Recording requested by and mail to:

City Clerk
City of Beaumont
550 E. Sixth Street
Beaumont, CA 92223

SPACE ABOVE THIS LINE FOR RECORDER'S USE
EXEMPT FROM RECORDER'S FEES PURSUANT TO GOVERNMENT CODE SECTION 6103 AND 27383

APN:

STORM WATER MANAGEMENT WQMP/BMP FACILITIES

COVENANT AND AGREEMENT NO.

City of Beaumont, Riverside County, California

THIS COVENANT AND AGREEMENT is made and entered into this January 23 of 2025, by and between John McClure, ("Owner"), and the City of Beaumont, California, ("City").

The Owner hereby certifies I am (we are) the sole owner of certain real property located at 460 W. 1st Street (Site Address) in the City of Beaumont, County of Riverside, State of California, more specifically described in **Exhibit "A"** and depicted in **Exhibit "B"** ("Property").

The Owner covenants and agrees to comply with the Project Water Quality Management Plan ("WQMP"), attached hereto as **Exhibit "C"**, providing for storm water quality treatment within the confines of the Property.

The Owner covenants and agrees that the health, safety and welfare of the residents of the City of Beaumont, require that the Best Management Practice ("BMP") facilities, more specifically described in the WQMP (for example bio- swales, catch basins, roof drains and appurtenances) be constructed and maintained to minimize pollutants in urban runoff by the Owner.

The Owner further covenants and agrees as follows:

1. The on-site storm water management/BMP facilities mentioned above shall be constructed by the Owner at its sole cost and expense, in accordance with the plans and specifications identified in the WQMP approved by City.

2. The Owner shall adequately maintain the storm water management/BMP facilities in a manner assuring peak performance at all times, including source control BMPs at all times as its sole responsibility, at its sole cost and expense. This includes all pipes and channels built to convey storm water on the Property, including catch basin inserts, underground detention ponds, swales and vegetation provided to control the quantity and quality of the

storm water. Adequate maintenance is herein defined as good working condition so that these facilities are performing in accordance with their design functions continuously at all times.

3. The Owner shall annually inspect the storm water management/BMP facilities mentioned above and submit an inspection report annually to the Public Works Department by the anniversary of the date of this Agreement of each year. The purpose of the inspection is to assure safe and proper functioning of the facilities. The inspection shall cover the storm water management BMPs listed in the WQMP such as bioswales, catch basins and related filter units, etc. Deficiencies shall be noted in the inspection report and corrected by Owner promptly.

4. The Owner hereby grants permission to City, its authorized agents and employees, to enter upon the Property and to inspect the storm water management/BMP facilities, take samples and perform testing whenever the City deems necessary and as required by the City's most current National Pollutant Discharge Elimination System (NPDES) Permit. The purpose of the inspection, testing and sampling is to follow up on apparent and reported deficiencies and/or to respond to citizen complaints and meet the requirements of the City's NPDES Permit issued by the State Water Resources Control Board – Santa Ana River Region. The City shall provide the Owner with advanced notice of entering upon the Property, except in the event of an emergency, as determined by the City. The City shall provide the Owner copies of the inspection findings and a directive to commence with the repairs if necessary. Owner or Owner's successors or assigns shall pay City for all costs incurred by City in the inspection, sampling, testing of the BMPs within thirty (30) calendar days of City invoice.

5. In the event the Owner fails to maintain the storm water management/BMP facilities in good working condition acceptable to the City, upon five (5) days advanced written notice, the City may enter upon the Property and take whatever steps necessary to correct deficiencies identified in any inspection report and to charge the costs of such repairs to the Owner the cost of which shall constitute a lien against the Property. In the event of an emergency, as determined by City, advanced notice as aforesaid, shall not be required. Notwithstanding the forgoing, it is expressly understood and agreed that the City is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation to the City.

6. The Owner will perform the work necessary to keep these facilities in good working order as appropriate. The maintenance schedule for the storm water management BMP facilities (including sediment removal) is outlined in the approved WQMP and the schedule must be followed at all times. In the future, City of Beaumont may adopt an annual Stormwater Inspection Fee that would be assessed to the Owner.

7. In the event the City, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials and the like, the Owner, its successors and assigns shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the City hereunder.
8. This Agreement imposes no liability of any kind whatsoever on the City. Owner agrees to indemnify, defend (with counsel reasonably approved by the City) and hold harmless the City and its authorized officers,
9. employees, agents and volunteers from any and all claims, actions, losses, damages, and/or liability arising out of this Agreement from any cause whatsoever, including the acts, errors or omissions of any person and for any costs or expenses incurred by the City on account of any claim except where such indemnification is prohibited by law. This indemnification provision shall apply regardless of the existence or degree of fault of indemnitees. The Owner's indemnification obligation applies to the City's "active" as well as "passive" negligence but does not apply to the City's "sole negligence" or "willful misconduct" within the meaning of Civil Code Section

2782, or to any claims, actions, losses, damages, and/or liabilities, to the extent caused by the acts or omissions of any third party contractors undertaking any work (other than field inspections) or other maintenance on the Property on behalf of the City under this Agreement.

10. This Agreement shall be recorded with the County Recorder for the County of Riverside and shall constitute a covenant running with the land, equitable servitude and lien against the Property, and shall be binding on the Owner, its successors, assigns, transferees, administrators, executors, heirs, encumbrancers and any other successors in interests, including any homeowner's association.

11. In addition to any remedy available to City under this Agreement, if Owner violates any term of this Agreement and does not cure the violation within the time already provided in this Agreement, or, if not provided, within thirty (30) calendar days, or within such time authorized by the City if said cure reasonably requires more than the subject time, the City may bring an action at law or in equity in a court of competent jurisdiction to enforce compliance by the Owner with the terms of this Agreement. In such action, the City may recover any damages to which the City may be entitled for the violation, enjoin the violation by temporary or permanent injunction without the necessity of proving actual damages or the inadequacy of otherwise available legal remedies, or obtain other equitable relief, including, but not limited to, the restoration of the Property and/or the BMPs identified in the WQMP to the condition in which it/they existed prior to any such violation or injury.

12. Owner shall provide printed educational materials with any sale of the Property which provide information on what storm water management facilities are present, the types and locations of maintenance signs that are required and how the necessary maintenance can be maintained.

13. Owner shall provide actual notice of this Agreement and its terms to any respective buyers or successor(s) in interest.

14. In order to be valid, amendment or change to this Agreement including the WQMP and BMPs requires an amendment executed by the City and Owner which is recorded with the Riverside County Recorder.

WITNESS the following signatures:

OWNER:

By: _____ By: _____

Name: John McClure Name: _____

Title: Owner Title: _____

Organization: 460 West 1st Street LLC Organization: _____

All signatures on this Agreement on behalf of the Owner must be acknowledged before a Notary Public. In the event that the owner is a corporation, the President/Vice President and the corporate secretary of the corporation must sign.

City:

CITY OF BEAUMONT
a Municipal Corporation

Signature: _____
City Manager

ATTEST:

Signature: _____
City Clerk

APPROVED AS TO FORM:

Signature: _____
John Pinkney, City Attorney

APPROVED AS TO CONTENT:

Signature: _____
Robert Vestal, Director of Engineering/Public Works

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Riverside)

On Jan 23, 2025, before me, Elaine Martinez, notary public, personally appeared John McClure who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature: _____ (Seal)

ELAINE MARTINEZ
COMM. #2375351
Notary Public - California
Riverside County
My Comm. Expires Sep. 17, 2025

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Riverside)

On _____, 20___, before me, _____, notary public, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature: _____ (Seal)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Riverside)

On _____, 20___, before me, _____, notary public, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature: _____ (Seal)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Riverside)

On _____, 20___, before me, _____, notary public, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature: _____ (Seal)

EXHIBIT "A"

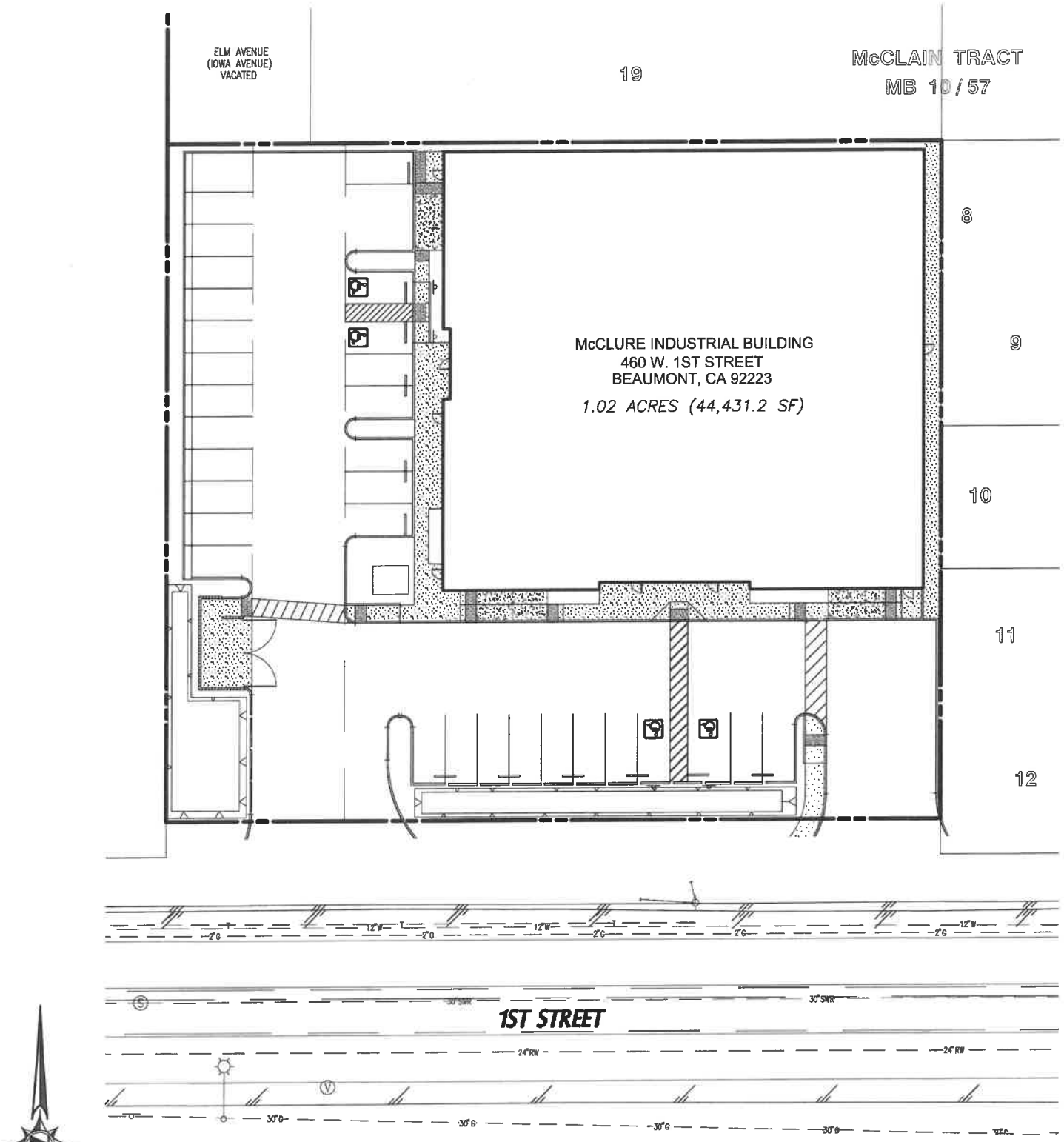
LEGAL DESCRIPTION

IN THE CITY OF BEAUMONT, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

LOTS 20, 21, 22, 23 AND 24 OF MCCLAIN TRACT, IN THE CITY OF BEAUMONT, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 10, PAGE 57 OF MAPS, THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

TOGETHER WITH THAT PORTION OF IOWA AVENUE (NOW KNOWN AS ELM AVENUE) ADJOINING SAID LAND ON THE WEST, AS VACATED BY RESOLUTION RECORDED JUNE 28, 1940, BOOK 467, PAGE 434, OF OFFICIAL RECORDS OF SAID RIVERSIDE COUNTY.

EXHIBIT "B"
DIAGRAM OF PROPERTY



PREPARED BY:

HUNSAKER & ASSOCIATES
IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
157 Technology Dr ▪ Irvine, CA 92618 ▪ PH: (949) 583-1010 ▪ FX: (949) 583-0759

DATE: January 28, 2025

EXHIBIT "C"
WQMP

FINAL
WATER QUALITY MANAGEMENT PLAN

"McCLURE INDUSTRIAL BUILDING"
DESIGN REVIEW NO. 2022-0869

Reviewed by
Sarah.Seitz
NV5 01/17/2025

No Further Comments

Project Address:
East of Veile Avenue and First Street
City of Beaumont, CA

Prepared for:
JOHN McCLURE
102 Mesa Court
Calimesa, CA 92320
951.743.8334

Prepared by:
Hunsaker & Associates Irvine, Inc.
3 Hughes
Irvine, CA 92618
949.583.1010

Preparation Date:
January 17, 2024
(Rev. November 19, 2024, December 26, 2024)

W.O. 4600-1X

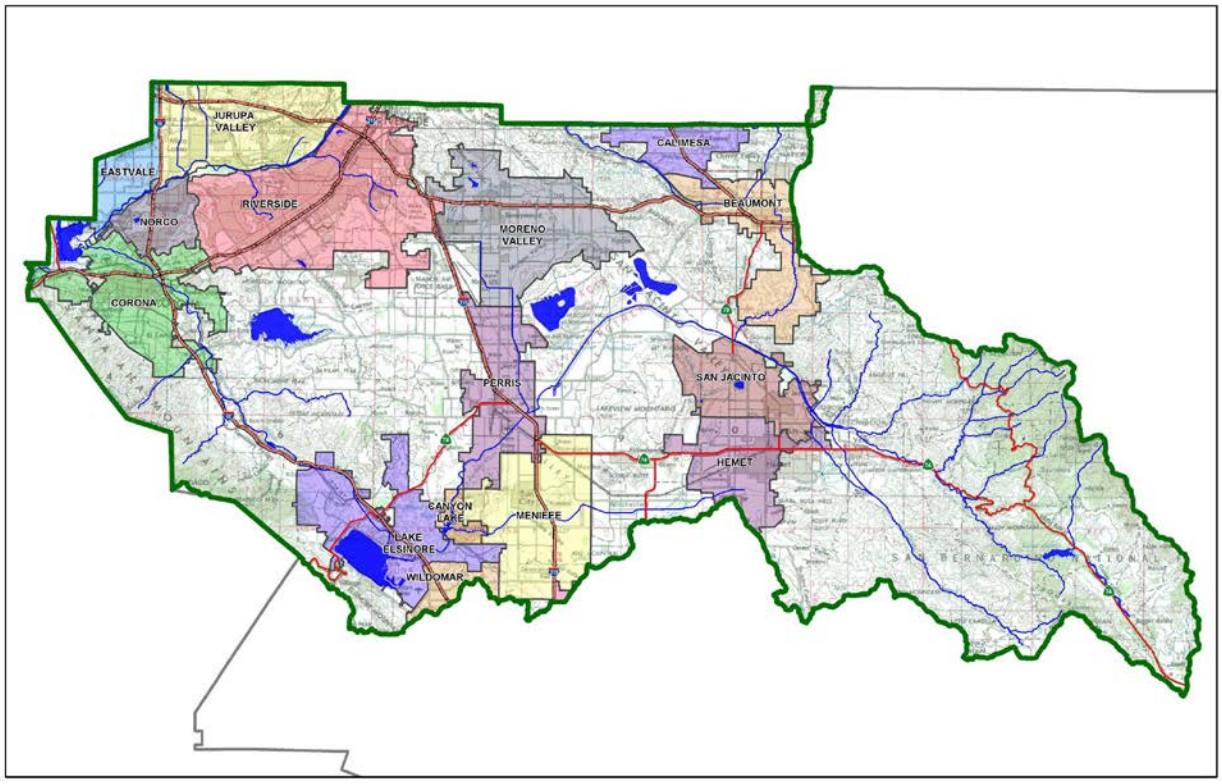
Project Specific Water Quality Management Plan

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

Project Title: "McClure Industrial Building"

Development No: N/A

Design Review/Case No: PW2022-0869



☐ **Preliminary**
☒ **Final**

Original Date Prepared: January 12, 2024

Revision Date(s): September 18, 2024, December 26, 2024

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

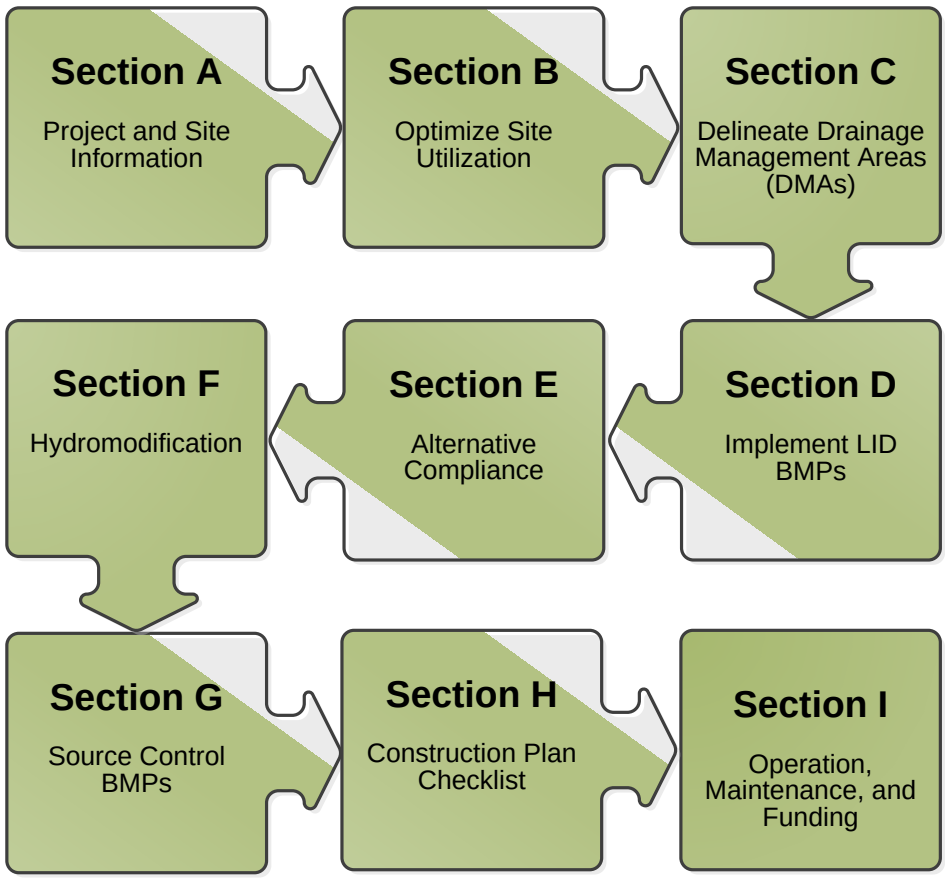
Contact Information:

Prepared for:
John McClure
102 Mesa Court
Calimesa, CA 92320
951.743.8334

Prepared by:
Hunsaker & Associates Irvine, Inc.
3 Hughes
Irvine, CA 92618
949.583.1010

A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your "how-to" manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for John McClure by Hunsaker & Associates Irvine, Inc. for the "McClure Indstrial Building" project.

This WQMP is intended to comply with the requirements of City of Beaumont for Water Quality Ordinance 1903 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 Beaumont Water Quality Ordinance (Municipal Code Chapter 13.24).

"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

11-19-24
Date

John McClure
Owner's Printed Name

Owner
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."

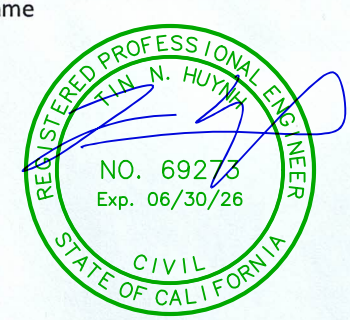
Preparer's Signature

11/19/2024
Date

Tin Huynh
Preparer's Printed Name

Design Engineer
Preparer's Title/Position

Preparer's Licensure:



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List of Appendices

Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	*Industrial*
Planning Area:	*N/A*
Community Name:	*N/A*
Development Name:	*McClure Industrial Building"*

PROJECT LOCATION

Latitude & Longitude (DMS): *33° 55' 19"N, -116° 59' 12"W*
Project Watershed and Sub-Watershed: *Santa Ana River, San Timoteo Canyon*
Gross Acres: *0.99*

APN(s): *417-150-015*

Map Book and Page No.: *Lots 20-24; MB 10/57*

PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	*Industrial*
Proposed or Potential SIC Code(s)	*1541*
Area of Impervious Project Footprint (SF)	*37,364 SF,*
Total Area of proposed Impervious Surfaces within the Project Footprint (SF)/or Replacement	*37,364 SF*
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 SF*
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)	*Geotech Report Attached*
What is the Water Quality Design Storm Depth for the project?	*0.85 in.*

Project Description:

The McClure Industrial Building project consists of a proposed 17,550 sf industrial use building with associated asphalt parking, drive aisles and landscape planters located along the western and southern site limits. The proposed building will house a fabrication shop and will not include the handling of heavy metals or toxic substances. The project is 0.99 acres in size and is located on the north side of First Street, approximately 415 feet east of Viele Avenue. The site naturally drains to the southwest, and the conceptual grading for the development has been designed to honor the existing drainage pattern. Water quality mitigation for the development will be provided through the implementation of bioretention BMPs equipped with underdrains due to the insufficient site-specific measured (raw) infiltration rates of less than 3.2 in/hr. Source control BMPs include landscape methods, trash enclosure maintenance and parking lot maintenance (sweeping).

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.

The project's Vicinity Map, WQMP Site Plan and Receiving Waters Exhibits are provided in Appendix 1 of this WQMP. The maps show the previously discussed elements, as required by the WQMP Guidance Document.

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
Noble Creek	*None*	*None*	*N/A*
San Timoteo Creek (Reach 3) HU 801.61	*Indicator Bacteria*	*GWR, REC1, REC2, WARM, WILD, RARE*	*3.5 miles*
Santa Ana River (Reach 5) HU 801.52	*None*	*AGR, GWR, REC1, REC2, WARM, WILD, RARE*	*20.8 miles*
Santa Ana River (Reach 4) HU 801.44	*Pathogens*	*GWR, REC1, REC2, WARM, WILD, RARE, SPWN*	*22.8 miles*
Santa Ana River (Reach 3) and Prado Area HU 801.21, 801.25	*Copper, Lead, Nutrients, Pathogens*	*AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN*	*30.1 miles*

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

Table A.2 Other Applicable Permits

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

Agency	Permit Required	
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* City of Beaumont Building Permits	☒ 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 evaporates 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. Project flows will flow to the southwest, as in pre-project conditions.

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

No. Pre-project site does not consist of any natural or native vegetation to be preserved. All vegetation will be removed and replaced with native and/or drought tolerant landscaping.

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

No. Project will allow for incidental infiltration of runoff in landscaping areas and the proposed bioretention planter areas. Per geotechincal borings conducted onsite, project site is not suitable for infltration BMPs.

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

Yes. Wherever feasible, landscaping areas have been proposed to minimize the amount of directly connected impervious area.

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

Dispersal of runoff to adjacent landscaping areas will be incidental and not designed. All runoff will be directed to proposed bioretention BMPs.

