City of Escondido
PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

MEYERS INDUSTRIAL
RECORD ID (PERMIT) NUMBERS: PL20-0654

MEYERS AVENUE
ESCONDIDO, CA 92029

ASSESSOR'S PARCEL NUMBER(S): 228-312-05

ENGINEER OF WORK:

Gregory W. Lang 04/10/22

GREGORY W. LANG, RCE 68075

PREPARED FOR:
VWP ESCONDIDO, LLC
2390 E. CAMELBACK ROAD, SUITE 305
PHOENIX, AZ 85016

PDP SWQMP PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
119 ABERDEEN DRIVE
CARDIFF, CA 92007
(858) 259-8212

DATE OF SWQMP:
APRIL 10, 2022

PLANS PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
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CARDIFF, CA 92007
(858) 259-8212

SWQMP APPROVED BY:

APPROVAL DATE:

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TABLE OF CONTENTS

ATTACHMENTS

ACRONYMS

ACP	Alternative Compliance
Project APN	Assessor's Parcel Number
BMP	Best Management Practice
DMA	Drainage Management Area
EOW	Engineer of Work
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWDM	Storm Water Design Manual
SWQMP	Storm Water Quality Management Plan
WMAA	Watershed Management Area Analysis
WQIP	Water Quality Improvement Plan

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Meyers Industrial
Permit Application Number: PL 20-0654

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Escondido Storm Water Design Manual, which is a design manual for compliance with the City of Escondido Municipal Code (Chapter 22, Article 2) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for storm water management.

I have read and understand that the City of Escondido has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the Storm Water Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Gregory W. Lang RCE 68075 Exp. 06-30-23
Engineer of Work's Signature, PE Number & Expiration Date

Gregory W. Lang P.E.
Print Name

Pasco Laret Suiter & Associates
Company

April 10, 2022
Date

Engineer's Seal:

SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	November 2020	Initial Submittal
2	June 2021	Revision to site plan
3	April 2022	Revision to site plan & BMPs
4		

Final Design

Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

Plan Changes

Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

PROJECT VICINITY MAP

Project Name: Meyers Industrial
Permit Application Number: PL 20-0654

VICINITY MAP

NTS

Step 1: Project type determination (Standard or Priority Development Project) (Form I-2a)

Project Summary Information	
Project Name	Meyers Industrial
Project Address	Meyers Avenue Escondido, CA 92029
Assessor's Parcel Number(s)	228-312-05
Permit Application Number	PL 20-0654
Project Watershed (Hydrologic Unit)	Select One: ☒Carlsbad 904 ☐San Dieguito 905
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	5.00 Acres (217,773 Square Feet)
Area to be disturbed by the project (Project Area)	4.10 Acres (178,644 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	3.20 Acres (139,587 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	0.90 Acres (39,057 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Confirmation of Priority Development Project Determination
The project is (select one): ☒ New Development ☐ Redevelopment[1]
The total proposed newly created or replaced impervious area is: 139,587 ft^2

[1] Redevelopment is defined as: The creation and/or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways; new sidewalks construction; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Solar energy farms that are not also one of the categories listed in Step 2b of Table 1-1. City staff must also determine that appropriate BMPs are provided to mitigate for downstream impacts due to significant changes to the existing hydrology

Is the project in any of the following categories, (a) through (f)?			
Yes ☒	No ☐	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☐	No ☒	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☒	No ☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes ☐	No ☒	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees.*
Yes ☐	No ☒	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

Yes	No		
☒	☐	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See Storm Water Design Manual Section 1.4.2 for additional guidance.*

Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?

☐ No – the project is not a Priority Development Project (Standard Project).

☒ Yes – the project is a Priority Development Project (PDP).

Further guidance may be found in Chapter 1 and Table 1-2 of the Storm Water Design Manual.

The following is for **redevelopment PDPs only**:

The area of existing (pre-project) impervious area at the project site is: _____ ft^2 (A)

The total proposed newly created or replaced impervious area is _____ ft^2 (B)

Percent impervious surface created or replaced (B/A)*100: _____%

The percent impervious surface created or replaced is (select one based on the above calculation):

☐less than or equal to fifty percent (50%) – **only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements**

OR

☐greater than fifty percent (50%) – **the entire project site is considered a PDP and subject to stormwater requirements**

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 1.1: Storm Water Quality Management Plan requirements

Step	Answer	Progression
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete Step 1 Project Type Determination Checklist on Pages 1 and 2, and see PDP exemption information below. For further guidance, see Section 1.4 of the Storm Water Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply, including Standard Project SWQMP. **Complete Form I-1.**
	☒ PDP ☐ PDP with ACP	Standard and PDP requirements apply, including PDP SWQMP. **SWQMP Required.** If participating in offsite alternative compliance, **complete Step 6.3 and an ACP SWQMP.**
	☐ PDP Exemption	**Go to Step 1.2 below.**

Step 1.2: Exemption to PDP definitions

Is the project exempt from PDP definitions based on either of the following: ☐ Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Green Streets Infrastructure;	If so: Standard Project requirements apply, AND any additional requirements specific to the type of project. City concurrence with the exemption is required. *Provide discussion and list any additional requirements below in this form.*
☐ Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the City of Escondido Guidance on Green Infrastructure.	**PDP Exempt.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:	

Step 2: Construction Storm Water BMPs

Construction storm water BMPs shall be shown on the Grading Plan and (if applicable) included in the Storm Water Pollution Prevention Plan (SWPPP).

Step 3: City of Escondido PDP SWQMP Site Information Checklist (Form I-2a)

Step 3.1: Description of Existing Site Condition

Current Status of the Site (select all that apply):
☐Existing development
☐Previously graded but not built out
☐Demolition completed without new construction
☐Agricultural or other non-impervious use
☒Vacant, undeveloped/natural

Description / Additional Information:

Existing Land Cover Includes (select all that apply and provide each area on site):
☐Vegetative Cover _____Acres (_____Square Feet)
☒Non-Vegetated Pervious 5.00 Acres (217,773 Square Feet)
☐Impervious Areas _____Acres (_____Square Feet)

Description / Additional Information:

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):
☐NRCS Type A
☐NRCS Type B
☐NRCS Type C
☒NRCS Type D

Approximate Depth to Groundwater (GW) (or N/A for no infiltration BMPs):
☐GW Depth < 5 feet
☐5 feet < GW Depth < 10 feet
☐10 feet < GW Depth < 20 feet
☒GW Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):
☐Watercourses
☐Seeps
☐Springs
☐Wetlands
☒None
☐Other

Description / Additional Information:

Step 3.2: Description of Existing Site Drainage Patterns

How is storm water runoff conveyed from the site? At a minimum, this description should answer:

(1) Whether existing drainage conveyance is natural or urban;
(2) Is runoff from offsite conveyed through the site? if yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site;
(3) Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels; and
(4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations.

Describe existing site drainage patterns:

In the existing condition, a high point is located at the southwest corner of the property. Runoff from the site sheet flows to the northeast toward Meyers Avenue. Stormwater is collected in the existing curb and gutter along the west side of Meyers Avenue and flows north to an existing curb inlet located at the intersection of Meyers Avenue and E. Barham Drive. The existing City storm drain infrastructure drains north to an existing open channel that ultimately discharges to San Marcos Creek and then into Lake San Marcos.

In the existing condition, stormwater from the undeveloped land located southwest of the subject property drains onto the subject property at the southwest corner of the site. The site is not within a FEMA designated Flood Zone.

A residential condominium project is proposed at the adjacent properties to the south and west of the existing site. The residential project has been approved by the City of San Marcos and City of Escondido and grading has commenced. The proposed grading as part of the residential condominium project includes new access drives along the southern and western property boundaries. Existing offsite drainage will be intercepted by curb and gutters and proposed storm drains within these access drives. All existing offsite drainage from the south is intercepted and conveyed to a 36” RCP storm drain proposed in Meyers Ave per Grading and Improvement Plan GP19-0016 and P19-0014. All existing offsite drainage from the west is intercepted and conveyed to a proposed storm drain in (Future) Sunrise View and Barham Drive per Improvement Plan IP20-00007 and P19-0014.

Step 3.3: Description of Proposed Site Development

Project Description / Proposed Land Use and/or Activities:

The site is currently zoned PD-I: Planned Development – Industrial per the City of Escondido. The project will include the construction of a new 67,300+/- SF industrial building, paved roadways and parking areas, retaining walls, and other associated improvements. Drainage improvements will consist of curb inlets, catch basins, ribbon gutters, brow ditches, and storm drain pipes. An underground detention vault is proposed near the northeast corner of the site to handle hydromodification requirements. Two (2) Modular Wetland Systems (MWS) are proposed upstream of the underground detention vault to provide storm water treatment.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

The project will include the construction of a new 67,300+/- SF industrial building, paved roadways and parking areas, retaining walls, and other associated improvements.

List/describe proposed pervious features of the project (e.g., landscape areas):

The project will include landscape areas and landscaped slopes.

Does the project include grading and changes to site topography?

☒Yes

☐No

Description / Additional Information:

Grading is proposed to accommodate the proposed development. The site grading and onsite storm drain system have been designed to avoid diversion of drainage.

Insert acreage or square feet for the different land cover types in the table below:

Change in Land Cover Type Summary					
Land Cover Type	Existing (acres or ft^2)	Percent of site	Proposed (acres or ft^2)	Percent of site	Percent Change
Vegetation	0 sf	0%	39,057 sf	17.9%	+17.9%
Pervious (non-vegetated)	217,773 sf	100%	39,129 sf	18.0%	-82.0%
Impervious	0 sf	0%	139,587 sf	64.1%	+64.1%

Step 3.4: Description of Proposed Site Drainage Patterns

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

☒Yes

☐No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

The project will include the construction of a new 67,300+/- SF industrial building, paved roadways and parking areas, retaining walls, and other associated improvements. The project will be accessed by a proposed driveway off Meyers Avenue. Drainage improvements will consist of curb inlets, catch basins, ribbon gutters, brow ditches, storm drain pipes and an underground detention vault located near the northeast corner of the site. The proposed site will consist of one (1) major drainage basin with one (1) outfall to mimic existing conditions. Storm water runoff from the project site is routed to POC-1 located near the northeast corner of the site, at a Type A cleanout and 18" storm drain lateral proposed per Improvement Plan P19-0014. The storm drain lateral connects to a proposed 36" RCP public storm drain pipe (per P19-0014) in Meyers Avenue, where flow travels north to the existing public storm drain system under E. Barham Drive.

