wash and replace pea gravel. Maybe needed every 5-10 years. Check observation well for ponding. If the trench becomes plugged, remove rock materials. Provide a fresh infiltration surface by excavating an additional 2-4 inches of soil. Replace the rock materials.

VII.B Service Agreement Information

See Appendix 8 of this O&M Plan for service agreement information with any contractors regarding the O&M of BMPs at the site, if any.

Appendix 1: Inspection and Maintenance Logs

Insert Additional Inspection or Maintenance Logs Here

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix 2: Updates, Revisions, and Errata

Insert Additional Updates, Revisions, and Errata Logs Here

Appendix 3: Maintenance Mechanism

Copy of Covenant Agreement

Establishing Notification Process And Responsibility

For Water Quality Management Plan Implementation And Maintenance

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Notification Process and Responsibility

1. **Name:** _____
Title: _____
Phone No.: _____

WQMP Responsibilities:

- (1) Routine inspections to evaluate BMP effectiveness.
- (2) Identifying when BMPs require maintenance.
- (3) Working with qualified contractors to maintain the BMP.
- (4) Recordkeeping of inspections and maintenance activities.

2. **Name:** _____
Title: _____
Phone No.: _____

WQMP Responsibilities:

- (1) Cleaning, repairing, servicing, and maintenance of BMP.

3. **Name:** _____
Title: _____
Phone No.: _____

WQMP Responsibilities:

- (1) In event of failure, and with City Engineer's authorization, modify or replace with an upgraded BMP to prevent future failure.
- (2) Notify successors of BMPs and maintenance requirements.

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

LAND DEVELOPMENT DIV.
CITY OF MORENO VALLEY
PO BOX 88005
14177 FREDERICK STREET
MORENO VALLEY, CA 92552-0805

EXEMPT FROM FEE PER G.C. Section 6103

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STORMWATER TREATMENT DEVICE AND CONTROL MEASURE ACCESS AND
MAINTENANCE COVENANT

THIS INSTRUMENT is made and entered into this ____ day of _____ 2017,
by and between **MAC JONES HOLDINGS, LLC** hereinafter referred to as "Owner," and the
City of Moreno Valley, a municipal corporation, hereinafter referred to as "City."

RECITALS

WHEREAS, the Owner owns real property ("Property") in the City specifically described
in Exhibit "A," which is attached hereto and incorporated herein by this reference; and

WHEREAS, at the time of approval of the development project known as
COTTONWOOD RESIDENTIAL SUBDIVISION (the "Project") for the Property, the City
required the Project to employ on-site stormwater and non-stormwater control measures to
mitigate the Project impacts to water quality and minimize pollutants in urban stormwater runoff;
and

WHEREAS, the City and Owner, its successors, and assigns, agree that the health, safety and welfare of the residents of the City, require that on-site stormwater and non-stormwater management control measures be constructed and implemented and adequately maintained on the Property; and

WHEREAS, the Owner has chosen to install **ONE INFILTRATION TRENCH AND TWO HYBRID-BIORETENTION WITH DRY WELLS**, hereinafter referred to as the "Device" and other control measures all as described in the Final Water Quality Management Plan (WQMP) to minimize pollutants in urban stormwater and non-stormwater runoff; and

WHEREAS, the Device and other control measures have been installed and/or implemented in accordance with the WQMP, project plans and specifications approved by the City; and

WHEREAS, the Device and other control measures, being installed on private property and draining only private property are private facilities with all maintenance or replacement therefore being the sole responsibility of the Owner; and

WHEREAS, the Owner is aware that periodic and continuous maintenance including, but not necessarily limited to, filter material replacement and sediment removal is required to assure discharges from the Device, other control measures and the Project are in compliance with the City's Municipal Code for stormwater and non-stormwater discharges and that such maintenance activity will require compliance with all Federal, State and local laws and regulations, including

those pertaining to confined space and waste disposal methods in effect at the time such maintenance occurs;

NOW, THEREFORE, in consideration of City's approval of the Project and the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the City and Owner agree as follows:

1. The Owner hereby provides the City and its designees with full right of access to the Device and other control measures and the immediate vicinity of the property at any time, upon reasonable notice; or in the event of emergency, as determined by City's Public Works Director/City Engineer or designees, no advance notice; for the purpose of inspection, sampling and testing of the Device and other control measures, and in cases of emergency, where the public health, safety, or welfare is compromised, such emergency shall be declared a "nuisance" as defined in the Municipal Code. Such conditions that created the emergency shall be abated as provided for in the Municipal Code and at the Owner's expense as provided for in Section 3, below.
2. The Owner shall diligently maintain the Device and other control measures in a manner assuring all discharges from the Device, other control measures and the Project are in compliance with the Municipal Code for stormwater and non-stormwater discharges at all times. All reasonable precautions shall be exercised by the Owner and the Owner's representatives in the removal and extraction of materials from the Device and other control measures, and the ultimate disposal

of the materials in a manner consistent with all applicable laws. As may be requested from time to time by the City, the Owner shall provide the City with documentation identifying the materials removed, the quantity and the recycle or disposal destinations, as appropriate.

3. In the event the Owner fails to perform the necessary maintenance contemplated by this Instrument, within five (5) days of being given written notice by the City, the lack of maintenance shall be considered a public health and safety concern and declared a “nuisance”, the City shall take all necessary actions as provided in the Municipal Code, to abate the nuisance and charge the entire cost and expense to the Owner, including administrative costs, attorneys' fees and interest thereon at the maximum rate authorized by law from the date of the notice of expense until paid in full. Additionally, any discharge as a result from the lack of maintenance prescribed herein from the Device to the City’s maintained Municipal Separate Storm Sewer System shall be considered an illegal discharge and considered a violation of the Municipal Code and shall cease immediately. Such cessation may include a yellow or red tag issued to the Project.

4. This Instrument shall be recorded in the Official Records of the County of Riverside at the expense of the Owner and shall constitute notice to all successors and assigns to the title to the Property of the obligations herein set forth. This Instrument shall also constitute a lien against the Property in such amount as will fully reimburse the City, including interest as herein above set forth, subject to foreclosure in event of default in payment.

5. It is the intent of the Owner that the burdens and benefits herein undertaken shall constitute covenants that run with the Property and shall constitute a lien against the Property.
6. This covenant imposes no liability of any kind whatsoever on the City and the Owner agrees to hold the City harmless from any liability in the event the Device and other control measures fail to operate in accordance with the plans and specification submitted to the City.
7. The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the Owner hereto. The term "Owner" shall include not only the Owner, but also its heirs, successors, executors, administrators, lessees and assigns. The Owner shall notify any successor to title of all or part of the Property about the existence of this Instrument. The Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. The Owner shall provide a copy of such notice to the City at the same time such notice is provided to the successor.
8. Time is of the essence in the performance of this Instrument.
9. Any notice to a party required or called for in this Instrument shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two (72) hours after deposit in the U.S. Mail, whichever is earlier. A party may

change notice address only by providing written notice thereof to the other party.

<p>CITY:</p> <p>Public Works Director/City Engineer</p> <p>City of Moreno Valley</p> <p>PO Box 88005</p> <p>14177 Frederick Street</p> <p>Moreno Valley, CA 92552-0805</p>	<p>OWNER:</p> <p><u>Name: Daniel Webb</u></p> <p><u>Company: Mac Jones Holdings, LLC</u></p> <p><u>Address: 2 Gondoliers Bluff</u></p> <p><u>City/State/ZIP: Newport Coast, CA 92657</u></p>
--	--

- 10. This Instrument represents the entire Covenant of the parties hereto as to the matters contained herein and supersedes any and all prior written or verbal agreements between the parties as to the subject matter hereof.
- 11. This Instrument shall be governed by and construed in accordance with the laws of the State of California.
- 12. No amendment to this Instrument shall be made without prior written approval by the City.

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

OWNER:

Daniel Webb, Owner

Mac Jones Holdings, LLC
(Name of company/partnership/corp./entity)

CITY:

CITY OF MORENO VALLEY

APPROVED AS TO FORM:

City Attorney

By: _____ Date: _____
City Manager

Attest:

By: _____ Date: _____
City Clerk

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

EXHIBIT “A”

Legal Description

EXHIBIT “A-1”

(Include 8.5x11 project site map and show location(s) of treatment control BMPs)

Appendix 4: Training Records

Insert Training Records with Brief Discussion Here

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix 5: Site Plan and Details

WQMP Site Map and BMP Details

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix 6: “As-Built” Drawings

Insert “As-Builts” Here When Available

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix 7: Manufacturer Information

Brochures, Manuals, and Maintenance Requirements

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix 8: Service Agreement Information

Insert Contractor Information (if any)

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

Attachment: Preliminary Water Quality Management Plan (2836 : PEN16-0050 - Tentative Tract Map 37060 to subdivide 10 acres in the RA-2

3.2 INFILTRATION TRENCH

Type of BMP	LID - Infiltration
Treatment Mechanisms	Infiltration, Evapotranspiration (when vegetated), Evaporation
Maximum Drainage Area	10-acres
Other Names	None

Description

Infiltration trenches are shallow excavated areas that are filled with rock material to create a subsurface reservoir layer. The trench is sized to store the design capture volume, V_{BMP} , in the void space between the rocks. Over a period of 72 hours, the stormwater infiltrates through the bottom of the trench into the surrounding soil. Infiltration basins are highly effective in removing all targeted pollutants from stormwater runoff.

Figure 1 shows the components of an infiltration trench. The section shows the reservoir layer and observation well, which is used to monitor water depth. An overflow pipe that is used to bypass flows once the trench fills with stormwater is also shown.

Site Considerations

Location

The use of infiltration trenches may be restricted by concerns over groundwater contamination, soil permeability, and clogging at the site. See the applicable WQMP for any specific feasibility considerations for using infiltration BMPs. Where this BMP is being used, the soil beneath the basin must be thoroughly evaluated in a geotechnical report since the underlying soils are critical to the basin's long term performance. These basins may not be appropriate for the following site conditions:

- Industrial sites or locations where spills of toxic materials may occur.
- Sites with very low soil infiltration rates.
- Sites with high groundwater tables or excessively high soil infiltration rates, where pollutants can affect groundwater quality.
- Sites with unstabilized soil or construction activity upstream.
- On steeply sloping terrain.
- Infiltration trenches located in a fill condition should refer to Appendix A of this Handbook for details on special requirements/restrictions.

This BMP has a flat surface area, so it may be challenging to incorporate into steeply sloping terrain.

INFILTRATION TRENCH BMP FACT SHEET

Setbacks

Always consult your geotechnical engineer for site specific recommendations regarding setbacks for infiltration trenches. Recommended setbacks are needed to protect buildings, walls, onsite or nearby wells, streams, and tanks. Setbacks should be considered early in the design process as they affect where infiltration facilities may be placed and how deep they are allowed to be. For instance, depth setbacks can dictate fairly shallow facilities that will have a larger footprint and, in some cases, may make an infiltration trench infeasible. In that instance, another BMP must be selected.

In addition to setbacks recommended by the geotechnical engineer, infiltration trenches must be set back:

- 10 feet from the historic high groundwater mark (measured vertically from the bottom of the trench, as shown in Figure 1)
- 5 feet from bedrock or impermeable surface layer (measured vertically from the bottom of the trench, as shown in Figure 1)
- From all mature tree drip lines as indicated in Figure 1
- 100 feet horizontally from wells, tanks or springs

Setbacks to walls and foundations must be included as part of the Geotechnical Report.

