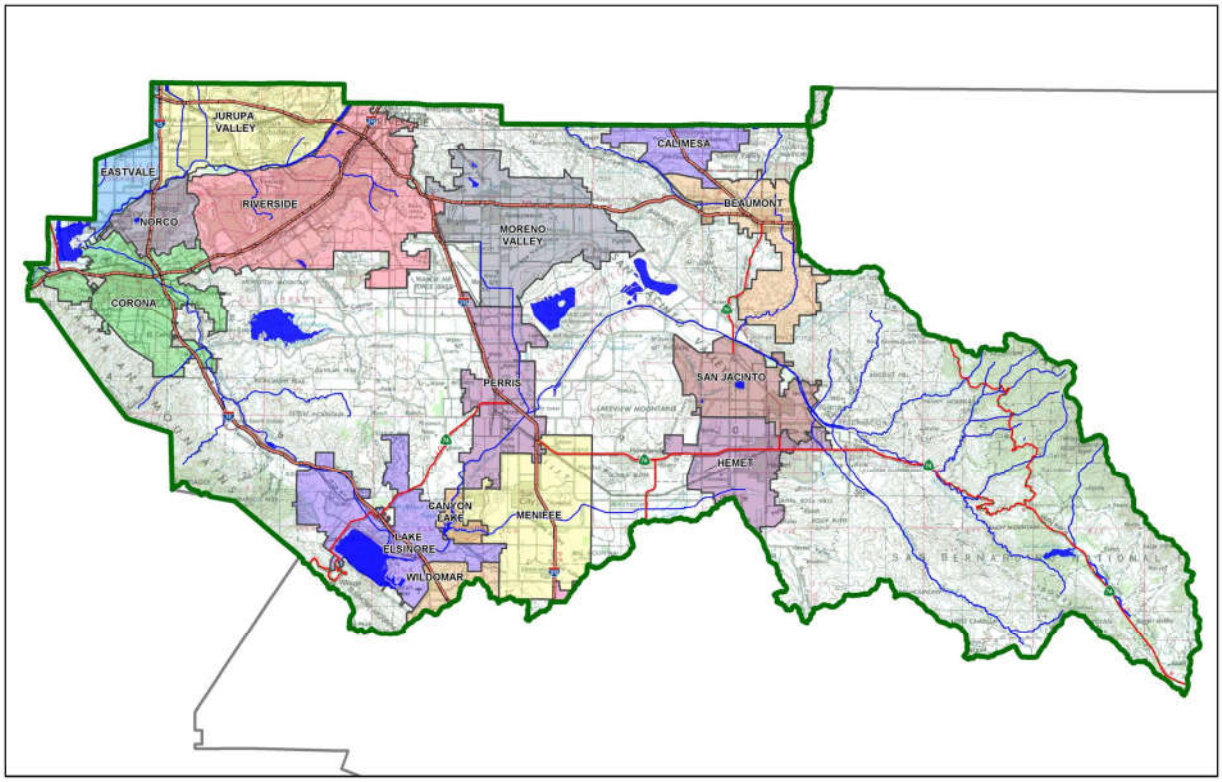
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Perris Truck Terminal

Development No:

Design Review/Case No: P22-05172



☒ **Preliminary**
☐ **Final**

Original Date Prepared: 05-10-22

Revision Date(s): 07-27-22

12-02-22

Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**
Template revised June 30, 2016

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Exp. 6-30-23
CIVIL
STATE OF CALIFORNIA

OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Truck Terminal Properties by Joseph E. Bonadiman & Associates, Inc. for the site located at the northeast corner of Perris Blvd and Markham Street, project number P22-05172.

This WQMP is intended to comply with the requirements of City of Perris which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under City of Perris Water Quality Ordinance No. 1194.

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	Date
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	01-26-23 Date
J.T. Stanton Preparer's Printed Name	P.E. Preparer's Title/Position

Preparer's Licensure: R.C.E. No. C-70944

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Section A: Project and Site Information

Project Description: Site is currently vacant and proposed development consists of a new truck and trailer parking facility of approximately 8.34 acres. Total impervious area is 325,162 SF. Total building area is 720 SF. Total pervious (landscape) area is 37,310 SF. Proposed drought-tolerant landscaping and trash enclosure is shown on the Post-Construction BMP Site Plan under Appendix 1. The site is designed with a bio-retention trenches along the east and west property lines to meet the WQMP mitigation requirement. Flows from the bio-retention trenches will then be conveyed to the discharge points shown on the Post-Construction BMP Site Plan. The following are the BMP sizes: 5,255 CF (BMP-1) and 10,121 CF (BMP-2).

PROJECT INFORMATION	
Type of Project:	New truck and trailer parking facility
Planning Area:	PERRIS VALLEY COMMERCE CENTER (PVCC) SPECIFIC PLAN AREA
Community Name:	PERRIS VALLEY
Development Name:	Truck Terminal Properties Markham Yu No. 2 Perris
PROJECT LOCATION	
Latitude & Longitude (DMS): 33.85279 / -117.22463	
Project Watershed and Sub-Watershed: Santa Ana	
Gross Acres: 8.34 acres	
APN(s): 302-110-021, 22, 23 & 24	
Map Book and Page No.: Book 105/ Pg 96 Pm. 18109	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	TRUCK PARKING
Proposed or Potential SIC Code(s)	4212
Area of Impervious Project Footprint (SF)	0 S.F.
Total Area of proposed Impervious Surfaces within the Project Footprint (SF)/or Replacement	325,162 S.F.
Does the project consist of offsite road improvements?	☐ Y ☒ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the Project limits Footprint (SF)	0
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	N/A
Are there any natural hydrologic features on the project site?	☐ Y ☒ N
Is a Geotechnical Report attached?	☐ Y ☒ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	A, C, D
What is the Water Quality Design Storm Depth for the project?	0.633"

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
- BMP Locations (Lat/Long)

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

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
Line D-2	NONE	NONE	WATER BODY CLASSIFIED AS RARE
Line D	NONE	NONE	WATER BODY CLASSIFIED AS RARE
Perris Valley Channel	NONE	NONE	NOT A WATER BODY
San Jacinto River (Reach3) (HU#802.11)	NONE	AGR, GWR, WILD, MUN, REC1, REC2, WARM, WILD,	NOT A WATER BODY CLASSIFIED AS RARE
San Jacinto River (Reach 2) (HU#802.11)	NONE	AGR, GWR, WILD, MUN, REC1, REC2, WARM	NOT A WATER BODY CLASSIFIED AS RARE
Canyon Lake (HU#802.11, 802.12) N	NUTRIENTS, PATHOGENS	WILD, REC2, WARM, GWR, MUN, REC1, AGR	NOT A WATER BODY CLASSIFIED AS RARE
San Jacinto River (Reach 1) (HU#802.11, 802.32, 802.31)	NONE	AGR, GWR, MUN, REC1, REC2, WARM, WILD	NOT A WATER BODY CLASSIFIED AS RARE
Lake Elsinore (HU#802.31)	Nutrients, Organic Enrichment/Low Dissolved Oxygen, PCBs, Sediment Toxicity, Unknown Toxicity	MUN, REC1, REC2, WARM, WILD	NOT A WATER BODY CLASSIFIED AS RARE

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N

State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☐ Y	☒ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* CITY OF PERRIS GRADING PERMIT	☒ Y	☐ 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.