The proposed site is split into two (2) Drainage Management Areas (DMAs) draining to POC-1.

Prior to discharging from the project site, developed site runoff from DMA-A is drained to two (2) Modular Wetland Systems, BMP-2 and BMP-3, for storm water treatment, and one (1) underground detention vault, BMP-1, responsible for handling hydromodification requirements for the project site. The detention vault is also responsible for mitigating the 50-year peak flow to meet the pre-development peak flow runoff rate. Detention requirements have been addressed in a separate report- "Hydrology and Hydraulics Study" by Pasco Laret Suiter & Associates, dated March 2022.

The underground detention vault has been designed to provide flow control in the form of peak flow attenuation. The vault has been modified to include low-flow and mid-flow orifice outlets and an overflow weir to control peak flows. Overflow relief for the 50-year storm event is provided with a partition weir installed in the vault and discharged directly to the proposed Type A cleanout and proposed 18" storm drain lateral (per P19-0014). The storm drain lateral will discharge into the proposed 36" RCP storm drain pipe per P19-0014.

Runoff from disturbed slopes along the northerly and easterly boundaries of the proposed development (DMA-B) will drain to a proposed Type B brow ditch along the top of the proposed wall at the northeast corner of the site. The brow ditch will discharge into the modified Type A cleanout (proposed per P16-0014) with Type F opening at the northeast corner of the site, where flow will discharge into the existing 18" storm drain at POC-1.

DMA-B consists primarily of associated fill slopes and landscape areas that drain directly offsite. Vegetated areas will include native and/or non-native/non-invasive drought tolerant species. Disturbed soils will be amended and aerated to promote water retention. The DMA is considered self-mitigating per Chapter 5.2.1 of the City of Escondido BMP Design Manual (February 2016) and does not include storm water treatment facilities.

Step 3.5: Potential Pollutant Source Areas

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply).

☒On-site storm drain inlets
☐Interior floor drains and elevator shaft sump pumps
☐Interior parking garages
☒Need for future indoor & structural pest control
☒Landscape/Outdoor Pesticide Use
☐Pools, spas, ponds, decorative fountains, and other water features
☐Food service
☒Refuse areas
☒Industrial processes
☐Outdoor storage of equipment or materials
☐Vehicle and Equipment Cleaning
☐Vehicle/Equipment Repair and Maintenance
☐Fuel Dispensing Areas
☒Loading Docks
☒Fire Sprinkler Test Water
☒Miscellaneous Drain or Wash Water
☒Plazas, sidewalks, and parking lots
☐Other (provide description)

Description / Additional Information:

Step 3.6: Identification and Narrative of Receiving Water and Pollutants of Concern

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):
Stormwater is collected in the existing curb and gutter along the west side of Meyers Avenue and flows north to an existing curb inlet located at the intersection of Meyers Avenue and E. Barham Drive. The existing City storm drain infrastructure drains north to an existing open channel that ultimately discharges to San Marcos Creek and then to Lake San Marcos.

List any 303(d) impaired water bodies[2] within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
San Marcos Creek	Benthic Community Effects, DDE, Bacteria, Phosphorous, Selenium, Toxicity	TMDL still required
San Marcos Lake	Ammonia as Nitrogen, Copper, Nutrients, Phosphorus, Bacteria	TMDL still required

Identification of Project Site Pollutants*

*Identification of project site pollutants below is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs. Note the project must also participate in an alternative compliance program (unless prior lawful approval to meet earlier PDP requirements is demonstrated).

Identify pollutants expected from the project site based on all proposed use(s) of the site (see Storm Water Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment		X	
Nutrients		X	X
Heavy Metals		X	X
Organic Compounds		X	X
Trash & Debris		X	
Oxygen Demanding Substances		X	X
Oil & Grease		X	X
Bacteria & Viruses	X		X
Pesticides		X	X

[2] The current list of Section 303(d) impaired water bodies can be found at http://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/#impaired

Step 3.7: Hydromodification Management Requirements

Do hydromodification management requirements apply (see Section 1.6 of the Storm Water Design Manual)?

☒Yes, hydromodification management requirements for flow control and preservation of critical coarse sediment yield areas are applicable.

☐No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

☐No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

☐No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA[3] for the watershed in which the project resides.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

[3]The Watershed Management Area Analysis (WMAA) is an optional element for inclusion in the Water Quality Improvement Plans (WQIPs) described in the 2013 MS4 Permit [Provision B.3.b.(4)]. It is available online at the Project Clean Water website:
http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=248

Step 3.7.1: Critical Coarse Sediment Yield Areas*

***This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

☐Yes

☒No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Section 6.2 of the manual been performed?

☐6.2.1 Verification of GLUs (classification that provides an estimate of sediment yield based on geology, hillslope, and land cover) Onsite

☐6.2.2 Downstream Systems Sensitivity to Coarse Sediment

☐6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite

☐No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

☐No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.

☐Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.

☐Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

Flow Control for Post-Project Runoff*

***This Section only required if hydromodification management requirements apply**
List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit. One (1) Point of Compliance (POC) has been identified for hydromodification flow control. POC-1 is located at the northeast corner of the site, at a Type A cleanout and 18" storm drain lateral proposed per Improvement Plan P19-0014. The storm drain lateral connects to a proposed 36" RCP public storm drain pipe (per P19-0014) in Meyers Ave, where flow travels north to the existing public storm drain system under Barham Drive.
Has a geomorphic assessment been performed for the receiving channel(s)? ☒No, the low flow threshold is 0.1Q2 (default low flow threshold) ☐Yes, the result is the low flow threshold is 0.1Q2 ☐Yes, the result is the low flow threshold is 0.3Q2 ☐Yes, the result is the low flow threshold is 0.5Q2 *If a geomorphic assessment has been performed, provide title, date, and preparer:* *Discussion / Additional Information: (optional)*

Step 3.8: Other Site Requirements and Constraints

When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.

Optional Additional Information or Continuation of Previous Sections As Needed

This space provided for additional information or continuation of information from previous sections as needed.

Step 4: Source Control BMP Checklist (Form I-2b)

Source Control BMPs			
All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the City Storm Water Design Manual for information to implement source control BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project. Answer each category below pursuant to the following: • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the City Storm Water Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided.			
Source Control Requirement	**Applied?**		
SC-1 Prevention of Illicit Discharges into the MS4	☒Yes	☐No	☐N/A
☒Direct irrigation water away from impervious surfaces ☐Direct vehicle wash water away from impervious surfaces ☐Other: *Discussion / justification if SC-1 not implemented:*			
SC-2 Storm Drain Stenciling or Signage	☒Yes	☐No	☐N/A
☒Stencil or stamp storm drains with anti-dumping message ☐ Post signs prohibiting illegal dumping ☐Other *Discussion / justification if SC-2 not implemented:*			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	☒N/A
☐ Store materials inside a covered enclosure ☐ Direct runoff from downspouts and roofs away from storage areas ☐ Other *Discussion / justification if SC-3 not implemented:*			

SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	☒N/A
☐ Locate work area away from storm drains or catch basins ☐ Work over impermeable surfaces where spills and pollutants can be captured and ☐ removed *Discussion / justification if SC-4 not implemented:*			
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒Yes	☐No	☐N/A
☒Locate trash containers in a roofed, walled enclosure ☒Locate trash containers away from storm drains *Discussion / justification if SC-5 not implemented:*			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
☒ A. On-site storm drain inlets	☒Yes	☐No	☐N/A
☐ B. Interior floor drains and elevator shaft sump pumps	☐Yes	☐No	☒N/A
☐ C. Interior parking garages	☐Yes	☐No	☒N/A
☒ D. Need for future indoor & structural pest control	☒Yes	☐No	☐N/A
☒ E. Landscape/outdoor pesticide use	☒Yes	☐No	☐N/A
☐ F. Pools, spas, ponds, fountains, and other water features	☐Yes	☐No	☒N/A
☐ G. Food service	☐Yes	☐No	☒N/A
☒ H. Refuse areas	☒Yes	☐No	☐N/A
☒ I. Industrial processes	☒Yes	☐No	☐N/A
☐ J. Outdoor storage of equipment or materials	☐Yes	☐No	☒N/A
☐ K. Vehicle and equipment cleaning	☐Yes	☐No	☒N/A
☐ L. Vehicle/equipment repair and maintenance	☐Yes	☐No	☒N/A
☐ M. Fuel dispensing areas	☐Yes	☐No	☒N/A
☒ N. Loading docks	☒Yes	☐No	☐N/A
☒ O. Fire sprinkler test water	☒Yes	☐No	☐N/A
☒ P. Miscellaneous drain or wash water	☒Yes	☐No	☐N/A
☒ Q. Plazas, sidewalks, and parking lots	☒Yes	☐No	☐N/A
Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for <u>all</u> "No" answers shown above.			

Note: Show all source control measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 5: Site Design BMP Checklist (Form I-2c)

Site Design BMPs			
All development projects must implement site design BMPs SD-A through SD-H where applicable and feasible. See Chapter 4.3 and Appendix E of the City Storm Water Design Manual for information to implement site design BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project. Answer each category below pursuant to the following: • "Yes" means the project will implement the site design BMP as described in Chapter 4.3 and/or Appendix E of the City Storm Water Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided.			
Site Design Requirement	**Applied?**		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	☒Yes	☐No	☐N/A
☒ Maintain existing drainage patterns *Discussion / justification if SD-1 not implemented:*			
SD-2 Conserve Natural Areas, Soils, and Vegetation	☒Yes	☐No	☐N/A
□ Preserve trees (see Zoning Code Art. 55 Grading & Erosion Control; Art. 62 Landscape Regulations) □ Avoid sensitive areas such as wetlands and waterways *Discussion / justification if SD-2 not implemented:*			
SD-3 Minimize Impervious Area	☒Yes	☐No	☐N/A
☒Install parking and driving aisles to minimum width required to meet standards *Discussion / justification if SD-3 not implemented:*			

SD-4 Minimize Soil Compaction	☒Yes	☐No	☐N/A
☒ Avoid compaction in planned landscaped spaces ☒ Till and amend soil for improved infiltration capacity *Discussion / justification if SD-4 not implemented:*			
SD-5 Impervious Area Dispersion	☒Yes	☐No	☐N/A
☒ Drain rooftops, roads or sidewalks into adjacent landscape areas ☒ Drain impervious surfaces through pervious areas *Discussion / justification if SD-5 not implemented:*			
SD-6 Runoff Collection			
Discussion / justification if SD-6 not implemented: *Permeable pavement is not a suitable BMP for this project.*	☐Yes	☒No	☐N/A
SD-7 Landscaping with Native or Drought Tolerant Species			
Discussion / justification if SD-7 not implemented:	☒Yes	☐No	☐N/A
SD-8 Harvesting and Using Precipitation			
Discussion / justification if SD-8 not implemented:	☐Yes	☒No	☐N/A

Note: Show all site design measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 6: PDP Structural BMPs (Form I-3)

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the Storm Water Design Manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the Storm Water Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the City at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 8.2.3.2 of the Storm Water Design Manual). PDP structural BMPs must be maintained into perpetuity, and the City must confirm the maintenance (see Section 7 of the Storm Water Design Manual).