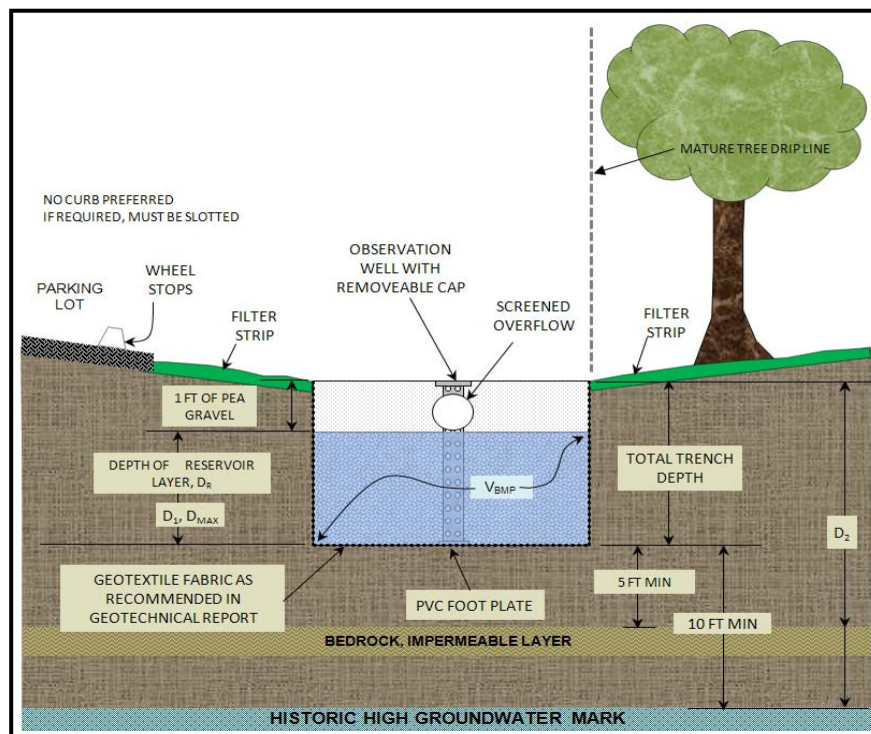


Figure 1 Section View of an Infiltration Trench

INFILTRATION TRENCH BMP FACT SHEET

Sediment Control

Infiltration BMPs have the risk of becoming plugged over time. To prevent this, sediment must be removed before stormwater enters the trench. Both sheet and concentrated flow types have requirements that should be considered in the design of an infiltration trench.

When sheet type flows approach the trench along its length (as illustrated in Figure 2), a vegetated filter strip should be placed between the trench

and the upstream drainage area. The filter strip must be a minimum of 5 feet wide and planted with grasses (preferably native) or covered with mulch.

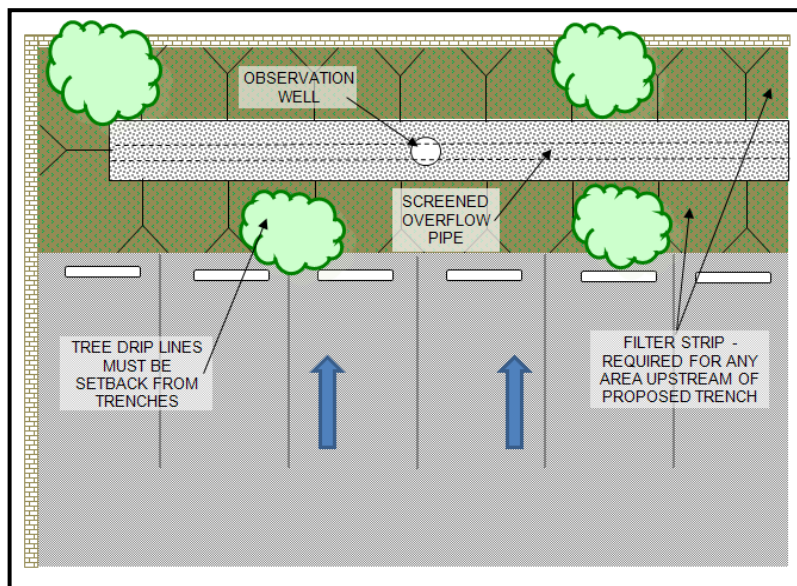


Figure 2 Plan View, Sheet Type Flows

Concentrated flows require a different approach. A 2004 Caltrans BMP Retrofit Report found that flow spreaders recommended in many water quality manuals are ineffective in distributing concentrated flows. As such, concentrated flows should either be directed toward a traditional vegetated swale (as shown on the right side of Figure 3) or to catch basin filters that can remove litter and sediment. Catch basins must discharge runoff as surface flow above the trench; they cannot outlet directly into the reservoir layer of the infiltration trench. If catch basins are used, the short and long term costs of the catch basin filters should be considered.

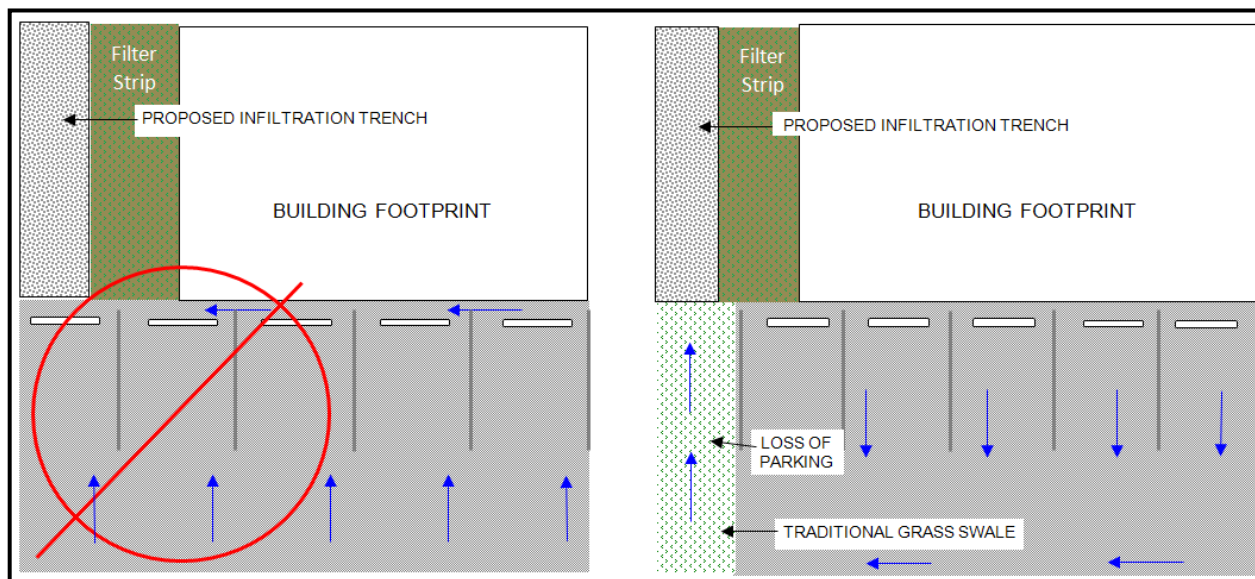


Figure 3 Plan View, Concentrated Flows

INFILTRATION TRENCH BMP FACT SHEET

Additional Considerations

Class V Status

In certain circumstances, for example, if an infiltration trench is “deeper than its widest surface dimension,” or includes an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground, it would probably be considered by the EPA to be a Class V injection well. Class V injection wells are subject to regulations and reporting requirements via the Underground Injection Control (UIC) Program. To ensure that infiltration trenches are not considered Class V wells, the design procedure in this manual requires that the trench not be deeper than it is wide.

Geotechnical Report

A geotechnical report must be included for all infiltration trenches. Appendix A of this Handbook entitled “Infiltration Testing Guidelines”, details which types of infiltration tests are acceptable and how many tests or boring logs must be performed. A Geotechnical Report must be submitted in support of all infiltration trenches. Setbacks to walls and foundations must be included in the Geotechnical Report.

Observation Wells

One or more observation wells should be provided. The observation well consists of a vertical section of perforated pipe, 4 to 6 inches in diameter, installed flush with top of trench on a foot plate and have a locking, removable cap.

Overflow

An overflow route is needed to bypass storm flows larger than the V_{BMP} or in the event of clogging. Overflow systems must connect to an acceptable discharge point such as a downstream conveyance system.

Maintenance Access

Normal maintenance of an infiltration trench includes maintenance of the filter strip as well as debris and trash removal from the surface of the trench and filter strip. More substantial maintenance requiring vehicle access may be required every 5 to 10 years. Vehicular access along the length of the swale should be provided to all infiltration trenches. It is preferred that trenches be placed longitudinally along a street or adjacent to a parking lot area. These conditions have high visibility which makes it more likely that the trench will be maintained on a regular basis.

INFILTRATION TRENCH BMP FACT SHEET

Inspection and Maintenance

Schedule	Inspection and Maintenance Activity
Every two weeks, or as often as necessary to maintain a pleasant appearance	<ul style="list-style-type: none"> - Maintain adjacent landscaped areas. Remove clippings from landscape maintenance activities. - Remove trash & debris
3 days after Major Storm Events	<ul style="list-style-type: none"> - Check for surface ponding. If ponding is only above the trench, remove, wash and replace pea gravel. May be needed every 5-10 years. - Check observation well for ponding. If the trench becomes plugged, remove rock materials. Provide a fresh infiltration surface by excavating an additional 2-4 inches of soil. Replace the rock materials.

Design and Sizing Criteria

Design Parameter	Design Criteria
Design Volume	V_{BMP}
Design Drawdown time	72 hrs
Maximum Tributary Drainage Area	10 acres
Maximum Trench Depth	8.0 ft
Width to Depth Ratio	Width must be greater than depth
Reservoir Rock Material	AASHTO #3 or 57 material or a clean, washed aggregate 1 to 3-in diameter equivalent
Filter Strip Width	Minimum of 5 feet in the direction of flow for all areas draining to trench
Filter Strip Slope	Max slope = 1%
Filter Strip Materials	Mulch or grasses (non-mowed variety preferred)
Historic High Groundwater Mark	10 ft or more below bottom of trench
Bedrock/Impermeable Layer Setback	5 ft or more below bottom of trench
Tree Setbacks	Mature tree drip line must not overhang the trench
Trench Lining Material	As recommended in Geotechnical Report

INFILTRATION TRENCH BMP FACT SHEET

Infiltration Trench Design Procedure

1. Enter the area tributary to the trench, maximum drainage area is 10 acres.
2. Enter the Design Volume, V_{BMP} , determined from Section 2.1 of this Handbook.
3. Enter the site infiltration rate, found in the geotechnical report.
4. Enter the factor of safety from Table 1 of Appendix A, Infiltration Testing.
5. Determine the maximum reservoir layer depth, D_{MAX} . The value is obtained by taking the smaller of two depth equations but may never exceed 8 feet. The first depth, D_1 is related to the infiltration rate of the soil. The second depth, D_2 , is related to required setbacks to groundwater, bedrock/impermeable layer. These parameters are shown in Figure 1.

Calculate D_1 .

$$D_1 = \frac{I(\text{in/hr}) \times 72 (\text{hrs})}{12(\text{in/ft}) \times n/100 \times FS}$$

Where:

- I = site infiltration rate (in/hr), found in the geotechnical report
- FS = factor of safety, refer to Appendix A - Infiltration Testing
- n = porosity of the trench material, 40%

Calculate D_2 . Enter the depth to the seasonal high groundwater and bedrock/impermeable layer measured from the finished grade. The spreadsheet checks the minimum setbacks shown in Figure 1 and selects the smallest value. The equations are listed below for those doing hand calculations.

Minimum Setbacks (includes 1 foot for pea gravel):

- = Depth to historic high groundwater mark - 11 feet
- = Depth to impermeable layer - 6 feet

D_2 is the smaller of the two values.

D_{MAX} is the smaller value of D_1 and D_2 , and must be less than or equal to 8 feet.

6. Enter the proposed reservoir layer depth, D_R . The value must be no greater than D_{MAX} .

INFILTRATION TRENCH BMP FACT SHEET

7. Find the required surface area of the trench, A_S . Once D_R is entered, the spreadsheet will calculate the corresponding depth of water and the minimum surface area of the trench.

$$\text{Design } d_W = D_R \times (n/100) \qquad A_S = \frac{V_{BMP}}{\text{Design } d_W}$$

Where:

$$\begin{aligned} A_S &= \text{minimum area required (ft}^2\text{)} \\ V_{BMP} &= \text{BMP storage volume (ft}^3\text{)} \\ \text{Design } d_W &= \text{Depth of water in reservoir layer (ft)} \end{aligned}$$

8. Enter the proposed design surface area; it must be greater than the minimum surface area.
9. Calculate the minimum trench width. This is to ensure that EPA's Class V Injection well status is not triggered. The total trench depth (shown in Figure 1) includes the upper foot where the overflow pipe is located. The minimum surface dimension is $D_R + 1$ foot.

Additional Items

The following items detailed in the preceding sections should also be addressed in the design.

- Sediment Control
- Geotechnical Report
- Observation well(s)
- Overflow

INFILTRATION TRENCH BMP FACT SHEET

Reference Material

California Stormwater Quality Association. California Stormwater BMP Handbook New Development and Redevelopment. 2003.

County of Los Angeles Department of Public Works. Stormwater BMP Best Management Practice Design and Maintenance Manual for Publicly Maintained Storm Drain Systems. Los Angeles, CA, 2009.