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
DMA A1	*Roof*	*8,797*	*Type D Areas Draining to BMPs*
DMA A2	*Asphalt*	*10,505*	*Type D Areas Draining to BMPs*
DMA A3	*Concrete*	*1,008*	*Type D Areas Draining to BMPs*
DMA A4	*Landscape*	*1,635*	*Type D Areas Draining to BMPs*
DMA B1	*Roof*	*8,753*	*Type D Areas Draining to BMPs*
DMA B2	*Asphalt*	*7,474*	*Type D Areas Draining to BMPs*
DMA B3	*Concrete*	*811*	*Type D Areas Draining to BMPs*
DMA B4	*Landscape*	*1,238*	*Type D Areas Draining to BMPs*

[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)
None			

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

Self-Retaining Area				Type 'C' DMAs that are draining to the Self-Retaining Area		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]
None						

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

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet) [A]	Post-project surface type	Impervious fraction [B]	Product [C] = [A] x [B]	DMA name /ID	Area (square feet) [D]	Ratio [C]/[D]
None							

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

DMA Name or ID	BMP Name or ID
DMA A1-A4	*Bioretention Basin BMP A*
DMA B1-B4	*Bioretention Basin BMP B*

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?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?	X	
If Yes, list affected DMAs: *DMAs A and B both have measured field infiltration rates of less than 3.2 in/hr (1.6 in/hr with correction factor)*		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here:		

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

D.2 Harvest and Use Assessment

Please check what applies*:*

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

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

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

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If 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: 0.07

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: 0.86 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: 2.12

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: 1.82

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)
1.82	0.07

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: 15

Project Type: Industrial

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: 0.86

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: 229

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: 196

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)**
196	15

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-4 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-4: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the projected average daily use (Step 1) to the minimum required non-potable use (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**
N/A	N/A

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment per Section 3.4.2 of the WQMP Guidance Document.

The project's irrigation and toilet use anticipated demands are less than the minimum required. Therefore, harvest and use BMPs are not feasible for this project.

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	
DMA A1-A4	☐	☐	☒	☐	☐
DMA B1-B4	☐	☐	☒	☐	☐

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.

The project site is divided into two (2) BMP tributary areas. Bioretention Basin BMP A consists of the northwestern half of the project site and includes DMAs A1-A4. Bioretention Basin BMP B consists of the southeastern half of the project site and includes DMAs B1-B4.

The required Design Capture Volume (VBMP) for each BMP is provided in the following section. It is anticipated that the project BMPs will be able to achieve the minimum VBMP requirements for each DMA.

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	*Enter BMP Name / Identifier Here* *Bioretention Basin BMP A* *(DMA A1-A4)*		
	[A]		[B]	[C]	[A] x [C]			
A1	*8,797*	*Roof*	*1.0*	*0.89*	*7,846.9*	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
A2	*10,505*	*Asphalt*	*1.0*	*0.89*	*9,370.5*			
A3	*1,008*	*Concrete*	*1.0*	*0.89*	*899.1*			
A4	*1,635*	*Landscape*	*0.1*	*0.11*	*180.6*			
	$A_T = \Sigma[A]$				$\Sigma = [D]$	[E]	$[F] = \frac{[D]x[E]}{12}$	[I]
	21,945				*18,297.1*	*0.85*	*1,296*	***1303.2***

[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

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Enter BMP Name / Identifier Here* *Bioretention Basin BMP B* *(DMA B1-B4)*		
	[A]		[B]	[C]	[A] x [C]			
B1	*8,753*	*Roof*	*1.0*	*0.89*	*7,807.7*	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
B2	*7,474*	*Asphalt*	*1.0*	*0.89*	*6,666.8*			
B3	*811*	*Concrete*	*1.0*	*0.89*	*723.4*			
B4	*1,238*	*Landscape*	*0.1*	*0.11*	*136.7*			
	$A_T = \Sigma[A]$				$\Sigma = [D]$	[E]	$[F] = \frac{[D]x[E]}{12}$	[I]
	18,276				*15,334.6*	*0.85*	*1,086*	***1,090.8***

[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

BMP Summary

Runoff from each of the project's DMAs will be conveyed as sheet flow and gutter flow to a bioretention BMP located at the southern portion of the project site. Inlets into the BMPs will consist of curb openings (curb cuts) equipped with rip-rap. Once the BMP reaches capacity, flows are discharged to the gutter along First Street through a parkway culvert. Due to the lack of a connecting offsite storm drain system, treated runoff from each of the DMAs will be pumped to surface level and discharged to the gutter on First Street. ***To prevent discharge of dry weather runoff, project pumps shall be operational during rainfall events only. An on/off level switch is proposed for the sump pump vault for operation during rainfall events.***

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 ft²)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft²)	P	N	P	P	N	P	P	P
☒ Parking Lots (>5,000 ft²)	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]
N/A	
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]				
N/A						*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.

This section is not applicable to the project. Onsite project areas will employ LID BMPs to address runoff.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
N/A		

[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.

Project meets this exemption. 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.

Project does not meet this exemption.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration			
Volume (Cubic Feet)			

[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.

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:

Project does not meet this exemption.

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
D1. Need for future indoor and structural pest control	*Design building features that discourage entry of pests*	*Provide Integrated Pest Management information to owners, lessees and operators.*
D2. Landscape/Outdoor Pesticide Use	*Preserve, existing native trees, shrubs, and ground cover to the maximum extent possible.* *Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.* *Where landscaping areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.* *Consider using pest-resistant plants, especially to hardscape. To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.*	*Maintain landscaping using minimum or no pesticides.* *See applicable operation BMPs in "What you show know for…..Landscaping and Gardening"* *Provide IPM information to new owners, lessees and operators.*
G. Refuse Areas	*Trash enclosure areas shall be paved, covered with a solid canopy-type roof and precluded from rain, run-on and runoff. Drainage from any adjoining roofs and pavements shall be diverted around facility. Perimeter walls shall be installed and dumpster lid provided to prevent offsite transport of trash. Surrounding area shall be kept clean, with all leaks and over-spilled materials clean up as soon as possible. Trash shall be emptied on a weekly basis (at minimum) and as needed.*	*Ensure 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*

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
H. Industrial Processes	*All process activities to be performed indoors. No processes to drain to exterior or to storm drain system.*	*See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQS Stormwater Quality Handbooks at www.cabmphandbooks.com* *See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://rcflood.org/stormwater/*
N. Fire sprinkler test water	*Provide a means to drain fire sprinkler test water to the sanitary sewer.*	*See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www. Cabmphandbooks.com*
O. Miscellaneous Drain or Wash Water or Other Sources *Condensate Drain Lines* *Roofing, Gutters and Trim* *Rooftop Equipment*	*Condensate drain lines may discharge to landscaping areas if flow is minimal. Drain lines shall not discharge to the storm drain system.* *Copper materials will be avoided when feasible for roofing trims, gutters and other improvements.* *Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.*	
P. Plazas, sidewalks and parking lots	*Sweep regularly*	*Sweep sidewalks regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect wash water containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.*

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	BMP Location (Lat/Long)
BMP A	*Bioretention Basin BMP A*	*Grading Plan Sheet 3*	*33.921820°, -116.987044°*
BMP B	*Bioretention Basin BMP B*	*Grading Plan Sheet 3*	*33.921820°, -116.986780°*

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: Owner

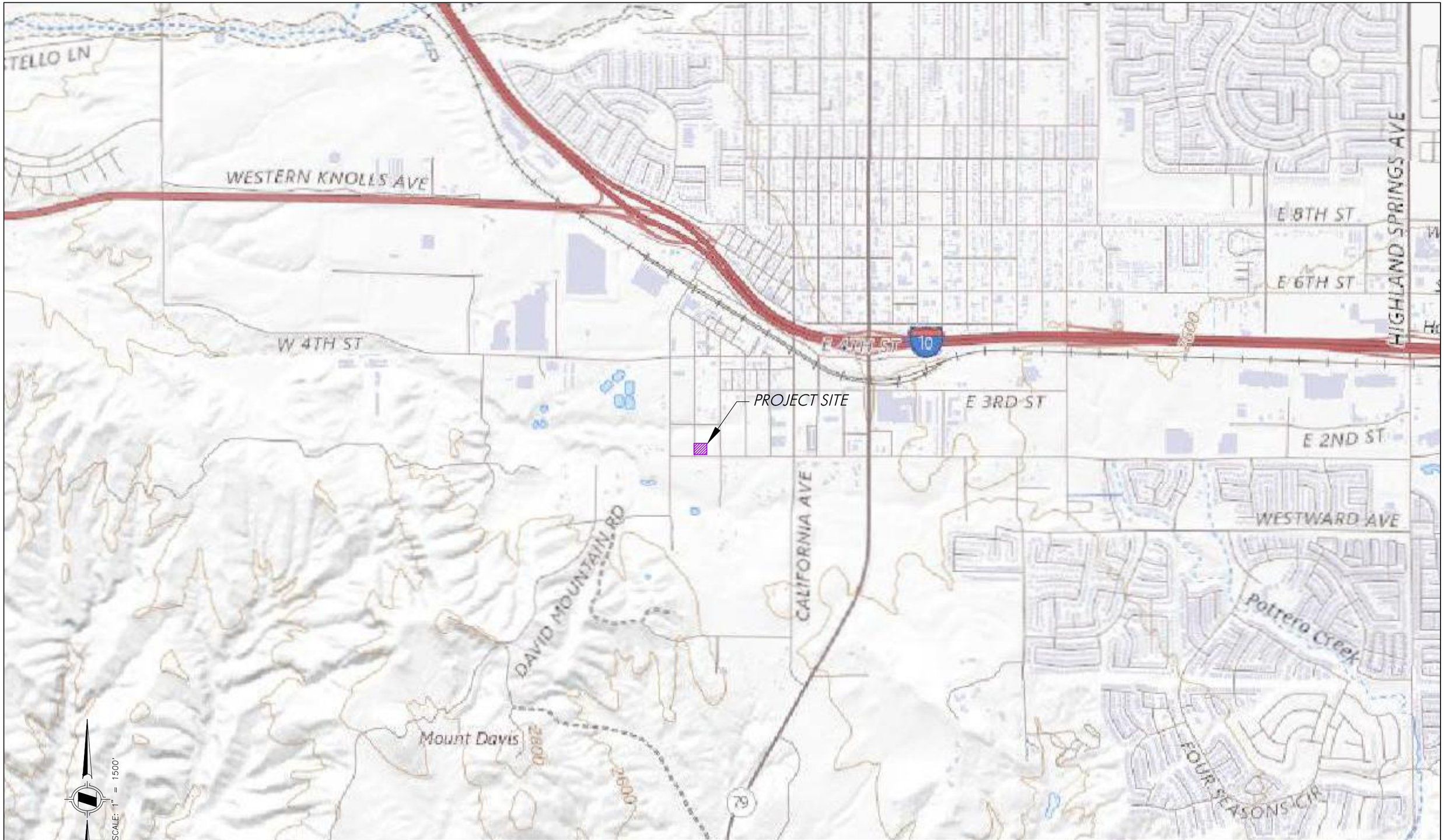
Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☐ Y ☒ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map



DRAWN BY: TIH	PREPARED BY: HUNSAKER & ASSOCIATES IRVINE, INC. PLANNING ■ ENGINEERING ■ SURVEYING Three Hughes, Irvine, CA 92618 ■ PH: (949) 583-1010 ■ FX: (949) 583-0759	PREPARED FOR: JOHN MCCLURE 102 MESA COURT CALIMESA, CA 92320 (951) 743-8334	"MCCLURE INDUSTRIAL" APN 417-150-015 EAST OF VEILE AVENUE & FIRST STREET CITY OF BEAUMONT, CALIFORNIA	SWPPP VICINITY MAP
DATE: 11/27/2023				
W.O.: 4600-1X				

DATE: Nov. 30, 2023 11:21:27 AM FILE: F:\1339\Engineering\SY_WQ\WQMP\Exhibits\1339_WQMP_VIC_McClure Industrial.dwg

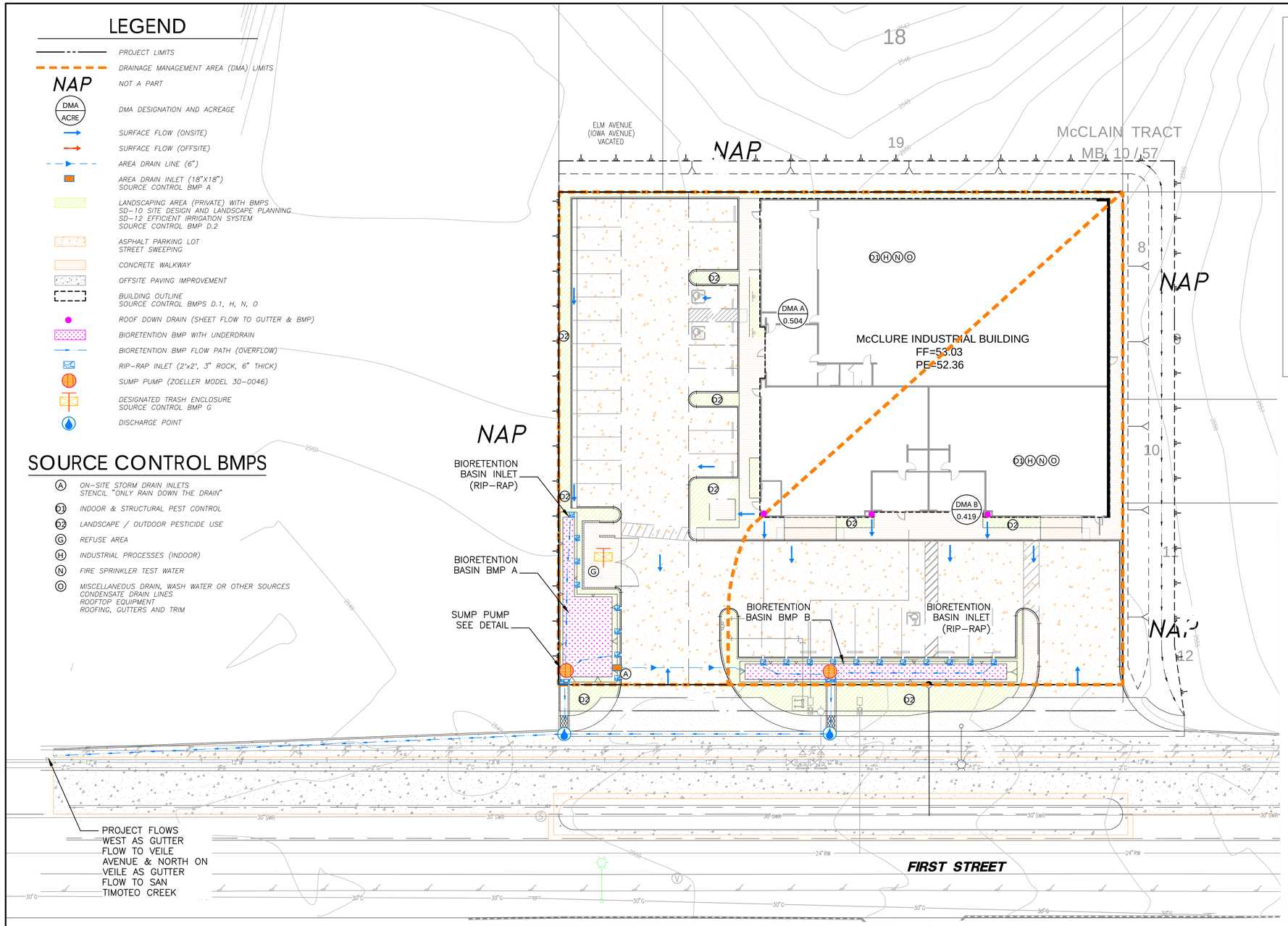
Receiving Waters Exhibit

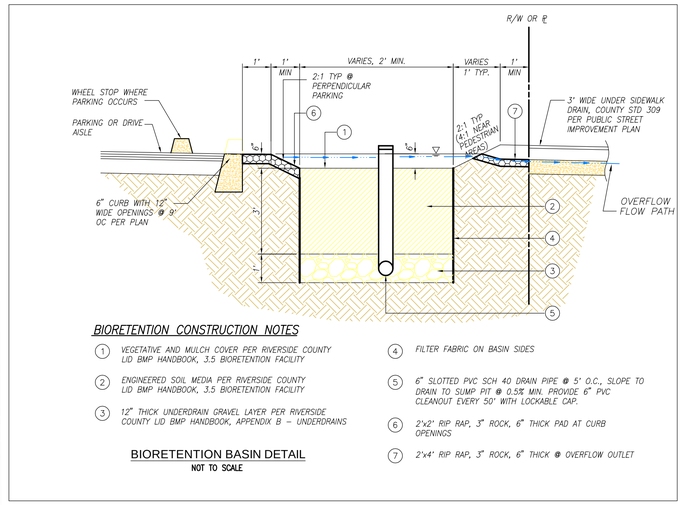
LEGEND

- PROJECT LIMITS
- DRAINAGE MANAGEMENT AREA (DMA) LIMITS
- NAP — NOT A PART
- DMA / ACRE — DMA DESIGNATION AND ACREAGE
- SURFACE FLOW (ONSITE)
- SURFACE FLOW (OFFSITE)
- AREA DRAIN LINE (6")
- AREA DRAIN INLET (18"X18") SOURCE CONTROL BMP A
- LANDSCAPING AREA (PRIVATE) WITH BMPS SD-10 SITE DESIGN AND LANDSCAPE PLANNING SD-12 EFFICIENT IRRIGATION SYSTEM SOURCE CONTROL BMP D.2
- ASPHALT PARKING LOT STREET SWEEPING
- CONCRETE WALKWAY
- OFFSITE PAVING IMPROVEMENT
- BUILDING OUTLINE SOURCE CONTROL BMPS D.1, H, N, O
- ROOF DOWN DRAIN (SHEET FLOW TO GUTTER & BMP)
- BIORETENTION BMP WITH UNDERDRAIN
- BIORETENTION BMP FLOW PATH (OVERFLOW)
- RIP-RAP INLET (2'x2', 3" ROCK, 6" THICK)
- SUMP PUMP (ZOELLER MODEL 30-0046)
- DESIGNATED TRASH ENCLOSURE SOURCE CONTROL BMP G
- DISCHARGE POINT

SOURCE CONTROL BMPS

- (A) ON-SITE STORM DRAIN INLETS STENCIL "ONLY RAIN DOWN THE DRAIN"
- (D1) INDOOR & STRUCTURAL PEST CONTROL
- (D2) LANDSCAPE / OUTDOOR PESTICIDE USE
- (G) REFUSE AREA
- (H) INDUSTRIAL PROCESSES (INDOOR)
- (N) FIRE SPRINKLER TEST WATER
- (O) MISCELLANEOUS DRAIN, WASH WATER OR OTHER SOURCES CONDENSATE DRAIN LINES ROOFTOP EQUIPMENT ROOFING, GUTTERS AND TRIM

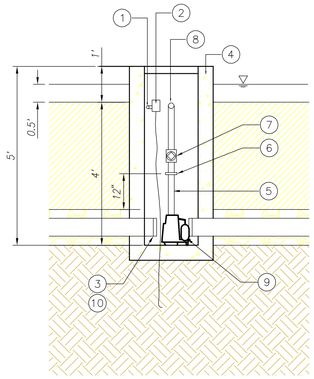




BIORETENTION CONSTRUCTION NOTES

1. VEGETATIVE AND MULCH COVER PER RIVERSIDE COUNTY LID BMP HANDBOOK, 3.5 BIORETENTION FACILITY
2. ENGINEERED SOIL MEDIA PER RIVERSIDE COUNTY LID BMP HANDBOOK, 3.5 BIORETENTION FACILITY
3. 12" THICK UNDERDRAIN GRAVEL LAYER PER RIVERSIDE COUNTY LID BMP HANDBOOK, APPENDIX B – UNDERDRAINS
4. FILTER FABRIC ON BASIN SIDES
5. 6" SLOTTED PVC SCH 40 DRAIN PIPE @ 5' O.C., SLOPE TO DRAIN TO SUMP PIT @ 0.5% MIN. PROVIDE 6" PVC CLEANOUT EVERY 50' WITH LOCKABLE CAP.
6. 2'x2' RIP RAP, 3" ROCK, 6" THICK PAD AT CURB OPENINGS
7. 2'x4' RIP RAP, 3" ROCK, 6" THICK @ OVERFLOW OUTLET

BIORETENTION BASIN DETAIL
NOT TO SCALE



SUMP PUMP VAULT DETAIL
NOT TO SCALE

NOTE: PUMP SHALL ONLY BE OPERATIONAL DURING RAINFALL EVENTS.

SUMP PUMP CONSTRUCTION NOTES

1. ELECTRICAL CONDUIT WITH POWER AND DISCONNECT SWITCH FROM ELECTRICAL ROOM TO VAULT PER SEPARATE ELECTRICAL PLANS
2. WATERPROOF ELECTRICAL JUNCTION BOX PER SEPARATE ELECTRICAL PLANS
3. 6" PVC END CAP (TYP OF 2)
4. 18"x18" BROOKS BOX WITH SOLID PARKWAY COVER
5. 1.5" STAINLESS STEEL REINFORCED TUBING, W/ 316 SST HOSE CLAMPS [FUTURE]
6. STAINLESS STEEL HOSE CLAMP [FUTURE]
7. 1.5" PVC, SCH40, UNION CHECK VALVE W/ QUARTER TURN BALL VALVE, ZOELLER MODEL 30-0046 [FUTURE]
8. 1.5" PVC SCH40 PVC PIPE, SOLVENT WELD, SECURED TO VAULT WALL WITH STAINLESS STEEL PIPE CLAMPS, ONE CLAMP FOR EACH 3' PIPE. DISCHARGE PIPE TO UNDER SIDEWALK DRAIN. [FUTURE]
9. SUMP PUMP, ZOELLER MODEL M53 (AUTO, 115V, 1PH, 60HZ, 3/10HP), CAST IRON BODY, 1.5" NPT DISCHARGE OR EQUAL [FUTURE]
10. PROVIDE 1/2"ø ORIFICE AT BOTTOM OF CAP (TYP OF 2) [FUTURE]

ITEMS 5-10 ARE INDICATED AS [FUTURE] AND TO BE INSTALLED IF THE WATER QUALITY BASINS DO NOT INFILTRATE WITHIN 72 HOURS AFTER A RAIN EVENT

BMP SUMMARY

DMA ID	AREA (SF)	SURFACE TYPE	LID BMP	V_{REQ} (CF)	A_{MIN} (SF)	$V_{PROVIDED}$ (CF)	$A_{PROVIDED}$ (SF)	LAT/LONG (DD)
A1	8797	Roofs	BIORETENTION BASIN A	1296	720	1303.2	724	33.921820°, -116.987044°
A2	10505	Concrete or Asphalt	BIORETENTION BASIN A					
A3	1008	Concrete or Asphalt	BIORETENTION BASIN A					
A4	1635	Ornamental Landscaping	BIORETENTION BASIN A					
B1	8753	Roofs	BIORETENTION BASIN B	1086	604	1090.8	606	33.921820°, 116.986780°
B2	7474	Concrete or Asphalt	BIORETENTION BASIN B					
B3	811	Concrete or Asphalt	BIORETENTION BASIN B					
B4	1238	Ornamental Landscaping	BIORETENTION BASIN B					

N

GRAPHIC SCALE
0 10 20 40
(IN FEET)
1 INCH = 20 FT.