Use this section to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (Step 6.2) for each structural BMP within the project (copy the BMP summary information sheet [Step 6.2] as many times as needed to provide summary information for each individual structural BMP).

Step 6.1: Description of structural BMP strategy

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the Storm Water D*esign Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate. At the end of this discussion provide a summary of all the structural BMPs within the project including the type and number.*

For the purpose of this SWQMP, the proposed site condition has been divided into one (1) Drainage Management Area (DMA) draining to structural BMPs and one (1) Self-Mitigating DMA. The DMAs have been delineated based on on-site drainage patterns and BMP locations.

The types of structural BMPs chosen for the project were based on the flow chart presented in Figures 5-1 and 5-2 of the City of Escondido BMP Design Manual (February 2016). Using Form I-4 (Worksheet B.3-1) to gauge the feasibility of implementing capture and use techniques for the project site, it was determined that harvest and use BMPs are considered infeasible. See Attachment 1a.

A feasibility study was then conducted for infiltration and if infiltration is fully or partially feasible for the project's structural BMPs. The negative impacts associated with retention were identified and substantiated through the completion of Form I-5 and Form I-6. Please refer to Attachment 1b and 1c.

Description of structural **BMP** strategy continued

(Page reserved for continuation of description of general strategy for structural **BMP** implementation at the site)

(Continued from previous page)

Based on site geologic conditions and permeable surface material, it has been determined that full or partial infiltration of storm water is considered infeasible. Since infiltration is considered infeasible, a Cistern (HU-1) and Proprietary Biofiltration BMP (BF-3) were chosen as the types of Structural BMPs for DMA-A.

DMA-A encompasses the proposed industrial building and paved drive aisles and parking areas. DMA-A drains to two (2) Modular Wetland Systems, BMP-2 and BMP-3, responsible for handling water quality treatment requirements for the project site, and an underground detention vault, BMP-1, responsible for handling hydromodification requirements for POC-1.

Since the Modular Wetlands are located upstream of the underground detention vault, they are considered flow-based biofiltration BMPs, and sized per Appendix F.2.2 of the City of Escondido BMP Design Manual. All stormwater runoff will be directed to the Modular Wetlands before draining to the underground detention vault. The Modular Wetlands will include an internal bypass to handle peak flows that exceed the required treatment flow rate.

The type of underground detention vault is a StormTrap SingleTrap. The vault has been modified to include low-flow and mid-flow orifice outlets and an overflow weir to control peak flows. Flows will discharge through a 1.75”-dia low flow orifice located at the invert of the vault (elev=701.00). A partition weir will be constructed within the vault with a 1.75’L X 0.25’H slot orifice set at 2 feet above the invert of the vault (elev=703.0) and a 6’L weir set at 5.17 feet above the invert of the vault (elev=706.17), such that peak flows can be safely discharged to the storm drain system.

The detention vault was modeled using the rain barrel LID module within SWMM. The Storm Water Management Model (SWMM) uses continuous simulation modeling to determine if the proposed HMP facility is sufficient to meet current HMP requirements for the Q2 to Q10 return periods. The rain barrel module can model the barrel height and flow control orifice in the vault structure. Based on the selected BMP outlet configuration and stage-storage and stage-discharge relationships, flow duration curves were generated to analyze the differences between pre-developed and post-project peak flow frequencies and durations at POC-1.

Since a geomorphic channel assessment analysis has not been performed for the receiving water body, the receiving water body is assumed to have a high susceptibility to erosion. Therefore, the 0.1Q2 low-flow threshold was used.

As the flow duration curve (FDC) comparison demonstrates, the proposed flow control facilities mitigate post-project peak flow frequencies and durations at or below 110% of the pre-developed condition; therefore, the additional storm water generated by the site development will be detained and released at a rate that will not exceed the pre-developed peak flow frequencies and durations for the geomorphically significant range of flows.

The SWMM output report for POC-1 is included in Attachment 2a.

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. BMP-1	
Construction Plan Sheet No. 3	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☒ Detention pond or vault for hydromodification management ☐ Other (describe in discussion section below)	
Purpose: ☐Pollutant control only ☒ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	Gregory W. Lang, RCE 68075 Pasco Laret Suitter & Associates 119 Aberdeen Drive Cardiff, CA 92007
Who will be the final owner of this BMP?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. BMP-2	
Construction Plan Sheet No. 3	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☐ Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	Gregory W. Lang, RCE 68075 Pasco Laret Suitter & Associates 119 Aberdeen Drive Cardiff, CA 92007
Who will be the final owner of this BMP?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. BMP-3	
Construction Plan Sheet No. 3	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☐ Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	Gregory W. Lang, RCE 68075 Pasco Laret Suitter & Associates 119 Aberdeen Drive Cardiff, CA 92007
Who will be the final owner of this BMP?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

Step 6.3: Offsite Alternative Compliance Participation Form

THIS FORM IS NOT APPLICABLE AT THIS TIME: An Alternative Compliance Program is under consideration by the City of Escondido.	
PDP INFORMATION	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
What are your PDP Pollutant Control Debits? *See Attachment 1 of the PDP SWQMP	
What are your PDP HMP Debits? (if applicable) *See Attachment 2 of the PDP SWQMP	
ACP Information	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
Project Owner/Address	
What are your ACP Pollutant Control Credits? *See Attachment 1 of the ACP SWQMP	
What are your ACP HMP Debits? (if applicable) *See Attachment 2 of the ACP SWQMP	
Is your ACP in the same watershed as your PDP? ☐Yes ☐No	Will your ACP project be completed prior to the completion of the PDP? ☐Yes ☐No
Does your ACP account for all Deficits generated by the PDP? ☐Yes ☐No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.)	What is the difference between your PDP debits and ACP Credits? *(ACP Credits -Total PDP Debits = Total Earned Credits)

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	Storm Water Pollutant Control Worksheet Calculations -Worksheet B.2-1 (Required) -Worksheet B.3-1 (Form I-4; Required) -Worksheet B.4-1 (if applicable) -Worksheet B.5-1 (if applicable) -Worksheet B.5-2 (if applicable) -Worksheet B.5-3 (if applicable) -Worksheet B.6-1 (if applicable) -Summary Worksheet (optional)	☒Included
Attachment 1b	Form I-5, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-5.	☒ Included ☐ Not included because the entire project will use harvest and use BMPs
Attachment 1c	Form I-6, Factor of Safety and Design Infiltration Rate Worksheet (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-6.	☒ Included ☐ Not included because the entire project will use harvest and use BMPs
Attachment 1d	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	☒ Included
Attachment 1e	Individual Structural BMP DMA Mapbook (Required) -Place each map on 8.5”x11” paper. -Show at a minimum the DMA, Structural BMP, and any existing hydrologic features within the DMA.	☒ Included

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Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

☒ Underlying hydrologic soil group
☒ Approximate depth to groundwater
☒ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
☒ Critical coarse sediment yield areas to be protected
☒ Existing topography and impervious areas
☒ Existing and proposed site drainage network and connections to drainage offsite
☒ Proposed demolition
☒ Proposed grading
☒ Proposed impervious features
☒ Proposed design features and surface treatments used to minimize imperviousness
☒ Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
☒ Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Step 3.5)
☒ Structural BMPs (identify location, structural BMP ID#, type of BMP, and size/detail)

Attachment 1a

Worksheet B.2-1. DCV
DMA-A

Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.6	inches
2	Area tributary to BMP (s)	A=	168,169	square-feet
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.764	unitless
4	Street trees volume reduction	TCV=	0	cubic-feet
5	Rain barrels volume reduction	RCV=	0	cubic-feet
6	Calculate DCV = (C x d/12 x A) – TCV - RCV	DCV=	6,424	cubic-feet

Harvest and Use Feasibility Screening	Form I-4

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?
√ Toilet and urinal flushing
√ Landscape irrigation
Other:_____

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

Toilet/Urinal Flushing
(9.3 gal/person-day) x (0.13368 cuft/gal) x (1.5 days) = 1.86 cuft/person-36hr
Assume (1 person per 150 sf office space x 6,770 sf) x (1.86 cuft/person-36 hr) = **84 cuft/36hr**
Assume (1 person per 200 sf manufacture space x 13,540 sf) x (1.86 cuft/person-36 hr) = **126 cuft/36hr**
Assume (1 person per 500 sf storage space x 47,390 sf) x (1.86 cuft/person-36 hr) = **177 cuft/36hr**
Landscape Irrigation
(0.90 ac irrigated) x (1470 gal/ac-36hr) x (0.13368 cuft/gal) = **177 cuft/36hr**

Total = 84 cuft + 126 cuft + 177 cuft + 177 cuft = 564 cuft

3. Calculate the DCV using worksheet B-2.1.
DCV = 6,424 cuft

3a. Is the 36-hour demand greater than or equal to the DCV?	3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV?	3c. Is the 36-hour demand less than 0.25DCV?
Yes / √ No	Yes / √ No	√ Yes
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	√ Harvest and use is considered to be infeasible.

Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	6,424	cubic-feet
2	DCV retained	$DCV_{retained}$		cubic-feet
3	DCV biofiltered	$DCV_{biofiltered}$		cubic-feet
4	DCV requiring flow-thru (Line 1 -Line 2-0.67*Line 3)	$DCV_{flow-thru}$	6,424	cubic-feet
5	Adjustment factor (Line 4 / Line 1)*	AF=	1	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	3.86	acres
8	Area-weighted runoff factor (estimate using Appendix B)	C=	0.76	unitless
9	Calculate Flow Rate = AF x (C x I x A)	Q=	0.590	cfs

Sizing of Flow Based Biofiltration BMPs

Per Appendix F.2.2 of the BMP Design Manual

Design Flow Rate (1.5xDCV)	Q=	0.885	cfs
No of MWS used		2	unitless
Treatment Capcity of MWS L-8-16	Q=	0.448	cfs
Provided Treatment Capacity	Q=	0.896	cfs

Attachment 1b

Categorization of Infiltration Feasibility Condition		Form I-5	
Part 1 - Full Infiltration Feasibility Screening Criteria **Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?**			
Criteria	Screening Question	**Yes**	**No**
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X
Provide basis: Per the project Geotechnical Report, titled "Geotechnical Evaluation, Proposed "Sunrise" Residential Development, Assessor's Parcel Numbers (APNs): 228-312-18-05, -09 and -10, City of San Marcos, County of San Diego, California 92078" prepared by EEI and dated August 3, 2017, the site infiltration rate is 0.0 in/hr. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation		X
Provide basis: Per the project Geotechnical Report, titled "Geotechnical Evaluation, Proposed "Sunrise" Residential Development, Assessor's Parcel Numbers (APNs): 228-312-18-05, -09 and -10, City of San Marcos, County of San Diego, California 92078" prepared by EEI and dated August 3, 2017, the site infiltration rate is 0.0 in/hr Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			

Form I-5			
Criteria	Screening Question	**Yes**	**No**
3	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation		X
Provide basis: Per the project Geotechnical Report, titled "Geotechnical Evaluation, Proposed "Sunrise" Residential Development, Assessor's Parcel Numbers (APNs): 228-312-18-05, -09 and -10, City of San Marcos, County of San Diego, California 92078" prepared by EEI and dated August 3, 2017, the site infiltration rate is 0.0 in/hr. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	**Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors		X
Provide basis: Per the project Geotechnical Report, titled "Geotechnical Evaluation, Proposed "Sunrise" Residential Development, Assessor's Parcel Numbers (APNs): 228-312-18-05, -09 and -10, City of San Marcos, County of San Diego, California 92078" prepared by EEI and dated August 3, 2017, the site infiltration rate is 0.0 in/hr. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result*	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** If any answer from row 1-4 is "**No**", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		No

Form I-5

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	**Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in		X

Provide basis:

Per the project Geotechnical Report, titled "Geotechnical Evaluation, Proposed "Sunrise" Residential Development, Assessor's Parcel Numbers (APNs): 228-312-18-05, -09 and -10, City of San Marcos, County of San Diego, California 92078" prepared by EEI and dated August 3, 2017, the site infiltration rate is 0.0 in/hr.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors	X	

Provide basis:

Per the project Geotechnical Report, titled "Geotechnical Evaluation, Proposed "Sunrise" Residential Development, Assessor's Parcel Numbers (APNs): 228-312-18-05, -09 and -10, City of San Marcos, County of San Diego, California 92078" prepared by EEI and dated August 3, 2017, the site infiltration rate is 0.0 in/hr.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

<table>
<tr><th colspan="4">Form I-5</th></tr>
<tr><th>Criteria</th><th>Screening Question</th><th>Yes</th><th>No</th></tr>
<tr><td>7</td><td>Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td>X</td><td></td></tr>
<tr><td colspan="4">Provide basis:

Per the project Geotechnical Report, titled “Geotechnical Evaluation, Proposed “Sunrise” Residential Development, Assessor’s Parcel Numbers (APNs): 228-312-18-05, -09 and -10, City of San Marcos, County of San Diego, California 92078” prepared by EEI and dated August 3, 2017, the site infiltration rate is 0.0 in/hr.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</td></tr>
<tr><td>8</td><td>Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td>X</td><td></td></tr>
<tr><td colspan="4">Provide basis:

Per the project Geotechnical Report, titled “Geotechnical Evaluation, Proposed “Sunrise” Residential Development, Assessor’s Parcel Numbers (APNs): 228-312-18-05, -09 and -10, City of San Marcos, County of San Diego, California 92078” prepared by EEI and dated August 3, 2017, the site infiltration rate is 0.0 in/hr.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</td></tr>
<tr><td>Part 2 Result*</td><td colspan="2">If all answers from row 5-8 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration.

If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.</td><td>No Infiltration</td></tr>
</table>

Form I-5 Certification

The Geotechnical Engineer certifies they completed Form I-5 except Criteria 4 & 8 (see Appendix C.4.3).

Professional Geotechnical Engineer's Printed Name:

_____

Professional Geotechnical Engineer's Signed Name:

_____

Date: _____

[SEAL]

The Project Design Engineer certifies they completed Criteria 4 & 8 (see Appendix C.4.4).

Professional Project Design Engineer's Printed Name:

_____

Professional Project Design Engineer's Signed Name:

_____

Date: _____

[SEAL]

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Attachment 1c

Factor of Safety and Design Infiltration Rate Worksheet				Form I-6	
Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25		
		Predominant soil texture	0.25		
		Site soil variability	0.25		
		Depth to groundwater / impervious layer	0.25		
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			
B	Design	Level of pretreatment/ expected sediment loads	0.5		
		Redundancy/resiliency	0.25		
		Compaction during construction	0.25		
		Design Safety Factor, $S_B = \Sigma p$			
Combined Safety Factor, $S_{total} = S_A \times S_B$					
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)					
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$					
Supporting Data					
Briefly describe infiltration test and provide reference to test forms: N/A, Per the project Geotechnical Report, titled “Geotechnical Evaluation, Proposed “Sunrise” Residential Development, Assessor’s Parcel Numbers (APNs): 228-312-18-05, -09 and -10, City of San Marcos, County of San Diego, California 92078” prepared by EEI and dated August 3, 2017, the site infiltration rate is 0.0 in/hr.					

Factor of Safety and Design Infiltration Rate Worksheet	Form I-6 Certification

The Geotechnical Engineer certifies they completed Form I-6 (see Appendix C.4.3).

Professional Geotechnical Engineer's Printed Name:

_____

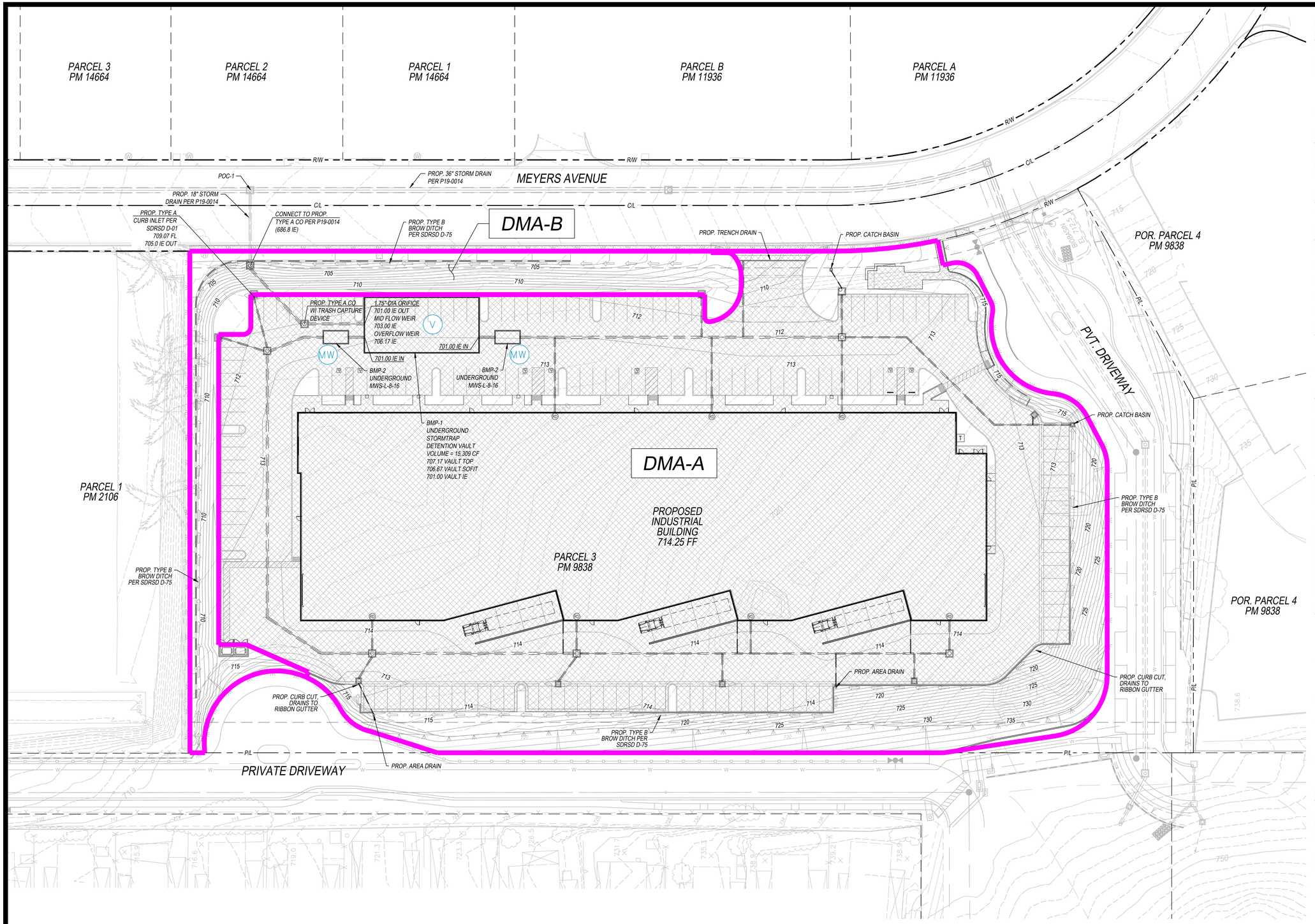
Professional Geotechnical Engineer's Signed Name:

_____

Date: _____

[SEAL]

Attachment 1d



LEGEND

DESCRIPTION	SYMBOL
RIGHT-OF-WAY	
PROPERTY LINE	
DMA BOUNDARY	
FLOWLINE	
PROPOSED BROW DITCH	
PROPOSED IMPERVIOUS AREA	

HYDROLOGIC SOIL GROUP

HYDROLOGIC SOIL TYPE: B & C*
*FOR THE PURPOSE OF DRAINAGE CALCS, THE ENTIRE SITE WILL BE MODELED WITH TYPE D SOILS. SEE "PRELIMINARY HYDROLOGY AND HYDRAULICS STUDY FOR MEYERS INDUSTRIAL" BY PLSA DATED APRIL 2022 FOR DISCUSSION.