LandSaver Stormwater Management System. Tech Sheet - Porosity of Structural Backfill. 2006.

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United States Environmental Protection Agency. Office of Water. Memorandum on Clarification on Which Stormwater Infiltration Practices/technologies Have the Potential to Be Regulated as "Class V" Wells by Underground Injection Control Program. By Linda Boornazian and Steve Heare. Washington D.C., 2008.

Ventura Countywide Stormwater Quality Management Program. Land Development Guidelines Biofilter Fact Sheet. Ventura, CA, 2001.

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3.5 Bioretention Facility

Type of BMP	LID – Bioretention
Treatment Mechanisms	Infiltration, Evapotranspiration, Evaporation, Biofiltration
Maximum Drainage Area	This BMP is intended to be integrated into a project’s landscaped area in a distributed manner. Typically, contributing drainage areas to Bioretention Facilities range from less than 1 acre to a maximum of around 10 acres.
Other Names	Rain Garden, Bioretention Cell, Bioretention Basin, Biofiltration Basin, Landscaped Filter Basin, Porous Landscape Detention

Description

Bioretention Facilities are shallow, vegetated basins underlain by an engineered soil media. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant uptake of pollutants and runoff. This keeps the Best Management Practice (BMP) from becoming clogged and allows more of the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. In most cases, the bottom of a Bioretention Facility is unlined, which also provides an opportunity for infiltration to the extent the underlying onsite soil can accommodate. When the infiltration rate of the underlying soil is exceeded, fully biotreated flows are discharged via underdrains. Bioretention Facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly biotreated) discharge to the storm drain system.

Siting Considerations

These facilities work best when they are designed in a relatively level area. Unlike other BMPs, Bioretention Facilities can be used in smaller landscaped spaces on the site, such as:

- ✓ Parking islands
- ✓ Medians
- ✓ Site entrances

Landscaped areas on the site (such as may otherwise be required through minimum landscaping ordinances), can often be designed as Bioretention Facilities. This can be accomplished by:

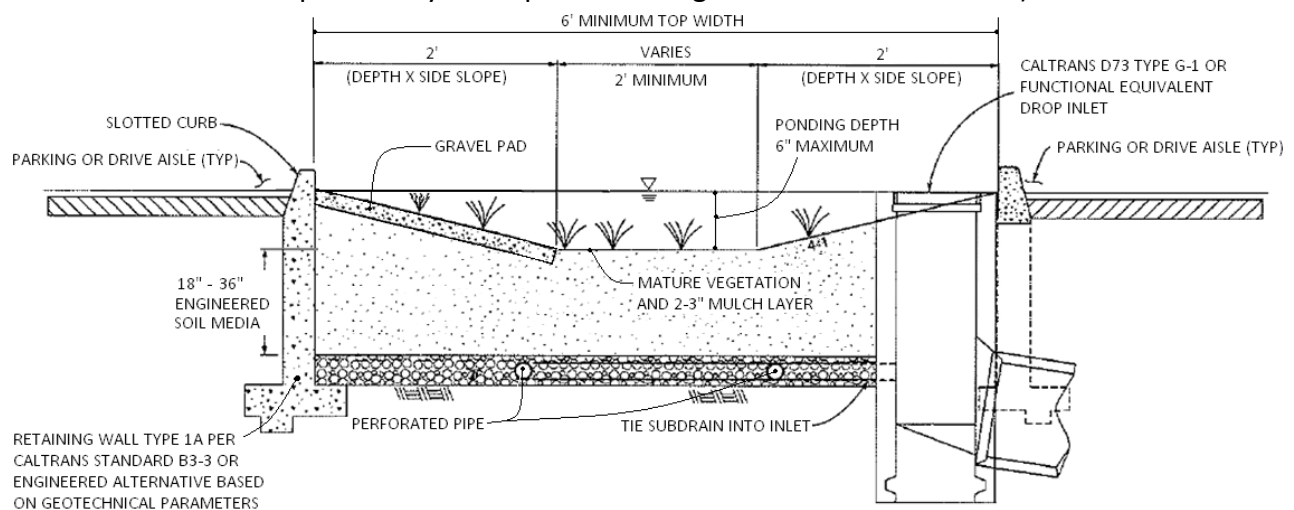
- *Depressing* landscaped areas below adjacent impervious surfaces, rather than elevating those areas
- Grading the site to direct runoff from those impervious surfaces *into* the Bioretention Facility, rather than away from the landscaping
- Sizing and designing the depressed landscaped area as a Bioretention Facility as described in this Fact Sheet

Bioretention Facilities should however not be used downstream of areas where large amounts of sediment can clog the system. Placing a Bioretention Facility at the toe of a steep slope should also be avoided due to the potential for clogging the engineered soil media with erosion from the slope, as well as the potential for damaging the vegetation.

Design and Sizing Criteria

The recommended cross section necessary for a Bioretention Facility includes:

- Vegetated area
- 18' minimum depth of engineered soil media
- 12' minimum gravel layer depth with 6' perforated pipes (added flow control features such as orifice plates may be required to mitigate for HCOG conditions)



While the 18-inch minimum engineered soil media depth can be used in some cases, it is recommended to use 24 inches or a preferred 36 inches to provide an adequate root zone for the chosen plant palate. Such a design also provides for improved removal effectiveness for nutrients. The recommended ponding depth inside of a Bioretention Facility is 6 inches; measured from the flat bottom surface to the top of the water surface as shown in Figure 1.

Because this BMP is filled with an engineered soil media, pore space in the soil and gravel layer is assumed to provide storage volume. However, several considerations must be noted:

- Surcharge storage above the soil surface (6 inches) is important to assure that design flows do not bypass the BMP when runoff exceeds the soil's absorption rate.
- In cases where the Bioretention Facility contains engineered soil media deeper than 36 inches, the pore space within the engineered soil media can only be counted to the 36-inch depth.
- A maximum of 30 percent pore space can be used for the soil media whereas a maximum of 40 percent pore space can be used for the gravel layer.

BIORETENTION FACILITY BMP FACT SHEET

Engineered Soil Media Requirements

The engineered soil media shall be comprised of 85 percent mineral component and 15 percent organic component, by volume, drum mixed prior to placement. The mineral component shall be a Class A sandy loam topsoil that meets the range specified in Table 1 below. The organic component shall be nitrogen stabilized compost¹, such that nitrogen does not leach from the media.

Table 1: Mineral Component Range Requirements

Percent Range	Component
70-80	Sand
15-20	Silt
5-10	Clay

The trip ticket, or certificate of compliance, shall be made available to the inspector to prove the engineered mix meets this specification.

Vegetation Requirements

Vegetative cover is important to minimize erosion and ensure that treatment occurs in the Bioretention Facility. The area should be designed for at least 70 percent mature coverage throughout the Bioretention Facility. To prevent the BMP from being used as walkways, Bioretention Facilities shall be planted with a combination of small trees, densely planted shrubs, and natural grasses. Grasses shall be native or ornamental; preferably ones that do not need to be mowed. The application of fertilizers and pesticides should be minimal. To maintain oxygen levels for the vegetation and promote biodegradation, it is important that vegetation not be completely submerged for any extended period of time. Therefore, a maximum of 6 inches of ponded water shall be used in the design to ensure that plants within the Bioretention Facility remain healthy.

A 2 to 3-inch layer of standard shredded aged hardwood mulch shall be placed as the top layer inside the Bioretention Facility. The 6-inch ponding depth shown in Figure 1 above shall be measured from the top surface of the 2 to 3-inch mulch layer.

Curb Cuts

To allow water to flow into the Bioretention Facility, 1-foot-wide (minimum) curb cuts should be placed approximately every 10 feet around the perimeter of the Bioretention Facility. Figure 2 shows a curb cut in a Bioretention Facility. Curb cut flow lines must be at or above the V_{BMP} water surface level.

¹ For more information on compost, visit the US Composting Council website at: <http://compostingcouncil.org/>

BIORETENTION FACILITY BMP FACT SHEET



Figure 2: Curb Cut located in a Bioretention Facility

To reduce erosion, a gravel pad shall be placed at each inlet point to the Bioretention Facility. The gravel should be 1- to 1.5-inch diameter in size. The gravel should overlap the curb cut opening a minimum of 6 inches. The gravel pad inside the Bioretention Facility should be flush with the finished surface at the curb cut and extend to the bottom of the slope.

In addition, place an apron of stone or concrete, a foot square or larger, inside each inlet to prevent vegetation from growing up and blocking the inlet. See Figure 3.

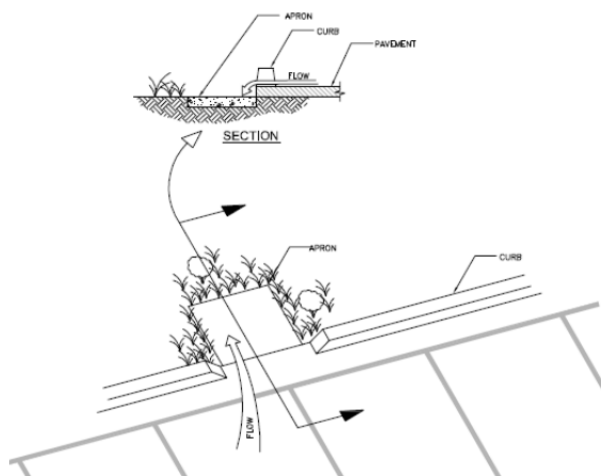


Figure 3: Apron located in a Bioretention Facility

Terracing the Landscaped Filter Basin

It is recommended that Bioretention Facilities be level. In the event the facility site slopes and lacks proper design, water would fill the lowest point of the BMP and then discharge from the basin without being treated. To ensure that the water will be held within the Bioretention Facility on sloped sites, the BMP must be terraced with nonporous check dams to provide the required storage and treatment capacity.

The terraced version of this BMP shall be used on non-flat sites with no more than a 3 percent slope. The surcharge depth cannot exceed 0.5 feet, and side slopes shall not exceed 4:1. Table 2 below shows the spacing of the check dams, and slopes shall be rounded up (i.e., 2.5 percent slope shall use 10' spacing for check dams).

Table 2: Check Dam Spacing

6" Check Dam Spacing	
Slope	Spacing
1%	25'
2%	15'
3%	10'

BIORETENTION FACILITY BMP FACT SHEET

Roof Runoff

Roof downspouts may be directed towards Bioretention Facilities. However, the downspouts must discharge onto a concrete splash block to protect the Bioretention Facility from erosion.

Retaining Walls

It is recommended that Retaining Wall Type 1A, per Caltrans Standard B3-3 or equivalent, be constructed around the entire perimeter of the Bioretention Facility. This practice will protect the sides of the Bioretention Facility from collapsing during construction and maintenance or from high service loads adjacent to the BMP. Where such service loads would not exist adjacent to the BMP, an engineered alternative may be used if signed by a licensed civil engineer.

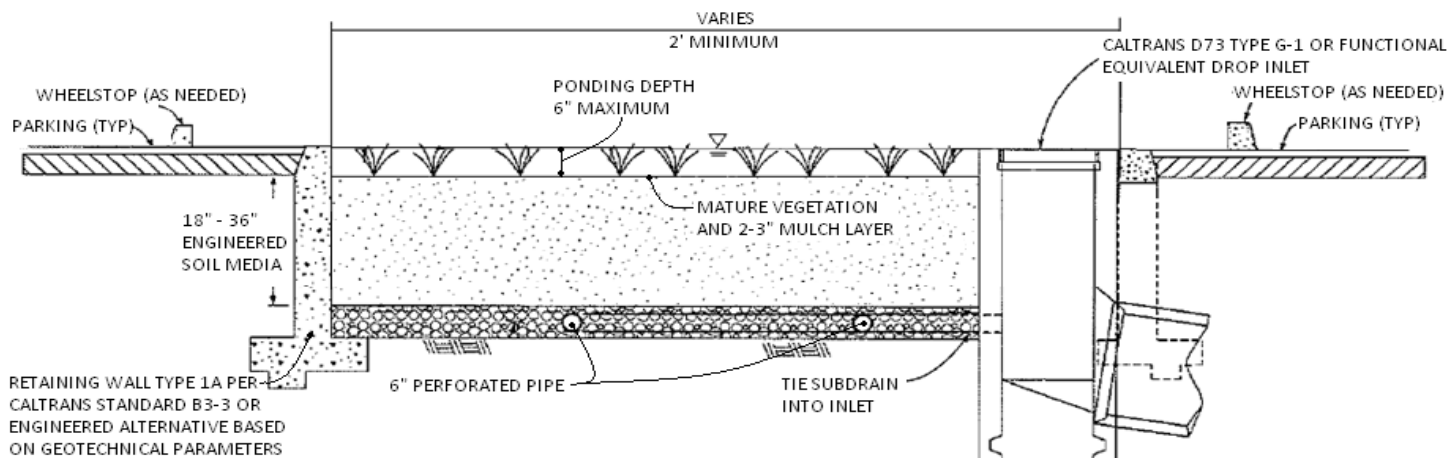
Side Slope Requirements

Bioretention Facilities Requiring Side Slopes

The design should assure that the Bioretention Facility does not present a tripping hazard. Bioretention Facilities proposed near pedestrian areas, such as areas parallel to parking spaces or along a walkway, must have a gentle slope to the bottom of the facility. Side slopes inside of a Bioretention Facility shall be 4:1. A typical cross section for the Bioretention Facility is shown in Figure 1.