FINAL WATER QUALITY MANAGEMENT PLAN
BMP SITE PLAN

APPLICANT:
JOHN MCCLURE
102 MESA COURT
CALIMESA, CA 92320
(951) 743-8334

PREPARED BY:
HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
Three Hughes • Irvine, CA 92618 • PH: (949) 583-1010 • FX: (949) 583-0759

"MCCLURE INDUSTRIAL"
APN 417-150-015
EAST OF VEILE AVENUE AND FIRST STREET
CITY OF BEAUMONT, CALIFORNIA

DRAFTED BY:	DATE:	W.O. NO:	SHEET NO:
TIH	11.19.2024	4600-1X	1 OF 1

DATE: Dec. 11, 2024 11:14:01 AM FILE: F:\1339\Engineering\SY_WQ\WQMP\Exhibits\1339_WQMP_SP_McClure Industrial.dwg

Appendix 2: Construction Plans

Grading and Drainage Plans

CITY OF BEAUMONT, CALIFORNIA
PRECISE PLANS FOR
McCLURE INDUSTRIAL BUILDING

GRADING NOTES

1. ALL GRADING SHALL CONFORM TO THE CITY OF BEAUMONT ORDINANCES, CURRENT ADOPTED CALIFORNIA BUILDING CODE, APPENDIX J, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, "LATEST EDITION" AND RECOMMENDATIONS OF THE SOILS ENGINEER.
2. NO WORK SHALL COMMENCED UNTIL ALL PERMITS HAVE BEEN OBTAINED FROM THE CITY AND OTHER APPROPRIATE AGENCIES.
3. ALL PROPERTY CORNERS SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION /GRADING.
4. DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE AND EROSION CONTROL SHOULD BE PROVIDED TO PREVENT PONDING WATER, SEDIMENT TRANSPORTATION, AND DAMAGE TO ADJACENT PROPERTIES.
5. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS.
6. NO FILL SHALL BE PLACED ON EXITING GROUND THAT HAS NOT BEEN CLEARED OF WEEDS. DEBRIS, TOPSOIL AND OTHER DELETERIOUS MATERIAL.
7. MAXIMUM CUT AND FILL SLOPE = 2: 1 EXCEPT WHERE SPECIFICALLY APPROVED OTHERWISE.
8. PROVIDE A 5' WIDE BY 1' HIGH BERM OR EQUIVALENT ALONG THE TOP OF ALL FILL SLOPES OVER 5' HIGH.
9. PROVIDE A BROW DITCH DESIGNED TO HANDLE 100 YR STORM FLOWS ALONG THE TOP OF CUT SLOPES.
10. NO OBSTRUCTION OF FLOODPLAIN OR NATURAL WATER COURSES SHALL BE PERMITTED.
11. ALL EXISTING DRAINAGE COURSES ON THE PROJECT SITE SHALL CONTINUE TO FUNCTION, ESPECIALLY DURING STORM CONDITIONS, PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT ADJOINING PROPERTIES DURING GRADING OPERATIONS.
12. CUT AND FILL SLOPES EQUAL TO OR GREATER THAN 3' IN VERTICAL HEIGHT SHALL BE PLANTED WITH GRASS OR GROUND COVER TO PROTECT THE SLOPE FROM EROSION AND INSTABILITY IN ACCORDANCE WITH CITY OF BEAUMONT REQUIREMENTS PRIOR TO FINAL GRADING INSPECTION
13. ALL SLOPES REQUIRED TO BE PLANTED SHALL BE PLANTED WITH APPROVED GROUND COVER AT 12" ON CENTER. SLOPES EXCEEDING 15' IN VERTICAL HEIGHT SHALL BE PLANTED WITH APPROVED TREES SPACED NOT TO EXCEED 20' ON CENTER OR SHRUBS NOT TO EXCEED 10' OR A COMBINATION OF SHRUBS AND TREES NOT TO EXCEED 15' IN ADDITION TO A GRASS MIX GROUND COVER. SLOPES EQUAL TO OR GREATER THAN 4' IN VERTICAL HEIGHT SHALL BE PROVIDED WITH AN IN-GROUND IRRIGATION SYSTEM COMPLETE WITH AN APPROPRIATE BACKFLOW PREVENTION DEVICE PER CITY REQUIREMENTS.
14. IF STEEP SLOPING TERRAIN OCCURS UPON WHICH FILL IS TO BE PLACED. IT MUST BE CLEARED, KEYED, AND BENCHED INTO FIRM NATURAL SOIL FOR FULL SUPPORT. PREPARATION SHALL BF APPROVED BY A SUITABLY QUALIFIED AND REGISTERED GEOTECHNICAL ENGINEER OR GEOLOGIST PRIOR TO PLACEMENT OF FILL MATERIAL.
15. THE GROUND IMMEDIATELY ADJACENT TO A FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN ONE UNIT VERTICAL IN 20 UNITS HORIZONTAL (5-PERCENT SLOPE) FOR A MINIMUM DISTANCE OF 10 FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET (3048 MM) OF HORIZONTAL DISTANCE, A 5-PERCENT SLOPE SHALL BE PROVIDED TO AN APPROVED ALTERNATIVE METHOD OF DIVERTING WATER AWAY FROM THE FOUNDATION. SWALES USED FOR THIS PURPOSE SHALL BE SLOPED A MINIMUM OF 2 PERCENT WHERE LOCATED WITHIN 10 FEET OF THE BUILDING FOUNDATION. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM OF 2 PERCENT AWAY FROM THE BUILDING.
16. ALL GRADING SHALL BE CONTINUOUSLY OBSERVED BY A COMPETENT SOILS ENGINEER WHO SHALL VERIFY THAT ALL FILL HAS BEEN PROPERLY PLACED AND WHO SHALL SUBMIT A FINAL COMPACTION REPORT FOR ALL FILLS OVER 1' DEEP.
17. A FINAL GEOTECHNICAL REPORT OF COMPLETION OF THE ROUGH GRADING, STATING SUBSTANTIAL CONFORMANCE WITH THE APPROVED GRADING PLAN, SHALL BE SUBMITTED TO THE BUILDING AND SAFETY DEPARTMENT PRIOR TO REQUESTING INSPECTION AND ISSUANCE OF BUILDING PERMITS. CERTIFICATIONS SHALL INCLUDE LINE GRADES, ELEVATIONS, AND LOCATION OF CUT/FILL SLOPES.
18. A LAND SURVEYOR OR ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING SHALL SUBMIT A PAD CERTIFICATION FOR ALL PADS. THE ELEVATION WITH RESPECT TO MEAN SEA LEVEL SHALL BE GIVEN. IF AN ELEVATION WITH RESPECT TO ADJACENT GROUND SURFACE IS REQUIRED, THE ACTUAL DISTANCE ABOVE THE ADJACENT GROUND SHALL BE GIVEN.
19. A GEOTECHNICAL ENGINEER OR GEOLOGIST SHALL SUBMIT TO THE BUILDING AND SAFETY DEPARTMENT AND THE PUBLIC WORKS DEPARTMENT A FINAL GEOTECHNICAL REPORT OF COMPLETION OF FINAL GRADING STATING SUBSTANTIAL CONFORMANCE WITH THE APPROVED PLANS FOR ALL GRADING DESIGNATED AS "ENGINEERED GRADING".
20. THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT AT LEAST 24 HOURS IN ADVANCE REQUESTING FINISH LOT GRADE AND DRAINAGE INSPECTION. THIS INSPECTION MUST BE APPROVED PRIOR TO BUILDING PERMIT FINAL INSPECTION FOR EACH LOT.
21. ALL STORM DRAINS, CATCH BASINS, AND STORM WATER RUNOFF STRUCTURES WILL BE PROVIDED WITH ADEQUATE CAPABILITIES TO FILTER AND RETAIN SEDIMENT, GRIT, OIL, AND GREASE TO PREVENT POLLUTION IN STORM WATER RUNOFF IN COMPLIANCE WITH THE CITY OF BEAUMONT'S BEST MANAGEMENT PRACTICES AND BEAUMONT'S DRAINAGE MASTER PLAN FOR STORMWATER AS WELL AS BEST MANAGEMENT PRACTICES IDENTIFIED IN THE CURRENT REPORT OF WASTE DISCHARGE FOR RIVERSIDE COUNTY PERMITTEES.
22. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT TWO DAYS BEFORE DIGGING AT 8-1-1 AND THE FOLLOWING UTILITY OR AGENCIES A MINIMUM OF TWO WORKING DAYS PRIOR TO COMMENCING ANY CONSTRUCTION OR GRADING:
    A. CITY OF BEAUMONT 951.769.8520
    B. SPECTRUM 844.780.6054
    C. SOUTHERN CALIFORNIA GAS COMPANY DISTRIBUTION 800.423.1391
    D. SOUTHERN CALIFORNIA GAS COMPANY TRANSMISSION 800.858.5601
    D. BEAUMONT CHERRY VALLEY WATER DISTRICT 951.567.0120
    E. EDISON 800.611.1911
    F. KINDER MORGAN ENGCY PARTNERS 951.712.8842
    G. WILLIAMS 918.510.8867
23. TRENCHING FOR UTILITIES AND STRUCTURES IS NOT ALLOWED UNTIL A SOIL COMPACTION REPORT IS SUBMITTED TO AND APPROVED BY THE PUBLIC WORKS DEPARTMENT.
24. THE CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, SAFE, CLEAN AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE CITY'S INSPECTOR. THE ADJACENT STREETS SHALL BE KEPT CLEAN OF SEDIMENT, DEBRIS AND OTHER NUISANCES AT ALL TIMES. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY THE CONSTRUCTION.
25. ALL OPERATIONS CONDUCTED ON THE SITE OR ADJACENT THERETO SHALL ADHERE TO THE NOISE ORDINANCE SET FORTH BY THE CITY MUNICIPAL CODE. ALL OPERATIONS SHALL BE LIMITED BY THE NOISE ORDINANCE TO THE LIMIT OF DECIBELS SPECIFIED FOR THE AREA AND TIME PERIOD. CONSTRUCTION ACTIVITIES WILL BE LIMITED TO THE PERIOD BETWEEN 7:00 A.M. AND 6:00 P.M. MONDAY THROUGH FRIDAY.
26. ALL OFF-SITE HAUL ROUTES SHALL BE SUBMITTED BY THE CONTRACTOR TO THE CITY ENGINEER FOR APPROVAL TWO FULL WORKING DAYS PRIOR TO BEGINNING OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEBRIS OR DAMAGE OCCURRING ALONG THE HAUL ROUTE OR ADJACENT STREETS AS A RESULT OF THE GRADING OPERATION.

GEOTECHNICAL ENGINEER'S STATEMENT

THESE GRADING PLANS HAVE BEEN REVIEWED BY THE UNDERSIGNED AND FOUND TO BE IN CONFORMANCE WITH THE RECOMMENDATIONS AND SPECIFICATIONS CONTAINED IN THE GEOTECHNICAL REPORT(S) PREPARED FOR THIS PROJECT TITLED "PRELIMINARY GEOTECHNICAL INVESTIGATION FOR PROPOSED INDUSTRIAL/COMMERCIAL DEVELOPMENT", DATED SEPTEMBER 10, 2020.

WILLIAM C. HOBBS, RCE 42265 DATE

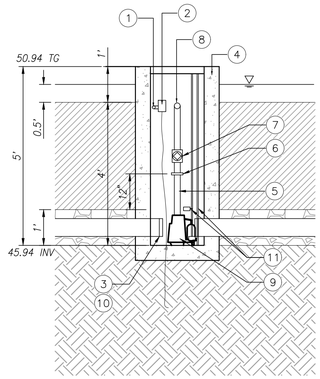
SOUTH SHORE TESTING & ENVIRONMENTAL
23811 WASHINGTON AVENUE, STE. C110-112
MURRIETA, CA. 92562
(951) 239-3008

OWNER/APPLICANT:

JOHN McCLURE
102 MESA COURT
CALIMESA, CA 92320
(951) 743-8334

LEGAL DESCRIPTION:

LOTS 20 THROUGH 24, INCLUSIVE, OF McCLAIN TRACT, IN THE CITY OF BEAUMONT, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA PER MB 10/57, RIV. CO. RECORDS, TOGETHER WITH THAT PORTION OF IOWA AVENUE (NOW KNOWN AS ELM AVENUE) ADJOINING SAID LAND ON THE WEST, AS VACATED BY RESOLUTION RECORDED JUNE 28, 1940 IN BOOK 467, PAGE 434, O.R.



SUMP PUMP CONSTRUCTION NOTES

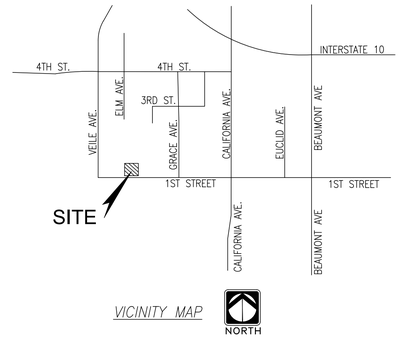
1. ELECTRICAL CONDUIT WITH POWER AND DISCONNECT SWITCH FROM ELECTRICAL ROOM TO VAULT PER SEPARATE ELECTRICAL PLANS
2. WATERPROOF ELECTRICAL JUNCTION BOX PER SEPARATE ELECTRICAL PLANS
3. 6" PVC END CAP (TYP OF 2)
4. 18"x18" BROOKS BOX WITH SOLID PARKWAY COVER
5. 1.5" STAINLESS STEEL REINFORCED TUBING, W/ 316 SST HOSE CLAMPS [FUTURE]
6. STAINLESS STEEL HOSE CLAMP [FUTURE]
7. 1.5" PVC, SCH40, UNION CHECK VALVE W/ QUARTER TURN BALL VALVE, ZOELLER MODEL 30-0046 [FUTURE]
8. 1.5" PVC SCH40 PVC PIPE, SOLVENT WELD, SECURED TO VAULT WALL WITH STAINLESS STEEL PIPE CLAMPS, ONE CLAMP FOR EACH 3' PIPE. DISCHARGE PIPE TO UNDER SIDEWALK DRAIN. [FUTURE]
9. SUMP PUMP, ZOELLER MODEL M53 (NON-AUTO, 115V, 1PH, 6 3/10HP), CAST IRON BODY, 1.5" NPT DISCHARGE OR EQUAL [FUTURE]
10. PROVIDE 1/2"ø ORIFICE AT BOTTOM OF CAP (TYP OF 2) [FUTURE]
11. LEVEL SWITCH [FUTURE]

	ELEVATION
PUMP ON SWITCH	47.0
PUMP OFF SWITCH	46.2

ITEMS 5-11 ARE INDICATED AS [FUTURE] AND TO BE INSTALLED IF THE WATER QUALITY BASINS DO NOT INFILTRATE WITHIN 72 HOURS AFTER A RAIN EVENT

SUMP PUMP VAULT DETAIL (24)

NOT TO SCALE



VICINITY MAP

"DECLARATION OF RESPONSIBLE CHARGE"

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS. I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF BEAUMONT DOES NOT RELIEVE ME AS ENGINEER OF WORK OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

FIRM: HUNSAKER & ASSOCIATES IRVINE, INC.
ADDRESS: 3 HUGHES
CITY, ST.: IRVINE, CALIFORNIA
TELEPHONE: (949) 583-1010

BY: _____ DATE: 11/04/2024
TIN N. HUYNH, RCE 69273

ASSESSOR'S PARCEL NO.

417-150-015

EXISTING ZONING:

M (MANUFACTURING)

SITE ADDRESS:

460 E. 1ST STREET
BEAUMONT, CA 92223

DISTURBED AREA

0.95 ACRES

EARTHWORK

RAW CUT . . . . . 687 C.Y.
RAW FILL . . . . . 773 C.Y.

EARTHWORK CALCULATIONS BASED ON THE RELATIONSHIP BETWEEN THE CONTOURED SURFACE AS SHOWN AND CALCULATED PROPOSED SUB-GRADE SURFACE.

IMPERVIOUS AREA PROPOSED

37,348 SF

SOURCE OF TOPOGRAPHY

A SITE SURVEY PERFORMED BY
BLAINE A. WOMER CIVIL ENGINEERING
DATED OCTOBER 1, 2021

CONSTRUCTION NOTES/ESTIMATE OF QUANTITIES

1. INSTALL MINIMUM 3" AC OVER 6" CLASS II AGGREGATE BASE. SECTION TO BE VERIFIED BY THE PROJECT GEOTECHNICAL ENGINEER . . . . . 16,800 S.F.
2. CONSTRUCT 6" TYPE A-6 CURB AND GUTTER PER RIV. CO. STD. NO. 200. . . . . 120 L.F.
3. CONSTRUCT 6" TYPE D CURB PER RIV. CO. STD. NO. 204. . . . . 450 L.F.
4. CONSTRUCT 0" TYPE D CURB PER MODIFIED RIV. CO. STD. NO. 204. . . . . 85 L.F.
5. CONSTRUCT ADA ACCESS RAMP PER DETAIL SHEET 3. . . . . 7 E.A.
6. CONSTRUCT 12" WIDE CURB OPENING PER DETAIL SHEET 3. . . . . 16 EA.
7. INSTALL CONCRETE SURFACE PER ARCHITECT PLANS. . . . . 1,440 S.F.
8. PAVEMENT STRIPING PER ARCHITECT PLANS. . . . . L.S.
9. CONSTRUCT TRASH ENCLOSURE PER ARCHITECT PLANS AND DETAIL THIS SHEET. . . . . 1 EA.
10. CONSTRUCT WHEEL STOP PER DETAIL ON SHEET 3 . . . . . 12 EA.
11. TRANSITION CURB FACE, 0" TO 6". . . . . 88 L.F.
12. INSTALL TRUNCATED DOMES PER 2022 CBC SEC. 11B-705. . . . . 200 S.F.
13. INSTALL VEHICULAR RATED CONCRETE SURFACE PER ARCHITECT PLANS. . . . . 460 S.F.
14. INSTALL 2'x2' RIP-RAP, 3" ROCK, 6" THICK. . . . . 100 S.F.
15. INSTALL 6" PVC SDR-35 DRAINAGE PIPE WITH TEMPORARY END CAP . . . . . 49 L.F.
16. ADA ACCESSIBLE PARKING LOT STRIPING PER CBC 2022 SEC.11B-502 FIG. 11B-502.2, 11B-502.3 & 11B-502.3.3. . . . . L.S.
17. PAINT ADA PARKING SPACE STRIPING AND LEGEND PER 2022 CBC SECTION 11B-502. . . . . L.S.
18. INSTALL ADA PARKING SPACE SIGNAGE PER 2022 CBC SECTION 11B-502.6. . . . . L.S.
19. INSTALL CONCRETE CURB RAMP PER RIV. CO. STD. NO. 403, CASE B. . . . . 1 EA.
20. TRANSITION CURB FACE, 0" TO 4" . . . . . 13 L.F.
21. INSTALL 4" THICK CONCRETE SURFACE PER DETAILS AND SECTIONS, SHEET 3. . . . . 670 S.F.
22. CONSTRUCT 4" TYPE D CURB PER MODIFIED RIV. CO. STD. NO. 204. . . . . 51 L.F.
23. CONST. BIORETENTION BASIN PER DETAIL ON SHEET 3. . . . . 1,471 S.F.
24. INSTALL SUMP PUMP VAULT FOR FUTURE SUMP PUMP PER DETAIL ON SHT 1 . . . . . 1 EA.
25. TRANSITION CURB FACE, 4" TO 6" . . . . . 20 L.F.

31. JOIN 4" FIRE BACKFLOW . . . . . 1 EA.
32. JOIN 1" DOMESTIC WATER METER . . . . . 1 EA.
33. INSTALL 1" LEAD FREE REDUCE PRESSURE PRINCIPLE BACKFLOW DEVICE, FEBCO LF825YA OR EQUAL WITH PROTECTION CAGE PAINTED GREEN. . . . . 1 EA.
34. INSTALL 4" PVC C-900 DR14 FIRE WATER MAIN, 48" MIN. COVER, W/ BEDDING AND BACKFILL PER BCVWD PLATE 6-1 . . . . . 104 L.F.
35. INSTALL 4" D.I. 90° BEND WITH THRUST BLOCK PER BCVWD PLATE 11-1 . . . . . 4 EA.
36. INSTALL PIV/FDC ASS'Y PER BCVWD STD. & SPECS. & DETAIL THIS SHEET. . . . . 1 EA.
37. INSTALL 1" PVC SCH40 WATER LINE, SOLVENT WELD ALL JOINTS, 48" MIN. COVER . . . . . 101 L.F.
38. JOIN 6" SEWER LATERAL AT SEWER CLEANOUT . . . . . 1 EA.
39. INSTALL 6" PVC SDR-35 SEWER LATERAL PER EMWD STD. No. SB-157 AND SB-158 . . . . . 60 L.F.
40. INSTALL SEWER CLEAN OUT PER EMWD STD. NO. SB-52. . . . . 1 EA.
41. SEE PLUMBING PLAN FOR SEWER BACKWATER VALVE PER CPC 710 . . . . . 1 EA.

WORK TO BE DONE

THE IMPROVEMENT WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING DOCUMENTS, CURRENT AT THE TIME OF CONSTRUCTION, AS DIRECTED BY THE CITY ENGINEER.

1. BEAUMONT MUNICIPAL CODE.
2. FOR STREETS: RIVERSIDE COUNTY ORDINANCE NO. 461.
   FLOOD CONTROL FACILITIES: THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT'S STANDARDS FOR FLOOD CONTROL FACILITIES.
   SANITARY SEWER FACILITIES: THE EASTERN MUNICIPAL WATER DISTRICT'S STANDARDS FOR SANITARY SEWER FACILITIES.
   ALL OTHER PUBLIC WORKS: THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK).
3. THIS SET OF PLANS.
4. RESOLUTION NO _____, DATED _____.
5. SOILS REPORT AND RECOMMENDATIONS BY SOUTH SHORE TESTING & ENVIRONMENTAL, DATED 9/10/2020 .

LEGEND

- ~ EXISTING POWER POLE
- ~ EXISTING POWER POLE ANCHOR
- ~ EXISTING EDGE OF PAVEMENT
- ~ EXISTING STREET LIGHT POLE
- Ⓢ ~ EXISTING SEWER MANHOLE
- Ⓥ ~ EXISTING VERIZON MANHOLE
- [S] ~ PROPOSED WATER METER
- ~ EXISTING SERVICE POLE
- 36"SWR ~ EXISTING 30" SEWER LINE
- 2"G ~ EXISTING GAS LINE, SIZE NOTED
- 12"W ~ EXISTING 12" WATERLINE
- 24"NPW ~ EXISTING 24" NON-POTABLE WATERLINE
- TP ~ TOP OF PAVEMENT ELEV.
- TB ~ TOP OF BERM ELEV.
- EP ~ EXISTING EDGE OF PAVEMENT ELEV.
- ~ EXISTING ONE DIRECTION NO PASSING ROADWAY STRIPING
- ~ EXISTING EDGE OF ROAD STRIPING
- ~ PROPOSED ASPHALT SURFACE
- ~ PROPOSED CONCRETE SURFACE
- A/4 ~ SECTION REFERENCE ~ SHEET No. REFERENCE

- DAYLIGHT LINE
- 2% SHEET FLOW RATE GRADED SWALE
- CENTERLINE
- SWALE HIGH POINT
- TOP OF SLOPE
- TOE OF SLOPE
- RETAINING WALL
- ADA PATH OF TRAVEL
- PA PLANTER AREA

PRIVATE ENGINEERS NOTICE TO CONTRACTOR(S)

1. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN, AND ANY OTHER LINES OR STRUCTURES NOT SHOWN ON THESE PLANS AND IS RESPONSIBLE FOR THE PROTECTION OF, AND ANY DAMAGE TO THESE LINES OR STRUCTURES
2. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE OWNER OF ALL UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.
3. QUANTITIES SHOWN HEREON ARE PROVIDED FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES PRIOR TO BIDDING FOR CONSTRUCTION.
4. THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER CITY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE CITY.

NOTE

1. APPROVAL OF THESE PLANS APPLIES ONLY WITHIN THE JURISDICTION OF THE CITY OF BEAUMONT.
2. TRENCHING FOR UTILITIES AND STRUCTURES IS NOT ALLOWED UNTIL SOIL COMPACTION REPORT IS SUBMITTED AND APPROVED BY THE PUBLIC WORKS DEPARTMENT.
3. THE CITY RESERVES THE RIGHT TO REQUIRE REVISION OF THE APPROVED PLANS TO CONFORM WITH CURRENT STANDARDS AND TO POST A NEW BOND IF CONSTRUCTION HAS NOT COMMENCED WITHIN TWO YEARS AFTER PLANS WERE APPROVED.
4. SIDEWALK AND DRIVEWAY APPROACHES WILL BE POURED/CONSTRUCTED ONLY AFTER DRIVEWAY LOCATIONS ARE DETERMINED.