DEPTH TO GROUNDWATER

DEPTH TO GROUNDWATER > 20 FT

PROJECT CHARACTERISTICS

PARCEL AREA:	5.00 AC
PROPOSED DRAINAGE BASIN:	4.26 AC
DISTURBED AREA:	4.10 AC
PROPOSED IMPERVIOUS AREA:	3.20 AC
PROPOSED LANDSCAPE AREA:	0.90 AC

STRUCTURAL BMPS

UNDERGROUND DETENTION VAULT (HU-1) (V)
MODULAR WELTAND SYSTEM (BF-3) (MW)

SITE DESIGN BMPS

SD-1	MAINTAIN NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES
SD-2	CONSERVE NATURAL AREAS, SOILS AND VEGETATION
SD-3	MINIMIZE IMPERVIOUS AREAS
SD-4	MINIMIZE SOIL COMPACTION
SD-5	IMPERVIOUS AREA DISPERSION
SD-7	LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES

SOURCE CONTROL BMPS

SC-1	PREVENTION OF ILLICIT DISCHARGES TO THE MS4
SC-2	STORM DRAIN STENCILING AND SIGNAGE
SC-5	PROTECT TRASH STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF OR WIND DISPERSAL
SC-6	ADDITIONAL BMPS BASED ON POTENTIAL RUNOFF POLLUTANTS:
SC-6A	ONSITE STORM DRAIN INLETS
SC-6D	NEED FOR FUTURE INDOOR & STRUCTURAL PEST CONTROL
SC-6E	LANDSCAPE/OUTDOOR PESTICIDE USE
SC-6H	REFUSE AREAS
SC-6I	INDUSTRIAL PROCESSES
SC-6N	LOADING DOCKS
SC-6O	FIRE SPRINKLER TEST WATER
SC-6P	MISCELLANEOUS DRAIN OR WASH WATER
SC-6Q	PLAZAS, SIDEWALKS, AND PARKING LOTS

SELF-MITIGATING DMAS

1. VEGETATION IN THE NATURAL OR LANDSCAPED AREA SHALL BE NATIVE AND/OR NON-NATIVE/NON-INVASIVE DROUGHT TOLERANT SPECIES THAT DO NOT REQUIRE REGULAR APPLICATION OF FERTILIZERS AND PESTICIDES.
2. SOILS SHALL BE UNDISTURBED NATIVE TOPSOIL, OR DISTURBED SOILS SHALL BE AMENDED AND AERATED TO PROMOTE WATER RETENTION CHARACTERISTICS EQUIVALENT TO UNDISTURBED NATIVE TOPSOIL.
3. THE INCIDENTAL IMPERVIOUS AREA SHALL BE LESS THAN 5 PERCENT OF THE SELF-MITIGATING AREA.
4. IMPERVIOUS AREA WITHIN THE SELF-MITIGATED AREA SHALL NOT BE HYDRAULICALLY CONNECTED TO OTHER IMPERVIOUS AREA UNLESS IT IS A STORM WATER CONVEYANCE SYSTEM (SUCH AS A BROW DITCH).
5. THE SELF-MITIGATING AREA SHALL BE HYDRAULICALLY SEPARATE FROM DMAS THAT CONTAIN PERMANENT STORM WATER POLLUTANT CONTROL BMPS.

CCSYAS

THE PROJECT IS ENTIRELY EXEMPT/NOT SUBJECT TO RPO REQUIREMENTS WITHOUT UTILIZATION OF RPO EXEMPTIONS AS THERE ARE NO AREAS ONSITE OR UPSTREAM TO PROTECT; THEREFORE THE PROJECT EFFECTIVELY AVOIDS AND BYPASSES SOURCES OF MAPPED CCSYAS PER APPROACHES OUTLINED IN APPENDIX H.2 AND H.3 AS NONE WERE IDENTIFIED.

REFER TO THE WMAA MAP INCLUDED IN THE "CITY OF ESCONDIDO PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP FOR MEYERS INDUSTRIAL" BY PASCO LARET SUITER & ASSOCIATES.

30' 15" 0 30' 60' 90'
SCALE: 1" = 30'

SUMMARY OF DRAINAGE MANAGEMENT AREAS

DMA	DRAINAGE AREA (AC)	IMPERVIOUS AREA (AC)	% IMP	DMA RUNOFF COEFFICIENT, C	DCV (CU-FT)	TREATED BY (BMP ID)	STRUCTURAL BMP TYPE	STRUCTURAL BMP PERFORMANCE
DMA-A	3.86	3.20	83%	0.76	6,424 CU-FT	BMP-2 & BMP-3	PROPRIETARY BIOFILTRATION (BF-3)	WQ TREATMENT
DMA-B	0.40	0.00	0%	- -	- -	N/A - SELF-MITIGATING	- -	- -

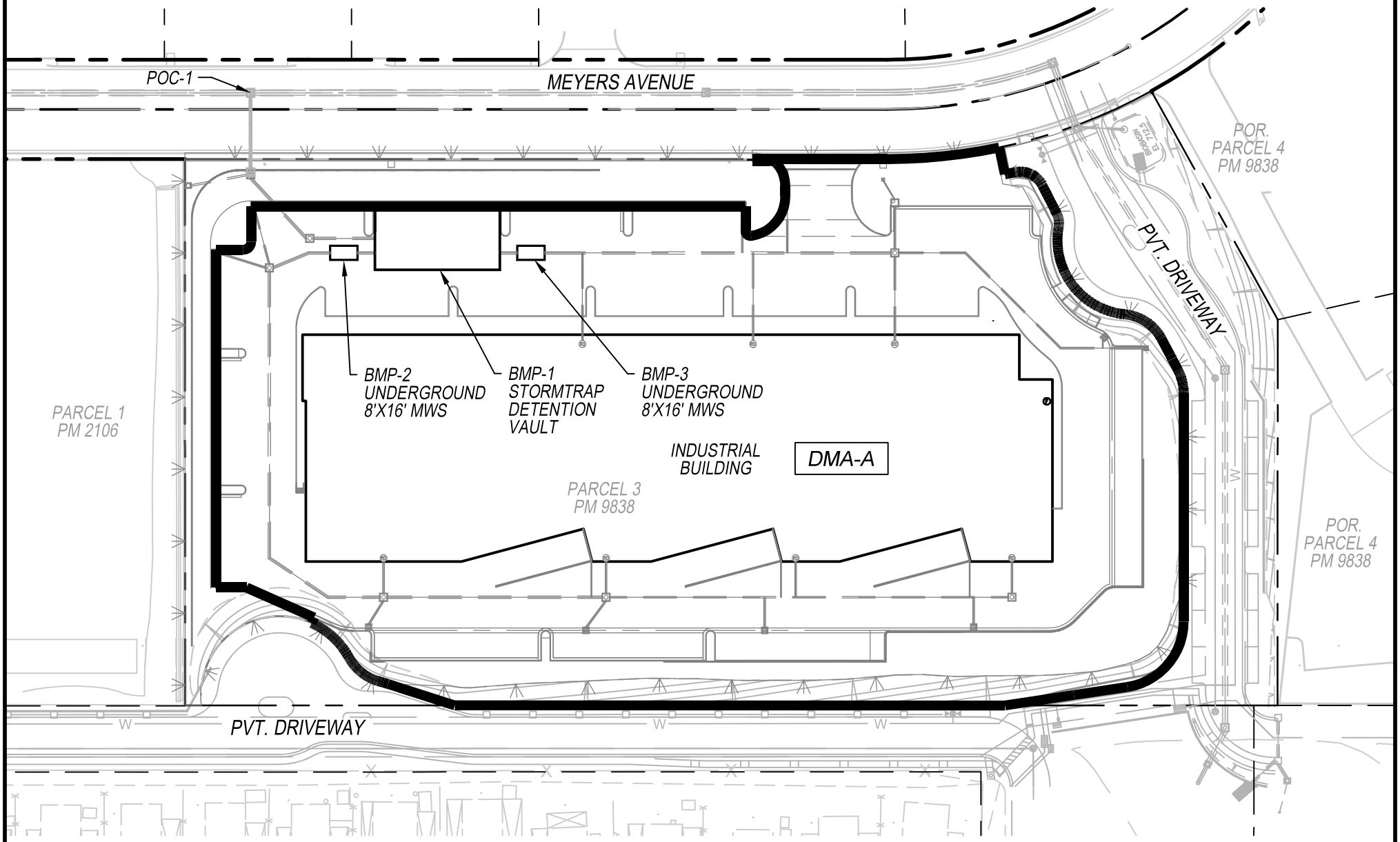
PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

DMA & HYDROMODIFICATION MANAGEMENT EXHIBIT

MEYERS AVE
MEYERS AVE
ESCONDIDO, CA 92029
PLSA JOB NO. 3446
SCALE 1"=30'
APRIL 2022
SHEET 1 OF 1

Attachment 1e

STRUCTURAL BMP DMA MAPBOOK



STRUCTURAL BMP DMA MAPBOOK
MEYERS INDUSTRIAL
PL20-0654

ATTACHMENT 2

BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

☐Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	**Contents**	**Checklist**
Attachment 2a	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the Storm Water Design Manual	☒ Included ☐ Submitted as separate stand-alone document
Attachment 2b	Hydromodification Management Exhibit (Required)	☒ Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2c	Management of Critical Coarse Sediment Yield Areas See Section 6.2 and Appendix H of the Storm Water Design Manual.	☒ Exhibit depicting onsite and/or upstream sources of critical coarse sediment as mapped in the WMAA AND, ☒ Demonstration that the project effectively avoids and bypasses sources of mapped critical coarse sediment OR, ☐ Demonstration that project does not generate a net impact on the receiving water.
Attachment 2d	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the Storm Water Design Manual.	☒ Not performed ☐ Included ☐ Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐ Included ☒ Not required because BMPs will drain in less than 96 hours

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

☒ Underlying hydrologic soil group
☒ Approximate depth to groundwater
☒ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
☒ Critical coarse sediment yield areas to be protected
☒ Existing topography
☒ Existing and proposed site drainage network and connections to drainage offsite
☒ Proposed grading
☒ Proposed impervious features
☒ Proposed design features and surface treatments used to minimize imperviousness
☒ Point(s) of Compliance (POC) for Hydromodification Management
☒ Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)
☒ Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail)