Bioretention Facilities Not Requiring Side Slopes

Where cars park perpendicular to the Bioretention Facility, side slopes are not required. A 6-inch maximum drop may be used, and the Bioretention Facility must be planted with trees and shrubs to prevent pedestrian access. In this case, a curb is not placed around the Bioretention Facility, but wheel stops shall be used to prevent vehicles from entering the Bioretention Facility, as shown in Figure 4.



BIORETENTION FACILITY BMP FACT SHEET

Planter Boxes

Bioretention Facilities can also be placed above ground as planter boxes. Planter boxes must have a minimum width of 2 feet, a maximum surcharge depth of 6 inches, and no side slopes are necessary. Planter boxes must be constructed so as to ensure that the top surface of the engineered soil media will remain level. This option may be constructed of concrete, brick, stone or other stable materials that will not warp or bend. Chemically treated wood or galvanized steel, which has the ability to contaminate stormwater, should not be used. Planter boxes must be lined with an impermeable liner on all sides, including the bottom. Due to the impermeable liner, the inside bottom of the planter box shall be designed and constructed with a cross fall, directing treated flows within the subdrain layer toward the point where subdrain exits the planter box, and subdrains shall be oriented with drain holes oriented down. These provisions will help avoid excessive stagnant water within the gravel underdrain layer. Similar to the in-ground Bioretention Facility versions, this BMP benefits from healthy plants and biological activity in the root zone. Planter boxes should be planted with appropriately selected vegetation.



Figure 5: Planter Box

Source: LA Team Effort

Overflow

An overflow route is needed in the Bioretention Facility design to bypass stored runoff from storm events larger than V_{BMP} or in the event of facility or subdrain clogging. Overflow systems must connect to an acceptable discharge point, such as a downstream conveyance system as shown in Figure 1 and Figure 4. The inlet to the overflow structure shall be elevated inside the Bioretention Facility to be flush with the ponding surface for the design capture volume (V_{BMP}) as shown in Figure 4. This will allow the design capture volume to be fully treated by the Bioretention Facility, and for larger events to safely be conveyed to downstream systems. The overflow inlet shall **not** be located in the entrance of a Bioretention Facility, as shown in Figure 6.

BIORETENTION FACILITY BMP FACT SHEET

Underdrain Gravel and Pipes

An underdrain gravel layer and pipes shall be provided in accordance with Appendix B – Underdrains.



Figure 6: Incorrect Placement of an Overflow Inlet.

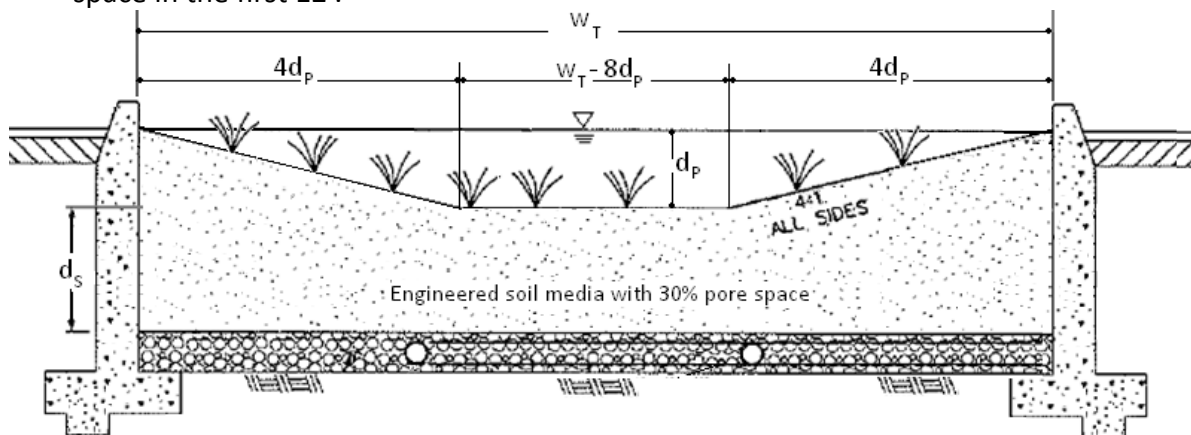
Inspection and Maintenance Schedule

The Bioretention Facility area shall be inspected for erosion, dead vegetation, soggy soils, or standing water. The use of fertilizers and pesticides on the plants inside the Bioretention Facility should be minimized.

Schedule	Activity
Ongoing	<ul style="list-style-type: none"> • Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance activities. • Remove trash and debris • Replace damaged grass and/or plants • Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
After storm events	<ul style="list-style-type: none"> • Inspect areas for ponding
Annually	<ul style="list-style-type: none"> • Inspect/clean inlets and outlets

Bioretention Facility Design Procedure

- 1) Enter the area tributary, A_T , to the Bioretention Facility.
- 2) Enter the Design Volume, V_{BMP} , determined from Section 2.1 of this Handbook.
- 3) Select the type of design used. There are two types of Bioretention Facility designs: the standard design used for most project sites that include side slopes, and the modified design used when the BMP is located perpendicular to the parking spaces or with planter boxes that do not use side slopes.
- 4) Enter the depth of the engineered soil media, d_s . The minimum depth for the engineered soil media can be 18' in limited cases, but it is recommended to use 24' or a preferred 36' to provide an adequate root zone for the chosen plant palette. Engineered soil media deeper than 36' will only get credit for the pore space in the first 36'.
- 5) Enter the top width of the Bioretention Facility.
- 6) Calculate the total effective depth, d_E , within the Bioretention Facility. The maximum allowable pore space of the soil media is 30% while the maximum allowable pore space for the gravel layer is 40%. Gravel layer deeper than 12' will only get credit for the pore space in the first 12'.



- a. For the design with side slopes the following equation shall be used to determine the total effective depth. Where, d_p is the depth of ponding within the basin.

$$d_E(\text{ft}) = \frac{0.3 \times \left[(w_T(\text{ft}) \times d_s(\text{ft})) + 4(d_p(\text{ft}))^2 \right] + 0.4 \times 1(\text{ft}) + d_p(\text{ft}) \left[4d_p(\text{ft}) + (w_T(\text{ft}) - 8d_p(\text{ft})) \right]}{w_T(\text{ft})}$$

This above equation can be simplified if the maximum ponding depth of 0.5' is used. The equation below is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = (0.3 \times d_s(\text{ft}) + 0.4 \times 1(\text{ft})) - \left(\frac{0.7(\text{ft}^2)}{w_T(\text{ft})} \right) + 0.5(\text{ft})$$

- b. For the design without side slopes the following equation shall be used to determine the total effective depth:

$$d_E(\text{ft}) = d_p(\text{ft}) + [(0.3) \times d_s(\text{ft}) + (0.4) \times 1(\text{ft})]$$

The equation below, using the maximum ponding depth of 0.5', is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = 0.5(\text{ft}) + [(0.3) \times d_s(\text{ft}) + (0.4) \times 1(\text{ft})]$$

- 7) Calculate the minimum surface area, A_M , required for the Bioretention Facility. This does not include the curb surrounding the Bioretention Facility or side slopes.

$$A_M(\text{ft}^2) = \frac{V_{\text{BMP}}(\text{ft}^3)}{d_E(\text{ft})}$$

- 8) Enter the proposed surface area. This area shall not be less than the minimum required surface area.
- 9) Verify that side slopes are no steeper than 4:1 in the standard design, and are not required in the modified design.
- 10) Provide the diameter, minimum 6 inches, of the perforated underdrain used in the Bioretention Facility. See Appendix B for specific information regarding perforated pipes.
- 11) Provide the slope of the site around the Bioretention Facility, if used. The maximum slope is 3 percent for a standard design.
- 12) Provide the check dam spacing, if the site around the Bioretention Facility is sloped.
- 13) Describe the vegetation used within the Bioretention Facility.

References Used to Develop this Fact Sheet

Anderson, Dale V. "Landscaped Filter Basin Soil Requirements." Riverside, May 2010.

California Department of Transportation. CalTrans Standard Plans. 15 September 2005. May 2010 <http://www.dot.ca.gov/hq/esc/oe/project_plans/HTM/stdplns-met-new99.htm>.

Camp Dresser and McKee Inc.; Larry Walker Associates. California Stormwater Best Management Practice Handbook for New Development and Redevelopment. California Stormwater Quality Association (CASQA), 2004.

Contra Costa Clean Water Program. Stormwater Quality Requirements for Development Applications. 3rd Edition. Contra Costa, 2006.

County of Los Angeles Public Works. Stormwater Best Management Practice Design and Maintenance Manual. Los Angeles, 2009.

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United States Environmental Protection Agency. Storm Water Technology Fact Sheet Bioretention. Washington D.C, 1999.

Urban Drainage and Flood Control District. Urban Storm Drainage Criteria Manual Volume 3 - Best Management Practices. Vol. 3. Denver, 2008. 3 vols.

Urbonas, Ben R. Stormwater Sand Filter Sizing and Design: A Unit Operations Approach. Denver: Urban Drainage and Flood Control District, 2002.

OPERATION AND MAINTENANCE OF *MaxWell*[®] DRYWELL

The Operation and Maintenance Format will include the following key components:

1.) Inspection Guidelines:

New installations

Newly installed systems should receive a thorough visual examination following the first several significant rainfall events. This assessment will assure that there is no standing water, and that runoff or nuisance water flows are being eliminated within the allowable 48 hour draw-down timeframe.

Ongoing Operations

At a minimum, the drainage structures should be inspected annually, and within 48 hours following a significant storm event to ensure that there is no standing water in the chambers.

2.) Maintenance Format:

After the first 12-months of entering service, it is recommended that an initial cleaning be undertaken. This will help to establish the amount of accumulated particulate matter and debris to be expected on a yearly basis. Thereafter, the systems should receive inspection at least annually, and cleaning should be undertaken when the evaluation reveals that 15% or more of the original chamber volume is occupied by silt and sediment.

During the maintenance operation, all screens and filters should be serviced and the floating absorbent blankets replaced, along with the geo-textile fabric at the bottom of the chambers. Should repair be needed, descriptions of deficiencies and estimated costs for suggested corrections should be provided. The above information shall be submitted in writing to the Owner at the conclusion of the maintenance service. Replacement is recommended for drywells that no longer dispose of ponded water within 48 hours after cleaning.

3.) Maintenance Records:

A written log shall be kept on-site of all inspections and maintenance performed on the drainage systems.

Torrent Resources Incorporated
1509 East Elwood Street
Phoenix Arizona 85040-1391

phone 602-268-0785
fax 602-268-0820

www.TorrentResources.com

AZ Lic. ROC070465 A, ROC047067 B-4; ADWR 363
CA Lic. 528080 A, C-42, HAZ
NV Lic. 0035350 A - NM Lic. 90504 GF04

An evolution of McGuckin Drilling



Landscaping and garden maintenance activities can be major contributors to water pollution. Soils, yard wastes, over-watering and garden chemicals become part of the urban runoff mix that winds its way through streets, gutters and storm drains before entering lakes, rivers, streams, etc. Urban runoff pollution contaminates water and harms aquatic life!

In Riverside County, report illegal discharges into the storm drain, call 1-800-506-2555
 “Only Rain Down the Storm Drain”

Important Links:

Riverside County Household Hazardous Waste Collection Information
 1-800-304-2226 or www.rivcwm.org

Riverside County Backyard Composting Program
 1-800-366-SAVE

Integrated Pest Management (IPM) Solutions
www.ipm.ucdavis.edu

California Master Gardener Programs
www.mastergardeners.org
www.camastergardeners.ucdavis.edu

California Native Plant Society
www.cnps.org

The Riverside County “Only Rain Down the Storm Drain” Pollution Prevention Program gratefully acknowledges Orange County's Storm Water Program for their contribution to this brochure.