Consideration of "highest and best use" of the discharge should also be considered. For example, Lake Elsinore is evaporating faster than runoff from natural precipitation can recharge it. Requiring infiltration of 85% of runoff events for projects tributary to Lake Elsinore would only exacerbate current water quality problems associated with Pollutant concentration due to lake water evaporation. In cases where rainfall events have low potential to recharge Lake Elsinore (i.e. no hydraulic connection between groundwater to Lake Elsinore, or other factors), requiring infiltration of Urban Runoff from projects is counterproductive to the overall watershed goals. Project proponents, in these cases, would be allowed to discharge Urban Runoff, provided they used equally effective filtration-based BMPs.

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?

Yes, the identified drainage patterns preserved as much as posible for the proposed development.

Did you identify and protect existing vegetation? If so, how? If not, why?

Yes, exisitng vegitation will be designated for protection where possible.

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

*Yes, infiltration test results are 0.*44 and 0.80 *in/hr. without factor of safety. See soils report in Appendix 3.*

Infiltration Summary: Bio-retention trenches will be used to mitigate WQMP volume requirements due to the low infiltration rates obtained from the soils testing results (Appendix 3, Soils Report).

Did you identify and minimize impervious area? If so, how? If not, why?

No, entire site is paved. Design is per city requirements.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

Yes, runoff will drain to adjacent pervious areas (e.g. bio-infiltration trenches).

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][2]	Area (Sq. Ft.)	DMA Type
DA-1,DMA-A	Ornamental Landscaping	15,727 S.F.	A
DA-1, DMA-B	Concrete or Asphalt	111,670 S.F.	D
DA-1, DMA-C	Roofs	0 S.F.	D
DA-2,DMA-A	Ornamental Landscaping	21,364 S.F.	A
DA-2,DMA-B	Concrete or Asphalt	214,488 S.F.	D
DA-2,DMA-C	Roofs	720 S.F.	D

[1]Reference Table 2-1 in the WQMP Guidance Document to populate this column
[2]If multi-surface provide back-up

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
DA-1,DMA-A	15,727 S.F.	N/A	Surface Drip
DA-2,DMA-A	21,364 S.F.	N/A	Surface Drip

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet)	Storm Depth (inches)	DMA Name / ID	[C] from Table C.4 =	Required Retention Depth (inches)
		[A]	[B]		[C]	[D]

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

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	Impervious fraction	Product	DMA name /ID	Area (square feet)	Ratio
	[A]		[B]	[C] = [A] x [B]		[D]	[C]/[D]

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DA-1,DMA-A	N/A (self-treating)
DA-1,DMA-B	BMP-1
DA-1,DMA-C	BMP-1
DA-2,DMA-A	N/A (self-treating)
DA-2,DMA-B	BMP-2
DA-2,DMA-C	BMP-2

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site; proceed to section D.3

If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?	☐	☒
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?	☐	☒
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?	☐	☒
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?	☒	☐
If Yes, list affected DMAs: DMA-A through C for both DA-1 and DA-2		
…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:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?	☐	☒
Describe here:		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

☐ Reclaimed water will be used for the non-potable water demands for the project.

☐ Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☒ The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If none 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: 0.86 Acres

Type of Landscaping (Conservation Design or Active Turf): Conservation Design

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: 7.46 Acres

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: 0.79

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: 5.89 Acres

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)
5.89 Acres	0.86 Acres

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 shutdowns or other lapses in occupancy:

Projected Number of Daily Toilet Users: 0

Project Type: Commercial

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: 7.46 Acres

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: 172.00

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: 1283

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)
1283	50

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 *gpd*

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 *Acres*

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 *gpd*

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 gpd	N/A gpd

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 per Section 3.4.2 of the WQMP Guidance Document.

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	
BMP-1	☐	☐	☒	☐	☐
BMP-2	☐	☐	☒	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

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**	BMP-1 ***Bioretention Swale***		
	[A]		[B]	[C]	[A] x [C]			
						Design Storm Depth (in)	*Design Capture Volume,* $\mathbf{V_{BMP}}$ *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DA-1, DMA-B	111,670	concrete or asphalt	1	0.89	99,610			
DA-1, DMA-C	0	roofs	1	0.89	0			
	111,670				99,610	0.63	5,254	5,255
	$A_T = \Sigma[A]$				$\Sigma = [D]$	[E]	$[F] = \frac{[D]x[E]}{12}$	[G]

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	BMP-2 *Bioretention Swale*		
	[A]		[B]	[C]	[A] x [C]			
						Design Storm Depth (in)	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DA-2, DMA-B	214,364	concrete or asphalt	1	0.89	191,213			
DA-2, DMA-C	720	roofs	1	0.89	642			
	215,084				191,855	0.63	10,120	10,121
	$A_T = \Sigma[A]$				$\Sigma = [D]$	[E]	$[F] = \frac{[D]x[E]}{12}$	[G]

[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
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☒ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☒ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☒	☒	☒	☒	☒	☒	☒

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
Total Credit Percentage[1]	

[1]Cannot Exceed 50%

[2]Obtain corresponding data from Table 3-8 in the WQMP Guidance Document

E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Area x Runoff Factor		Enter BMP Name / Identifier Here		
	[A]		[B]	[C]	[A] x [C]				
						Design Storm Depth (in)	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document

[E] is for Flow-Based Treatment Control BMPs [E] = .2, for Volume-Based Control Treatment BMPs, [E] 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]

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.
[2] Cross Reference Table E.1 above to populate this column.
[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

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 Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	N/A	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 Susceptibility Maps. See HCOC Applicability Map, from Riverside County Flood Control and Water Conservation District, in Appendix 7.

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:

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.

Note: Project is located with the mapped HCOC Exemption area as found in the Riverside County WAP Geodatabase approved April 20, 2017.

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
Concrete/Asphalt	Site Design & Landscape Planning	Maintain impervious areas and clean by sweeping/vacuuming monthly
Landscaping	Efficient Irrigation, Site Design & Landscape Planning	Limit use of pesticides and ensure the use of certified applicators.
Roof	Roof Runoff Controls	Maintain roof drains annually: clean debris and repair as needed
Refuse Areas	Post sign reading "Do not dump hazardous materials here"	Clean refuse areas and trash containers annually
D2. Landscape/ Outdoor Pesticide Use	• Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.	• Maintain landscaping using minimum or no pesticides weekly. • See applicable operational BMPs

	• Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. • Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. • Consider using pest-resistant plants, especially adjacent to hardscape. • To ensure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	in "What you should know for…..Landscape and Gardening" at http://rcflood.org/stormwater • Provide IPM information to new owners, lessees and operators.
G. Refuse areas	• Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas. • If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent runon and show locations of berms to prevent runoff from the area.	• 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
O. Miscellaneous Drain or Wash Water or Other (SourcesCondensate drain lines)	• Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain	
O. Miscellaneous Drain or Wash Water or Other (Roofing, gutters, and trim.)	• Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.	
P. Plazas, sidewalks, and parking lots.		• 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.