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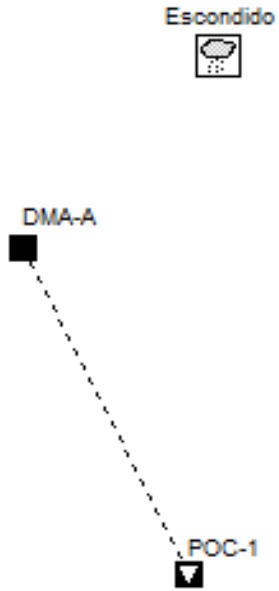
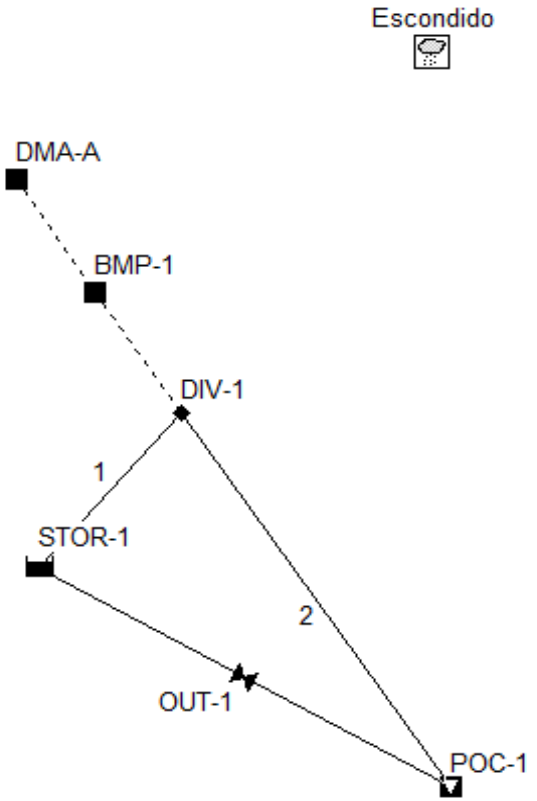
Attachment 2a

SWMM Model Schematics for Meyers Industrial - POC-1

PRE-PROJECT MODEL	POST-PROJECT MODEL
	

SWMM PRE-DEV INPUT PARAMETERS FOR POC-1

DMA	Tributary Area, A (ac)	Tributary Area, A (sf)	Overland Flow Length, L	Overland Flow Width, W=A/L	% Slope, S_o	Imp. Area (sf)	% Imperv	N-Imperv	N-Perv	Suction Head	Conductivity	Initial Deficit	Total Inflow	Separation Time
EX. DMA A	3.860629	168,169	25	6727	4.0	0.0	0.0%	0.012	0.030	9.0	0.025	0.33		
TOTAL	3.860629	168,169											0.00772	24

SWMM POST-DEV INPUT PARAMETERS FOR POC-1

DMA	Tributary Area, A (ac)	Tributary Area, A (sf)	Overland Flow Length, L	Overland Flow Width, W=A/L	% Slope, S_o	Imp. Area (sf)	% Imperv	N-Imperv	N-Perv	Suction Head	Conductivity	Initial Deficit	Total Inflow	Separation Time
DMA A	3.798646	165,469	50	3309	2.0	136,887	82.7%	0.012	0.08	9.0	0.025	0.33		
BMP 1	0.061983	2,700	52	52	0.0	2,700	100.0%	0.012	0.08	9.0	0.025	0.33		
TOTAL	3.860629	168,169				139,587							0.00772	24

Existing conditions: Mowed poor grass, Nperv = 0.03

Proposed conditions: Mix of shrubs and bushes, Nperv = 0.08

*See Manning's N Values for Overland Flow, Tory R. Walker Engineering

```
[TITLE]
;;Project Title/Notes
3446-Meyers Industrial
Pre-Project Condition POC-1

[OPTIONS]
;;Option             Value
FLOW_UNITS           CFS
INFILTRATION         GREEN_AMPT
FLOW_ROUTING         KINWAVE
LINK_OFFSETS         DEPTH
MIN_SLOPE            0
ALLOW_PONDING        NO
SKIP_STEADY_STATE    NO

START_DATE           09/24/1964
START_TIME           13:00:00
REPORT_START_DATE    09/24/1964
REPORT_START_TIME    13:00:00
END_DATE             05/23/2008
END_TIME             22:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          01:00:00
WET_STEP             00:15:00
DRY_STEP             04:00:00
ROUTING_STEP         0:01:00
RULE_STEP            00:00:00

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         12.557
MAX_TRIALS           8
HEAD_TOLERANCE       0.005
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              1

[EVAPORATION]
;;Data Source    Parameters
;;-------------- ----------------
MONTHLY          .06    .08    .11    .15    .17    .19    .19    .18    .15    .11    .08    .06
DRY_ONLY         NO
```

```
[RAINGAGES]
;;Name           Format    Interval SCF      Source
;;-------------- --------- ------ ------ ----------
Escondido        INTENSITY 1:00     1.0      TIMESERIES Escondido

[SUBCATCHMENTS]
;;Name           Rain Gage        Outlet           Area     %Imperv  Width    %Slope   CurbLen  SnowPack
;;-------------- ---------------- ---------------- -------- -------- -------- -------- -------- ----------------
DMA-A            Escondido        POC-1            3.863935 0        6733     4        0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo    PctRouted
;;-------------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
DMA-A            0.012      0.025      0.05       0.1        25         OUTLET

[INFILTRATION]
;;Subcatchment   Suction    Ksat       IMD
;;-------------- ---------- ---------- ----------
DMA-A            9          0.025      .33

[OUTFALLS]
;;Name           Elevation  Type       Stage Data       Gated    Route To
;;-------------- ---------- ---------- ---------------- -------- ----------------
;Basin 1
POC-1            0          FREE                        NO

[CURVES]
;;Name           Type       X-Value    Y-Value
;;-------------- ---------- ---------- ----------
OUTLETSTRUCTURE  Rating     0.000      0.000
OUTLETSTRUCTURE             0.500      0.191
OUTLETSTRUCTURE             1.000      0.297
OUTLETSTRUCTURE             1.500      0.374
OUTLETSTRUCTURE             2.000      0.438
OUTLETSTRUCTURE             2.500      0.494
OUTLETSTRUCTURE             3.000      0.543
OUTLETSTRUCTURE             3.500      0.589
OUTLETSTRUCTURE             4.000      0.631
OUTLETSTRUCTURE             4.500      8.170
OUTLETSTRUCTURE             5.000      8.720
OUTLETSTRUCTURE             5.500      9.119
OUTLETSTRUCTURE             5.667      9.243
;
VAULT            Storage    0          1500
VAULT                       5.67       1500

[TIMESERIES]
```

```
;;Name           Date       Time       Value
;;-------------- ---------- ---------- ----------
Escondido        FILE "J:\ACTIVE JOBS\3446 MEYERS\CIVIL\REPORTS\SWQMP\SWMM\Rain Gage\Escondido.dat"

[REPORT]
;;Reporting Options
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS 0.000 0.000 10000.000 10000.000
Units      None

[COORDINATES]
;;Node           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
POC-1            178.777            4094.579

[VERTICES]
;;Link           X-Coord            Y-Coord
;;-------------- ------------------ ------------------

[Polygons]
;;Subcatchment   X-Coord            Y-Coord
;;-------------- ------------------ ------------------
DMA-A            -640.138           5801.615

[SYMBOLS]
;;Gage           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
Escondido        340.254            6782.007
```

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
--------------------------------------------------------------

3446-Meyers Industrial
Pre-Project Condition POC-1


***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

****************
Analysis Options
****************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... NO
  Water Quality .......... NO
Infiltration Method ...... GREEN_AMPT
Starting Date ............ 09/24/1964 13:00:00
Ending Date .............. 05/23/2008 22:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 01:00:00
Wet Time Step ............ 00:15:00
Dry Time Step ............ 04:00:00


**************************        Volume         Depth
Runoff Quantity Continuity     acre-feet        inches
**************************     ---------       -------
Total Precipitation ......       196.777       611.120
Evaporation Loss .........         7.597        23.594
Infiltration Loss ........       147.760       458.889
Surface Runoff ...........        47.749       148.290
Final Storage ............         0.000         0.000
Continuity Error (%) .....        -3.216


**************************        Volume         Volume
Flow Routing Continuity        acre-feet      10^6 gal
**************************     ---------      ---------
Dry Weather Inflow .......         0.000         0.000
```

```
  Wet Weather Inflow .......        47.749        15.560
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........        47.749        15.560
  Flooding Loss ............         0.000         0.000
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.000         0.000
  Final Stored Volume ......         0.000         0.000
  Continuity Error (%) .....         0.000


  ***************************
  Subcatchment Runoff Summary
  ***************************

  ---------------------------------------------------------------------------------------------------------------------
---
                           Total      Total      Total      Total     Imperv       Perv      Total       Total     Peak
Runoff
                          Precip      Runon       Evap      Infil     Runoff     Runoff     Runoff      Runoff   Runoff
Coeff
  Subcatchment                in         in         in         in         in         in         in    10^6 gal      CFS
  ---------------------------------------------------------------------------------------------------------------------
---
  DMA-A                   611.12       0.00      23.59     458.89       0.00     148.29     148.29       15.56     3.15
0.243


  Analysis begun on:  Mon Jun  7 13:50:00 2021
  Analysis ended on:  Mon Jun  7 13:50:29 2021
  Total elapsed time: 00:00:29
```

```
[TITLE]
;;Project Title/Notes
3446-Meyers Industrial
Post-Project Condition

[OPTIONS]
;;Option             Value
FLOW_UNITS           CFS
INFILTRATION         GREEN_AMPT
FLOW_ROUTING         KINWAVE
LINK_OFFSETS         DEPTH
MIN_SLOPE            0
ALLOW_PONDING        NO
SKIP_STEADY_STATE    NO

START_DATE           09/24/1964
START_TIME           13:00:00
REPORT_START_DATE    09/24/1964
REPORT_START_TIME    13:00:00
END_DATE             05/23/2008
END_TIME             22:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          01:00:00
WET_STEP             00:15:00
DRY_STEP             04:00:00
ROUTING_STEP         0:01:00
RULE_STEP            00:00:00

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         12.557
MAX_TRIALS           8
HEAD_TOLERANCE       0.005
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              1