...Only Rain Down ...the Storm Drain

What you should know for...
 Landscape and Gardening

Best Management tips for:

- Professionals
- Novices
- Landscapers
- Gardeners
- Cultivators



Tips for Landscape & Gardening

This brochure will help you to get the most of your lawn and gardening efforts and keep our waterways clean. Clean waterways provide recreation, establish thriving fish habitats, secure safe sanctuaries for wildlife, and add beauty to our communities. NEVER allow gardening products or waste water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizers and pesticides applied to the landscape.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.



Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro-spray systems. Periodically inspect and fix leaks and misdirected sprinklers.

- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.



- Consider recycling your green waste and adding "nature's own fertilizer" to your lawn or garden.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.
- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains or sewers. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting.

- Try natural long-term common sense solutions first. Integrated Pest Management (IPM) can provide landscaping guidance and solutions, such as:

- ◆ **Physical Controls** - Try hand picking, barriers, traps or caulking holes to control weeds and pests.
- ◆ **Biological Controls** - Use predator insects to control harmful pests.
- ◆ **Chemical Controls** - Check www.ipm.ucdavis.edu before using chemicals. Remember, all chemicals should be used cautiously and in moderation.

- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Waste Collection Center to be recycled.
- *Dumping toxics into the street, gutter or storm drain is illegal!*

www.bewaterwise.com Great water conservation tips and drought tolerant garden designs.

www.ourwaterourworld.com Learn how to safely manage home and garden pests.

Additional information can also be found on the back of this brochure.

Helpful telephone numbers and links:

Riverside County Stormwater Protection Partners	
Flood Control District	(951) 955-1200
County of Riverside	(951) 955-1000
City of Banning	(951) 922-3105
City of Beaumont	(951) 769-8520
City of Calimesa	(909) 795-9801
City of Canyon Lake	(951) 244-2955
Cathedral City	(760) 770-0327
City of Coachella	(760) 398-4978
City of Corona	(951) 736-2447
City of Desert Hot Springs	(760) 329-6411
City of Eastvale	(951) 361-0900
City of Hemet	(951) 765-2300
City of Indian Wells	(760) 346-2489
City of Indio	(760) 391-4000
City of Lake Elsinore	(951) 674-3124
City of La Quinta	(760) 771-7000
City of Menifee	(951) 672-6777
City of Moreno Valley	(951) 413-3000
City of Murrieta	(951) 304-2489
City of Norco	(951) 270-5607
City of Palm Desert	(760) 346-0611
City of Palm Springs	(760) 323-8299
City of Perris	(951) 943-6100
City of Rancho Mirage	(760) 324-4511
City of Riverside	(951) 361-0900
City of San Jacinto	(951) 654-7337
City of Temecula	(951) 694-6444
City of Wildomar	(951) 677-7751

REPORT ILLEGAL STORM DRAIN DISPOSAL

1-800-506-2555 or e-mail us at fcnpdes@rcflood.org

- Riverside County Flood Control and Water Conservation District
www.rcflood.org

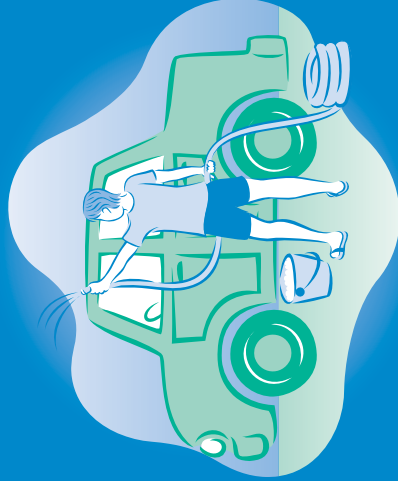
Online resources include:

- California Storm Water Quality Association
www.casqa.org
- State Water Resources Control Board
www.waterboards.ca.gov
- Power Washers of North America
www.thepwna.org

Stormwater Pollution

What you should know for...

Outdoor Cleaning Activities and Professional Mobile Service Providers



Storm drain pollution prevention information for:

- Car Washing / Mobile Detailers
- Window and Carpet Cleaners
- Power Washers
- Waterproofers / Street Sweepers
- Equipment cleaners or degreasers and all mobile service providers

Do you know where street flows actually go?

Storm drains are NOT connected to sanitary sewer systems and treatment plants!



The primary purpose of storm drains is to carry *rain* water away from developed areas to prevent flooding. Pollutants discharged to storm drains are transported directly into rivers, lakes and streams. Soaps, degreasers, automotive fluids, litter and a host of materials are washed off buildings, sidewalks, plazas and parking areas. Vehicles and equipment must be properly managed to prevent the pollution of local waterways.

Unintentional spills by mobile service operators can flow into storm drains and pollute our waterways. **Avoid mishaps.** Always have a **Spill Response Kit** on hand to clean up unintentional spills. Only emergency **Mechanical** repairs should be done in City streets, using drip pans for spills. **Plumbing** should be done on private property. Always store chemicals in a leak-proof container and keep covered when not in use. **Window/Power Washing** waste water shouldn't be released into the streets, but should be disposed of in a sanitary sewer, landscaped area or in the soil. Soiled **Carpet Cleaning** wash water should be filtered before being discharged into the sanitary sewer. Dispose of all filter debris properly. **Car Washing/Detailing** operators should wash cars on private property and use a regulated hose nozzle for water flow control and runoff prevention. Capture and dispose of waste water and chemicals properly. Remember, storm drains are for receiving rain water runoff only.

REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555

Help Protect Our Waterways!

Use these guidelines for Outdoor Cleaning Activities and Wash Water Disposal

Did you know that disposing of pollutants into the street, gutter, storm drain or body of water is **PROHIBITED** by law and can result in stiff penalties?

Best Management Practices

Waste wash water from Mechanics, Plumbers, Window/Power Washers, Carpet Cleaners, Car Washing and Mobile Detailing activities may contain significant quantities of motor oil, grease, chemicals, dirt, detergents, brake pad dust, litter and other materials.

Best Management Practices, or BMPs as they are known, are guides to prevent pollutants from entering the storm drains. *Each of us* can do our part to keep stormwater clean by using the suggested BMPs below:

Simple solutions for both light and heavy duty jobs:

Do....consider dry cleaning methods first such as a mop, broom, rag or wire brush. Always keep a spill response kit on site.

Do....prepare the work area before power cleaning by using sand bags, rubber mats, vacuum booms, containment pads or temporary berms to keep wash water away from the gutters and storm drains.

Do....use vacuums or other machines to remove and collect loose debris or litter before applying water.

Do....obtain the property owner's permission to dispose of *small amounts* of power washing waste water on to landscaped, gravel or unpaved surfaces.

Do....check your local sanitary sewer agency's policies on wash water disposal regulations before disposing of wash water into the sewer. (See list on reverse side)

Do....be aware that if discharging to landscape areas, soapy wash water may damage landscaping. Residual wash water may remain on paved surfaces to evaporate. Sweep up solid residuals and dispose of properly. Vacuum booms are another option for capturing and collecting wash water.

Do....check to see if local ordinances prevent certain activities.

Do not let...wash or waste water from sidewalk, plaza or building cleaning go into a street or storm drain.



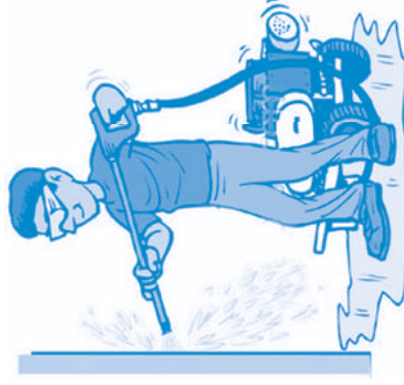
Report illegal storm drain disposal

Call Toll Free

1-800-506-2555

Using Cleaning Agents

Try using biodegradable/phosphate-free products. They are easier on the environment, but don't confuse them with being toxic free. Soapy water entering the storm drain system can impact the delicate aquatic environment.



When cleaning surfaces with a **high-pressure washer** or **steam cleaner**, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning can loosen additional material that can contaminate local waterways.

Think Water Conservation

Minimize water use by using high pressure, low volume nozzles. Be sure to check all hoses for leaks. Water is a precious resource, don't let it flow freely and be sure to shut it off in between uses.

Screening Wash Water

Conduct thorough dry cleanup before washing exterior surfaces, such as buildings and decks **with loose paint**, sidewalks or plaza areas. Keep debris from entering the storm drain after cleaning by first passing the wash water through a "20 mesh" or finer screen to catch the solid materials, then dispose of the mesh in a refuse container. Do not let the remaining wash water enter a street, gutter or storm drain.

Drain Inlet Protection & Collection of Wash Water

- Prior to any washing, block all storm drains with an impervious barrier such as sandbags or berms, or seal the storm drain with plugs or other appropriate materials.
- Create a containment area with berms and traps or take advantage of a low spot to keep wash water contained.
- Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground.
- Pump or vacuum up all wash water in the contained area.

Concrete/Coring/Saw Cutting and Drilling Projects

Protect any down-gradient inlets by using dry activity techniques whenever possible. If water is used, minimize the amount of water used during the coring/drilling or saw cutting process. Place a barrier of sandbags and/or absorbent berms to protect the storm drain inlet or watercourse. Use a shovel or wet vacuum to remove the residue from the pavement. Do not wash residue or particulate matter into a storm drain inlet or watercourse.



After the Storm

For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps



EPA 833-B-03-002

January 2003



*A Citizen's Guide to
Understanding Stormwater*



What is stormwater runoff?



Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Why is stormwater runoff a problem?



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- ◆ Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- ◆ Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- ◆ Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- ◆ Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- ◆ Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.



- ◆ Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

Stormwater Pollution Solutions

Residential



Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.



- ◆ Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- ◆ Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- ◆ Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- ◆ Cover piles of dirt or mulch being used in landscaping projects.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.



- ◆ Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- ◆ Don't dispose of household hazardous waste in sinks or toilets.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.



- ◆ Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- ◆ Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.



- ◆ When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.



Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.



Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for



rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.



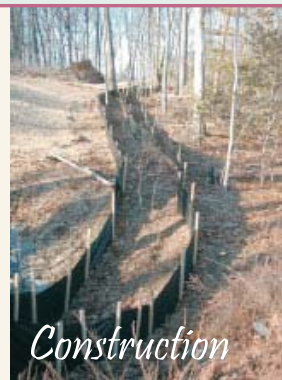
Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- ◆ Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- ◆ Cover grease storage and dumpsters and keep them clean to avoid leaks.
- ◆ Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- ◆ Divert stormwater away from disturbed or exposed areas of the construction site.
- ◆ Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- ◆ Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.



Construction



Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.



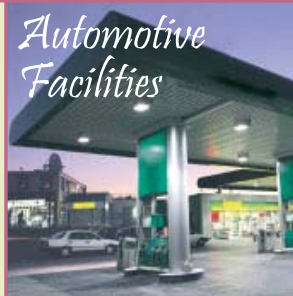
- ◆ Keep livestock away from streambanks and provide them a water source away from waterbodies.
- ◆ Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- ◆ Vegetate riparian areas along waterways.
- ◆ Rotate animal grazing to prevent soil erosion in fields.
- ◆ Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.



Forestry

Improperly managed logging operations can result in erosion and sedimentation.

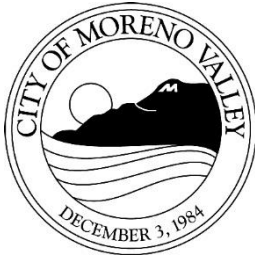
- ◆ Conduct preharvest planning to prevent erosion and lower costs.
- ◆ Use logging methods and equipment that minimize soil disturbance.
- ◆ Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- ◆ Construct stream crossings so that they minimize erosion and physical changes to streams.
- ◆ Expedite revegetation of cleared areas.



Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- ◆ Clean up spills immediately and properly dispose of cleanup materials.
- ◆ Provide cover over fueling stations and design or retrofit facilities for spill containment.
- ◆ Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- ◆ Install and maintain oil/water separators.