Section H: Construction Plan Checklist

Note: to be completed in FWQMP.

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.

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	Longitude	Latitude

Table H.1 Construction Plan Cross-reference

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

Note: to be completed in FWQMP.

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:

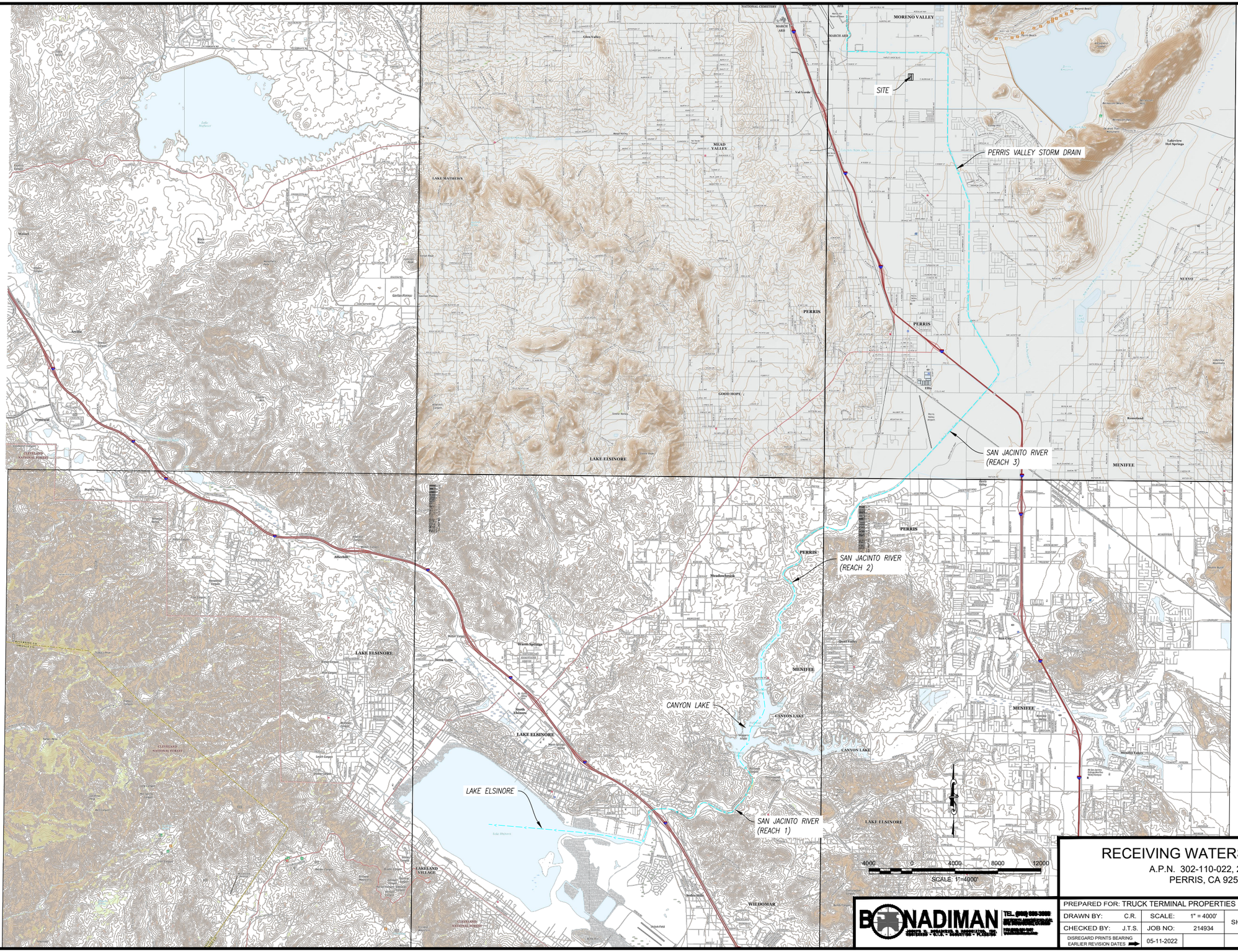
Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☐ 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. This section will be completed and addressed at the time of the final WQMP submittal.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map