INDEX OF SHEETS

ALL STANDARD DRAWINGS ARE COUNTY OF RIVERSIDE ROAD IMPROVEMENT STANDARDS & SPECIFICATIONS UNLESS NOTED OTHERWISE:
* RCFC&WCD STANDARD MANUAL
** EMWD SEWER STANDARD DRAWINGS
*** STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

DIGALERT — Call 2 Working Days Before You Dig! 811

BENCHMARK:
NGS BENCH MARK POINT ID DX3472, A 3" BRASS DISK SET VERTICALLY IN THE WEST FACE OF THE EAST ABUTMENT OF I-10 OVERCROSSING OF PENNSYLVANIA AVE., 36' EAST OF THE AVE. C/L, 1.7' NORTH OF THE SOUTH END OF THE WEST FACE, 3' ABOVE THE GROUND.

ELEV 2601.93, NAVD 88

BY	MARK	DESCRIPTION	APPR.	DATE
ENGINEER		REVISIONS	CITY	

HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
Three Hughes ▪ Irvine, CA 92618 ▪ PH: (949) 583-1010 ▪ FX: (949) 583-0759

11/04/2024
TIN N. HUYNH DATE
R.C.E. 69273

SEAL: REGISTERED PROFESSIONAL ENGINEER — TIN N. HUYNH — NO. 69273 Exp. 06/30/26 — CIVIL — STATE OF CALIFORNIA

DESIGN BY:
DRAWN BY:
CHECKED BY:
SCALE:
DATE:
JOB NUMBER:

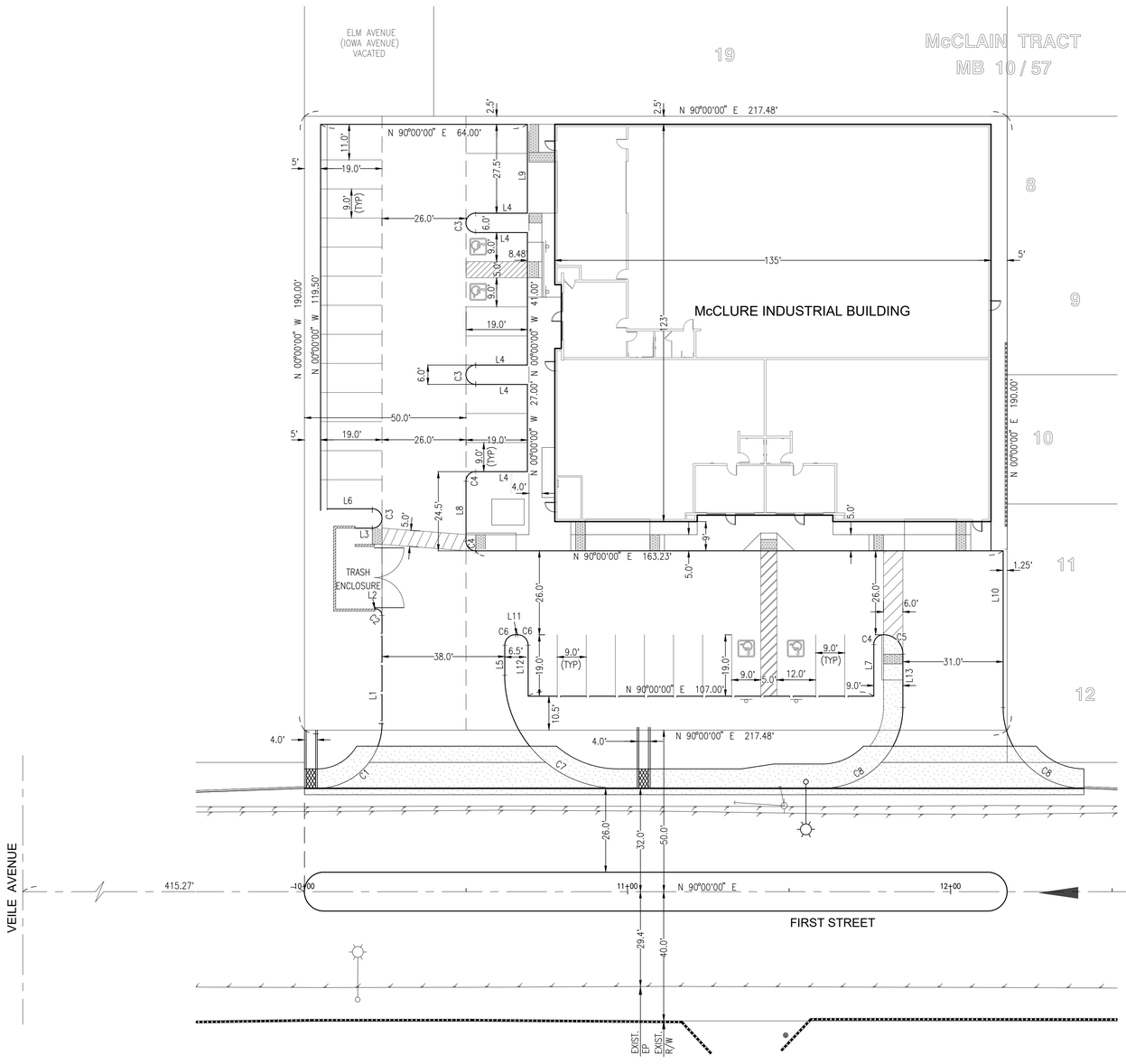
BEAUMONT — CALIFORNIA

Reviewed By: _____ Staff Engineer Date: _____
Recommended for Approval By: _____ Administrative Engineer Date: _____
Approved By: _____ City Engineer/Director of Public Works Date: _____

CITY OF BEAUMONT, PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
550E. 6th St
Beaumont, CA 92223
TEL: (951) 769-8520 FAX: (951) 769-8526

CITY OF BEAUMONT, CALIFORNIA
PRECISE GRADING PLANS FOR:
McCLURE INDUSTRIAL BUILDING
TITLE SHEET

SHEET 1 OF 4 SHEETS
FILE NO:



LINE DATA

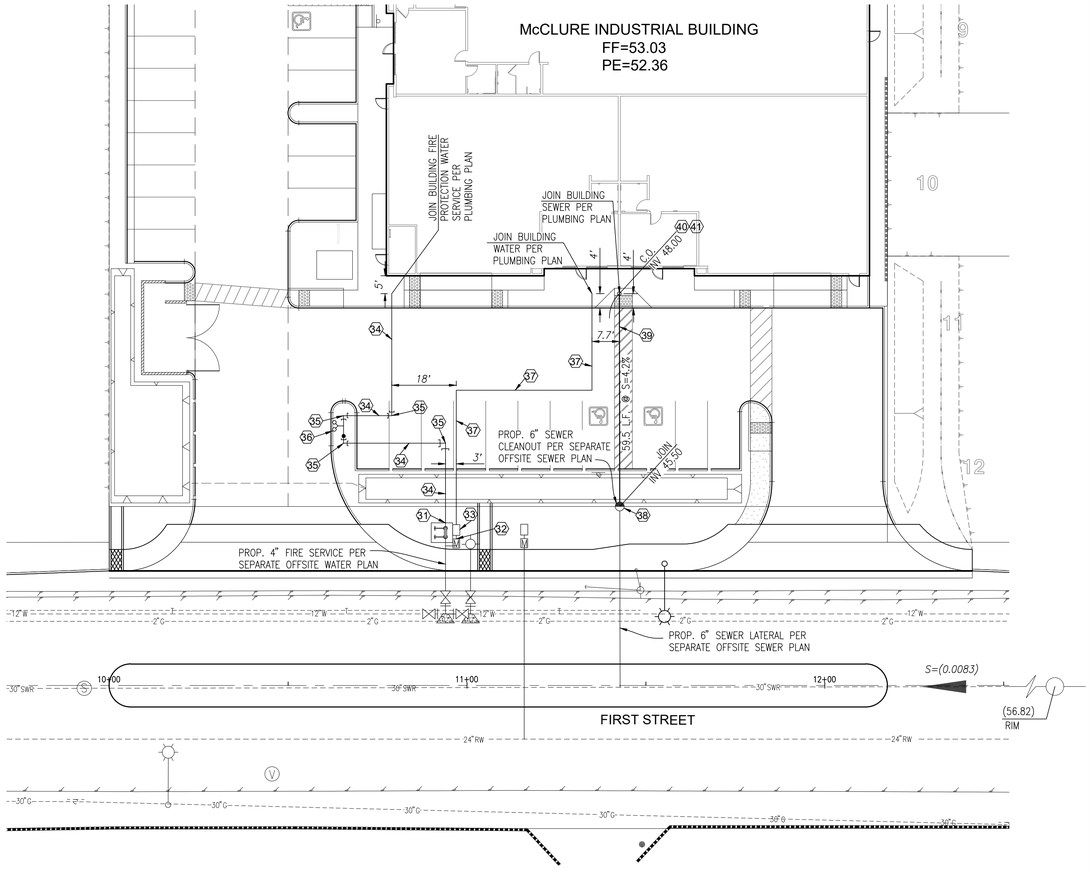
LINE	BEARING	DISTANCE
L1	N 00°00'00" W	33.50'
L2	N 90°00'00" E	0.33'
L3	N 90°00'00" E	5.33'
L4	N 90°00'00" E	16.00'
L5	N 00°00'00" W	9.25'
L6	N 90°00'00" E	14.00'
L7	N 00°00'00" W	16.00'
L8	N 00°00'00" W	18.50'
L9	N 00°00'00" W	27.50'
L10	N 00°00'00" W	48.50'
L11	N 90°00'00" E	0.73'
L12	N 00°00'00" W	15.75'
L13	N 00°00'00" W	16.50'

HORIZONTAL CONTROL PLAN

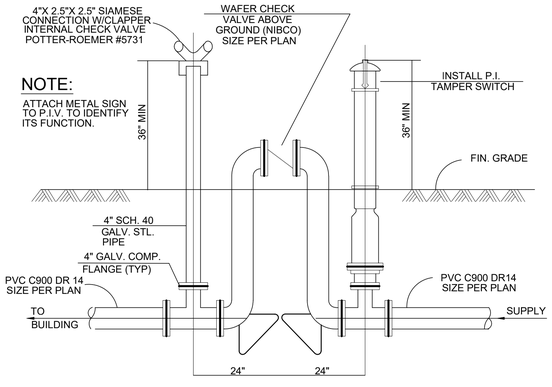
CURVE DATA

CURVE	RADIUS	LENGTH	DELTA	TANGENT
C1	20.00'	31.42'	90°00'00"	20.00'
C2	2.00'	3.14'	90°00'00"	2.00'
C3	3.00'	9.42'	180°00'00"	0.00'
C4	3.00'	4.71'	90°00'00"	3.00'
C5	6.00'	9.42'	90°00'00"	6.00'
C6	3.25'	5.11	90°00'00"	3.25'
C7	35.00'	54.98'	90°00'00"	35.00'
C8	25.00'	39.27'	90°00'00"	25.00'

NORTH
0 20 40 60
1" = 20'



PRIVATE WATER AND SEWER PLAN



POST INDICATOR/FIRE DEPT. CONNECTION DETAIL

CONNECTION SUPPORT PER NFPA 24 SEC. 5.9.1.2
NTS

CONSTRUCTION NOTES

31. JOIN 4" FIRE BACKFLOW
32. JOIN 1" DOMESTIC WATER METER
33. INSTALL 1" LEAD FREE REDUCE PRESSURE PRINCIPLE BACKFLOW DEVICE, FEBCO LF825YA OR EQUAL WITH PROTECTION CAGE PAINTED GREEN.
34. INSTALL 4" PVC C-900 DR14 FIRE WATER MAIN, 48" MIN. COVER, W/ BEDDING AND BACKFILL PER BCVWD PLATE 6-1
35. INSTALL 4" D.I. 90° BEND WITH THRUST BLOCK PER BCVWD PLATE 11-1
36. INSTALL PIV/FDC ASS'Y PER BCVWD STD. & SPECS. & DETAIL THIS SHEET.
37. INSTALL 1" PVC SCH40 WATER LINE, SOLVENT WELD ALL JOINTS, 48" MIN. COVER W/ BLUE-INSULATED 14AWG TRACER WIRE PER CPC 604.10.1
38. JOIN 6" SEWER LATERAL AT SEWER CLEANOUT
39. INSTALL 6" PVC SDR-35 SEWER LATERAL PER EMWD STD. No. SB-157 AND SB-158
40. INSTALL SEWER CLEAN OUT PER EMWD STD. NO. SB-52.
41. SEE PLUMBING PLAN FOR SEWER BACKWATER VALVE PER CPC 710

SANITARY SEWER OR DRAINAGE PIPING CLAY OR MATERIAL THAT ARE NOT APPROVED FOR USE WITHIN A BUILDING SHALL NOT BE RUN OR LAID IN THE SAME TRENCH AS THE WATER PIPES UNLESS BOTH OF THE FOLLOWING REQUIREMENTS ARE MET (CPC 720.1):

THE BOTTOM OF THE WATER PIPE SHALL BE NOT LESS THAN 12" ABOVE THE TOP OF SEWER OR DRAIN LINE. THE WATER PIPE SHALL BE PLACED ON A SHELF EXCAVATED AT THE ONE SIDE OF THE COMMON TRENCH WITH A CLEAR HORIZONTAL DISTANCE OF NOT LESS THAN 12" FROM THE SEWER OF DRAIN LINE.

NORTH
0 20 40 60
1" = 20'

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:

SEE SHEET 1

BY	MARK	DESCRIPTION	APPR.	DATE
ENGINEER		REVISIONS	CITY	

HUNSAKER & ASSOCIATES
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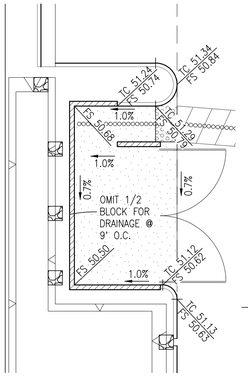
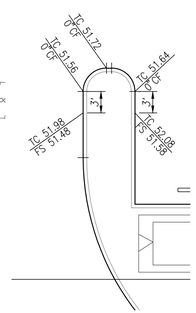
CITY OF BEAUMONT, CALIFORNIA
PRECISE GRADING PLANS FOR:

McCLURE INDUSTRIAL BUILDING
HORIZONTAL CONTROL AND PRIVATE WATER AND SEWER PLAN

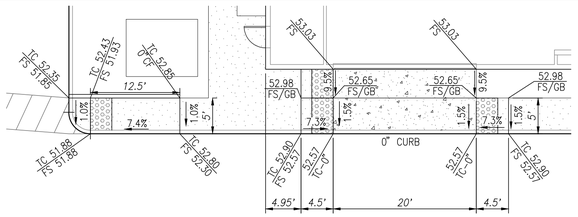
SHEET 2 OF 4 SHEETS
FILE NO:



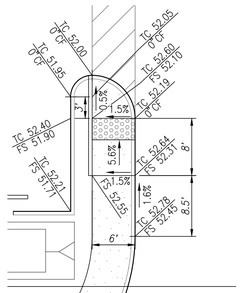
DETAIL 'A'
TRASH ENCLOSURE DETAIL (9)
NOT TO SCALE



DETAIL 'B'
CURB DETAIL
NOT TO SCALE



DETAIL 'C'
CURB RAMP DETAIL (5)
NOT TO SCALE



DETAIL 'E'
CURB RAMP DETAIL (5)
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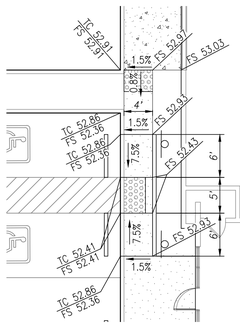

DETAIL 'D'
CURB RAMP DETAIL (5)
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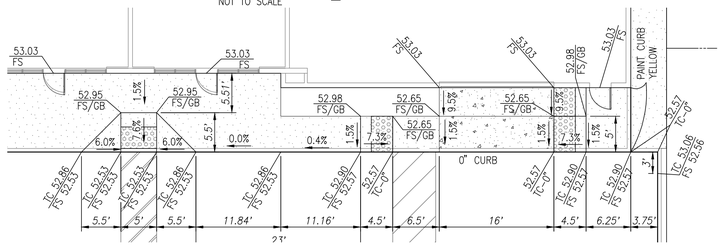

DETAIL 'F'
CURB RAMP DETAIL (5)
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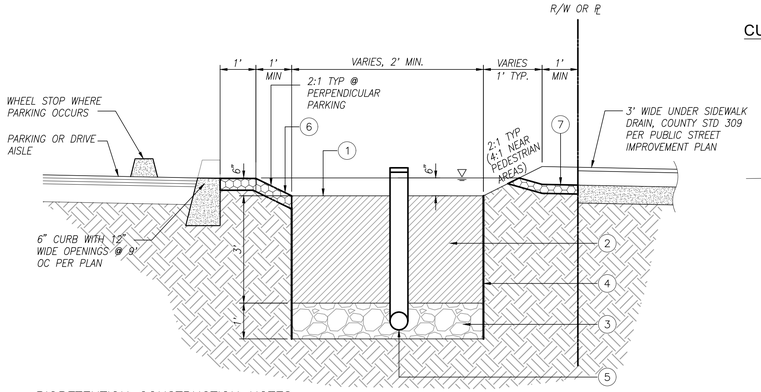
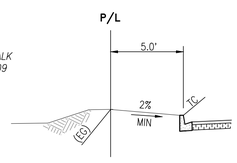


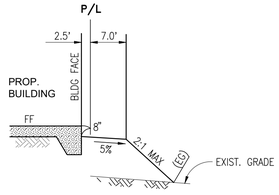
BIORETENTION CONSTRUCTION NOTES

1. VEGETATIVE AND MULCH COVER PER RIVERSIDE COUNTY LID BMP HANDBOOK, 3.5 BIORETENTION FACILITY
2. ENGINEERED SOIL MEDIA PER RIVERSIDE COUNTY LID BMP HANDBOOK, 3.5 BIORETENTION FACILITY
3. 12" THICK UNDERDRAIN GRAVEL LAYER PER RIVERSIDE COUNTY LID BMP HANDBOOK, APPENDIX B – UNDERDRAINS
4. FILTER FABRIC ON BASIN SIDES
5. 6" SLOTTED PVC SCH 40 DRAIN PIPE @ 5' O.C., SLOPE TO DRAIN TO SUMP PIT @ 0.5% MIN. PROVIDE 6" PVC CLEANOUT EVERY 50' WITH LOCKABLE CAP.
6. 2'x2' RIP RAP, 3" ROCK, 6" THICK PAD AT CURB OPENINGS
7. 2'x4' RIP RAP, 3" ROCK, 6" THICK @ OVERFLOW OUTLET

BIORETENTION BASIN DETAIL (23)
NOT TO SCALE



SECTION (A/3)
(ALL WALLS REQUIRE SEPARATE PERMIT)
NOT TO SCALE



SECTION (B/3)
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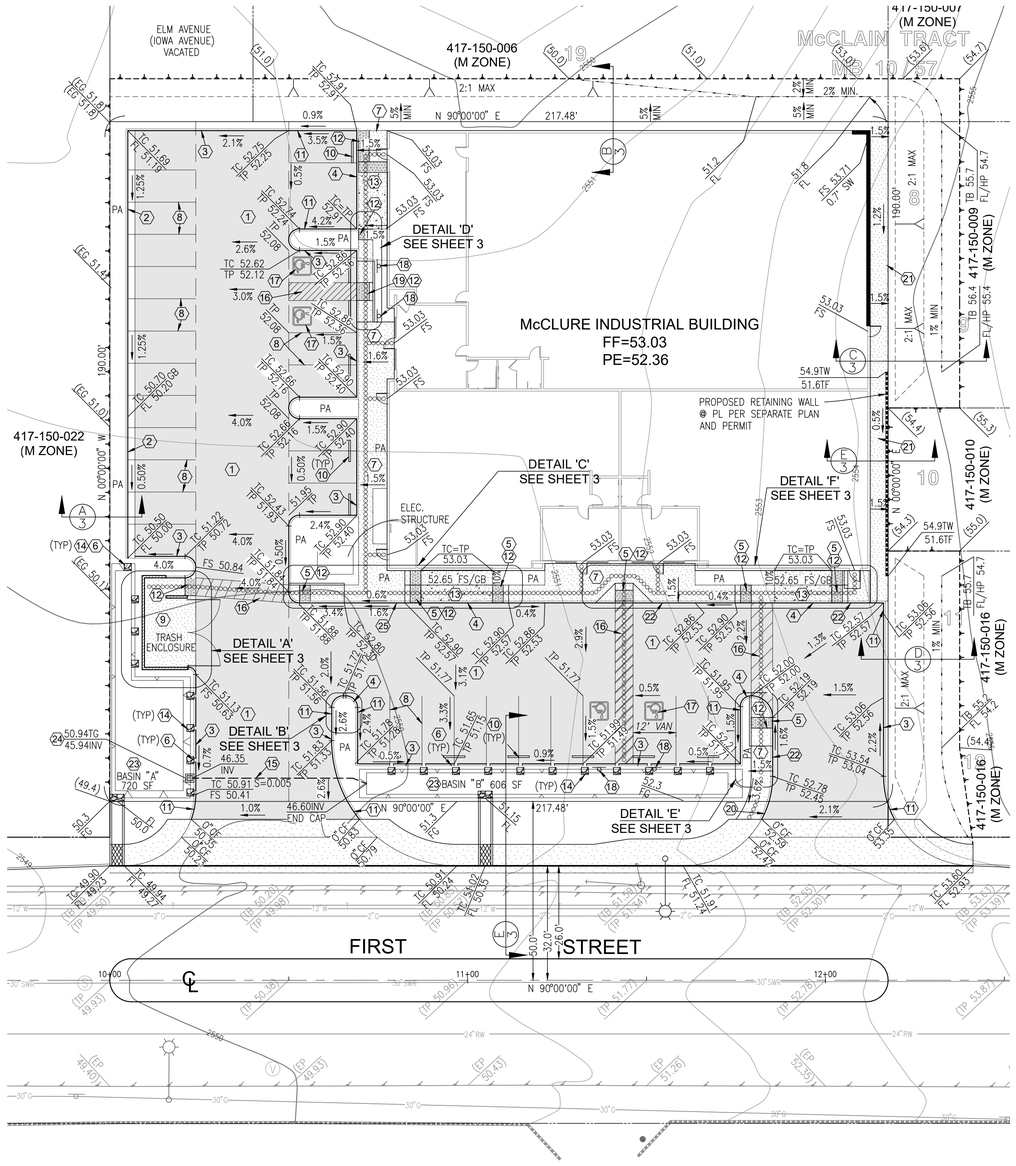

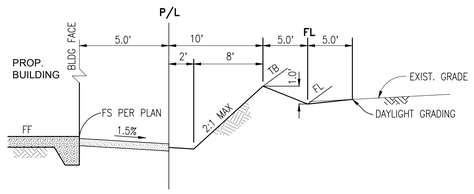

SECTION (C/3)
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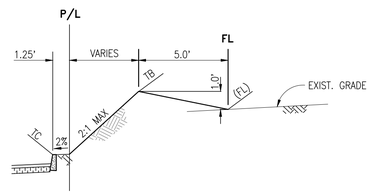
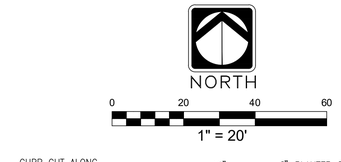
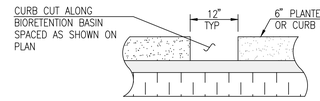