[EVAPORATION]
;;Data Source    Parameters
;;-------------- ----------------
MONTHLY          .06    .08    .11    .15    .17    .19    .19    .18    .15    .11    .08    .06
DRY_ONLY         NO
```

```
[RAINGAGES]
;;Name           Format    Interval SCF      Source
;;-------------- --------- ------ ------ ----------
Escondido        INTENSITY 1:00     1.0      TIMESERIES Escondido

[SUBCATCHMENTS]
;;Name           Rain Gage        Outlet           Area     %Imperv  Width    %Slope   CurbLen  SnowPack
;;-------------- ---------------- ---------------- -------- -------- -------- -------- -------- ----------------
DMA-A            Escondido        BMP-1            3.798646 82.7     3309     2        0
BMP-1            Escondido        DIV-1            0.061983 100      52       0        0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo    PctRouted
;;-------------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
DMA-A            0.012      0.08       0.05       0.1        25         OUTLET
BMP-1            .012       0.08       0.05       0.10       25         OUTLET

[INFILTRATION]
;;Subcatchment   Suction    Ksat       IMD
;;-------------- ---------- ---------- ----------
DMA-A            9          0.025      .33
BMP-1            9          0.025      0.33

[LID_CONTROLS]
;;Name           Type/Layer Parameters
;;-------------- ---------- ----------
BMP-1            RB
BMP-1            STORAGE    68         0.67       0.00       0
BMP-1            DRAIN      0.3744     0.5        0          0          0          0

[LID_USAGE]
;;Subcatchment   LID Process      Number  Area       Width      InitSat    FromImp    ToPerv     RptFile
DrainTo          FromPerv
;;-------------- ---------------- ------- ---------- ---------- ---------- ---------- ---------- ------------------------ ---
------------- ----------
BMP-1            BMP-1            1       2700       52         0          100        0          *                        *
0

[OUTFALLS]
;;Name           Elevation  Type       Stage Data       Gated    Route To
;;-------------- ---------- ---------- ---------------- -------- ----------------
;Basin 1
POC-1            0          FREE                        NO

[DIVIDERS]
;;Name           Elevation  Diverted Link    Type       Parameters
;;-------------- ---------- ---------------- ---------- ----------
```

```
DIV-1            0          1                CUTOFF     0.11165    0          0          0          0

[STORAGE]
;;Name           Elev.    MaxDepth   InitDepth  Shape      Curve Name/Params            N/A      Fevap    Psi      Ksat
IMD
;;-------------- -------- ---------- ---------- ---------- ---------------------------- -------- --------           --------
--------
STOR-1           0        3.67       0          TABULAR    STOR                         0        0

[CONDUITS]
;;Name           From Node        To Node          Length     Roughness  InOffset   OutOffset  InitFlow   MaxFlow
;;-------------- ---------------- ---------------- ---------- ---------- ---------- ---------- ---------- ----------
1                DIV-1            STOR-1           400        0.01       0          0          0          0
2                DIV-1            POC-1            100        0.01       0          0          0          0

[OUTLETS]
;;Name           From Node        To Node          Offset     Type            QTable/Qcoeff    Qexpon     Gated
;;-------------- ---------------- ---------------- ---------- --------------- ---------------- ---------- --------
OUT-1            STOR-1           POC-1            0          TABULAR/DEPTH   OUT-1                       NO

[XSECTIONS]
;;Link           Shape        Geom1            Geom2      Geom3      Geom4      Barrels    Culvert
;;-------------- ------------ ---------------- ---------- ---------- ---------- ---------- ----------
1                DUMMY        0                0          0          0          1
2                DUMMY        0                0          0          0          1

[CURVES]
;;Name           Type       X-Value    Y-Value
;;-------------- ---------- ---------- ----------
OUT-1            Rating     0.000      0.000
OUT-1                       0.250      1.204
OUT-1                       0.500      1.702
OUT-1                       0.750      2.085
OUT-1                       1.000      2.407
OUT-1                       1.250      2.692
OUT-1                       1.500      2.949
OUT-1                       1.750      3.185
OUT-1                       2.000      3.405
OUT-1                       2.250      3.611
OUT-1                       2.500      3.807
OUT-1                       2.750      3.992
OUT-1                       3.000      4.170
OUT-1                       3.250      4.761
OUT-1                       3.500      8.030
OUT-1                       3.670      11.188
;
STOR-1           Storage    0.0000     17650.1
STOR-1                      0.0833     17846.1
```

```
STOR-1                     0.1667     18042.1
STOR-1                     0.2500     18238.1
STOR-1                     0.3333     18434.0
STOR-1                     0.4167     18630.0
STOR-1                     0.5000     18826.0
STOR-1                     0.5833     19022.0
STOR-1                     0.6667     19218.0
STOR-1                     0.7500     19414.0
STOR-1                     0.8333     19610.0
STOR-1                     0.9167     19805.9
STOR-1                     1.0000     20001.9
STOR-1                     1.0833     20197.9
STOR-1                     1.1667     20393.9
STOR-1                     1.2500     20589.9
STOR-1                     1.3333     20785.9
STOR-1                     1.4167     20981.9
STOR-1                     1.5000     21177.8

[TIMESERIES]
;;Name           Date       Time       Value
;;-------------- ---------- ---------- ----------
Escondido        FILE "J:\ACTIVE JOBS\3446 MEYERS\CIVIL\REPORTS\SWQMP\SWMM\Rain Gage\Escondido.dat"

[REPORT]
;;Reporting Options
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS 0.000 0.000 10000.000 10000.000
Units      None

[COORDINATES]
;;Node           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
POC-1            1712.803           922.722
DIV-1            28.835             3367.935
STOR-1           -868.347           2352.941

[VERTICES]
;;Link           X-Coord            Y-Coord
;;-------------- ------------------ ------------------

[Polygons]
;;Subcatchment   X-Coord            Y-Coord
```

```
;;-------------- ------------------ ------------------
DMA-A            -1008.403          4901.961
BMP-1            -518.207           4159.664

[SYMBOLS]
;;Gage           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
Escondido        1455.172           5558.621
```

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
--------------------------------------------------------------

3446-Meyers Industrial
Post-Project Condition

WARNING 04: minimum elevation drop used for Conduit 1
WARNING 04: minimum elevation drop used for Conduit 2

***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

****************
Analysis Options
****************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ NO
  Water Quality .......... NO
Infiltration Method ...... GREEN_AMPT
Flow Routing Method ...... KINWAVE
Starting Date ............ 09/24/1964 13:00:00
Ending Date .............. 05/23/2008 22:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 01:00:00
Wet Time Step ............ 00:15:00
Dry Time Step ............ 04:00:00
Routing Time Step ........ 60.00 sec


*************************        Volume         Depth
Runoff Quantity Continuity     acre-feet        inches
*************************     ---------       -------
Total Precipitation ......       196.609       611.120
Evaporation Loss .........        22.332        69.416
Infiltration Loss ........        24.957        77.573
Surface Runoff ...........        10.315        32.062
LID Drainage .............       142.517       442.985
Final Storage ............         0.018         0.055
```

```
  Continuity Error (%) .....        -1.795


  **************************        Volume         Volume
  Flow Routing Continuity        acre-feet      10^6 gal
  **************************     ---------      ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......       152.832        49.802
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........         0.000         0.000
  External Outflow .........       152.829        49.802
  Flooding Loss ............         0.000         0.000
  Evaporation Loss .........         0.000         0.000
  Exfiltration Loss ........         0.000         0.000
  Initial Stored Volume ....         0.000         0.000
  Final Stored Volume ......         0.000         0.000
  Continuity Error (%) .....         0.002


  *******************************
  Highest Flow Instability Indexes
  *******************************
  All links are stable.


  ************************
  Routing Time Step Summary
  ************************
  Minimum Time Step           :    59.00 sec
  Average Time Step           :    60.00 sec
  Maximum Time Step           :    60.00 sec
  Percent in Steady State     :     0.00
  Average Iterations per Step :     1.00
  Percent Not Converging      :     0.00


  **************************
  Subcatchment Runoff Summary
  **************************

  ------------------------------------------------------------------------------------------------------------------
---
                           Total      Total      Total      Total     Imperv       Perv      Total       Total     Peak
Runoff
                          Precip      Runon       Evap      Infil     Runoff     Runoff     Runoff      Runoff   Runoff
Coeff
  Subcatchment                in         in         in         in         in         in         in    10^6 gal      CFS
```

DMA-A	611.12	0.00	70.55	78.84	447.41	25.46	472.87	48.77	3.19
0.774									
BMP-1	611.12	28979.83	0.00	0.00	0.00	0.00	29588.47	49.80	3.24
1.000									

****
LID Performance Summary
****

Subcatchment	LID Control	Total Inflow in	Evap Loss in	Infil Loss in	Surface Outflow in	Drain Outflow in	Initial Storage in	Final Storage in	Continuity Error %
BMP-1	BMP-1	29590.95	0.00	0.00	1997.06	27592.27	0.00	1.74	-0.00

****
Node Depth Summary
****

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min	Reported Max Depth Feet
POC-1	OUTFALL	0.00	0.00	0.00	0 00:00	0.00
DIV-1	DIVIDER	0.00	0.00	0.00	0 00:00	0.00
STOR-1	STORAGE	0.00	1.27	1.27	10332 04:19	1.08

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Flow Balance Error Percent
POC-1	OUTFALL	0.00	2.82	10332 04:19	0	49.8	0.000
DIV-1	DIVIDER	3.24	3.24	10332 03:31	49.8	49.8	0.000
STOR-1	STORAGE	0.00	3.13	10332 03:31	0	7.6	0.011

****
Node Flooding Summary
****

No nodes were flooded.