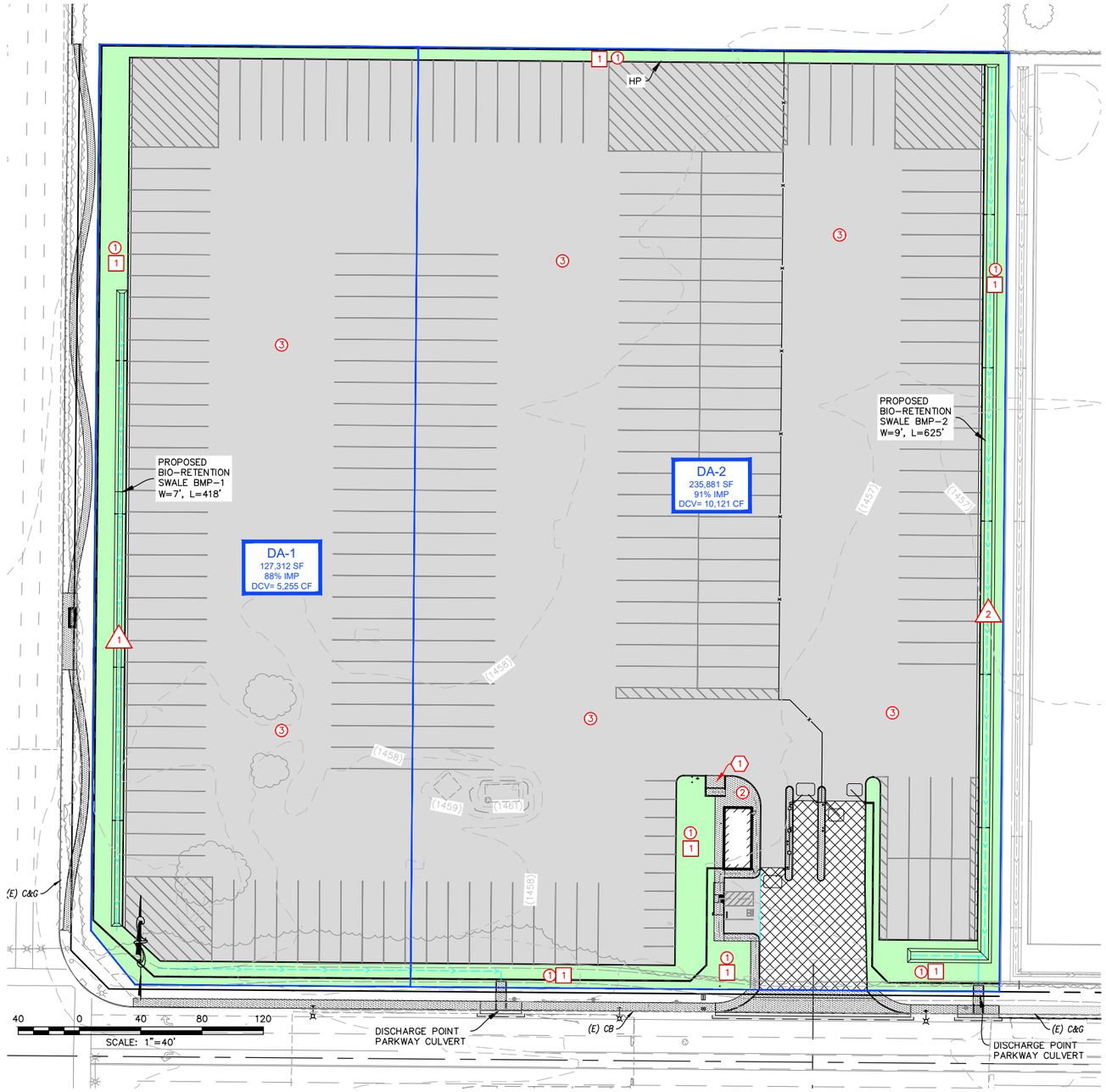
RECEIVING WATERS - WQMP

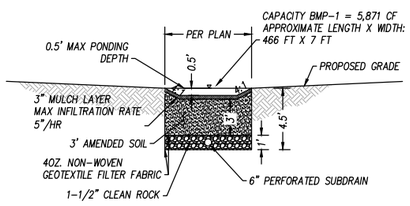
A.P.N. 302-110-022, 23 & 24
PERRIS, CA 92571

BONADIMAN

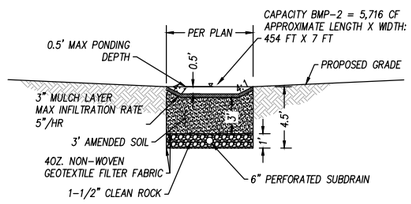
PREPARED FOR: TRUCK TERMINAL PROPERTIES

DRAWN BY:	C.R.	SCALE:	1" = 4000'	SHEET: 1 OF 1	
CHECKED BY:	J.T.S.	JOB NO:	214934		
DISREGARD PRINTS BEARING EARLIER REVISION DATES →		05-11-2022			





1 DETAIL - BIORETENTION BMP-1



2 DETAIL - BIORETENTION BMP-2

PROPERTY OWNER

MARKHAM STREET PARTNERS, LLC
BABAK NASSIRZADEH (MANAGING MEMBER)
1820 SAN VICENTE BLVD
SANTA MONICA, CA 90402
EMAIL: bnassir@truckterminalproperties.com
PHONE: 310-466-7225

PROPERTY ADDRESS

18450 PERRIS BLVD
PERRIS, CA 92571

APPLICANT

MARKHAM STREET PARTNERS, LLC
BABAK NASSIRZADEH (MANAGING MEMBER)
1820 SAN VICENTE BLVD
SANTA MONICA, CA 90402
EMAIL: bnassir@truckterminalproperties.com
PHONE: 310-466-7225

PROJECT COVERAGE

SUBJECT	PROPSOED	%
BUILDING(S)	720 SF.	0.2%
IMPERVIOUS	325,162 SF.	89.5%
PERVIOUS	37,310 SF.	10.3%
TOTALS	363,192 SF.	100% (8.34 AC.)

LEGEND:

- W.Q.M.P DRAINAGE AREA
- PROPERTY LIMITS
- FLOW LINE
- PROPOSED LANDSCAPING AREAS (DMA-A) (DROUGHT-TOLERANT LANDSCAPING)
- PROPOSED CONCRETE PAVING AREAS (DMA-B)
- PROPOSED A/C PAVING AREAS (DMA-B)
- PROPOSED STRUCTURES (DMA-C)

NON-STRUCTURAL SOURCE CONTROL BMPs:

- EDUCATION FOR PROPERTY OWNERS, OPERATORS, TENANTS, OCCUPANTS, OR EMPLOYEES
- ACTIVITY RESTRICTIONS
- (1) IRRIGATION SYSTEM AND LANDSCAPE MAINTENANCE (SC-44) (SC-73)
- (2) COMMON AREA LITTER CONTROL
- (3) STREET SWEEPING PRIVATE STREETS AND PARKING LOTS (SC-70)

STRUCTURAL SOURCE CONTROL BMPs:

- [1] LANDSCAPE AND IRRIGATION SYSTEM DESIGN

PROPERLY DESIGN:

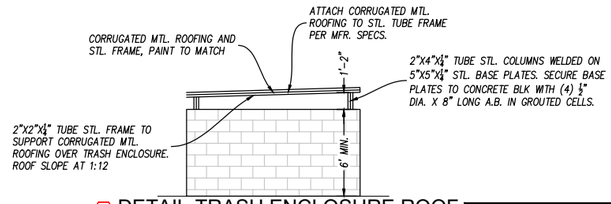
- (1) TRASH STORAGE AREAS (SD-32)

PROPOSED TREATMENT CONTROL BMP'S:

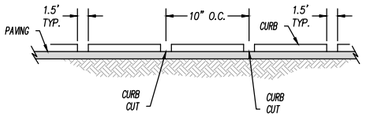
- 1 BIORETENTION (TC-32) BMP-1
- 2 BIORETENTION (TC-32) BMP-2

NOTES

POINT OF RUN-ON: NONE



1 DETAIL-TRASH ENCLOSURE ROOF

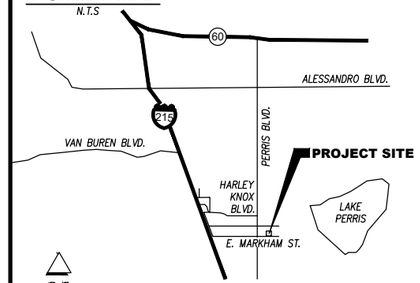


DETAIL - CURB CUT
N.T.S.

NO DUMPING DRAINS TO RIVER

BONADIMAN

VICINITY MAP
N.T.S



CITY OF PERRIS

Post-Construction BMP Site Plan Trucking Parking-18450 Perris Blvd P22-05172

A.P.N. 302-110-022, 23 & 24 PERRIS, CA 92571

PREPARED FOR: TRUCK TERMINAL PROPERTIES					
DRAWN BY: JTS	SCALE: 1" = 40'	SHEET: 1 OF 2			
CHECKED BY: JTS	JOB NO: 214934				
DISREGARD PRINTS BEARING EARLIER REVISION DATES →	12-02-22				

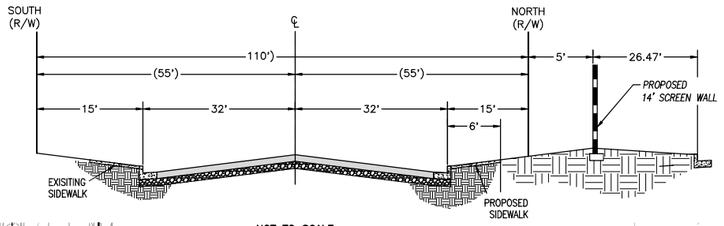
Appendix 2: Construction Plans

Grading and Drainage Plans
Provided for reference only,
See approved plans for construction