SECTION (D/3)
(ALL WALLS REQUIRE SEPARATE PERMIT)
NOT TO SCALE

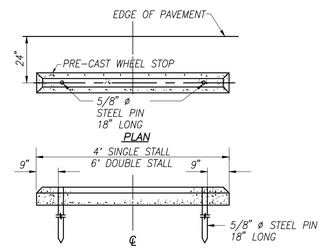
CONSTRUCTION NOTES

1. INSTALL MINIMUM 3" AC OVER 6" CLASS II AGGREGATE BASE. SECTION TO BE VERIFIED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. CONSTRUCT 6" TYPE A-6 CURB AND GUTTER PER RIV. CO. STD. NO. 200.
3. CONSTRUCT 6" TYPE D CURB PER RIV. CO. STD. NO. 204.
4. CONSTRUCT 0" TYPE D CURB PER MODIFIED RIV. CO. STD. NO. 204.
5. CONSTRUCT ADA ACCESS RAMP PER DETAIL SHEET 3.
6. CONSTRUCT 12" WIDE CURB OPENING PER DETAIL THIS SHEET.
7. INSTALL CONCRETE SURFACE PER ARCHITECT PLANS.
8. PAVEMENT STRIPING PER ARCHITECT PLANS.
9. CONSTRUCT TRASH ENCLOSURE PER ARCHITECT PLANS AND DETAIL THIS SHEET.
10. CONSTRUCT WHEEL STOP PER DETAIL ON SHEET 3
11. TRANSITION CURB FACE, 0" TO 6".
12. INSTALL TRUNCATED DOMES PER 2019 CBC SEC. 11B-705.
13. INSTALL VEHICULAR RATED CONCRETE SURFACE PER ARCHITECT PLANS
14. INSTALL 2'x2' RIP-RAP, 3" ROCK, 6" THICK.
15. INSTALL 6" PVC SDR-35 DRAINAGE PIPE WITH TEMPORARY END CAP
16. ADA ACCESSIBLE PARKING LOT STRIPING PER CBC 2022 SEC.11B-502 FIG. 11B-502.2, 11B-502.3 & 11B-502.3.3.
17. PAINT ADA PARKING SPACE STRIPING AND LEGEND PER 2022 CBC SECTION 11B-502.
18. INSTALL ADA PARKING SPACE SIGNAGE PER 2022 CBC SECTION 11B-502.6.
19. INSTALL CONCRETE CURB RAMP PER RIV. CO. STD. NO. 403, CASE B.
20. TRANSITION CURB FACE, 0" TO 4".
21. INSTALL 4" THICK CONCRETE SURFACE PER DETAILS AND SECTIONS, SHEET 3.
22. CONSTRUCT 4" TYPE D CURB PER MODIFIED RIV. CO. STD. NO. 204.
23. CONST. BIORETENTION BASIN PER DETAIL ON SHEET 3
24. INSTALL SUMP PUMP VAULT FOR FUTURE SUMP PUMP PER DETAIL ON SHT 1
25. TRANSITION CURB FACE, 4" TO 6"

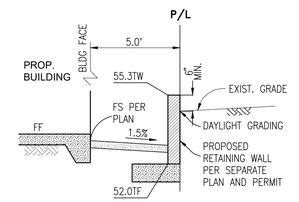




TYPICAL CURB CUT DETAIL (6)
NTS



10 PRECAST CONC WHEEL STOP
NTS



SECTION (E/3)
(ALL WALLS REQUIRE SEPARATE PERMIT)
NOT TO SCALE

DIGALERT
Call 2 Working Days Before You Dig!
811

BENCHMARK:

SEE SHEET 1

BY	MARK	DESCRIPTION	APPR.	DATE
ENGINEER		REVISIONS	CITY	

HUNSAKER & ASSOCIATES
IRVINE, INC.
PLANNING ▪ ENGINEERING ▪ SURVEYING
Three Hughes ▪ Irvine, CA 92618 ▪ PH: (949) 583-1010 ▪ FX: (949) 583-0759

TIN N. HUYNH
R.C.E. 69273
11/04/2024
DATE

SEAL
REGISTERED PROFESSIONAL ENGINEER
TIN N. HUYNH
NO. 69273
Exp. 06/30/26
CIVIL
STATE OF CALIFORNIA

DESIGN BY:
DRAWN BY:
CHECKED BY:
SCALE:
DATE:
JOB NUMBER:

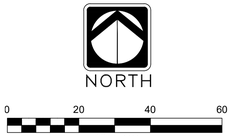
BEAUMONT
CALIFORNIA

Reviewed By: _____ Staff Engineer Date: _____
Recommended for Approval By: _____ Administrative Engineer Date: _____
Approved By: _____ City Engineer/Director of Public Works Date: _____

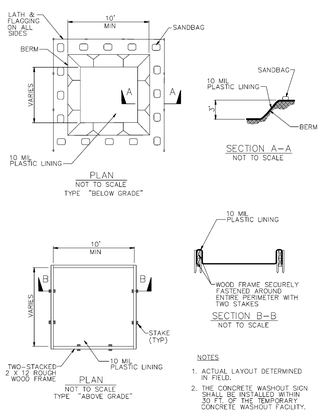
CITY OF BEAUMONT, PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
550E. 6th St
Beaumont, CA 92223
TEL: (951) 769-8520 FAX: (951) 769-8526

CITY OF BEAUMONT, CALIFORNIA
PRECISE GRADING PLANS FOR:
McCLURE INDUSTRIAL BUILDING
PRECISE GRADING PLAN & DETAILS

SHEET 3 OF 4 SHEETS
FILE NO:



Concrete Waste Management WM-8



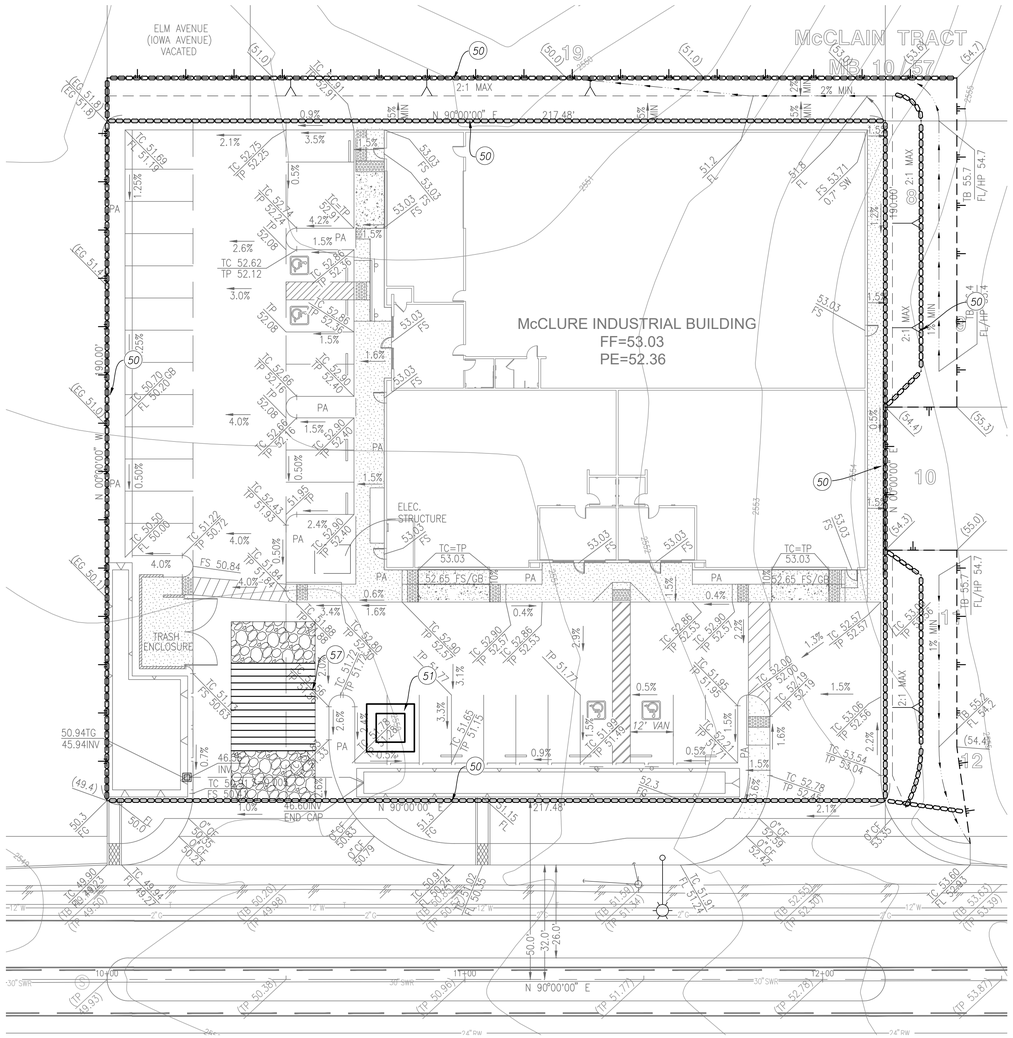
NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

November 2009 — California Stormwater BMP Handbook Construction — www.casqa.org — 6 of 7

(51) CONCRETE WASTE MANAGEMENT, WM-8

NTS



EROSION CONTROL NOTES

(50) INSTALL FIBER ROLL PER DETAIL ON SHEET 5

(51) INSTALL CONCRETE WASHOUT AREA PER CASQA BMP WM-8

(57) CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE PER CALIFORNIA STORMWATER BMP HANDBOOK TC 1 AND DETAIL 57 HEREON

SEDIMENT AND EROSION CONTROL NOTES:

1. COBBLES 2" TO 12" SHALL BE STOCKPILED AND UTILIZED IN ALL SIGNIFICANT FLOW PATHS TO SEAL THE FINE SEDIMENT AND REDUCE LONG TERM EROSION.

2. SLOPES EXCEEDING 5 FEET IN HEIGHT SHALL BE PLANTED WITH AN APPROVED PLANT MATERIAL. IN ADDITION, SLOPES EXCEEDING 15 FEET IN HEIGHT SHALL BE PROVIDED WITH AN APPROVED IRRIGATION SYSTEM, UNLESS OTHERWISE APPROVED BY THE BUILDING OFFICIAL.

3. ALL EXISTING DRAINAGE COURSES THROUGH THIS SITE SHALL REMAIN OPEN UNTIL FACILITIES TO HANDLE STORM WATER ARE APPROVED AND FUNCTIONAL; HOWEVER, IN ANY CASE, THE PERMITEE SHALL BE HELD LIABLE FOR ANY DAMAGE DUE TO OBSTRUCTING NATURAL DRAINAGE.

4. IN CASE OF EMERGENCY, CONTACT MARK R. COOPER OF PAGE PLAZA PARTNERS, LLC AT (951) 643-4711.

5. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. NECESSARY MATERIALS SHALL BE AVAILABLE ON SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.

6. EROSION CONTROL DEVICES SHALL NOT BE MOVED OR MODIFIED WITHOUT THE APPROVAL OF THE CITY INSPECTOR. ALL EROSION CONTROL B.M.P.'s SHALL BE MAINTAINED ON A REGULAR BASIS. NON MAINTENANCE SHALL RESULT IN JOB SITE SHUTDOWN.

7. ALL REMOVABLE EROSION PROTECTIVE DEVICES SHALL BE IN PLACE AT THE END OF EACH WORK DAY WHEN THE 5-DAY RAIN PROBABILITY FORECAST EXCEEDS 40%.

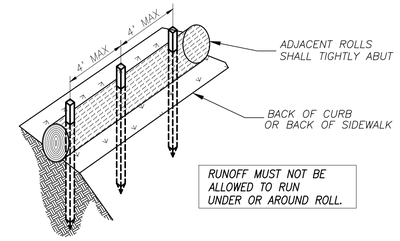
8. AFTER A RAINSTORM, ALL EROSION SILT AND DEBRIS SHALL BE REMOVED FROM STREETS, CHECK BERMS AND BASINS.

9. GRADED AREAS ON THE PERMITTED AREA PERIMETER MUST DRAIN AWAY FROM THE FACE OF SLOPE AT THE CONCLUSION OF EACH WORK DAY. DRAINAGE SHALL BE DIRECTED TOWARD DE-SILTING FACILITIES.

10. THE PERMITTEE AND CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATER CREATES A HAZARDOUS CONDITION.

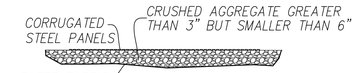
11. THE UNDERSIGNED CIVIL ENGINEER SHALL INSPECT THE EROSION CONTROL WORK AND INSURE THAT THE WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.

12. ALL EROSION CONTROL B.M.P.'s SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS. THE CITY ENGINEER OR HIS REPRESENTATIVE MAY REQUIRE ADDITIONAL B.M.P.'s.



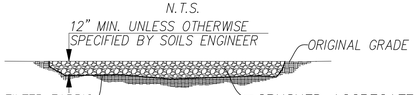
(50) FIBER ROLL INSTALLATION

NTS



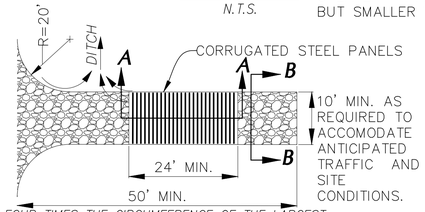
SECTION A-A

N.T.S.



SECTION B-B

N.T.S.



OR FOUR TIMES THE CIRCUMFERENCE OF THE LARGEST CONSTRUCTION VEHICLE TIRE, WHICHEVER IS GREATER

PLAN VIEW

(57) STABILIZED CONSTRUCTION ENTRANCE

NTS

* REFERENCE: CALIFORNIA STORM WATER QUALITY BMP HANDBOOK TRACKING CONTROL BMP; TC-1

DIGALERT — Call 2 Working Days Before You Dig! 811

BENCHMARK:

SEE SHEET 1

BY	MARK	DESCRIPTION	APPR.	DATE
ENGINEER		REVISIONS	CITY	

HUNSAKER & ASSOCIATES IRVINE, INC.
PLANNING • ENGINEERING • SURVEYING
Three Hughes • Irvine, CA 92618 • PH: (949) 583-1010 • FX: (949) 583-0759

TIN N. HUYNH
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SEAL: REGISTERED PROFESSIONAL ENGINEER — TIN N. HUYNH — NO. 69273 Exp. 06/30/26 — CIVIL — STATE OF CALIFORNIA

DESIGN BY:
DRAWN BY:
CHECKED BY:
SCALE:
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JOB NUMBER:

BEAUMONT — CALIFORNIA

Reviewed By: _____ Staff Engineer — Date: _____
Recommended for Approval By: _____ Administrative Engineer — Date: _____
Approved By: _____ City Engineer/Director of Public Works — Date: _____

CITY OF BEAUMONT, PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
550E. 6th St
Beaumont, CA 92223
TEL: (951) 769-8520 FAX: (951) 769-8526

CITY OF BEAUMONT, CALIFORNIA
PRECISE GRADING PLANS FOR:
McCLURE INDUSTRIAL BUILDING
EROSION CONTROL PLAN

SHEET 4
OF 4 SHEETS
FILE NO:

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

SOILS SOUTHWEST, INC.
SOILS, MATERIALS AND ENVIRONMENTAL ENGINEERING CONSULTANTS

897 VIA LATA, SUITE N • COLTON, CA 92324 • (909) 370-0474 • (909) 370-0481 • FAX (909) 370-3156

Report of Soil Infiltration Rate for WQMP-BMP Stormwater Disposal Systems Design

Planned McClure Industrial Building
First Street w/o Grace Avenue
Beaumont, California
APN: 417-150-015

Project No. 21042-BMP

September 7, 2021

Prepared for:

Mr. John Dykes
FDC Commercial Construction
461 E. Melo Avenue
Hemet, CA 92543

soilssouthwest@aol.com
Established 1984

SOILS SOUTHWEST, INC.

SOILS, MATERIALS AND ENVIRONMENTAL ENGINEERING CONSULTANTS

897 VIA LATA, SUITE N • COLTON, CA 92324 • (909) 370-0474 • (909) 370-0481 • FAX (909) 370-3156

September 7, 2021 Project No. 21042-BMP

Mr. John Dykes
% FDC Commercial Construction
461 E. Melo Avenue
Hemet, CA 92543

Subject: Report of Soil Infiltration Rate for WQMP-BMP Design
Planned McClure Industrial Building
First Street w/o Grace Avenue
Beaumont, California
APN: 417-150-015

Reference:
1. WQMP-BMP test locations as delineated by Blaine A. Womer, Civil Engineering
2. Riverside County Low Impact Development BMP Design Handbook
3. Onsite Stormwater Infiltration System Investigation by South Shore Testing and Environmental dated September 15,2020 as provided by the client

Dear Mr. Dyke:

Presented herewith are the results of soils infiltration testing for the proposed WQMP-BMP stormwater disposal systems design as proposed for the site of the planned McClure Industrial Building to be located on the north side of First Street west of Grace Avenue, City of Beaumont, California

The WQMP-BMP evaluations consisted of soil infiltration two (2) test borings performed at approximately 6 feet below existing grade surface as suggested by the project civil engineer, Blaine A. Womer. For the purposes of determining the presence/or absence of groundwater or impermeable soils layers beneath the bottom of the planned infiltration chamber, a deeper exploration (B-1) was performed to the maximum depth of approximately 15 feet below existing grade surface to very the presence, or no-presence of impermeable soils or groundwater. basin explored indicating presence of gravely rocky sandy soils. Subsequent soils infiltration testing is performed using the standardized "falling-head" test methods, with the observed percolation rates being converted to infiltration rates using the Porchet Method as per the guidelines of the Table 1, Infiltration Basin Option 2 method as described in the Appendix A of the Riverside County-Low Impact Development (LID) BMP design Handbook. Approximate test locations are shown on the attached Plate 1.

The soils encountered consist, in general, of upper fine to medium sands with traces of silts and clays overlying fine to medium coarse silty sands with traces of clay to the approximate depth of 15.0 feet explored as described in the Log of Borings, P-1 and P-2 and B-1, attached. No free groundwater was encountered. Based on the testing completed, the infiltrations rates are 0.08 in/hr and 0.00 inch/hr. for the test locations P1 and P2 respectively as described in the Table II, Section 3.0 of this report.

Respectfully submitted,
Soils Southwest, Inc.
Moloy Gupta, RCE 31708

John Flippin, Project Supervisor

1.0 EXCAVATED TEST BORINGS

BMP soil infiltration testing are performed at the locations as shown on the accompanying Plate 1, at the two (2) test borings locations (P-1and P-2) as shown on the accompanying Plate 1. Due to drilling rig inaccessibility and as suggested by the project civil engineers, test excavations were made using an 8-inch diameter hollow-stem auger drill rig at the locations and to the maximum 6 feet depth below the current grade surface. Water used during infiltration percolation testing was supplied by using a portable water tank. An additional test boring was performed to determine the presence of groundwater or impermeable soil layers explored to the maximum depth of 15.0 feet below the existing basin bottom.

2.0 METHODOLOGY AND TEST PROCEDURES:

Following test boring completion, each of the test holes were fitted with perforated pvc pipes, underlain by 2-inch crushed rock at the bottoms to minimize potentials for scouring and caving. As per the handbook, for testing and to establish test intervals, each test holes were initially filled with 24-inch water supplied from portable water storage tank.

Since 6 or more inches of water did not seep away in 25 minutes or less, subsequent percolation testing was performed at 30-minute time intervals for at least 6 hours, or until the rates became relatively consistent, or in this case, not infiltrating. Actual testing included water placement at about 4 feet below the existing grade surface (inlet depth) or 24 inches above proposed infiltration system bottom.

The final 30-minute recorded percolation test rate was converted into an Infiltration Rate (I_t) for inches per hour using the "Porchet Method" equation as described in the Reference 2, Riverside County Low Impact Development BMP Design Handbook.

3.0 INFILTRATION TEST RESULTS

Based on the testing completed at the test locations and to the test depth described, it is our opinion that the observed soil infiltration rates are 0.08"/hr. and 0.00"/hr. for the test locations P-1 and P-2 respectively. For design, it is suggested that the BMP rates described should be selected by the project design engineer using an appropriate Factor of Safety. Infiltration rates performed by Southshore Testing at a shallower depth, September 2020, were 8 inch/hr and 0.75 in/hr., respectively.

Calculations to convert the standardized "falling head" soil percolation test rates to "infiltration" rates are in accordance with the Section 2.3 of the referenced County Handbooks as presented in the Table I and II below.

3.1. Conversion Summary and Calculations

TABLE I

Based on the testing completed, the following describes the observed field percolation rates for WQMP-BMP converted to soils design infiltration rate as per the referenced design handbooks. Actual field test data are attached.

Infiltration Rate for BMP Design

Test Date & Test No. (8-30-2021)	Relative Site Location	Test Depth (ft.) Below Grade	Observed Soil Percolation Rates (inch/hour.)	Design Infiltration Rates* following Conversion of Soil Percolation Rates Using Porchet Method (with no Factor of Safety)
P-1	East side	6.0	0.50	0.08
P-2	West side	6.0	0.00	0.00

TABLE II

Conversion Table (Porchet Method)

Test No.	**Depth Test Hole (inches)**	**Time Interval**	**Initial Depth (inch)**	**Final Depth (inch)**	**Initial Water Height (inch)**	**Final Water Height (inch)**	**Change in Height/ Time**	**Average Head Height/Time**
	D_T	ΔT (Min)	D_O (in)	D_f (in)	$H_o=D_t-D_o$	$H_f=D_t-D_f$	$\Delta H= H_f-H_O$	$H_{avg} = (H_o+H_f)/2$
P-1	73	30	49	49.5	24.0	23.5	0.5	23.75
P-2	73	30	49	49.0	24.0	24.0	0.0	24.0

	Infiltration Rate (It)=ΔH60r/Δt(r+2Havg)		
	A	B	C (Factor of Safety not included)
Test No.	ΔH60r	Δt(r+2Havg)	A/B=in/hr
P-1	120	1545	0.08
P-2	0	1560	0.00

In design, use of an appropriate safety factor should be considered to account for long-term saturation, inconsistencies in subsoil conditions, along with the potential for silting of percolating soils.

The infiltration rates described are based on the in-situ testing as completed at the locations as suggested by the project civil engineer. In event the final chamber location and depth vary considerably from those as described herein, supplemental soils infiltration testing may be warranted.

It should be noted that over prolong use and lack of maintenance the detention/infiltration basins or deep chambers constructed based on the suggested design rate may experience much lower infiltration rate due to the accumulation of silts, fines, soils, and others. Regular maintenance of the chambers in form of removal of debris, oil and fines are strongly recommended. A maintenance record of such is suggested for future use, if any.

Suggested Site Requirements for Stormwater BMP installation

The invert of stormwater infiltration shall be at least 10 feet above the groundwater elevation. Stormwater infiltration BMPs shall not be placed on steep slopes and shall not create the condition or potential for slopes instability.

Stormwater infiltration shall not increase the potential for static or seismic settlement of structures on or its adjacent.

Stormwater infiltration shall not place an increased surcharge on structures or foundations on or its adjacent. The pore-water pressure shall not be increased on soil retaining structures on or adjacent to the site.

The invert of stormwater infiltration shall be set back at least 15 feet, and outside a 1:1 plan drawn up from the bottom of adjacent foundations.