PLANNING COMMISSION

STAFF REPORT

Meeting Date: October 26, 2017

A CITYWIDE MUNICIPAL CODE (TITLE 9) AMENDMENT ADDRESSING LAND USE REGULATIONS FOR ACCESSORY DWELLING UNIT (ADU) (FORMERLY SECOND DWELLING UNITS) TO ENSURE COMPLIANCE WITH NEW STATE OF CALIFORNIA LAWS

Case: PEN17-0115

Applicant: City of Moreno Valley

Owner: City of Moreno Valley

Representative: Community Development Department

Location: Citywide

Case Planner: Claudia Manrique

Council District: All

SUMMARY

The proposed development code amendments will modify provisions in Title 9 of Moreno Valley Municipal Code (MVMC) related to Second Dwelling Units to bring it into compliance with new state regulations set forth in Senate Bill SB 1069 and Assembly Bill AB 2299 signed by Governor Jerry Brown in September 2016. A key change includes all references to second dwelling units being modified to Accessory Dwelling Units (ADU). The intent of the new State law for ADUs was to remove barriers to development of ADUs and to provide the public greater flexibility, opportunity and ease of access to housing supply options.

Background

California Government Code Section 65852.2 regarding second dwelling units was enacted in 1982 and it has been amended several times to encourage the creation of second dwelling units with sufficient flexibility to address unique local circumstances and conditions.

On April 13, 2010, the Moreno Valley City Council adopted Ordinance 817 to modify local development provisions required by then amended Government Code Sections 65583.1, 65852.2, and 65915 required by the passage of Assembly Bill 1866.

The current City Code provisions allow second dwelling units in all single-family residential zoning districts. Second dwelling units are allowed by right and permitting of such is considered a “ministerial” action.

New State Accessory Dwelling Unit Law

New state regulations set forth in Senate Bill SB 1069 and Assembly Bill AB 2299 approved in September 2016 became effective on January 1, 2017 and renamed second dwelling units to Accessory Dwelling Units (ADUs).

Assembly Bill AB 2299 provided that any existing local ordinance pertaining to ADUs that does not meet the Bill’s intent and written requirements is considered null and void as of January 1, 2017. In such cases, new applications for ADU’s must be processed based on Government Code Section 65852.2 regulations until such time that the local jurisdiction adopts a compliant ordinance.

PROJECT DESCRIPTION

To respond to State law changes, the following topics have been addressed:

- The subject heading for Section 9.09.130 will be revised to “Accessory Dwelling Unit (ADU)”;
- Added new definitions for ADU and efficiency units;
- Land use determination and permit processing procedures;
- Added development standards/provisions for efficiency units;
- Added restrictions pertaining to fire safety;
- Added utility connection fee restrictions;
- Clarified ADU setbacks and separation requirements;
- Added language covering parking exemptions; and
- Modifications made to Table 9.11.040A-12 (Off-Street Parking Requirements) in Chapter 9.11 (Parking, Pedestrian and Load Requirements).

The specific details for each change are further included in Attachment 2 to the staff report. In addition, to facilitate consideration of the proposed changes, Attachment 1 is provided for the Commissioners to review the existing zoning provisions for second dwelling units in the MVMC Section 9.09.130. Attachment 3 provides a “side-by-side” comparison table of the existing zoning and the proposed changes.

Three particularly noteworthy changes include:

1. Efficiency Units

The definition of efficiency units, as defined by Section 17958.1 of the Health and Safety Code, has been added. Efficiency units are for occupancy by no more than two persons, have a minimum floor area of 150 square feet and may also have partial kitchen or bathroom facilities. Under State law, the City can not prohibit efficiency units; therefore, the new language of the proposed ordinance authorizes the Community Development Director to approve efficiency units administratively when it can be demonstrated by an applicant that all applicable development standards are met.

2. Parking

Presently, the MVMC requires one open parking space be provided per bedroom for an ADU. This provision will remain, however the new State law provides for parking exemptions that the City must follow. Therefore, new language is recommended to be added to the MVMC so that the ADU parking requirement would be waived under any of the following five scenarios if requested by the applicant:

- (1) The accessory dwelling unit is located within one-half mile of public transit.
- (2) The accessory dwelling unit is located within an architecturally and historically significant historic district.
- (3) The accessory dwelling unit is part of the existing primary residence or an existing accessory structure.
- (4) When on-street parking permits are required but not offered to the occupant of the accessory dwelling unit.
- (5) When there is a car share vehicle located within one block of the accessory dwelling unit.

As a matter of process, it is noted that should an applicant wish to have the City waive an ADU parking requirement it will be incumbent upon the applicant, within the permit submittal materials, to demonstrate to the satisfaction of the Community Development Director that one or more of the five criteria noted above do in fact apply before a parking waiver will be granted. If none of the prerequisite conditions for the waiver are present, the project will be required to provide one uncovered parking space per bedroom for the ADU.

To ensure consistency within the MVMC, Table 9.11.040A-12 (Off-Street Parking Requirements) within Chapter 9.11 will be revised as follows to include an appropriate reference to the new provisions contained in Section 9.09.130:

Residential Uses	Requirement	Covered Parking	Notes
Second units Accessory Dwelling Unit	1/bedroom		The second dwelling unit shall provide a minimum of one parking space per bedroom in addition to the parking required for the main dwelling without blocking any required parking (no tandem parking). The Accessory Dwelling Unit shall provide a minimum of one

		parking space per bedroom in addition to the parking required for the main dwelling, except as exempted by State law (refer to 9.09.130 Accessory dwelling units). Spaces may be provided as uncovered and/or tandem parking on a driveway.
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3. Minimum and Maximum Unit Size

The MVMC currently establishes the minimum square footage for an ADU at four hundred fifty (450) square feet and a maximum size of one-thousand two-hundred fifty (1,250) square feet. The maximum square footage may be exempted in cases where the size of the existing primary dwelling unit is one-thousand two-hundred fifty (1,250) square feet or smaller. In those cases, the ADU may exceed one-thousand two-hundred fifty (1,250) square feet and the unit would be subject to the development standards for the zoning district. In order to achieve consistency with changes in the new State law these standards must be revised.

The proposed amendment will add a new provision that allows a minimum unit size for attached ADUs of one hundred and fifty (150) square feet consistent with the State law for efficiency units. The minimum size of four hundred fifty (450) square feet will remain for detached ADUs.

The new State law specifies the maximum size of an ADU to be one-thousand two-hundred (1,200) square feet, and for ADUs attached to an existing single family dwelling the ADU cannot be larger than 50% of the existing living areas. To ensure consistency with the new State law, the maximum square footage for detached ADUs within the MVMC will be reduced from one-thousand two-hundred fifty (1,250) to one-thousand two-hundred (1,200) square feet. The maximum square footage for attached ADUs will be limited to 50% of the existing living areas of the existing residence and in no event shall be greater than one-thousand two-hundred (1,200) square feet.

Additions to Section 9.15 (Definitions)

The proposed MVMC Section 9.09.130 Accessory Dwelling Units (ADU) includes the following new definitions, which will also be added to Section 9.15 (Definitions) of the MVMC as well:

- “Accessory dwelling unit” means an attached or a detached residential dwelling unit, which provides complete independent living facilities for one or more persons. It shall include permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel that the existing single-family dwelling is situated.
- “Efficiency unit” means an attached unit for occupancy by no more than two persons which have a minimum floor area of 150 square feet and which may also have partial kitchen or bathroom facilities, as allowed in Section 17958.1 of the Health and Safety Code.

ENVIRONMENTAL

This proposed MVMC amendment qualifies for a statutory exemption per Section 15282(h) of the California Environmental Quality Act (CEQA) Guidelines, which specifically states that the adoption of an ordinance regarding second units in a single-family or multiple-family residential zone by a city or county to implement the provisions of Sections 65852.1 and 65852.2 of the Government Code relating to second unit ordinances are exempt from the requirements of CEQA.

NOTIFICATION

As prescribed by the City's Municipal Code, a modification to the zoning provisions of the MVMC requires a public hearing before the Planning Commission. In accordance with Section 9.02.200 of the Municipal Code, a 1/8 page public notice was published in the Press Enterprise newspaper on October 15, 2017 for the October 26, 2017 public hearing of the Planning Commission.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2017-33, and thereby:

1. **FIND** that PEN17-0115 (Municipal Code Amendment for Accessory Dwelling Units) qualifies for a Statutory Exemption in accordance with CEQA Guidelines, Section 15282(h); and
2. **RECOMMEND** that the City Council approve the proposed amendments to Title 9 of the City Municipal Code, PEN17-0115.

Prepared by:
Claudia Manrique
Associate Planner

Approved by:
Allen Brock
Community Development Director

ATTACHMENTS

1. Existing MVMC Section 9.09.130
2. Proposed MVMC Section 9.09.130
3. MVMC Section 9.09.130 Comparison Table
4. Public Notice
5. Resolution 2017-33

Attachment 1: Existing

9.09.130 Second dwelling units.

A. Purpose and Intent. The purpose of these standards is to ensure that accessory living quarters located in residential districts do not adversely impact either adjacent residential parcels or the surrounding neighborhood, and are developed in a manner which protects the integrity of the residential district, while providing for needed housing opportunities for owners of eligible parcels.

B. Applicability. Each second dwelling unit shall comply with the development standards for the district in which it is located, the provisions of this section, and shall require approval of an administrative plot plan.

C. Property Development Standards. The following standards shall apply to all second dwelling units:

1. No more than one second unit or other type of accessory dwelling unit shall be permitted per lot;
2. The lot must contain one, but no more than one existing dwelling unit;
3. The minimum lot size for a parcel to be eligible for a second dwelling unit shall be seven thousand two hundred (7,200) square feet;
4. The minimum square footage of a second dwelling unit shall be four hundred fifty (450) square feet. The maximum square footage of a second dwelling unit shall be no greater than one thousand two hundred fifty (1,250) square feet, except when the primary dwelling unit is one thousand two hundred fifty (1,250) square feet or smaller. In that case, the second unit may exceed one thousand two hundred fifty (1,250) square feet subject to the minimum development standards for the zoning district;
5. The unit shall be subject to the same minimum development standards as the main building on the parcel including building setbacks;
6. The second unit shall be compatible with the main dwelling unit in architecture, mass and scale;
7. The second dwelling unit shall provide a minimum of one parking space per bedroom in addition to the parking required for the main dwelling without blocking the required parking (no tandem parking) pursuant to Chapter 9.11 of this title;
8. The unit may be rented and shall not be sold separately from the main unit unless the land containing the second unit is first divided from the property containing the main unit in accordance with the city's subdivision regulations;
9. The unit shall have adequate water supply and sewage disposal capability;
10. The applicant shall be the owner-occupant of the property and shall reside in either the primary residence or the second unit;
11. The entrance to an attached second unit shall be separate from the entrance to the first unit and shall be installed in a manner as to eliminate an obvious indication of two units in the same structure;
12. Second units shall be subject to all development fees specified by city ordinances or resolutions for second units;
13. The unit shall have kitchen and bath facilities; and
14. The property owner(s) shall enter into a written agreement with the city, in which the owner(s) agree to use the premises in compliance with the requirements of

this section, any applicable enactments of the city council, and in form acceptable to the city attorney and the community development director. The written agreement shall include that any lease executed on a second dwelling unit shall automatically become a month to month tenancy at the time of sale or transfer of the property. Recordation of such agreement in the files of the county recorder shall be completed prior to issuance of a building permit for the second unit. (Ord. 912 § 20, 2016; Ord. 817 § 3.3, 2010; Ord. 475 § 1.4, 1995; Ord. 428 § 1.2, 1994; Ord. 359, 1992)

Exhibit A

9.09.130 Accessory Dwelling Units (ADU).

A. Purpose and Intent. The purpose of these standards is to ensure:

1. Accessory dwelling units (ADU) as defined herein are a permitted accessory use. This chapter establishes location and development standards for the construction and occupancy of accessory dwelling units on single-family residential lots. The standards herein serve to ensure accessory dwelling units are constructed in a manner that is consistent with the requirements and allowances of state law.

2. An accessory dwelling unit does not exceed the allowable density for a lot upon which an ADU is built. ADUs are a residential use that is consistent with the existing general plan and zoning designation.

B. Applicability. Each accessory dwelling unit (ADU) shall require approval of an administrative plot plan, and shall comply with the development standards for the district in which it is located and the provisions of this section.

C. Definitions.

For the purpose of this chapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

1. "Accessory dwelling unit" means an attached or a detached residential dwelling unit, which provides complete independent living facilities for one or more persons. It shall include permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel the existing single-family dwelling is situated.

2. "Efficiency unit" means a unit for occupancy by no more than two persons which have a minimum floor area of one-hundred fifty (150) square feet and which may also have partial kitchen or bathroom facilities, as allowed in Section 17958.1 of the Health and Safety Code.