SITE / PRELIMINARY GRADING PLAN

PERRIS TRUCK TERMINAL

IN THE CITY OF PERRIS, CALIFORNIA



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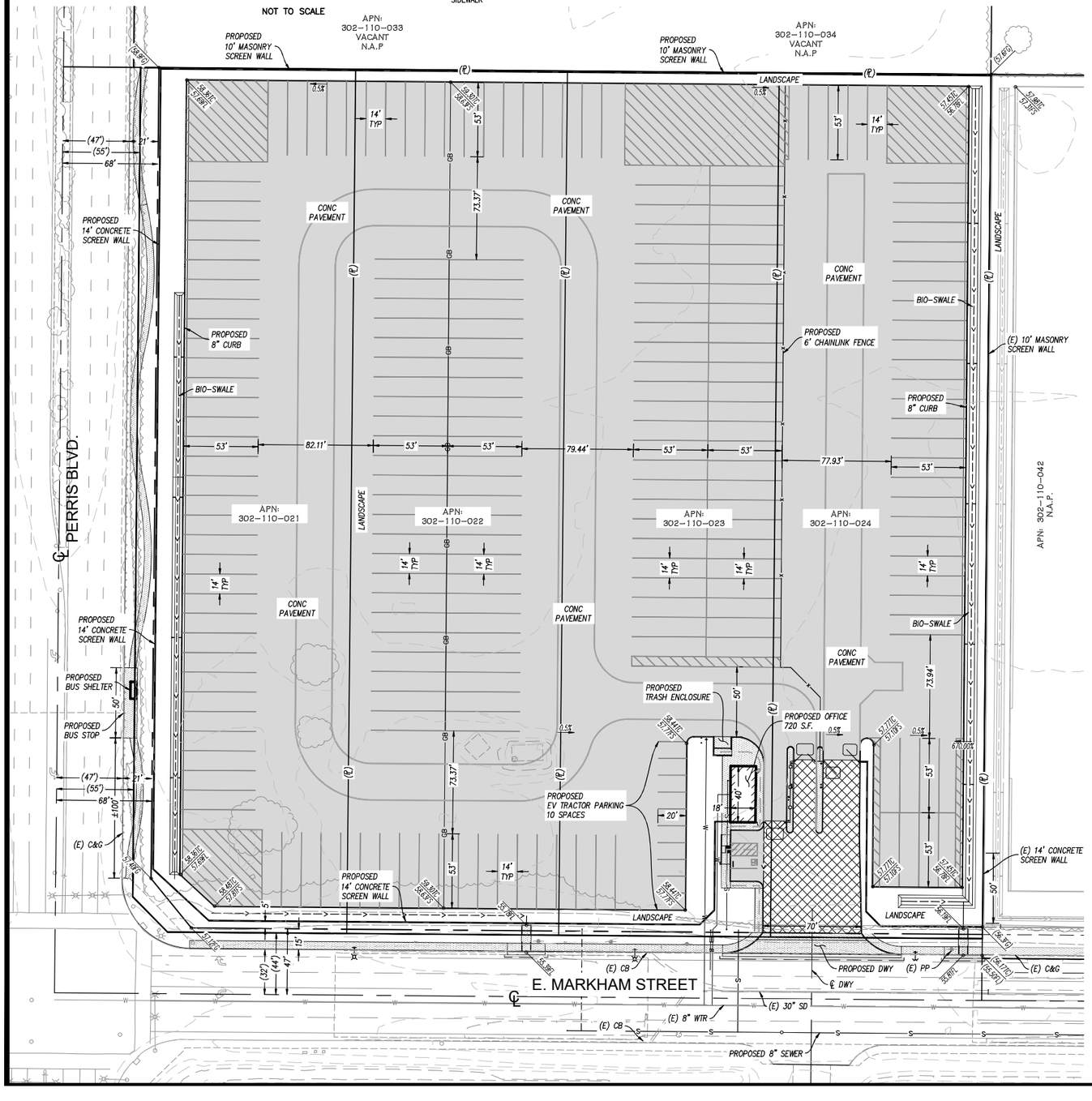
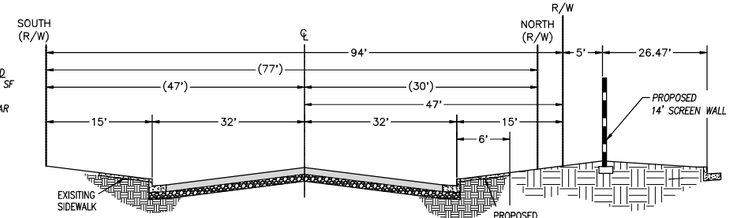


OWNER/APPLICANT

MARKHAM STREET PARTNERS, LLC.
ATTN: BOB NASSIR
1820 SAN VICENTE BOULEVARD
SANTA MONICA, CA 90402
PHONE: (310) 466-7225

PROJECT DATA

	REQUIRED	PROVIDED
MINIMUM LOT SIZE:	15,000 SF	370,254 SF
LOT COVERAGE BY STRUCTURE:	50% MAX	0.2%
FLOOR AREA RATIO (FAR)	0.75 FAR	0.002 FAR
STRUCTURE HEIGHT:	50' MAX	20'
SETBACK:		
FRONT (10'+5' PER 10' OF STRUCTURE HEIGHT OVER 20')	25'	80'
SIDE (NON-RESIDENTIAL)	NONE	~
REAR	0'	~
PERIMETER LANDSCAPING	5'	5'
ENTRIES/PARKING/LOADING	REQ	YES
ENHANCED LANDSCAPE SCREENING		(14' SCREEN WALL @ FRONT & WEST)
SITE LANDSCAPE COVERAGE	12%	12%



TYPICAL SECTION, MARKHAM ST.

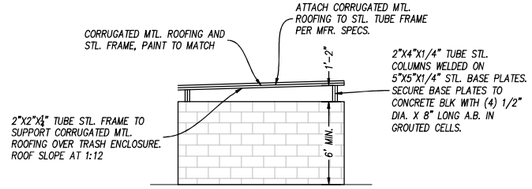
NOT TO SCALE

EARTHWORK QUANTITIES:

CONSTRUCTION MAY VARY.

CUT 13,238 CUBIC YARDS
FILL 2,208 CUBIC YARDS
EXPORT 11,030 CUBIC YARDS

EARTH WORK QUANTITIES NOTE: THE ABOVE LISTED QUANTITIES REFLECT THE EINGINEER'S ESTIMATE OF THE ACTUAL VOLUMES OF MATERIAL CUT AND FILLED. THESE QUANTITIES ARE FOR ESTIMATING AND BONDING PURPOSE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COMPUTING HIS OWN QUANTITIES FOR CONTRACT PURPOSES.



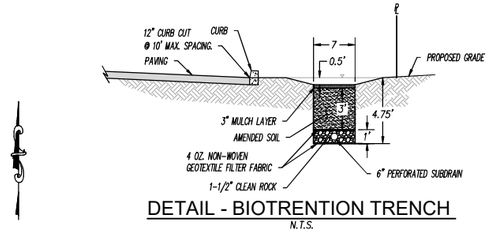
DETAIL-TRASH ENCLOSURE ROOF

PROJECT COVERAGE

SUBJECT	PROPSOED	%
BUILDING(S)	720 SF.	0.2%
IMPERVIOUS	325,162 SF.	89.5%
LANDSCAPE	37,310 SF.	10.3%
TOTALS	363,192 SF.	100% (8.34 AC.)