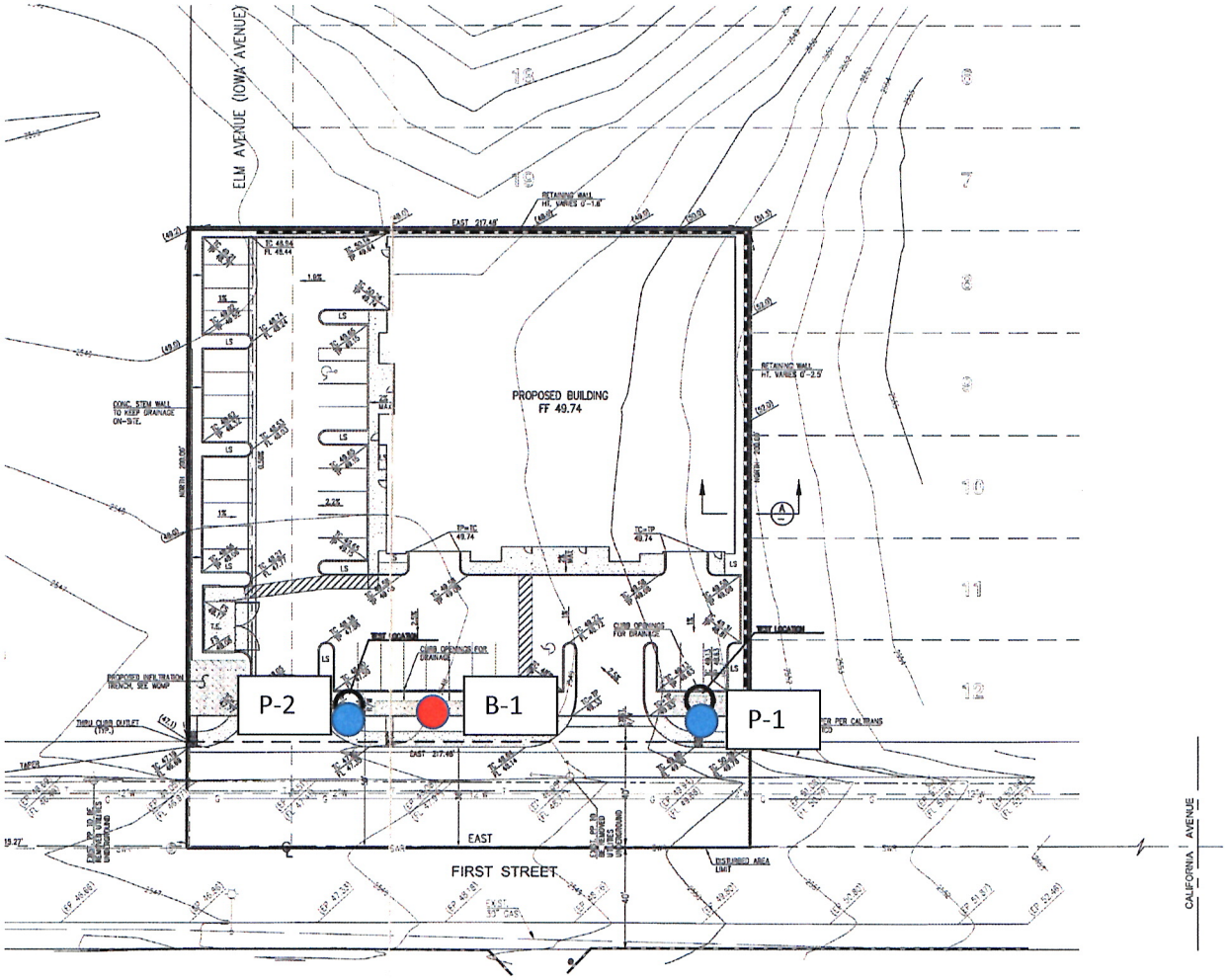
Stormwater infiltration shall not be located near utility lines where the introduction of stormwater could cause damage to utilities or settlement of trench backfill.

Stormwater infiltration is not allowed within 100 feet of any potable groundwater production well.

Once installed, regular maintenance of the detention basin is recommended.

PLOT PLAN AND TEST LOCATIONS

Planned McClure Industrial Building
First Street w/o Grace Avenue
Beaumont, California
APN: 417-150-015
(Schematic, not to scale)



Legend:

B-1 Approximate Location of Text Exploratory Boring

P-1 Approximate Location of BMP Testing

Plate 1

LOG OF TEST BORINGS
and
PERCOLATION TEST DATA

Soils Southwest, Inc.
897 Via Lata, Suite N
Colton, CA 92324
(909) 370-0474 Fax (909) 370-3156

LOG OF BORING P-1

Project: FDC Commercial Construction/McClure		**Job No.:** 21042-BMP
Logged By: JF	**Boring Diam.:** 8" HSA	**Date:** August 30, 2021

Standard Penetration (Blows per Ft.)	Sample Type	Water Content in %	Dry Density in PCF	Percent Compaction	Unified Classification System	Graphic	Depth in Feet	Description and Remarks
					SP			tilled weeds/disturbed surface soils
								SAND - reddish gray brown, traces of silt and clay, fine to medium, pebbles, dry to damp
							5	
								- End of infiltration test boring @ 6.0 ft. - no bedrock - no groundwater - 3" perforated pvc pipe installed with gravel at bottom
							10	
							15	
							20	
							25	
							30	

Groundwater: n/a
Approx. Depth of Bedrock: n/a
Datum: n/a
Elevation: +/- 2550

Site Location
Proposed WQMP-BMP for Industrial Building
First Street w/o Grace Avenue
Beaumont, California

Plate #

Soils Southwest, Inc.
897 Via Lata, Suite N
Colton, CA 92324
(909) 370-0474 Fax (909) 370-3156

LOG OF BORING B-1

Project: FDC Commercial Construction/McClure		**Job No.:** 21042-BMP
Logged By: JF	**Boring Diam.:** 8" HSA	**Date:** August 30, 2021

Standard Penetration (Blows per Ft.)	Sample Type	Water Content in %	Dry Density in PCF	Percent Compaction	Unified Classification System	Graphic	Depth in Feet	Description and Remarks
					SM-ML			tilled weeds and disturbed surface soils
					SP-SM			SAND - light yellowish gray brown, silty, fine, pebble, dry
								- Color change to light reddish brown, slightly silty, fine, pebbles, damp
							5	
					SP		10	- gray-brown, traces of clay, fine to medium coarse, pebbles, rock fragments, damp
					SM-ML			- color change to light brown to light gray brown, silty, fine, pebbles, damp
							15	- End of test exploratory boring @ 15.0 ft. - no bedrock - no groundwater
							20	
							25	
							30	

Groundwater: n/a
Approx. Depth of Bedrock: n/a
Datum: n/a
Elevation: +/- 2548

Site Location
Proposed WQMP-BMP for Industrial Building
First Street w/o Grace Avenue
Beaumont, California

Plate #

Soils Southwest, Inc.
897 Via Lata, Suite N
Colton, CA 92324
(909) 370-0474 Fax (909) 370-3156

LOG OF BORING P-2

Project: FDC Commercial Construction/McClure		**Job No.:** 21042-BMP
Logged By: JF	**Boring Diam.:** 8" HSA	**Date:** August 30, 2021

Standard Penetration (Blows per Ft.)	Sample Type	Water Content in %	Dry Density in PCF	Percent Compaction	Unified Classification System	Graphic	Depth in Feet	Description and Remarks
					SM-ML			tilled weeds/disturbed surface soils
					SM			SAND - light gray brown, silty, fine, dry
								- color change to reddish gray brown, silty, traces of clay, fine, pebbles, dry
							5	- color change to gray-brown, silty, fine to medium coarse, pebbles, rock fragments
								- End of infiltration test boring @ 6.0 ft. - no bedrock - no groundwater - 3" perforated pvc pipe installed with gravel at bottom
							10	
							15	
							20	
							25	
							30	

Groundwater: n/a **Approx. Depth of Bedrock:** n/a **Datum:** n/a **Elevation:** +/- 2550	**Site Location** Proposed WQMP-BMP for Industrial Building First Street w/o Grace Avenue Beaumont, California	**Plate #**

KEY TO SYMBOLS

Symbol Description

Strata symbols

 Poorly graded sand

 Poorly graded silty fine sand

 Poorly graded sand with silt

 Silty sand

Notes:

1. Exploratory borings were drilled on August 30, 2021 using a 4-inch diameter continuous flight power auger.

2. No free water was encountered at the time of drilling or when re-checked the following day.

3. Boring locations were taped from existing features and elevations extrapolated from the final design schematic plan.

4. These logs are subject to the limitations, conclusions, and recommendations in this report.

5. Results of tests conducted on samples recovered are reported on the logs.

Conversion Table (Porchet Method)
First Street/West of Grace Ave.
Beaumont, California
Project No. 21042-BMP

Test N no.	Test Hole Depth (inches) D_T	Time Interval Δ_T	Initial Depth (inches) D_O (in)	Final Depth (inches) D_f (in)	Initial Water Height (inches $H_O=D_T-D_O$	Final Water Height (inches) $H_f = D_T-D_f$	Change Height/Time $\Delta H / \Delta D = H_O-H_f$	Average Head Height/Time $H_{avg} = (H_O+H_f)/2$
P-1	73	30	49	49.5	24	23.5	0.5	23.75
P-2	73	30	49	49	24	24	0	24

	Observed Infiltration Rate (It) = ΔH60r/Δt (r+2Havg)		
	A	B	C
	ΔH60r	Δt (r+2H_{avg})	A/B= inc/hr
P-1	120	1545	**0.08**
P-2	0	1560	**0.00**

Legend

Δ H /ΔD = Observed Field Rate

H_O = inches of water filled from bottom

D_O = initial height of water (inches) from bottom

D_f = final heigh of water (inches) from bottom

Columns A-B-C : Porchet Conversion Calculations

Column C: Observed Rate following Porchet Conversion

D_t = depth of test hole bottom (inches)

Percolation Test Data Sheet

Project: FDC Commercial Construction First St. Beaumont				Project No. 21042-BMP	
Test Hole No: West ~~P-1~~			Tested By: John F	Date: 8/30/21	
Depth of Test Hole, D_T	73		USCS Soil Classification		
Test Hole Dimensions (inches)				Length	Width
Diameter (if round)=	8.0 in.	Sides (if rectangular)=			

Sandy Soil Criteria Test *

Trial No.	Start Time	Stop Time	Δt Time Interval (min)	D_o Initial Depth to Water (in.)	D_f Final Depth to Water (in.)	ΔD Change in Water Level (in.)	Greater Than or Equal to 6.0 inches??? (Y/N)
1	11:28	~~11~~:53	25	49	50	1	N
2			25	~~49~~			

* If two consective measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fiill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25."

Trial No.	Start Time	Stop Time	Δt Time Interval (min)	D_o Initial Depth to Water (in.)	D_f Final Depth to Water (in.)	ΔD Change in Water Level (in.)	ΔT/ΔD Percolation Rate (min./in.)
1	11:54	12:24	30	49	49.5	0.5	
2	12:28	12:58	30	49	49.	0	
3	12:58	1:28	30	49	50.25	1.25	
4	1:29	1:59	30	49	49.5	0.5	
5	2:01	2:31	30	49	49.5	0.5	
6							
7							
8							
9							
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14							
15							
16							
17							
18							

Comments

Percolation Test Data Sheet

Project: FDC Commercial Construction 41st St. Beaumont				Project No. 21042-BMP	
Test Hole No: EAST	P-2		Tested By:	Date: 5/30/12	
Depth of Test Hole, D_T	73		USCS Soil Classification		
Test Hole Dimensions (inches)				Length	Width
Diameter (if round)=	8.0 in.	Sides (if rectangular)=			

Sandy Soil Criteria Test *

Trial No.	Start Time	Stop Time	Δt Time Interval (min)	D_o Initial Depth to Water (in.)	D_f Final Depth to Water (in.)	ΔD Change in Water Level (in.)	Greater Than or Equal to 6.0 inches??? (Y/N)
1	11:31	11:56	25	49	50.5	1.5	N
2			25	49			

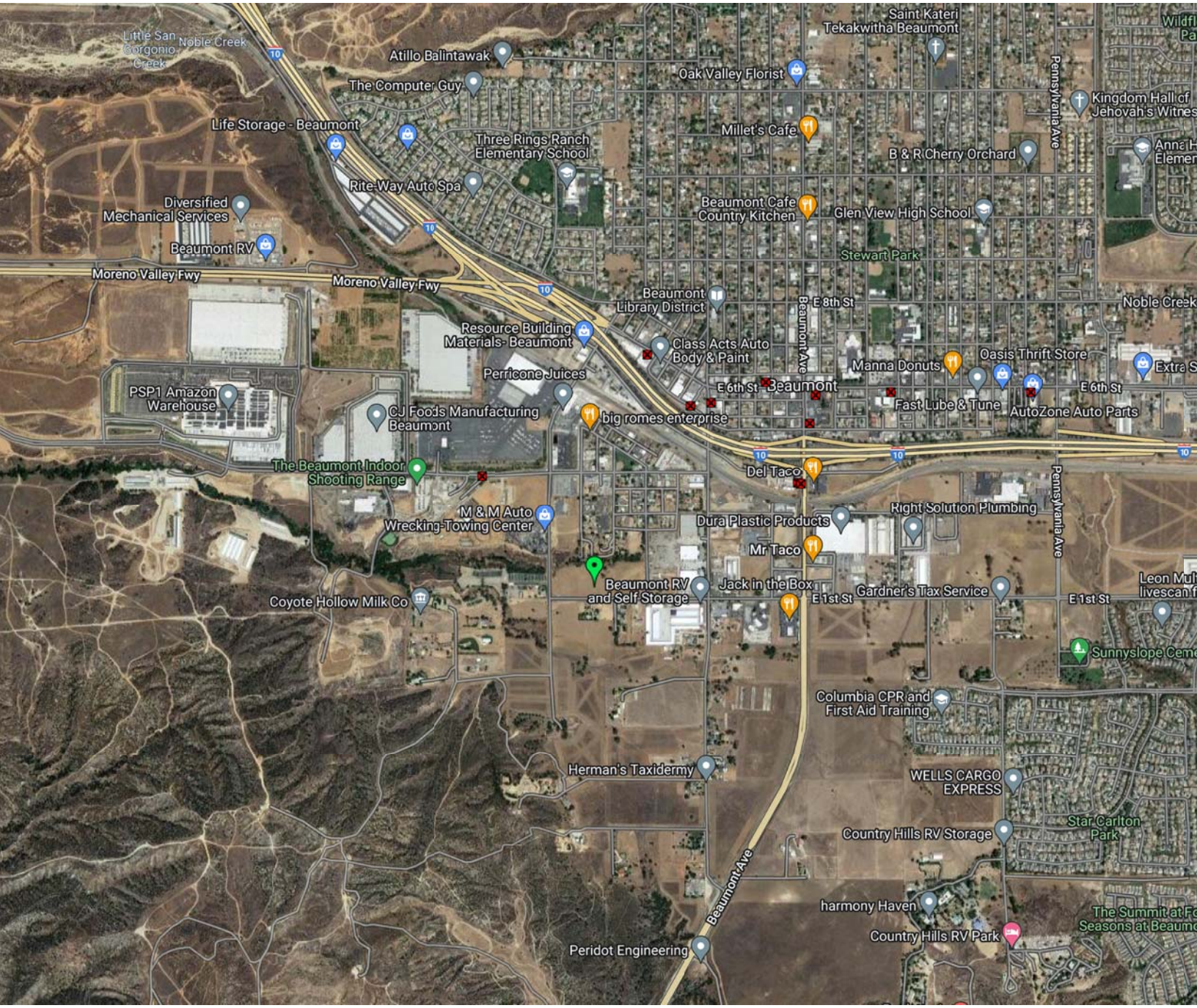
* If two consective measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fiill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25."

Trial No.	Start Time	Stop Time	Δt Time Interval (min)	D_o Initial Depth to Water (in.)	D_f Final Depth to Water (in.)	ΔD Change in Water Level (in.)	$\Delta T/\Delta D$ Percolation Rate (min./in.)
1	11:57	12:27	30	49	49	0	
2	12:37	1:07	30	49	49	0	
3	1:07	1:37	30	49	50	1.0	
4	1:37	2:07	30	49	49	0	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							

Comments

Appendix 4: Historical Site Conditions

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



LEGEND - CHOOSE MORE SITES ×
LUST Cleanup Sites - REMOVE
Signifies a Closed Site

LIST SITES VISIBLE ON MAP

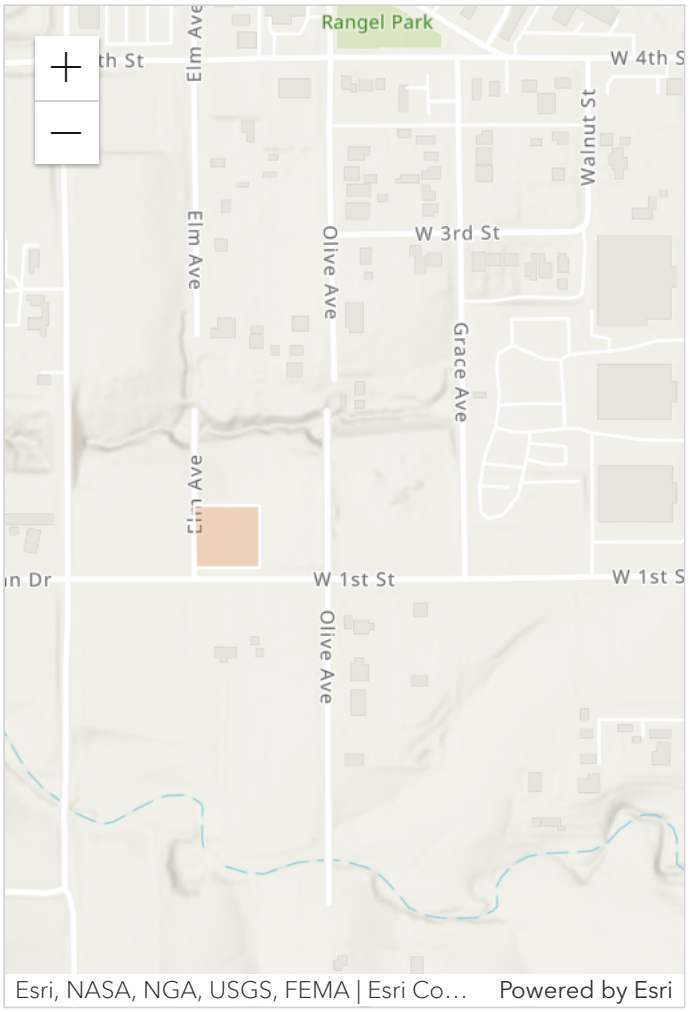
WQMP Report

County of Riverside Stormwater Project

Santa Ana River Watershed Geodatabase

Report generated: Fri Sep 01 2023 15:05:07 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	33.92206142538983, -116.98657214619745
Map	
Parcel Number(s)	417150009, 417150015, 417150016, 417150006, 417150007, 417170010,

	417150022, 417150005, 417150010, 417170009
Site Acreage	0.98
Watershed(s)	SANTA ANA
Cities (within 1 mile)	BEAUMONT
Hydrologic Units	**HUC Number**: 180702030401 — **HUC Name**: Little San Gorgonio Creek
The HUCs Contribute stormwater to the following 303d listed water bodies and TMDLs which may include drainage from your proposed Project Site	**WBID Number**: CAR8012100019990211140353 — **WBID Name**: Santa Ana River, Reach 3 **WBID Number**: CAR8012700019990211142130 — **WBID Name**: Santa Ana River, Reach 4
These 303d listed water bodies and TMDLs have the following Pollutants of Concern (POC)	**Category** / **Pollutants**: Bacterial Indicators — Pathogens Metals/Metalloids — Copper Metals/Metalloids — Lead
Is the Project Site subject to Hydromodification?	YES
Limitations of Infiltration	**Onsite Soils Group(s)**: C

	NO DATA
Known Groundwater Contamination Plumes (within 1000 ft)	NO
Adjacent Water Wells	NO - Please contact your local water agency for more information.
Local Supplier	None found
Wholesale Supplier	SAN GORGONIO PASS WATER AGENCY

Environmentally Sensitive Areas within 200 feet	
Fish and Wildlife Habitat/Species	• None found
CVMSHCP	• None found
WRMSHCP	• Burrowing Owl Survey Required Area • Narrow Endemic Plants Survey Req. - Area 8

Groundwater Elevation from Mean Sea Level	2460 ft.
85th Percentile Design Storm Depth	0.827 in.
Groundwater Basin	Beaumont
MSHCP / CVMSHCP Criteria Cell(s)	No data

Retention Ordinance Information

City	Ordinance	Description	Storm Event (Required Design Capture Volume)
No ordinances found			

Related Studies and Reports

- IBI Scores - Southern Cal.pdf
- bulletin118_4-sc.pdf
- WaterFacts2022.pdf
- 8039-SAR-Hydromodification.pdf
- 2006-Report-on-Water-Supply-Issues-LAFCO.pdf
- 2010 Urban Water Management Plan SGPWA-B-W.pdf
- ByerlyReport2005Dec5.pdf
- RiversideCountyOrdinance859.2.pdf
- sir_2006-5026.pdf
- v2-ReportOnWaterConditions-2010-200dpi.pdf
- Beaumont MDP.pdf
- 2012 Annual Report of SAR.pdf

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

DMA ID	AREA (SF)	SURFACE TYPE	LID BMP	V_{REQ} (CF)	A_{MIN} (SF)	$V_{PROVIDED}$ (CF)	$A_{PROVIDED}$ (SF)	LAT/LONG (DD)
A1	8797	Roofs	BIORETENTION BASIN A	1296	720	1303.2	724	33.921820°, -116.987044°
A2	10505	Concrete or Asphalt	BIORETENTION BASIN A					
A3	1008	Concrete or Asphalt	BIORETENTION BASIN A					
A4	1635	Ornamental Landscaping	BIORETENTION BASIN A					
B1	8753	Roofs	BIORETENTION BASIN B	1086	604	1090.8	606	33.921820°, 116.986780°
B2	7474	Concrete or Asphalt	BIORETENTION BASIN B					
B3	811	Concrete or Asphalt	BIORETENTION BASIN B					
B4	1238	Ornamental Landscaping	BIORETENTION BASIN B					

Santa Ana Watershed - BMP Design Volume, $\mathbf{V_{BMP}}$

(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 Hunsaker | Date 1/17/2024

Designed by Tommy Hsu | Case No

Company Project Number/Name McClure Industrial Building

BMP Identification

BMP NAME / ID Bioretention Basin BMP A

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth,
from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.85 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, $\mathbf{V_{BMP}}$ (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
A1	*8797*	*Roofs*	*1*	*0.89*	*7846.9*			
A2	*10505*	*Concrete or Asphalt*	*1*	*0.89*	*9370.5*			
A3	*1008*	*Concrete or Asphalt*	*1*	*0.89*	*899.1*			
A4	*1635*	*Ornamental Landscaping*	*0.1*	*0.11*	*180.6*			
	21945	***Total***			**18297.1**	**0.85**	***1296***	***1303.2***

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: Hunsaker | Date: 1/17/2024

Designed by: Tommy Hsu | Case No:

Company Project Number/Name: McClure Industrial Building

BMP Identification

BMP NAME / ID: Bioretention Basin BMP B

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth,
from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.85 inches

Drainage Management Area Tabulation

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

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
B1	*8753*	*Roofs*	*1*	*0.89*	*7807.7*			
B2	*7474*	*Concrete or Asphalt*	*1*	*0.89*	*6666.8*			
B3	*811*	*Concrete or Asphalt*	*1*	*0.89*	*723.4*			
B4	*1238*	*Ornamental Landscaping*	*0.1*	*0.11*	*136.7*			
	18276	***Total***			**15334.6**	**0.85**	***1086.2***	***1090.8***

Notes:

Bioretention Facility - Design Procedure	BMP ID	Legend:	Required Entries	
	DMA A		Calculated Cells	

Company Name:	Hunsaker and Associates Irvine, Inc.	Date:	9/12/2024
Designed by:	Tommy Hsu	County/City Case No.:	

Design Volume

Enter the area tributary to this feature	A_T=	0.504	acres
Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	1,296	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 =	22.0	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 =	720	ft^2
Proposed Surface Area	A=	724	ft^2
Minimum Required Length of Bioretention Facility, L	L =	32.7	ft

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =	0	:1
Diameter of Underdrain		6	inches
Longitudinal Slope of Site (3% maximum)		0.5	%
6" Check Dam Spacing		0	feet
Describe Vegetation:		Shrubs	

Notes: Side slopes 2:1 Typical; No side slopes where pedestrian access is limited or perpendicular to parking spaces.