D. Approval Authority.

Approval of an accessory dwelling unit is considered a ministerial action and the approval authority is the Community Development Director. Approval of an accessory dwelling unit is subject to all applicable requirements established within this chapter as well as all building, fire, engineering, flood, water quality, environmental codes, standards, and permitting fees established by the City.

E. Application and Processing.

1. ADU proposed within previously permitted existing space: Applications for an accessory dwelling unit to be established within an existing permitted space including,

the primary structure, an attached or detached garage or other accessory structure on the same property shall be made to the Community Development Department and shall be permitted ministerially with approval of both an Administrative Plot Plan and a building permit where all of the following have been submitted to the satisfaction of the Community Development Director:

- a. A detailed description and scaled, dimensioned floor plan of the proposed ADU, clearly illustrating the bedroom(s), bathroom(s), kitchen and other features or other proposed habitable areas;
- b. A detailed description and scaled, dimensioned elevation of the proposed ADU, clearly illustrating the exterior entrance of the ADU;
- c. A scaled, dimensioned site plan of the property clearly illustrating the location of all improvements on site (existing primary residence, garage, driveway(s), fences/walls, accessory structures, public right-of-way improvements, etc.) and where the ADU shall be located;
- d. The scaled, dimensioned site plan of the property shall note the use(s) of all buildings existing on site.

2. New ADU: Applications for an ADU not located within an existing permitted structure or dwelling shall be made to the Community Development Department and shall be permitted ministerially with approval of both an Administrative Plot Plan and building permit where all of the following have been submitted to the satisfaction of the Community Development Director:

- a. A detailed description and scaled, dimensioned floor plan of the proposed ADU, clearly illustrating the bedroom(s), bathroom(s), kitchen and other features or other proposed habitable areas;
- b. A detailed description and scaled, dimensioned elevation of the proposed ADU, clearly illustrating the exterior of the ADU;
- c. A scaled, dimensioned site plan of the property clearly illustrating the location of all improvements on site (existing primary residence, garage, driveway(s), fences/walls, accessory structures, public right-of-way improvements, etc.) and where the ADU shall be located;
- d. The scaled, dimensioned site plan of the property shall note the use(s) of all buildings existing on site.

3. Applications shall be permitted ministerially within 120 days of application if all applicable requirements and development standards of this chapter are met and no variances are required.

F. Development Standards and Requirements.

Accessory dwelling units shall comply with the following development standards:

1. The lot is zoned for single-family or multifamily use and contains an existing, single-family dwelling.
2. Only one ADU is allowed per lot/parcel.

3. The ADU must be on the same lot as the existing dwelling.
4. The ADU shall not be for sale separate from the primary residential dwelling on site, unless the land containing the second unit accessory dwelling unit (ADU) is first divided from the property containing the main unit in accordance with the city's subdivision regulations.
5. The applicant shall be the owner-occupant of the property and shall reside in either the primary residence or the ADU.
6. The minimum lot size for a parcel to be eligible for a detached accessory dwelling unit (ADU) shall be seven thousand two hundred (7,200) square feet. There is no minimum lot area required for an attached ADU.
7. Total lot coverage, including the ADU, shall be as permitted within the underlying zoning district. If no lot coverage is specified, the maximum lot coverage allowed is 50%.
8. The minimum square footage of a detached ADU shall be four hundred fifty (450) square feet. The unit shall include permanent provisions for living, sleeping, eating, cooking, and sanitation.
9. The maximum square footage of the ADU shall be no greater than one thousand two hundred (1,200) square feet, except when the primary dwelling unit is one thousand two hundred fifty (1,200) square feet or smaller. In that case, the ADU may exceed one thousand two hundred fifty (1,200) square feet subject to the development standards for the zoning district.
10. ADUs shall follow the development standards of the zone in which a lot is located, including but not limited to height, lot coverage, and setbacks.
11. Setbacks are not required for an existing garage that is converted to an ADU. An ADU that is constructed above a garage requires a five foot setback from the side and rear lot lines.
12. ADUs shall be located at the rear or the side of the existing single family dwelling unless it is demonstrated to the satisfaction of the Community Development Director that the ADU can only be located in front of the single family dwelling due to extraordinary or physical constraints of the lot.
13. The entrance to an attached ADU shall be separate from the entrance to the primary dwelling unit and shall be located/designed in a manner as to eliminate an obvious indication of two units in the same structure.

14. Plans that demonstrate an unobstructed pathway extending from a street to one entrance of the ADU are desirable prior to approval of an ADU application; however, is not a mandatory requirement for an ADU.

15. The unit shall have adequate water supply and sewage disposal capability.

16. ADUs, when converted from existing accessory structures, are permitted without additional restrictions provided the structure has independent exterior access and side and rear setbacks sufficient for fire safety.

17. ADUs shall be subject to all development fees specified by city ordinances or resolutions for ADUs.

18. Parking Requirements, consistent with Chapter 9.11 of this title:

- a. One parking space is required per bedroom of an Accessory Dwelling Unit and may be provided through tandem parking.
- b. Parking is allowed in rear and side setback areas. No parking is allowed in front setback areas.
- c. When a garage or covered parking structure is demolished in conjunction with the construction of an Accessory Dwelling Unit, the replacement parking spaces may be located in any configuration on the same lot as the Accessory Dwelling Unit, including but not limited to covered spaces, uncovered spaces, or tandem spaces. However, replacement parking will not be a mandatory requirement.

19. Parking Exemptions. Additional parking spaces are not required for Accessory Dwelling Units in any of the following instances:

- a. The ADU is located within one-half mile of a public transportation stop along a prescribed route according to a fixed schedule; or
- b. The ADU is located within one block of a car share parking spot; or
- c. The ADU is located in a historic district listed in or formally determined eligible for listing in the National Register of Historic Places and the California Register of Historical Resources or as a City Historic Preservation Overlay Zone; or
- d. When on-street parking permits are required but not offered to the occupant of the Accessory Dwelling Unit; or
- e. The Accessory Dwelling Unit is part of the existing Dwelling Unit or an existing accessory structure.

20. New detached or attached ADUs shall be compatible with the architectural style of the primary residence in design features. To determine architectural compatibility, the ADU must possess at least three of the following design elements in common with the primary building on the site:

- a. Wall covering materials (wood, stucco, metal);

- b. Wall texture (smooth, stucco, lace stucco, lap siding);
- c. Roofing material (tile, shake, composition, metal);
- d. Roof pitch;
- e. Structural eaves;
- f. Mass and scale of structure relative to structural height;
- g. Window characteristics (few or numerous, single pane, multi-pane, decorative);
and
- h. Decorative treatments (pop-outs, columns, dormers, window surrounds, decorative arches)

21. Outside stairways serving ADUs should not be located on any building elevation facing a public street; and when unavoidable, the design of the stairway shall mute/mitigate any potential negative aesthetic impact and maintain the character of the existing single family residence.

22. The property owner(s) shall enter into a written agreement with the city, in which the owner(s) agree to use the premises in compliance with the requirements of this section, any applicable enactments of the city council, and in form acceptable to the city attorney and the community development director. The written agreement shall include that any lease executed on an ADU shall automatically become a month to month tenancy at the time of sale or transfer of the property. Recordation of such agreement in the files of the county recorder shall be completed prior to issuance of a building permit for the ADU.

Existing 9.09.130 Second dwelling units.	Proposed 9.09.130 Accessory dwelling units.
<p>A. Purpose and Intent. The purpose of these standards is to ensure that accessory living quarters located in residential districts do not adversely impact either adjacent residential parcels or the surrounding neighborhood, and are developed in a manner which protects the integrity of the residential district, while providing for needed housing opportunities for owners of eligible parcels.</p>	<p>A. Purpose and Intent. The purpose of these standards is to ensure:</p> <ol style="list-style-type: none"> 1. Accessory dwelling units (ADU) as defined herein are a permitted accessory use. This chapter establishes location and development standards for the construction and occupancy of accessory dwelling units on single-family residential lots. The standards herein serve to ensure accessory dwelling units are constructed in a manner that is consistent with the requirements and allowances of state law. 2. An accessory dwelling unit does not exceed the allowable density for a lot upon which an ADU is built. ADUs are a residential use that is consistent with the existing general plan and zoning designation.
<p>B. Applicability. Each second dwelling unit shall comply with the development standards for the district in which it is located, the provisions of this section, and shall require approval of an administrative plot plan.</p>	<p>B. Applicability. Each accessory dwelling unit (ADU) shall require approval of an administrative plot plan, and shall comply with the development standards for the district in which it is located and the provisions of this section.</p>
<p>C. Property Development Standards. The following standards shall apply to all second dwelling units:</p> <ol style="list-style-type: none"> 1. No more than one second unit or other type of accessory dwelling unit shall be permitted per lot; 2. The lot must contain one, but no more than one existing dwelling unit; 3. The minimum lot size for a parcel to be eligible for a second dwelling unit shall be seven thousand two hundred (7,200) square feet; 4. The minimum square footage of a second dwelling unit shall be four hundred fifty (450) square feet. The maximum square footage of a second dwelling unit shall be no greater than one thousand two hundred fifty (1,250) square feet, except when the primary dwelling unit is one thousand two hundred fifty (1,250) square feet or smaller. In that case, the second unit may exceed one thousand two hundred fifty (1,250) square feet subject to the minimum development standards for the zoning district; 5. The unit shall be subject to the same minimum development standards as the main building on the parcel including building setbacks; 	<p>C. Definitions.</p> <p>For the purpose of this chapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.</p> <ol style="list-style-type: none"> 1. "Accessory dwelling unit" means an attached or a detached residential dwelling unit, which provides complete independent living facilities for one or more persons. It shall include permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel the existing single-family dwelling is situated. 2. "Efficiency unit" means a unit for occupancy by no more than two persons which have a minimum floor area of one-hundred fifty (150) square feet and which may also have partial kitchen or bathroom facilities, as allowed in Section 17958.1 of the Health and Safety Code.

6. The second unit shall be compatible with the main dwelling unit in architecture, mass and scale;

7. The second dwelling unit shall provide a minimum of one parking space per bedroom in addition to the parking required for the main dwelling without blocking the required parking (no tandem parking) pursuant to Chapter 9.11 of this title;

8. The unit may be rented and shall not be sold separately from the main unit unless the land containing the second unit is first divided from the property containing the main unit in accordance with the city's subdivision regulations;

9. The unit shall have adequate water supply and sewage disposal capability;

10. The applicant shall be the owner-occupant of the property and shall reside in either the primary residence or the second unit;

11. The entrance to an attached second unit shall be separate from the entrance to the first unit and shall be installed in a manner as to eliminate an obvious indication of two units in the same structure;

12. Second units shall be subject to all development fees specified by city ordinances or resolutions for second units;

13. The unit shall have kitchen and bath facilities; and

14. The property owner(s) shall enter into a written agreement with the city, in which the owner(s) agree to use the premises in compliance with the requirements of this section, any applicable enactments of the city council, and in form acceptable to the city attorney and the community development director. The written agreement shall include that any lease executed on a second dwelling unit shall automatically become a month to month tenancy at the time of sale or transfer of the property. Recordation of such agreement in the files of the county recorder shall be completed prior to issuance of a building permit for the second unit. (Ord. 912 § 20, 2016; Ord. 817 § 3.3, 2010; Ord. 475 § 1.4, 1995; Ord. 428 § 1.2, 1994; Ord. 359,

1992)	
	<p>D. Approval Authority. Approval of an accessory dwelling unit is considered a ministerial action and the approval authority is the Community Development Director. Approval of an accessory dwelling unit is subject to all applicable requirements established within this chapter as well as all building, fire, engineering, flood, water quality, environmental codes, standards, and permitting fees established by the City.</p>
	<p>E. Application and Processing.</p> <p>1. ADU proposed within previously permitted existing space: Applications for an accessory dwelling unit to be established within an existing permitted space including, the primary structure, an attached or detached garage or other accessory structure on the same property shall be made to the Community Development Department and shall be permitted ministerially with approval of both an Administrative Plot Plan and a building permit where all of the following where all of the following have been submitted to the satisfaction of the Community Development Director:</p> <ol style="list-style-type: none"> a. A detailed description and scaled, dimensioned floor plan of the proposed ADU, clearly illustrating the bedroom(s), bathroom(s), kitchen and other features or other proposed habitable areas; b. A detailed description and scaled, dimensioned elevation of the proposed ADU, clearly illustrating the exterior of the ADU; c. A scaled, dimensioned site plan of the property clearly illustrating the location of all improvements on site (existing primary residence, garage, driveway(s), fences/walls, accessory structures, public right-of-way improvements, etc.) and where the ADU shall be located; d. The scaled, dimensioned site plan of the property shall note the use(s) of all buildings existing on site. <p>2. New detached ADU: Applications for an ADU not located within an existing permitted structure or dwelling shall be made to the Community Development Department and shall be permitted ministerially with approval of both an Administrative Plot Plan and building permit where all of the following</p>