PARKING:

STANDARD CAR	2 SPACES
ACCESSIBLE CAR	1 SPACE
EV TRUCK STALL	10 SPACES
TRAILER STALLS 14' X 53'	205 SPACES
TOTAL:	219 SPACES



DETAIL - BIOTRENTION TRENCH

N.T.S.

LEGEND

AC ASPHALTIC CONCRETE SURFACE
BVC BEGIN VERTICAL CURVE
CB CATCH BASIN
CL CENTER LINE
EVC END OF VERTICAL CURVE
FF FINISH FLOOR
FG FINISH GRADE
FH FIRE HYDRANT
FL FLOWLINE
FS FINISHED SURFACE
GB GRADE BREAK
GW GUY WIRE
INV INVERT OF PIPE
MH MANHOLE
NTS NOT TO SCALE
PP POWER POLE
TC TOP OF CURB
TF TOP OF FOOTING
TW TOP OF WALL
TYP TYPICAL
WI WROUGHT IRON

40 0 40 80 120
SCALE: 1"=40'

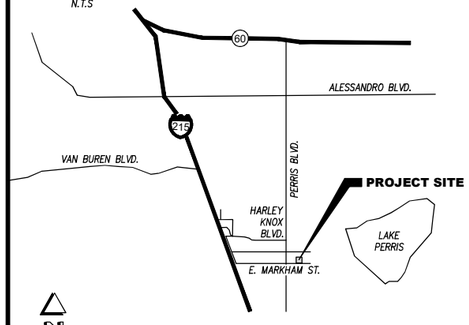
EXISTING CONCRETE SURFACE
PROPOSED CONCRETE SURFACE
PROPOSED AC PAVEMENT
RIGHT OF WAY
PROPERTY LINE
CENTERLINE
EXISTING BLOCK OR STONE WALL
FLOWLINE
FILL SLOPE
INDICATES DIRECTION OF FLOW
(1500) CONTOUR ELEVATION (FEET)

PROPERTY INFORMATION

ASSESSOR'S PARCEL NO:	302-110-021, 022, 023 & 024
GROSS ACREAGE:	373,177 SF/ 8.57 AC
NET ACREAGE:	363,192 SF/ 8.34 AC
EXISTING ZONING:	PVCC SP
EXISTING LAND USE:	VACANT
PROPOSED LAND USE:	TRAILER PARKING LOT
WATER PURVEYOR:	EASTERN MUNICIPAL WATER DISTRICT (951) 928-6107
WATER PURVEYOR:	METROPOLITAN WATER - MILLS (213) 217-7663
SEWER PURVEYOR:	EASTERN MUNICIPAL WATER DISTRICT (951) 928-6107
GAS PURVEYOR:	SOCAL GAS - HEMET (RAMONA) (909) 335 -7955
ELECTRICITY PURVEYOR:	UTILIQUEST FOR SCE DISTRICT - MENIFEE (909) 503-5565
TELEPHONE PURVEYOR:	UTILIQUEST FOR FRONTIER - MENIFEE (877) 530-0911
SCHOOL DISTRICT:	VAL VERDE UNIFIED SCHOOL DISTRICT

VICINITY MAP

N.T.S



CITY OF PERRIS

BONADIMAN
JOSEPH S. BONADIMAN & ASSOCIATES, INC.
ENGINEERS • C.I.D. • SURVEYING • PLANNING
TEL. (909) 885-3806
234 NORTH ARROWHEAD AVE.
SAN BERNARDINO, CA 92408
FAX (909) 381-1721
www.bonadiman.com

PROPOSED SITE PLAN

PERRIS TRUCK TERMINAL
APN(S): 302-110-021, 022, 023 & 024
TITLE SHEET

REVISIONS

NO	DESCRIPTION	BY	APPROVED	DATE

PREPARED FOR: MARKHAM STREET PARTNERS, LLC.

DRAWN BY:	JTS	SCALE:	1" = 40'	SHEET: 1 OF 1	SP1
CHECKED BY:	JTS	JOB NO:	214934		
DISREGARD PRINTS BEARING EARLIER REVISION DATES →		12-08-22			

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

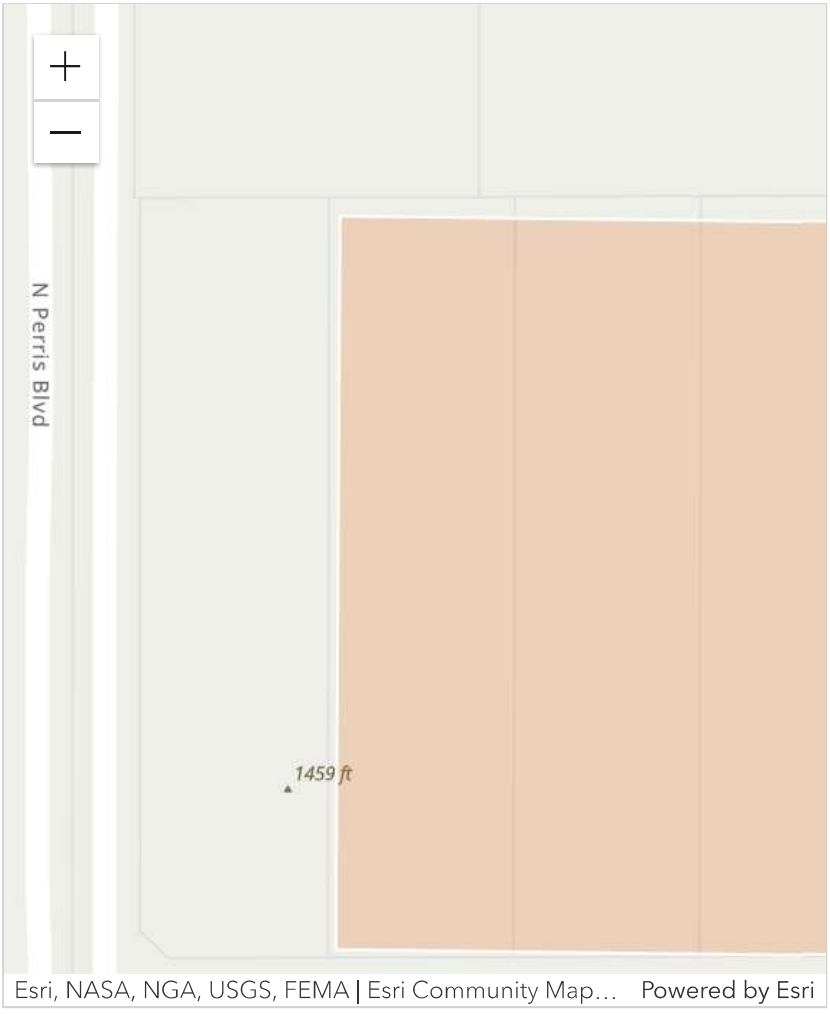
WQMP Report

County of Riverside Stormwater Project

Santa Ana River Watershed Geodatabase

Report generated: Tue May 10 2022 14:23:32 GMT-0700 (Pacific Daylight Time)

Note: The information provided in this report and on the Stormwater Geodatabase for the County of Riverside Stormwater Program is intended to provide basic guidance in the preparation of the applicant's Water Quality Management Plan (WQMP) and should not be relied upon without independent verification. All searches will include any data found within 200 feet of the provided coordinates unless otherwise noted.