Bioretention Facility - Design Procedure	BMP ID	Legend:	Required Entries	
	DMA B		Calculated Cells	

Company Name:	Hunsaker and Associates Irvine, Inc.	Date:	9/12/2024
Designed by:	Tommy Hsu	County/City Case No.:	

Design Volume

Enter the area tributary to this feature	A_T=	0.42	acres
Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	1,086	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 =	107.0	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 =	604	ft^2
Proposed Surface Area	A=	606	ft^2
Minimum Required Length of Bioretention Facility, L	L =	5.6	ft

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =	0	:1
Diameter of Underdrain		6	inches
Longitudinal Slope of Site (3% maximum)		0.5	%
6" Check Dam Spacing		0	feet
Describe Vegetation:		Shrubs	

Notes: 4:1 Near Pedestrian Access; 2:1 on side slopes where pedestrian access is limited or perpendicular to parking spaces.

3.5 Bioretention Facility

Type of BMP	LID – Bioretention
Treatment Mechanisms	Infiltration, Evapotranspiration, Evaporation, Biofiltration
Maximum Drainage Area	This BMP is intended to be integrated into a project's landscaped area in a distributed manner. Typically, contributing drainage areas to Bioretention Facilities range from less than 1 acre to a maximum of around 10 acres.
Other Names	Rain Garden, Bioretention Cell, Bioretention Basin, Biofiltration Basin, Landscaped Filter Basin, Porous Landscape Detention

Description

Bioretention Facilities are shallow, vegetated basins underlain by an engineered soil media. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant uptake of pollutants and runoff. This keeps the Best Management Practice (BMP) from becoming clogged and allows more of the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. In most cases, the bottom of a Bioretention Facility is unlined, which also provides an opportunity for infiltration to the extent the underlying onsite soil can accommodate. When the infiltration rate of the underlying soil is exceeded, fully biotreated flows are discharged via underdrains. Bioretention Facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly biotreated) discharge to the storm drain system.

Siting Considerations

These facilities work best when they are designed in a relatively level area. Unlike other BMPs, Bioretention Facilities can be used in smaller landscaped spaces on the site, such as:

- ✓ Parking islands
- ✓ Medians
- ✓ Site entrances

Landscaped areas on the site (such as may otherwise be required through minimum landscaping ordinances), can often be designed as Bioretention Facilities. This can be accomplished by:

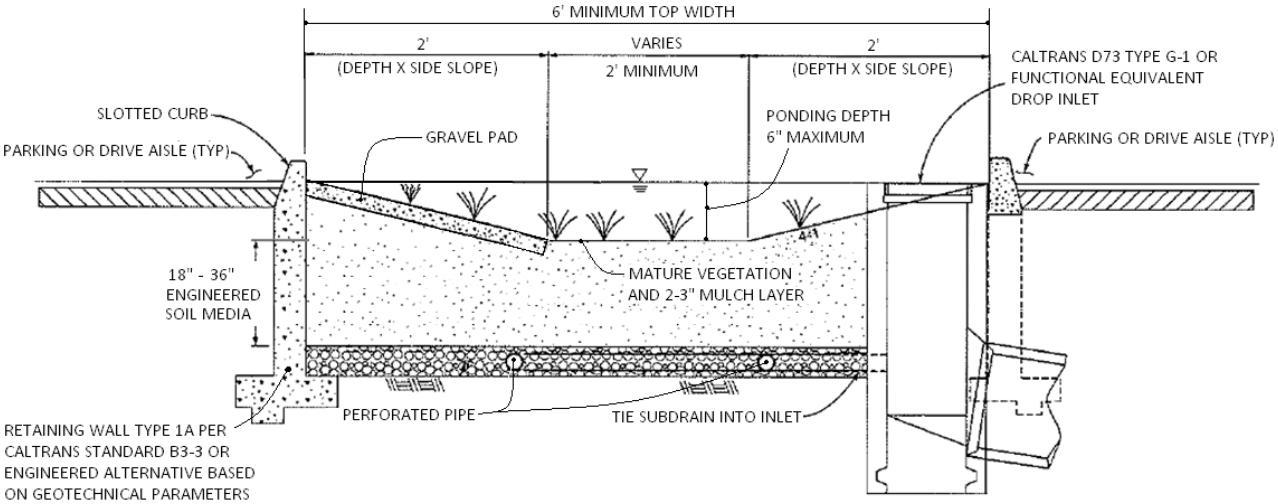
- *Depressing* landscaped areas below adjacent impervious surfaces, rather than elevating those areas
- Grading the site to direct runoff from those impervious surfaces *into* the Bioretention Facility, rather than away from the landscaping
- Sizing and designing the depressed landscaped area as a Bioretention Facility as described in this Fact Sheet

Bioretention Facilities should however not be used downstream of areas where large amounts of sediment can clog the system. Placing a Bioretention Facility at the toe of a steep slope should also be avoided due to the potential for clogging the engineered soil media with erosion from the slope, as well as the potential for damaging the vegetation.

Design and Sizing Criteria

The recommended cross section necessary for a Bioretention Facility includes:

- Vegetated area
- 18' minimum depth of engineered soil media
- 12' minimum gravel layer depth with 6' perforated pipes (added flow control features such as orifice plates may be required to mitigate for HCOC conditions)



While the 18-inch minimum engineered soil media depth can be used in some cases, it is recommended to use 24 inches or a preferred 36 inches to provide an adequate root zone for the chosen plant palate. Such a design also provides for improved removal effectiveness for nutrients. The recommended ponding depth inside of a Bioretention Facility is 6 inches; measured from the flat bottom surface to the top of the water surface as shown in Figure 1.

Because this BMP is filled with an engineered soil media, pore space in the soil and gravel layer is assumed to provide storage volume. However, several considerations must be noted:

- Surcharge storage above the soil surface (6 inches) is important to assure that design flows do not bypass the BMP when runoff exceeds the soil's absorption rate.
- In cases where the Bioretention Facility contains engineered soil media deeper than 36 inches, the pore space within the engineered soil media can only be counted to the 36-inch depth.
- A maximum of 30 percent pore space can be used for the soil media whereas a maximum of 40 percent pore space can be use for the gravel layer.

Figure 1: Standard Layout for a Bioretention Facility

Engineered Soil Media Requirements

The engineered soil media shall be comprised of 85 percent mineral component and 15 percent organic component, by volume, drum mixed prior to placement. The mineral component shall be a Class A sandy loam topsoil that meets the range specified in Table 1 below. The organic component shall be nitrogen stabilized compost[1], such that nitrogen does not leach from the media.

Table 1: Mineral Component Range Requirements

Percent Range	Component
70-80	Sand
15-20	Silt
5-10	Clay

The trip ticket, or certificate of compliance, shall be made available to the inspector to prove the engineered mix meets this specification.

Vegetation Requirements

Vegetative cover is important to minimize erosion and ensure that treatment occurs in the Bioretention Facility. The area should be designed for at least 70 percent mature coverage throughout the Bioretention Facility. To prevent the BMP from being used as walkways, Bioretention Facilities shall be planted with a combination of small trees, densely planted shrubs, and natural grasses. Grasses shall be native or ornamental; preferably ones that do not need to be mowed. The application of fertilizers and pesticides should be minimal. To maintain oxygen levels for the vegetation and promote biodegradation, it is important that vegetation not be completely submerged for any extended period of time. Therefore, a maximum of 6 inches of ponded water shall be used in the design to ensure that plants within the Bioretention Facility remain healthy.

A 2 to 3-inch layer of standard shredded aged hardwood mulch shall be placed as the top layer inside the Bioretention Facility. The 6-inch ponding depth shown in Figure 1 above shall be measured from the top surface of the 2 to 3-inch mulch layer.

Curb Cuts

To allow water to flow into the Bioretention Facility, 1-foot-wide (minimum) curb cuts should be placed approximately every 10 feet around the perimeter of the Bioretention Facility. Figure 2 shows a curb cut in a Bioretention Facility. Curb cut flow lines must be at or above the V_{BMP} water surface level.

[1] For more information on compost, visit the US Composting Council website at: http://compostingcouncil.org/

Figure 2: Curb Cut located in a Bioretention Facility

To reduce erosion, a gravel pad shall be placed at each inlet point to the Bioretention Facility. The gravel should be 1- to 1.5-inch diameter in size. The gravel should overlap the curb cut opening a minimum of 6 inches. The gravel pad inside the Bioretention Facility should be flush with the finished surface at the curb cut and extend to the bottom of the slope.

In addition, place an apron of stone or concrete, a foot square or larger, inside each inlet to prevent vegetation from growing up and blocking the inlet. See Figure 3.

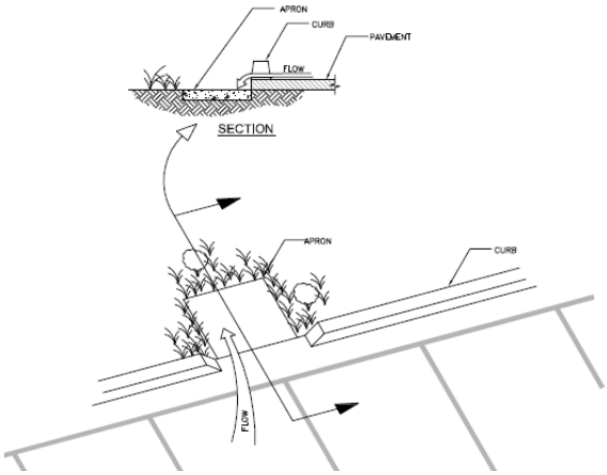


Figure 3: Apron located in a Bioretention Facility

Terracing the Landscaped Filter Basin

It is recommended that Bioretention Facilities be level. In the event the facility site slopes and lacks proper design, water would fill the lowest point of the BMP and then discharge from the basin without being treated. To ensure that the water will be held within the Bioretention Facility on sloped sites, the BMP must be terraced with nonporous check dams to provide the required storage and treatment capacity.

The terraced version of this BMP shall be used on non-flat sites with no more than a 3 percent slope. The surcharge depth cannot exceed 0.5 feet, and side slopes shall not exceed 4:1. Table 2 below shows the spacing of the check dams, and slopes shall be rounded up (i.e., 2.5 percent slope shall use 10' spacing for check dams).

Table 2: Check Dam Spacing

6" Check Dam Spacing	
Slope	**Spacing**
1%	*25'*
2%	*15'*
3%	*10'*

Roof Runoff

Roof downspouts may be directed towards Bioretention Facilities. However, the downspouts must discharge onto a concrete splash block to protect the Bioretention Facility from erosion.

Retaining Walls

It is recommended that Retaining Wall Type 1A, per Caltrans Standard B3-3 or equivalent, be constructed around the entire perimeter of the Bioretention Facility. This practice will protect the sides of the Bioretention Facility from collapsing during construction and maintenance or from high service loads adjacent to the BMP. Where such service loads would not exist adjacent to the BMP, an engineered alternative may be used if signed by a licensed civil engineer.

Side Slope Requirements

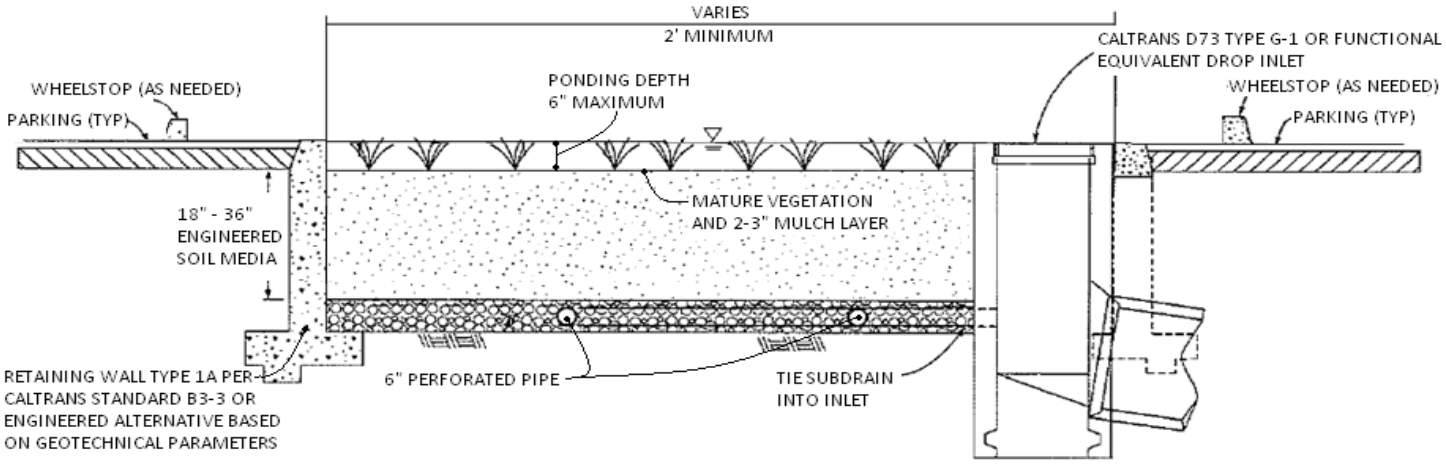
Bioretention Facilities Requiring Side Slopes

The design should assure that the Bioretention Facility does not present a tripping hazard. Bioretention Facilities proposed near pedestrian areas, such as areas parallel to parking spaces or along a walkway, must have a gentle slope to the bottom of the facility. Side slopes inside of a Bioretention Facility shall be 4:1. A typical cross section for the Bioretention Facility is shown in Figure 1.

Bioretention Facilities Not Requiring Side Slopes

Where cars park perpendicular to the Bioretention Facility, side slopes are not required. A 6-inch maximum drop may be used, and the Bioretention Facility must be planted with trees and shrubs to prevent pedestrian access. In this case, a curb is not placed around the Bioretention Facility,

but wheel stops shall be used to prevent vehicles from entering the Bioretention Facility, as shown in Figure 4.



Planter Boxes

Bioretention Facilities can also be placed above ground as planter boxes. Planter boxes must have a minimum width of 2 feet, a maximum surcharge depth of 6 inches, and no side slopes are necessary. Planter boxes must be constructed so as to ensure that the top surface of the engineered soil media will remain level. This option may be constructed of concrete, brick, stone or other stable materials that will not warp or bend. Chemically treated wood or galvanized steel, which has the ability to contaminate stormwater, should not be used. Planter boxes must be lined with an impermeable liner on all sides, including the bottom. Due to the impermeable liner, the inside bottom of the planter box shall be designed and constructed with a cross fall, directing treated flows within the subdrain layer toward the point where subdrain exits the planter box, and subdrains shall be oriented with drain holes oriented down. These provisions will help avoid excessive stagnant water within the gravel underdrain layer. Similar to the in-ground Bioretention Facility versions, this BMP benefits from healthy plants and biological activity in the root zone. Planter boxes should be planted with appropriately selected vegetation.

Figure 5: Planter Box
Source: LA Team Effort

Overflow

An overflow route is needed in the Bioretention Facility design to bypass stored runoff from storm events larger than V_{BMP} or in the event of facility or subdrain clogging. Overflow systems must connect to an acceptable discharge point, such as a downstream conveyance system as shown in Figure 1 and Figure 4. The inlet to the overflow structure shall be elevated inside the Bioretention Facility to be flush with the ponding surface for the design capture volume (V_{BMP}) as shown in Figure 4. This will allow the design capture volume to be fully treated by the Bioretention Facility, and for larger events to safely be conveyed to downstream systems. The overflow inlet shall **not** be located in the entrance of a Bioretention Facility, as shown in Figure 6.

Underdrain Gravel and Pipes

An underdrain gravel layer and pipes shall be provided in accordance with Appendix B – Underdrains.

Figure 6: Incorrect Placement of an Overflow Inlet.

Inspection and Maintenance Schedule

The Bioretention Facility area shall be inspected for erosion, dead vegetation, soggy soils, or standing water. The use of fertilizers and pesticides on the plants inside the Bioretention Facility should be minimized.

Schedule	Activity
Ongoing	• Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance activities. • Remove trash and debris • Replace damaged grass and/or plants • Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
After storm events	• Inspect areas for ponding
Annually	• Inspect/clean inlets and outlets

Bioretention Facility Design Procedure

1) Enter the area tributary, A_T, to the Bioretention Facility.

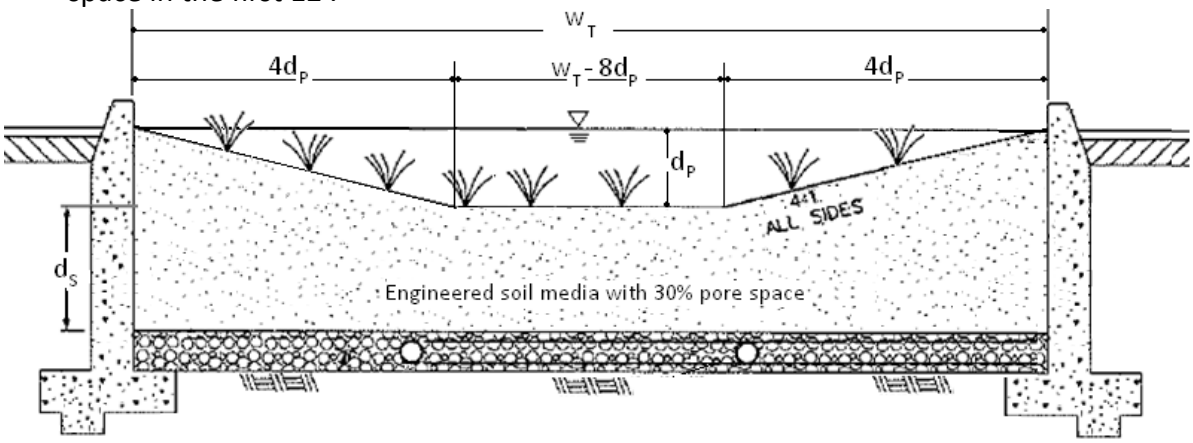
2) Enter the Design Volume, $V_{BMP,}$ determined from Section 2.1 of this Handbook.

3) Select the type of design used. There are two types of Bioretention Facility designs: the standard design used for most project sites that include side slopes, and the modified design used when the BMP is located perpendicular to the parking spaces or with planter boxes that do not use side slopes.

4) Enter the depth of the engineered soil media, d_S. The minimum depth for the engineered soil media can be 18' in limited cases, but it is recommended to use 24' or a preferred 36' to provide an adequate root zone for the chosen plant palette. Engineered soil media deeper than 36' will only get credit for the pore space in the first 36'.

5) Enter the top width of the Bioretention Facility.

6) Calculate the total effective depth, d_E, within the Bioretention Facility. The maximum allowable pore space of the soil media is 30% while the maximum allowable pore space for the gravel layer is 40%. Gravel layer deeper than 12' will only get credit for the pore space in the first 12'.



a. For the design with side slopes the following equation shall be used to determine the total effective depth. Where, d_P is the depth of ponding within the basin.

$$d_E(\text{ft}) = \frac{0.3 \times \left[\left(w_T(\text{ft}) \times d_S(\text{ft})\right) + 4\left(d_P(\text{ft})\right)^2\right] + 0.4 \times 1(\text{ft}) + d_P(\text{ft})\left[4d_P(\text{ft}) + \left(w_T(\text{ft}) - 8d_P(\text{ft})\right)\right]}{w_T(\text{ft})}$$

This above equation can be simplified if the maximum ponding depth of 0.5' is used. The equation below is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = (0.3 \times d_S(\text{ft}) + 0.4 \text{ x } 1(\text{ft})) - \left(\frac{0.7\ (\text{ft}^2)}{w_T(\text{ft})}\right) + 0.5(\text{ft})$$

b. For the design without side slopes the following equation shall be used to determine the total effective depth:

$$d_E(\text{ft}) = d_P(\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

The equation below, using the maximum ponding depth of 0.5', is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = 0.5\ (\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

7) Calculate the minimum surface area, A_M, required for the Bioretention Facility. This does not include the curb surrounding the Bioretention Facility or side slopes.

$$A_M(\text{ft}^2) = \frac{V_{BMP}(\text{ft}^3)}{d_E\ (\text{ft})}$$

8) Enter the proposed surface area. This area shall not be less than the minimum required surface area.

9) Verify that side slopes are no steeper than 4:1 in the standard design, and are not required in the modified design.

10) Provide the diameter, minimum 6 inches, of the perforated underdrain used in the Bioretention Facility. See Appendix B for specific information regarding perforated pipes.

11) Provide the slope of the site around the Bioretention Facility, if used. The maximum slope is 3 percent for a standard design.

12) Provide the check dam spacing, if the site around the Bioretention Facility is sloped.

13) Describe the vegetation used within the Bioretention Facility.

References Used to Develop this Fact Sheet

Anderson, Dale V. "Landscaped Filter Basin Soil Requirements." Riverside, May 2010.

California Department of Transportation. CalTrans Standard Plans. 15 September 2005. May 2010 <http://www.dot.ca.gov/hq/esc/oe/project_plans/HTM/stdplns-met-new99.htm>.

Camp Dresser and McKee Inc.; Larry Walker Associates. California Stormwater Best Management Practice Handbook for New Development and Redevelopment. California Stormwater Quality Association (CASQA), 2004.

Contra Costa Clean Water Program. Stormwater Quality Requirements for Development Applications. 3rd Edition. Contra Costa, 2006.

County of Los Angeles Public Works. Stormwater Best Management Practice Design and Maintenance Manual. Los Angeles, 2009.

Kim, Hunho, Eric A. Seagren and Allen P. Davis. "Engineered Bioretention for Removal of Nitrate from Stormwater Runoff." Water Environment Research 75.4 (2003): 355-366.

LA Team Effort. LA Team Effort: FREE Planter Boxes for Businesses. 2 November 2009. May 2010 <http://lateameffort.blogspot.com/2009/11/free-planter-boxes-for-businesses-est.html>.

Montgomery County Maryland Department of Permitting Services Water Resources Section. Biofiltration (BF). Montgomery County, 2005.

Program, Ventura Countywide Stormwater Quality Management. Technical Guidance Manual for Stormwater Quality Control Measures. Ventura, 2002.

United States Environmental Protection Agency. Storm Water Technology Fact Sheet Bioretention. Washington D.C, 1999.

Urban Drainage and Flood Control District. Urban Storm Drainage Criteria Manual Volume 3 - Best Management Practices. Vol. 3. Denver, 2008. 3 vols.

Urbonas, Ben R. Stormwater Sand Filter Sizing and Design: A Unit Operations Approach. Denver: Urban Drainage and Flood Control District, 2002.