	<p>have been submitted to the satisfaction of the Community Development Director:</p> <ol style="list-style-type: none"> a. A detailed description and scaled, dimensioned floor plan of the proposed ADU, clearly illustrating the bedroom(s), bathroom(s), kitchen and other features or other proposed habitable areas; b. A detailed description and scaled, dimensioned elevation of the proposed ADU, clearly illustrating the exterior of the ADU; c. A scaled, dimensioned site plan of the property clearly illustrating the location of all improvements on site (existing primary residence, garage, driveway(s), fences/walls, accessory structures, public right-of-way improvements, etc.) and where the ADU shall be located; d. The scaled, dimensioned site plan of the property shall note the use(s) of all buildings existing on site. <p>3. Applications shall be permitted ministerially within 120 days of application if all applicable requirements and development standards of this chapter are met and no variances are required.</p>
	<p>F. Development Standards and Requirements. Accessory dwelling units shall comply with the following development standards:</p> <ol style="list-style-type: none"> 1. The lot is zoned for single-family or multifamily use and contains an existing, single-family dwelling. 2. Only one ADU is allowed per lot/parcel. 3. The ADU must be on the same lot as the existing dwelling. 4. The ADU shall not be for sale separate from the primary residential dwelling on site, unless the land containing the second unit accessory dwelling unit (ADU) is first divided from the property containing the main unit in accordance with the city's subdivision regulations. 5. The applicant shall be the owner-occupant of the property and shall reside in either the primary residence or the ADU. 6. The minimum lot size for a parcel to be eligible for a detached accessory dwelling unit (ADU) shall be seven thousand two hundred (7,200) square feet. There is no minimum lot area required for an attached ADU. 7. Total lot coverage, including the ADU, shall be as permitted within the underlying zoning district. If no

lot coverage is specified, the maximum lot coverage allowed is 50%.

8. The minimum square footage of a detached ADU shall be four hundred fifty (450) square feet. The unit shall include permanent provisions for living, sleeping, eating, cooking, and sanitation.

9. The maximum square footage of the ADU shall be no greater than one thousand two hundred (1,200) square feet, except when the primary dwelling unit is one thousand two hundred fifty (1,200) square feet or smaller. In that case, the ADU may exceed one thousand two hundred fifty (1,200) square feet subject to the development standards for the zoning district.

10. ADUs shall follow the development standards of the zone in which a lot is located, including but not limited to height, lot coverage, and setbacks.

11. Setbacks are not required for an existing garage that is converted to an ADU and a setback of no more than five feet from the side and rear lot lines are not required for an ADU that is constructed above a garage.

12. ADUs shall be located at the rear or the side of the existing single family dwelling unless it is demonstrated to the satisfaction of the Community Development Director that the ADU can only be located in front of the single family dwelling due to extraordinary or physical constraints of the lot.

13. The entrance to an attached ADU shall be separate from the entrance to the primary dwelling unit and shall be located/designed in a manner as to eliminate an obvious indication of two units in the same structure.

14. Plans that demonstrate an unobstructed pathway extending from a street to one entrance of the ADU are desirable prior to approval of an ADU application; however, is not a mandatory requirement for an ADU.

15. The unit shall have adequate water supply and sewage disposal capability.

16. ADUs, when converted from existing accessory structures, are permitted without additional restrictions provided the structure has independent exterior access and side and rear setbacks sufficient for fire safety.

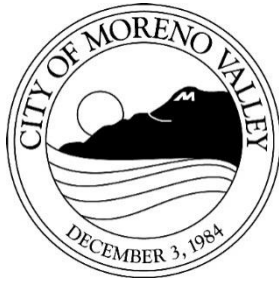
17. ADUs shall be subject to all development fees specified by city ordinances or resolutions for ADUs.

18. Parking Requirements, consistent with Chapter 9.11 of this title:

a. One parking space is required per

	<p>bedroom of an Accessory Dwelling Unit and may be provided through tandem parking.</p> <ul style="list-style-type: none"> b. Parking is allowed in rear and side setback areas. No parking is allowed in front setback areas. c. When a garage or covered parking structure is demolished in conjunction with the construction of an Accessory Dwelling Unit, the replacement parking spaces may be located in any configuration on the same lot as the Accessory Dwelling Unit, including but not limited to covered spaces, uncovered spaces, or tandem spaces. However, replacement parking will not be a mandatory requirement. <p>19. Parking Exemptions. Additional parking spaces are not required for Accessory Dwelling Units in any of the following instances:</p> <ul style="list-style-type: none"> a. The ADU is located within one-half mile of a public transportation stop along a prescribed route according to a fixed schedule; or b. The ADU is located within one block of a car share parking spot; or c. The ADU is located in a historic district listed in or formally determined eligible for listing in the National Register of Historic Places and the California Register of Historical Resources or as a City Historic Preservation Overlay Zone; or d. When on-street parking permits are required but not offered to the occupant of the Accessory Dwelling Unit; or e. The Accessory Dwelling Unit is part of the existing Dwelling Unit or an existing accessory structure. <p>20. New detached or attached ADUs shall be compatible with the architectural style of the primary residence in design features. To determine architectural compatibility, the ADU must possess at least three of the following design elements in common with the primary building on the site:</p> <ul style="list-style-type: none"> a. Wall covering materials (wood, stucco, metal);
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	<ul style="list-style-type: none">b. Wall texture (smooth, stucco, lace stucco, lap siding);c. Roofing material (tile, shake, composition, metal);d. Roof pitch;e. Structural eaves;f. Mass and scale of structure relative to structural height;g. Window characteristics (few or numerous, single pane, multi-pane, decorative); andh. Decorative treatments (pop-outs, columns, dormers, window surrounds, decorative arches) <p>21. Outside stairways serving ADUs should not be located on any building elevation facing a public street; and when unavoidable, the design of the stairway shall mute/mitigate any potential negative aesthetic impact and maintain the character of the existing single family residence.</p> <p>22. The property owner(s) shall enter into a written agreement with the city, in which the owner(s) agree to use the premises in compliance with the requirements of this section, any applicable enactments of the city council, and in form acceptable to the city attorney and the community development director. The written agreement shall include that any lease executed on an ADU shall automatically become a month to month tenancy at the time of sale or transfer of the property. Recordation of such agreement in the files of the county recorder shall be completed prior to issuance of a building permit for the ADU.</p>
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**NOTICE
OF
PLANNING COMMISSION PUBLIC
HEARING**

THE PLANNING COMMISSION WILL CONSIDER A CITYWIDE MUNICIPAL CODE AMENDMENT TO THE ACCESSORY DWELLING UNIT (ADU) REGULATIONS (FORMERLY SECOND DWELLING UNITS).

The proposed project (PEN17-0115) is an amendment to the City's existing Accessory Dwelling Unit (ADU) regulations (Section 9.09.130 of the Municipal Code and other applicable sections). The proposed amendment consists of changes to the existing development standards applicable to new accessory dwelling units. The purpose of the proposed Municipal Code text amendment is to implement recently adopted State regulations, and facilitate the development of accessory dwelling units while maintaining the established character of Moreno Valley's single-family neighborhoods.

The adoption of an ordinance regarding second units in a single-family or multifamily residential zone by a city or county to implement the provisions of Sections 65852.1 and 65852.2 of the Government Code" relating to "second unit ordinances" has been found to be exempt from the California Environmental Quality Act (CEQA) in accordance with Section 15282(h). Similarly, the ministerial approvals of ADUs would not be a "project" under CEQA (Section 15268), and environmental review would not be required prior to approving individual applications.

Any person interested in the proposal may speak at the hearing or provide written testimony at or prior to the hearing. Any person interested in the proposed project may contact Claudia Manrique, Associate Planner at (951) 413-3225 or 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.

If you challenge this item in court, you may be limited to raising only those issues you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the Planning Commission on or before the following meeting date:

**Thursday, October 26, 2017
7:00 P.M.
City Council Chambers
14177 Frederick Street
Moreno Valley, CA 92552-0805**

Upon request and 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 48 hours before the meeting. The 48-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

PLANNING COMMISSION RESOLUTION NO. 2017-33

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, RECOMMENDING CITY COUNCIL APPROVAL OF PEN17-0115, AN AMENDMENT TO TITLE 9 OF THE CITY OF MORENO VALLEY MUNICIPAL CODE TO IMPLEMENT NEW STATE LAW REQUIREMENTS RELATED TO ACCESSORY DWELLING UNITS.

WHEREAS, City of Moreno Valley Community Development Department staff has filed an application for the approval of PEN17-0115, a Municipal Code Amendment, as described in the title of this Resolution; and

WHEREAS, the requested Amendment is necessitated by new State laws regarding accessory dwelling units that went into effect January 1, 2017; and

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

WHEREAS, upon completion of a through development review process the project was appropriately noticed on October 15, 2017 for a public hearing before the Planning Commission on October 26, 2017; and

WHEREAS, on October 26, 2017, the Planning Commission of the City of Moreno Valley conducted a public hearing to consider the application; and

WHEREAS, on October 26, 2017, the Planning Commission of the City of Moreno Valley made a finding that the project is exempt from the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et. seq.) under CEQA Guideline Sections 15282(h)(Other Statutory Exemptions); and

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

NOW, THEREFORE, BE IT RESOLVED, by the Planning Commission of the City of Moreno Valley 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 October 26, 2017 including written and oral staff reports, and the record from the public hearing, this Planning Commission hereby specifically finds as follows:

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

FACT: The proposed amendment is consistent with the General Plan and its goals, objectives, policies and programs. Accessory Dwelling Units (ADUs) are land uses permitted in all single-family residential land use designations and developed multiple-family properties with existing single-family residences. The Amendment ensures that the Municipal Code will comply with State law and that the City will retain the ability to regulate certain aspects of ADUs, such as height, location and design, to ensure neighborhood compatibility, which is consistent with the following General Plan Goals and Policies:

- Goal 2.4 - 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.
- Policy 2.2.14 - Encourage a diversity of housing types, including conventional, factory built, mobile home, and multiple family dwelling units.

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

FACT: Accessory Dwelling Units (ADUs) are land uses permitted in all single-family residential land use designations and developed multiple-family properties with existing single-family residences. This Municipal Code Amendment ensures that the Municipal Code will comply with State law and that the City will retain the ability to regulate certain aspects of ADUs, such as height, location and design, to ensure neighborhood compatibility.

The proposed amendment pertaining to Accessory Dwelling Units (ADUs) has been reviewed to ensure it is consistent with other applicable provisions of the Municipal Code, including parking and permit processing requirements.

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 amendment pertains to Accessory Dwelling Units (ADUs) and is intended to ensure that the City complies with

State law and retains the ability, to the extent possible, to regulate the appropriate development of ADUs. Non-compliance with the State law would result in the City's development standards related to ADUs becoming null and void, and the City would rely on the State requirements. By modifying the Municipal Code to comply with the State law regarding ADUs, the City will continue to maintain local control to ensure ADUs are approved, built, and operated compatible with the surrounding residential neighborhoods.

The proposed changes do not adversely affecting the public health, safety or welfare of the residents of City of Moreno Valley or surrounding jurisdictions.

The adoption of an ordinance regarding second units in a single-family or multiple-family residential zone by a city or county to implement the provisions of Sections 65852.1 and 65852.2 of the Government Code" relating to "second unit ordinances" are exempt from the requirements of CEQA pursuant to Section 15282(h) (Other Statutory Exemptions).

BE IT FURTHER RESOLVED that the Planning Commission **HEREBY APPROVES** Resolution No. 2017-33 and thereby:

1. **FINDS** that PEN17-0115 (Municipal Code Amendment for Accessory Dwelling Units) qualifies for a Statutory Exemption in accordance with CEQA Guidelines, Section 15282(h); and
2. **RECOMMENDS** that the City Council approve the proposed amendments to Title 9 of the City Municipal Code, PEN17-0115. (Exhibit A)

APPROVED on this 26th day of October, 2017.

Jeffrey Barnes
Chair, Planning Commission

ATTEST:

Richard J. Sandzimier, Planning Official

APPROVED AS TO FORM:

City Attorney

Attachment: Exhibit A