Center Point	33.85279721979064, -117.22463592280934
Map	
Parcel Number(s)	302110028, 302110027, 302110021, 302110034, 302110042, 302110033, 302120024, 302110024, 302110023, 302110022

Site Acreage	6.00
Watershed(s)	SANTA ANA
Cities (within 1 mile)	PERRIS MORENO VALLEY

Hydrologic Units

HUC Number	HUC Name
180702020305	Perris Reservoir

The HUCs Contribute stormwater to the following 303d listed water bodies and TMDLs which may include drainage from your proposed Project Site

WBID Number	WBID Name
CAL8021100019990208151525	Canyon Lake (Railroad Canyon Reservoir)
CAL8023100019990208151100	Lake Elsinore

These 303d listed water bodies and TMDLs have the following Pollutants of Concern (POC)

Category	Pollutants
Bacterial Indicators	Pathogens
Nutrients	Nutrients
Nutrients	Organic Enrichment/Low Dissolved Oxygen
Other Organics	PCBs (Polychlorinated biphenyls)
Toxicity	Sediment Toxicity
Toxicity	Unknown Toxicity

Limitations of Infiltration

Onsite Soils Group(s)	A

	D C
Known Groundwater Contamination Plumes (within 1000 ft)	NO
Adjacent Water Wells	NO - Please contact your local water agency for more information.
Local Supplier	EASTERN MUNICIPAL W.D.
Wholesale Supplier	METROPOLITAN WATER DISTRICT

Environmentally Sensitive Areas within 200 feet	**Fish and Wildlife Habitat/Species**	• None found
	CVMSHCP	• None found
	WRMSHCP	• Criteria Area Survey Req. - Area 9 • Narrow Endemic Plants Survey Req. - Area 10 • Burrowing Owl Survey Required Area
Groundwater Elevation from Mean Sea Level	1404 ft.	
85th Percentile Design Storm Depth	0.633 in.	
Groundwater Basin	Perris-North	
MSHCP / CVMSHCP Criteria Cell(s)	No data	

Retention Ordinance Information	<table><tr><th>City</th><th>Ordinance</th><th>Description</th><th>Storm Event (Required Design Capture Volume)</th></tr><tr><td colspan="4">No ordinances found</td></tr></table>
Related Studies and Reports	• CNRP_Final_1-28-2013.pdf • IBI Scores - Southern Cal.pdf • bulletin118_4-sc.pdf • water_fact_3_7.11.pdf • 8039-SAR-Hydromodification.pdf • Perris Valley MDP.pdf • West_San_Jacinto_GW_Basin_Management_Plan.pdf • Perris Valley ADP_Report.pdf • Perris Valley ADP_Map.pdf

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Western Riverside Area, California

December 2, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,400 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 15, Sep 6, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 14, 2022—Mar 17, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Du	Domino silt loam	1.0	12.0%
Dv	Domino silt loam, saline-alkali	3.6	43.2%
EyB	Exeter very fine sandy loam, deep, 0 to 5 percent slopes	2.0	24.2%
HgA	Hanford fine sandy loam, 0 to 2 percent slopes	1.7	20.6%
Totals for Area of Interest		**8.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Western Riverside Area, California

Du—Domino silt loam

Map Unit Setting

National map unit symbol: hct7
Elevation: 1,000 to 1,800 feet
Mean annual precipitation: 12 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 230 to 280 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Domino and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Domino

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 27 inches: silt loam
H3 - 27 to 36 inches: cemented
H4 - 36 to 63 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R019XD068CA - SILTY BASIN
Hydric soil rating: No

Minor Components

Unnamed
Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed
Percent of map unit: 3 percent
Hydric soil rating: No

Chino
Percent of map unit: 3 percent
Hydric soil rating: No

Willows
Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed
Percent of map unit: 3 percent
Hydric soil rating: No

Dv—Domino silt loam, saline-alkali

Map Unit Setting
National map unit symbol: hct8
Elevation: 1,000 to 1,800 feet
Mean annual precipitation: 12 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 230 to 280 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Domino and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Domino

Setting
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile
H1 - 0 to 14 inches: silt loam
H2 - 14 to 27 inches: silt loam
H3 - 27 to 36 inches: cemented
H4 - 36 to 63 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R019XD068CA - SILTY BASIN
Hydric soil rating: No

Minor Components

Chino

Percent of map unit: 10 percent
Hydric soil rating: No

Willows

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

EyB—Exeter very fine sandy loam, deep, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hctn
Elevation: 300 to 700 feet
Mean annual precipitation: 7 to 15 inches
Mean annual air temperature: 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Exeter and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exeter

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 16 inches: fine sandy loam
H2 - 16 to 37 inches: sandy clay loam
H3 - 37 to 50 inches: indurated
H4 - 50 to 60 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: 35 to 60 inches to duripan
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R019XD029CA - LOAMY
Hydric soil rating: No

Minor Components

Ramona

Percent of map unit: 5 percent
Hydric soil rating: No

Greenfield

Percent of map unit: 5 percent
Hydric soil rating: No

Monserate

Percent of map unit: 5 percent
Hydric soil rating: No

HgA—Hanford fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2y8ts
Elevation: 610 to 1,750 feet
Mean annual precipitation: 9 to 15 inches
Mean annual air temperature: 64 to 65 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 8 inches: fine sandy loam
C1 - 8 to 40 inches: fine sandy loam
C2 - 40 to 60 inches: stratified loamy sand to coarse sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: R019XD029CA - LOAMY
Hydric soil rating: No

Minor Components

Greenfield

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Tujunga

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ramona

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

References

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Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

Note:

There is no known Phase I Environmental Site Assessment for this site.

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

Note:

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 a LID Technical Infeasibility Analysis is not needed for this site.

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

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	Joseph E Bonadiman & Associates, Inc.	Date	12/2/2022
Designed by	JTS	Case No	
Company Project Number/Name	214934 Perris Truck Terminal		

BMP Identification

BMP NAME / ID: BMP-1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth,
from the Riverside County SWCT[2] Website (http://rivco.permitrack.com/)

D_{85}= 0.633 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA 1-B	*111,670*	*Concrete or Asphalt*	*1.00*	*0.89*	*99610*			
DMA 1-C	*0*	*Roofs*	*1.00*	*0.89*	*0*			
	111670	***Total***			**99610**	**0.63**	***5254***	***5,255***

Notes:

Bioretention Facility - Design Procedure	BMP ID: BMP-1	Legend:	Required Entries / Calculated Cells

Company Name: Joseph E. Bonadiman & Associates, Inc. Date: 12/2/2022

Designed by: County/City Case No.:

Design Volume

Enter the area tributary to this feature A_T = 2.92 acres

Enter V_{BMP} determined from Section 2.1 of this Handbook V_{BMP} = 5,255 ft^3

Type of Bioretention Facility Design

○ Side slopes required (parallel to parking spaces or adjacent to walkways)