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ A. **On-site storm drain inlets**	☐ **Locations of inlets.**	☒ **Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.**	☒ **Maintain and periodically repaint or replace inlet markings.** ☒ **Provide stormwater pollution prevention information to new site owners, lessees, or operators.** ☒ **See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** ☒ **Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."**
☐ B. **Interior floor drains and elevator shaft sump pumps**		☐ **State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**
☐ C. **Interior parking garages**		☐ **State that parking garage floor drains will be plumbed to the sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ D1. **Need for future indoor & structural pest control**		☒ **Note building design features that discourage entry of pests.**	☒ **Provide Integrated Pest Management information to owners, lessees, and operators.**
☒ D2. **Landscape/ Outdoor Pesticide Use**	☐ **Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.** ☐ **Show self-retaining landscape areas, if any.** ☒ **Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)**	**State that final landscape plans will accomplish all of the following.** ☐ **Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.** ☒ **Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.** ☐ **Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.** ☒ **Consider using pest-resistant plants, especially adjacent to hardscape.** ☒ **To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.**	☒ **Maintain landscaping using minimum or no pesticides.** ☒ **See applicable operational BMPs in "What you should know for…..Landscape and Gardening"** at http://rcflood.org/stormwater/**Error! Hyperlink reference not valid.** ☒ **Provide IPM information to new owners, lessees and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ E. **Pools, spas, ponds, decorative fountains, and other water features.**	☐ **Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environmental Health Guidelines.)**	**If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.**	☐ **See applicable operational BMPs in** "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood.org/stormwater/
☐ F. **Food service**	☐ **For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.** ☐ **On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.**	☐ **Describe the location and features of the designated cleaning area.** ☐ **Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.**	☐ **See the brochure, "**The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/ **Provide this brochure to new site owners, lessees, and operators.**
☒ G. **Refuse areas**	☒ **Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.** ☒ **If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area.** ☒ **Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.**	☒ **State how site refuse will be handled and provide supporting detail to what is shown on plans.** ☒ **State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.**	☒ **State how the following will be implemented:** **Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ H. **Industrial processes.**	☒ **Show process area.**	☒ **If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."**	☒ **See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ I. **Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)**	❑ **Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area.** ❑ **Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.** ❑ **Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.**	**Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.** **Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for:** ▪ **Hazardous Waste Generation** ▪ **Hazardous Materials Release Response and Inventory** ▪ **California Accidental Release (CalARP)** ▪ **Aboveground Storage Tank** ▪ **Uniform Fire Code Article 80 Section 103(b) & (c) 1991** ▪ **Underground Storage Tank** **www.cchealth.org/groups/hazmat/**	❑ **See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ J. **Vehicle and Equipment Cleaning**	❑ **Show on drawings as appropriate:** **(1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.** **(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).** **(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.** **(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.**	❑ **If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.**	**Describe operational measures to implement the following (if applicable):** ❑ **Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.** Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/ ❑**Car dealerships and similar may rinse cars with water only.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ K. **Vehicle/Equipment Repair and Maintenance**	❑ **Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.** ❑ **Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.** ❑ **Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.**	❑ **State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.** ❑ **State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.** ❑ **State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.**	**In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:** ❑ **No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.** ❑ **No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.** ❑ **No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.** Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/ Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ L. **Fuel Dispensing Areas**	❑ **Fueling areas[6] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable.** ❑ **Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.**		❑ **The property owner shall dry sweep the fueling area routinely.** ❑ **See the Fact Sheet SD-30 , "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

[6] **The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ M. **Loading Docks**	❑ **Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.** ❑ **Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.** ❑ **Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.**		❑ **Move loaded and unloaded items indoors as soon as possible.** ❑ **See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ N. **Fire Sprinkler Test Water**		☒ **Provide a means to drain fire sprinkler test water to the sanitary sewer.**	☒ **See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**
O. **Miscellaneous Drain or Wash Water or Other Sources** ☐ **Boiler drain lines** ☒ **Condensate drain lines** ☒ **Rooftop equipment** ☐ **Drainage sumps** ☒ **Roofing, gutters, and trim.** ☐ **Other sources**		☐ **Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.** ☐ **Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.** ☐ **Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.** ☐ **Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.** ☒ **Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.** ☐ **Include controls for other sources as specified by local reviewer.**	

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ P. **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.**

Site Design & Landscape Planning SD-10

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- ☑ Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Each project site possesses unique topographic, hydrologic, and vegetative features, some of which are more suitable for development than others. Integrating and incorporating appropriate landscape planning methodologies into the project design is the most effective action that can be done to minimize surface and groundwater contamination from stormwater.

Approach

Landscape planning should couple consideration of land suitability for urban uses with consideration of community goals and projected growth. Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for site design and landscapes planning should conform to applicable standards and specifications of agencies with jurisdiction and be consistent with applicable General Plan and Local Area Plan policies.

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Designing New Installations

Begin the development of a plan for the landscape unit with attention to the following general principles:

- Formulate the plan on the basis of clearly articulated community goals. Carefully identify conflicts and choices between retaining and protecting desired resources and community growth.
- Map and assess land suitability for urban uses. Include the following landscape features in the assessment: wooded land, open unwooded land, steep slopes, erosion-prone soils, foundation suitability, soil suitability for waste disposal, aquifers, aquifer recharge areas, wetlands, floodplains, surface waters, agricultural lands, and various categories of urban land use. When appropriate, the assessment can highlight outstanding local or regional resources that the community determines should be protected (e.g., a scenic area, recreational area, threatened species habitat, farmland, fish run). Mapping and assessment should recognize not only these resources but also additional areas needed for their sustenance.

Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Conserve Natural Areas during Landscape Planning

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.
- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
- Promote natural vegetation by using parking lot islands and other landscaped areas.
- Preserve riparian areas and wetlands.

Maximize Natural Water Storage and Infiltration Opportunities Within the Landscape Unit

- Promote the conservation of forest cover. Building on land that is already deforested affects basin hydrology to a lesser extent than converting forested land. Loss of forest cover reduces interception storage, detention in the organic forest floor layer, and water losses by evapotranspiration, resulting in large peak runoff increases and either their negative effects or the expense of countering them with structural solutions.
- Maintain natural storage reservoirs and drainage corridors, including depressions, areas of permeable soils, swales, and intermittent streams. Develop and implement policies and

regulations to discourage the clearing, filling, and channelization of these features. Utilize them in drainage networks in preference to pipes, culverts, and engineered ditches.

- Evaluating infiltration opportunities by referring to the stormwater management manual for the jurisdiction and pay particular attention to the selection criteria for avoiding groundwater contamination, poor soils, and hydrogeological conditions that cause these facilities to fail. If necessary, locate developments with large amounts of impervious surfaces or a potential to produce relatively contaminated runoff away from groundwater recharge areas.

Protection of Slopes and Channels during Landscape Design

- Convey runoff safely from the tops of slopes.
- Avoid disturbing steep or unstable slopes.
- Avoid disturbing natural channels.
- Stabilize disturbed slopes as quickly as possible.
- Vegetate slopes with native or drought tolerant vegetation.
- Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
- Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in run-off velocity and frequency caused by the project do not erode the channel.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
- Line on-site conveyance channels where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are high enough to erode grass or other vegetative linings, riprap, concrete, soil cement, or geo-grid stabilization are other alternatives.
- Consider other design principles that are comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define “redevelopment” in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of “ redevelopment” must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under “designing new installations” above should be followed.

Redevelopment may present significant opportunity to add features which had not previously been implemented. Examples include incorporation of depressions, areas of permeable soils, and swales in newly redeveloped areas. While some site constraints may exist due to the status of already existing infrastructure, opportunities should not be missed to maximize infiltration, slow runoff, reduce impervious areas, disconnect directly connected impervious areas.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Stormwater Management Manual for Western Washington, Washington State Department of Ecology, August 2001.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Efficient Irrigation SD-12

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include “NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Trash Storage Areas SD-32

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

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CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Parking/Storage Area Maintenance SC-43

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	☑
Oil and Grease	☑
Organics	☑
Oxygen Demanding	☑

Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The following protocols are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook).
- Keep accurate maintenance logs to evaluate BMP implementation.

Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low concentrations.

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel and dispose of litter in the trash.

Surface cleaning

- Use dry cleaning methods (e.g. sweeping or vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- If water is used follow the procedures below:
  - Block the storm drain or contain runoff.
  - Wash water should be collected and pumped to the sanitary sewer or discharged to a pervious surface, do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- When cleaning heavy oily deposits:
  - Use absorbent materials on oily spots prior to sweeping or washing.
  - Dispose of used absorbents appropriately.

Surface Repair

- Pre-heat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination form contacting stormwater runoff.
- Cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc., where applicable. Leave covers in place until job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.

- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of the parking facilities and stormwater conveyance systems associated with them on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Refer to SC-11, Spill Prevention, Control & Cleanup.
- Keep your Spill Prevention Control and countermeasure (SPCC) plan up-to-date, nad implement accordingly.
- Have spill cleanup materials readily available and in a known location.
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

Requirements

Costs

Cleaning/sweeping costs can be quite large, construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities on a regular basis to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

SC-43 Parking/Storage Area Maintenance

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination form contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Use only as much water as necessary for dust control, to avoid runoff.

References and Resources

http://www.stormwatercenter.net/

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality control Board. July 1998 (Revised February 2002 by the California Coastal Commission).

Orange County Stormwater Program
http://www.ocwatersheds.com/StormWater/swp_introduction.asp

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA) http://www.basma.org

San Diego Stormwater Co-permittees Jurisdictional Urban Runoff Management Program (URMP)
http://www.projectcleanwater.org/pdf/Model%20Program%20Municipal%20Facilities.pdf

Appendix 9: O&M

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

NON-STRUCTURAL BMP MAINTENANCE RESPONSIBILITY/FREQUENCY MATRIX

BMP	RESPONSIBILITY	BMP START DATE	FREQUENCY
Education for Property Owners, Operators, Tenants, Occupants, or Employees	Owner	Upon hire	At hire, educational materials and awareness for water quality protection to be provided to employees. http://www.floodcontrol.co.riverside.ca.us/stormwater/
Irrigation System and Landscape Maintenance	Owner	At completion of Construction	Monthly during regular maintenance, manage landscaping in accordance with the County of Riverside Water Conservation Ordinance and with the State of California Department of Pesticides management guidelines for use of fertilizers and pesticides.
Common Area Litter Control	Owner	At completion of Construction	Monthly sweeping and trash pickup within project areas by county staff. Daily pick of trash within private homeowner areas.
Street Sweeping Public Streets and Parking Lots (SC-70)	Owner	At completion of Construction	Streets shall be swept on a monthly basis, at minimum. Sweeping will intensify during non-rainy days after October 1st (Rainy season).
Drainage Facility Inspection and Maintenance (SC-74)	Owner	At completion of Construction	Inspect catch basins once per month (minimum) for accumulated debris. Increase frequency as needed during rainy months. Remove when debris reaches 40% of capacity, or once a year prior to rainy season.

STRUCTURAL BMP MAINTENANCE RESPONSIBILITY/FREQUENCY MATRIX

BMP	RESPONSIBILITY	BMP START DATE	FREQUENCY
Storm Drain System Stenciling and Signage (SD-13)	Owner	At completion of Construction	Once every 6 months, inspect for re-stenciling needs and re-stencil as necessary.
Landscape and Irrigation System Design (SD-10 & SD-12)	Owner	At completion of Construction	Once a month, in conjunction with maintenance activities. Verify that runoff minimizing landscape design continues to function by checking that water sensors are functioning properly, that irrigation heads are adjusted properly to eliminate overspray to hardscape areas, and to verify that irrigation timing and cycle lengths are adjusted in accordance with water demands, given time of year, weather and day or night time temperatures.

LID BMP MAINTENANCE RESPONSIBILITY/FREQUENCY MATRIX

BMP	RESPONSIBILITY	BMP START DATE	FREQUENCY
Bioretention Basin (BMP A and B)	Owner	Completion of Construction	Monthly: Conduct general inspection and maintenance per routine landscaping maintenance activities. Inspect surface area for debris, trash and vegetation accumulation. Inspect for general plant health. Inspect for sediment, build up on planting surface and in area drain inlet. Inspect for sediment or debris clogging inlet. Clean/repair items as necessary. 5 to 7 years: Remove vegetation, permeable soil and drain rock if draw down is below design rate. Replace in kind. Check sub-drain pipe and inlet. Repair if necessary.

Required Permits

No additional permits are necessary for the operation and maintenance of the proposed BMPs.

Forms to Record BMP Implementation, Maintenance, and Inspection

The form that will be used to record implementation, maintenance, and inspection of BMPs is attached.

Recordkeeping

All records must be maintained for at least five (5) years and must be made available for review upon request.

Today's Date: _____

Name of Person Performing Activity (Printed): _____

Signature: _____

BMP Name (As Shown in O&M Plan)	Brief Description of Implementation, Maintenance, and Inspection Activity Performed

Recording requested by and mail to:

City Clerk
City of Beaumont
550 E. Sixth Street
Beaumont, CA 92223

SPACE ABOVE THIS LINE FOR RECORDER'S USE
EXEMPT FROM RECORDER'S FEES PURSUANT TO GOVERNMENT CODE SECTION 6103 AND 27383

APN: 417-150-015

STORM WATER MANAGEMENT WQMP/BMP FACILITIES

COVENANT AND AGREEMENT NO.

City of Beaumont, Riverside County, California

THIS COVENANT AND AGREEMENT is made and entered into this _____ of 20___, by and between John C. McClure, ("Owner"), and the City of Beaumont, California, ("City").

The Owner hereby certifies I am (we are) the sole owner of certain real property located at 460 W. 1st Street, Beaumont CA 92223 (Site Address) in the City of Beaumont, County of Riverside, State of California, more specifically described in **Exhibit "A"** and depicted in **Exhibit "B"** ("Property").

The Owner covenants and agrees to comply with the Project Water Quality Management Plan ("WQMP"), attached hereto as **Exhibit "C"**, providing for storm water quality treatment within the confines of the Property.

The Owner covenants and agrees that the health, safety and welfare of the residents of the City of Beaumont, require that the Best Management Practice ("BMP") facilities, more specifically described in the WQMP (for example bio- swales, catch basins, roof drains and appurtenances) be constructed and maintained to minimize pollutants in urban runoff by the Owner.

The Owner further covenants and agrees as follows:

1. The on-site storm water management/BMP facilities mentioned above shall be constructed by the Owner at its sole cost and expense, in accordance with the plans and specifications identified in the WQMP approved by City.

2. The Owner shall adequately maintain the storm water management/BMP facilities in a manner assuring peak performance at all times, including source control BMPs at all times as its sole responsibility, at its sole cost and expense. This includes all pipes and channels built to convey storm water on the Property, including catch basin inserts, underground detention ponds, swales and vegetation provided to control the quantity and quality of the

storm water. Adequate maintenance is herein defined as good working condition so that these facilities are performing in accordance with their design functions continuously at all times.

3. The Owner shall annually inspect the storm water management/BMP facilities mentioned above and submit an inspection report annually to the Public Works Department by the anniversary of the date of this Agreement of each year. The purpose of the inspection is to assure safe and proper functioning of the facilities. The inspection shall cover the storm water management BMPs listed in the WQMP such as bioswales, catch basins and related filter units, etc. Deficiencies shall be noted in the inspection report and corrected by Owner promptly.

4. The Owner hereby grants permission to City, its authorized agents and employees, to enter upon the Property and to inspect the storm water management/BMP facilities, take samples and perform testing whenever the City deems necessary and as required by the City's most current National Pollutant Discharge Elimination System (NPDES) Permit. The purpose of the inspection, testing and sampling is to follow up on apparent and reported deficiencies and/or to respond to citizen complaints and meet the requirements of the City's NPDES Permit issued by the State Water Resources Control Board – Santa Ana River Region. The City shall provide the Owner with advanced notice of entering upon the Property, except in the event of an emergency, as determined by the City. The City shall provide the Owner copies of the inspection findings and a directive to commence with the repairs if necessary. Owner or Owner's successors or assigns shall pay City for all costs incurred by City in the inspection, sampling, testing of the BMPs within thirty (30) calendar days of City invoice.

5. In the event the Owner fails to maintain the storm water management/BMP facilities in good working condition acceptable to the City, upon five (5) days advanced written notice, the City may enter upon the Property and take whatever steps necessary to correct deficiencies identified in any inspection report and to charge the costs of such repairs to the Owner the cost of which shall constitute a lien against the Property. In the event of an emergency, as determined by City, advanced notice as aforesaid, shall not be required. Notwithstanding the forgoing, it is expressly understood and agreed that the City is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation to the City.

6. The Owner will perform the work necessary to keep these facilities in good working order as appropriate. The maintenance schedule for the storm water management BMP facilities (including sediment removal) is outlined in the approved WQMP and the schedule must be followed at all times. In the future, City of Beaumont may adopt an annual Stormwater Inspection Fee that would be assessed to the Owner.

7. In the event the City, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials and the like, the Owner, its successors and assigns shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the City hereunder.
8. This Agreement imposes no liability of any kind whatsoever on the City. Owner agrees to indemnify, defend (with counsel reasonably approved by the City) and hold harmless the City and its authorized officers,
9. employees, agents and volunteers from any and all claims, actions, losses, damages, and/or liability arising out of this Agreement from any cause whatsoever, including the acts, errors or omissions of any person and

for any costs or expenses incurred by the City on account of any claim except where such indemnification is prohibited by law. This indemnification provision shall apply regardless of the existence or degree of fault of indemnitees. The Owner's indemnification obligation applies to the City's "active" as well as "passive" negligence but does not apply to the City's "sole negligence" or "willful misconduct" within the meaning of Civil Code Section

2782, or to any claims, actions, losses, damages, and/or liabilities, to the extent caused by the acts or omissions of any third party contractors undertaking any work (other than field inspections) or other maintenance on the Property on behalf of the City under this Agreement.

10. This Agreement shall be recorded with the County Recorder for the County of Riverside and shall constitute a covenant running with the land, equitable servitude and lien against the Property, and shall be binding on the Owner, its successors, assigns, transferees, administrators, executors, heirs, encumbrancers and any other successors in interests, including any homeowner's association.

11. In addition to any remedy available to City under this Agreement, if Owner violates any term of this Agreement and does not cure the violation within the time already provided in this Agreement, or, if not provided, within thirty (30) calendar days, or within such time authorized by the City if said cure reasonably requires more than the subject time, the City may bring an action at law or in equity in a court of competent jurisdiction to enforce compliance by the Owner with the terms of this Agreement. In such action, the City may recover any damages to which the City may be entitled for the violation, enjoin the violation by temporary or permanent injunction without the necessity of proving actual damages or the inadequacy of otherwise available legal remedies, or obtain other equitable relief, including, but not limited to, the restoration of the Property and/or the BMPs identified in the WQMP to the condition in which it/they existed prior to any such violation or injury.

12. Owner shall provide printed educational materials with any sale of the Property which provide information on what storm water management facilities are present, the types and locations of maintenance signs that are required and how the necessary maintenance can be maintained.

13. Owner shall provide actual notice of this Agreement and its terms to any respective buyers or successor(s) in interest.

14. In order to be valid, amendment or change to this Agreement including the WQMP and BMPs requires an amendment executed by the City and Owner which is recorded with the Riverside County Recorder.

WITNESS the following signatures:

OWNER:

By: _____ By: _____

Name: John C. McClure Name: _____

Title: Owner Title: _____

Organization: _____ Organization: _____

City:

CITY OF BEAUMONT

a Municipal Corporation

Signature: _____

City Manager

ATTEST:

_____

City Clerk

APPROVED AS TO FORM:

_____

John Pinkney, City Attorney

APPROVED AS TO CONTENT:

_____

Jeff Hart, Director of Engineering/Public Works

All signatures on this Agreement on behalf of the Owner must be acknowledged before a Notary Public. In the event that the owner is a corporation, the President/Vice President and the corporate secretary of the corporation must sign.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Riverside)

On _____, 2019, before me, _____, notary public, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: _____ (Seal)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Riverside)

On _____, 2019, before me, _____, notary public, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

Signature: _____ (Seal)

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County of Riverside)

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State of California)
County of Riverside)

On _____, 2019, before me, _____, notary public, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature: _____ (Seal)

EXHIBIT "A"
LEGAL DESCRIPTION

EXHIBIT "B"
DIAGRAM OF PROPERTY

EXHIBIT "C"
WQMP

BMP Maintenance Agreement

Appendix 10: Educational Materials

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

Stormwater Pollution

What you should know for...

Industrial & Commercial Facilities

Riverside County Stormwater Program Members

City of Banning
(951) 922-3105

City of Beaumont
(951) 769-8520

City of Calimesa
(909) 795-9801

City of Canyon Lake
(951) 244-2955

City of Cathedral City
(760) 770-0340

City of Coachella
(760) 398-3502

City of Corona
(951) 736-2447

City of Desert Hot Springs
(760) 329-6411

City of Eastvale
(951) 361-0900

City of Hemet
(951) 765-2300

City of Indian Wells
(760) 346-2489

City of Indio
(760) 391-4000

City of Jurupa Valley
(951) 332-6464

City of Lake Elsinore
(951) 674-3124

City of La Quinta
(760) 777-7000

City of Menifee
(951) 672-6777

City of Moreno Valley
(951) 413-3000

City of Murrieta
(951) 304-2489

City of Norco
(951) 270-5607

City of Palm Desert
(760) 346-0611

City of Palm Springs
(760) 323-8299

City of Perris
(951) 943-6100

City of Rancho Mirage
(760) 324-4511

City of Riverside
(951) 826-5311

City of San Jacinto
(951) 487-7330

City of Temecula
(951) 694-6444

City of Wildomar
(951) 677-7751

Coachella Valley Water District
(760) 398-2651

County of Riverside
(951) 955-1000

Riverside County Flood Control District
(951) 955-1200

Best Management Practices (BMPS) for:

- Industrial Facilities
- Commercial Facilities

YOU can prevent Stormwater Pollution following these practices...

Industrial and Commercial Facilities

The Riverside County Stormwater Program has identified a number of Best Management Practices (BMPs) for Industrial and Commercial Facilities. These BMPs control and reduce stormwater pollutants from reaching our storm drain system and ultimately our local water bodies. City and County ordinances require businesses to use these BMPs to protect our water quality. Local cities and the County are required to verify implementation of these BMPs by performing regular facility inspections.

Prohibited Discharges

Discontinue all non-stormwater discharges to the storm drain system. It is *prohibited* to discharge any chemicals, paints, debris, wastes or wastewater into the gutter, street or storm drain.

Outdoor Storage BMPs

- Install covers and secondary containment areas for all hazardous materials and wastes stored outdoors in accordance with County and/or City standards.
- Keep all temporary waste containers covered, at all times when not in use.
- Sweep outdoor areas instead of using a hose or pressure washer.
- Move all process operations including vehicle/equipment maintenance inside of the building or under a covered and contained area.
- Wash equipment and vehicles in a contained and covered wash bay which is closed-loop or connected to a clarifier sized to local standards and discharged to a sanitary sewer or take them to a commercial car wash.

Spills and Clean Up BMPs

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep up the area.
- Clean up spills immediately when they occur, using dry clean up methods such as absorbent materials or sweep followed by proper disposal of materials.
- Always have a spill kit available near chemical loading dock doors and vehicle maintenance and fueling areas.
- Follow your Business Emergency Plan, as filed with the local Fire Department.
- Report all prohibited discharges and non-implementation of BMPs to your local Stormwater Coordinator as listed on the back of this pamphlet.
- Report hazardous materials spills to 951-358-5055 or call after hours to 951-782-2973 or, if an emergency, call the Fire Department's Haz Mat Team at 911.

Plastic Manufacturing Facilities BMPs

AB 258 requires plastic product manufacturers to use BMPs, such as safe storage and clean-up procedures to prevent plastic pellets (nurdles) from entering the waterway. The plastic pellets are released into the environment during transporting, packaging and processing and migrate to waterways through the storm drain system. AB 258 will help protect fish and wildlife from the hazards of plastic pollution.

Training BMPs

As prescribed by your City and County Stormwater Ordinance(s), train employees in spill procedures and prohibit non-stormwater discharges to the storm drain system. Applicable BMP examples can be found at www.cabmphandbooks.com.

Permitting

Stormwater discharges associated with specific categories for industrial facilities are regulated by the State Water Resources Control Board through an Industrial Stormwater General Permit. A copy of this General Permit and application forms are available at: www.waterboards.ca.gov, select stormwater then the industrial quick link.

To report illegal dumping or for more information on stormwater pollution prevention call: 1-800-506-2555 or e-mail us at: fcnpdes@rcflood.org.