◉ 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 = 7.0 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 = 2,920 ft^2

Proposed Surface Area A= 2,920 ft^2

Minimum Required Length of Bioretention Facility, L L = 417.1 ft

Bioretention Facility Properties

Side Slopes in Bioretention Facility z = 4 :1

Diameter of Underdrain 6 inches

Longitudinal Slope of Site (3% maximum) %

6" Check Dam Spacing 100 feet

Describe Vegetation:

Notes:

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	Joseph E Bonadiman & Associates, Inc.	Date	12/2/2022
Designed by	JTS	Case No	
Company Project Number/Name	214934 Perris Truck Terminal		

BMP Identification

BMP NAME / ID: BMP-2

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth,
from the Riverside County SWCT[2] Website (http://rivco.permitrack.com/)

D_{85}= 0.633 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA 2-B	*214,364*	*Concrete or Asphalt*	*1.00*	*0.89*	*191213*			
DMA 2-C	*720*	*Roofs*	*1.00*	*0.89*	*642*			
	215084	***Total***			**191855**	**0.63**	**10120**	**10,121**

Notes:

Bioretention Facility - Design Procedure	BMP ID: BMP-2	Legend:	Required Entries / Calculated Cells

Company Name: Joseph E. Bonadiman & Associates, Inc. Date: 12/2/2022

Designed by: County/City Case No.:

Design Volume

Enter the area tributary to this feature A_T = 5.43 acres

Enter V_{BMP} determined from Section 2.1 of this Handbook V_{BMP} = 10,121 ft^3

Type of Bioretention Facility Design

○ Side slopes required (parallel to parking spaces or adjacent to walkways)

◉ 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 = 9.0 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 = 5,623 ft^2

Proposed Surface Area A= 5,623 ft^2

Minimum Required Length of Bioretention Facility, L L = 624.8 ft

Bioretention Facility Properties

Side Slopes in Bioretention Facility z = 4 :1

Diameter of Underdrain 6 inches

Longitudinal Slope of Site (3% maximum) %

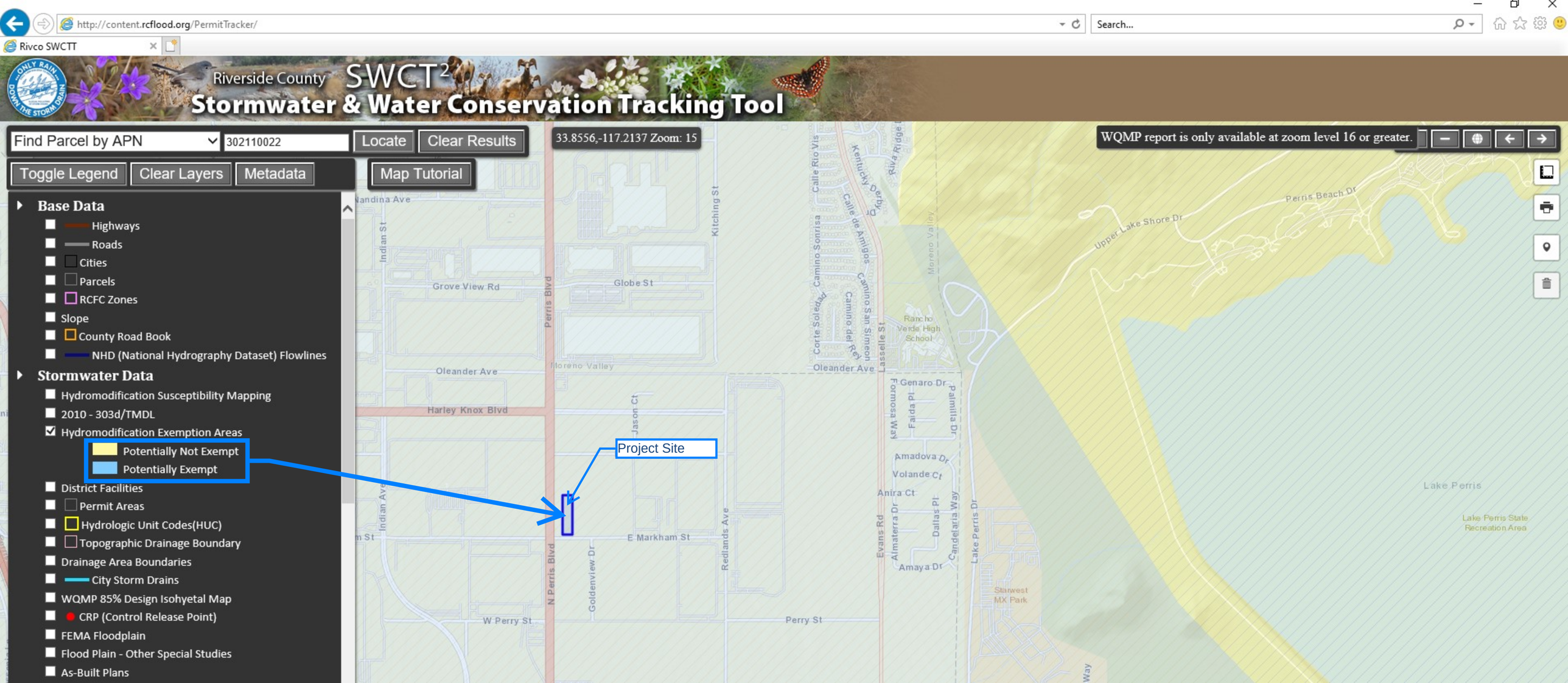
6" Check Dam Spacing 100 feet

Describe Vegetation:

Notes:

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern


http://content.rcflood.org/PermitTracker/
Search...
Rivco SWCTT
Riverside County SWCT²
Stormwater & Water Conservation Tracking Tool
Find Parcel by APN
302110022
Locate
Clear Results
33.8556,-117.2137 Zoom: 15
WQMP report is only available at zoom level 16 or greater.
Toggle Legend
Clear Layers
Metadata
Map Tutorial
Base Data
Highways
Roads
Cities
Parcels
RCFC Zones
Slope
County Road Book
NHD (National Hydrography Dataset) Flowlines
Stormwater Data
Hydromodification Susceptibility Mapping
2010 - 303d/TMDL
Hydromodification Exemption Areas
Potentially Not Exempt
Potentially Exempt
District Facilities
Permit Areas
Hydrologic Unit Codes(HUC)
Topographic Drainage Boundary
Drainage Area Boundaries
City Storm Drains
WQMP 85% Design Isohyetal Map
CRP (Control Release Point)
FEMA Floodplain
Flood Plain - Other Special Studies
As-Built Plans
Project Site
Grove View Rd
Globe St
Oleander Ave
Harley Knox Blvd
E Markham St
W Perry St
Perry St
Perris Blvd
Indian St
Kitching St
Moreno Valley
Rancho Verde High School
Upper Lake Shore Dr
Perris Beach Dr
Lake Perris
Lake Perris State Recreation Area
Amadova Dr
Volante Ct
Anira Ct
Amaya Dr
Genaro Dr
Lake Perris Dr
Redlands Ave
Goldenview Dr
Jason Ct
Lasselle St

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information