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
STOR-1	0.001	0	0	0	3.429	35	10332 04:18	2.71

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
POC-1	7.18	0.07	2.82	49.798
System	7.18	0.07	2.82	49.798

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
1	DUMMY	3.13	10332 03:31			
2	DUMMY	0.11	424 04:13			
OUT-1	DUMMY	2.71	10332 04:19			

****

```
  Conduit Surcharge Summary
  *************************

  No conduits were surcharged.


  Analysis begun on:  Fri Mar 25 11:29:41 2022
  Analysis ended on:  Fri Mar 25 11:30:21 2022
  Total elapsed time: 00:00:40
```

Pre-project Flow Frequency - Long-term Simulation

Pre-project

3446-Meyers Industrial

Statistics - Node POC-1 Total Inflow

Rank	Start Date	Event Duration (hours)	Event Peak (CFS)	Exceedance Frequency (percent)	Return Period (years)
1	1/6/1993	99	3.152	0.34	45
2	2/23/1971	7	2.898	0.67	22.5
3	2/15/1986	8	2.879	1.01	15
4	1/25/1995	15	2.647	1.35	11.25
5	8/26/2007	2	2.486	1.68	9
6	1/4/1995	8	2.423	2.02	7.5
7	2/14/1998	11	2.381	2.36	6.43
8	12/25/1983	14	2.356	2.69	5.63
9	11/19/1967	21	2.334	3.03	5
10	3/1/1983	43	2.205	3.37	4.5
11	1/16/1978	8	2.204	3.7	4.09
12	3/17/1978	36	2.184	4.04	3.75
13	4/20/1988	38	2.181	4.38	3.46
14	12/5/1966	47	2.166	4.71	3.21
15	2/9/1981	2	2.091	5.05	3
16	1/31/2007	1	2.088	5.39	2.81
17	11/14/1972	2	2.062	5.72	2.65
18	11/25/1983	1	2.047	6.06	2.5
19	4/11/1967	20	1.976	6.4	2.37
20	1/11/2005	8	1.904	6.73	2.25
21	1/9/2005	19	1.9	7.07	2.14
22	1/24/1969	35	1.816	7.41	2.05
23	1/9/1998	26	1.795	7.74	1.96
24	2/16/1980	102	1.789	8.08	1.88
25	12/18/1967	25	1.746	8.42	1.8
26	1/28/1980	48	1.744	8.75	1.73
27	1/12/1993	31	1.742	9.09	1.67
28	11/30/2007	15	1.722	9.43	1.61
29	3/2/1980	7	1.702	9.76	1.55
30	3/20/1991	20	1.696	10.1	1.5
31	10/18/2004	3	1.688	10.44	1.45
32	2/15/1992	5	1.638	10.77	1.41
33	2/3/1998	5	1.636	11.11	1.36
34	10/19/2004	25	1.599	11.45	1.32
35	2/8/1993	11	1.58	11.78	1.29
36	11/22/1965	26	1.562	12.12	1.25
37	11/25/1985	7	1.554	12.46	1.22
38	3/19/1981	2	1.537	12.79	1.18
39	12/4/1974	2	1.456	13.13	1.15
40	11/14/1993	1	1.419	13.47	1.13
41	2/27/1983	5	1.418	13.8	1.1
42	3/18/1982	18	1.414	14.14	1.07
43	4/4/2006	16	1.406	14.48	1.05
44	10/27/2004	6	1.375	14.81	1.02
45	2/5/1978	22	1.371	15.15	1

10-year Q:	2.558	cfs
5-year Q:	2.334	cfs
2-year Q:	1.804	cfs
Lower Flow Threshold:	10%	
$0.1xQ_2$ (Pre):	0.180	cfs

Post-project Flow Frequency - Long-term Simulation

Post-project (Mitigated)

3446-Meyers Industrial

Statistics - Node POC-1 Total Inflow

Rank	Start Date	Event Duration (hours)	Event Peak (CFS)	Exceedance Frequency (percent)	Return Period (years)
1	1/6/1993	339	2.608	0.12	45
2	1/3/1995	153	2.378	0.25	22.5
3	12/3/1966	133	2.262	0.37	15
4	1/14/1978	90	2.045	0.49	11.25
5	11/19/1967	110	2.007	0.62	9
6	1/27/1980	108	1.889	0.74	7.5
7	1/24/1969	129	1.803	0.86	6.43
8	11/22/1965	100	1.591	0.99	5.63
9	2/14/1986	57	1.514	1.11	5
10	1/5/1979	67	1.499	1.23	4.5
11	2/13/1980	226	1.438	1.36	4.09
12	11/30/2007	61	1.435	1.48	3.75
13	3/11/1978	192	1.426	1.6	3.46
14	1/7/2005	147	1.362	1.73	3.21
15	3/3/1995	113	1.326	1.85	3
16	2/23/1971	52	1.158	1.98	2.81
17	1/7/1980	149	1.122	2.1	2.65
18	2/28/1970	229	1.095	2.22	2.5
19	10/27/2004	57	1.026	2.35	2.37
20	2/27/1991	91	0.881	2.47	2.25
21	11/24/1985	68	0.866	2.59	2.14
22	3/6/1974	86	0.715	2.72	2.05
23	3/2/1980	120	0.649	2.84	1.96
24	5/8/1977	63	0.599	2.96	1.88
25	2/18/2005	162	0.589	3.09	1.8
26	11/21/1996	58	0.565	3.21	1.73
27	1/22/1967	99	0.54	3.33	1.67
28	8/26/2007	44	0.496	3.46	1.61
29	2/24/1983	254	0.382	3.58	1.55
30	2/14/1998	168	0.376	3.7	1.5
31	2/22/1969	137	0.358	3.83	1.45
32	3/15/1982	139	0.355	3.95	1.41
33	11/29/1985	120	0.317	4.07	1.36
34	2/7/1993	74	0.258	4.2	1.32
35	3/19/1991	93	0.199	4.32	1.29
36	2/8/1981	62	0.198	4.44	1.25
37	3/25/1991	99	0.196	4.57	1.22
38	1/31/1996	69	0.192	4.69	1.18
39	12/24/1983	79	0.189	4.81	1.15
40	12/16/1967	116	0.189	4.94	1.13
41	12/9/1965	195	0.188	5.06	1.1
42	11/28/1970	99	0.186	5.19	1.07
43	11/17/1986	50	0.186	5.31	1.05
44	3/11/1995	60	0.185	5.43	1.02
45	12/4/1974	50	0.185	5.56	1

10-year Q: 2.024 cfs

5-year Q: 1.514 cfs

2-year Q: 0.678 cfs

Lower Flow Threshold: 10%

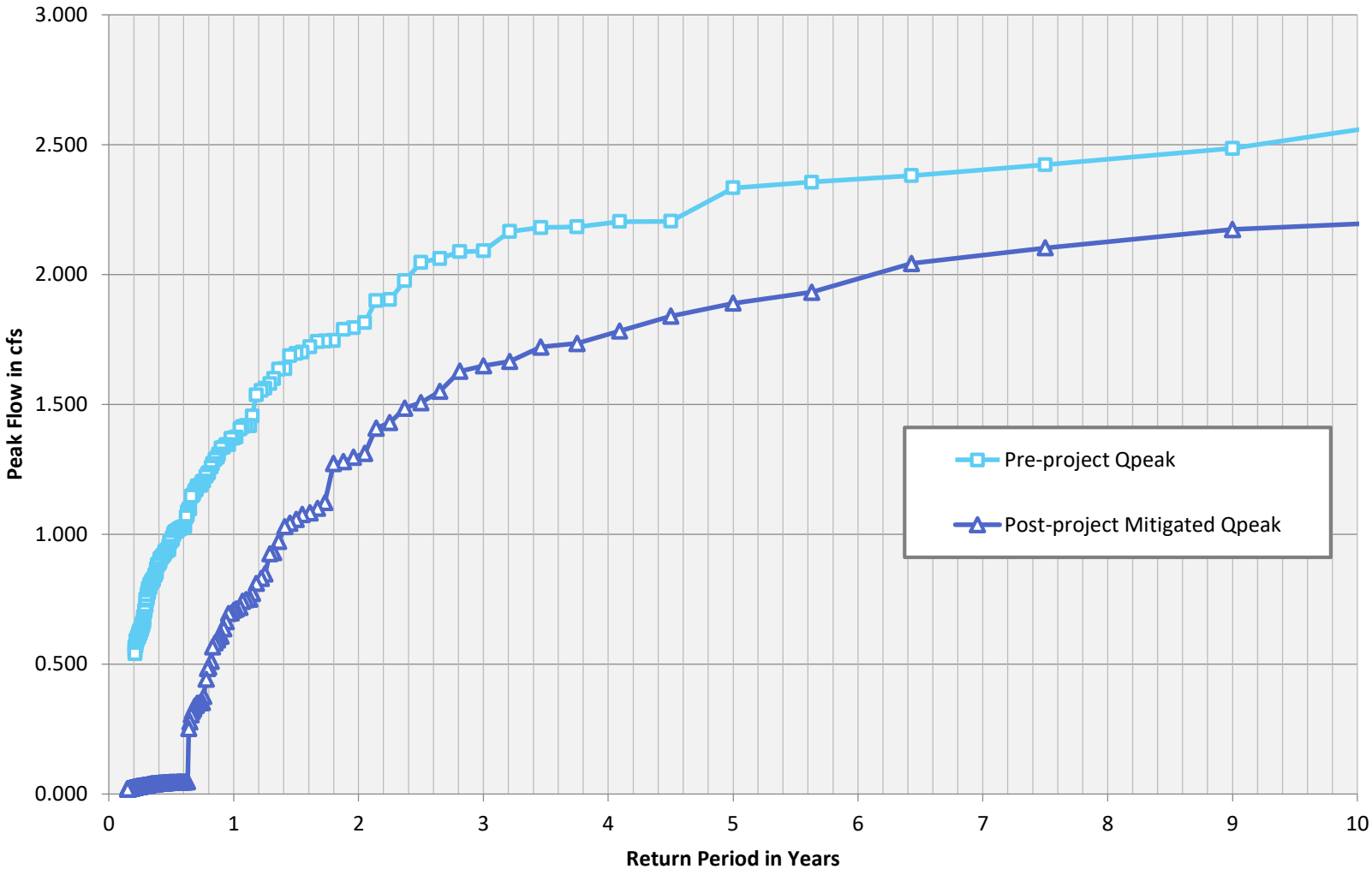
$0.1xQ_2$ (Pre): 0.068 cfs

Peak Flow Frequency Summary

Q_2 to Q_{10} Comparison Table - POC-1

Return Period	Existing Condition (cfs)	Mitigated Condition (cfs)	Reduction, Exist - Mitigated (cfs)
LF = 0.1xQ_2	0.180	0.130	0.050
2-year	1.804	1.301	0.504
3-year	2.091	1.626	0.465
4-year	2.199	1.707	0.492
5-year	2.334	1.888	0.446
6-year	2.368	1.974	0.393
7-year	2.403	2.064	0.339
8-year	2.444	2.116	0.328
9-year	2.486	2.167	0.319
10-year	2.558	2.189	0.368

POC-1 Peak Flow Frequency Curves



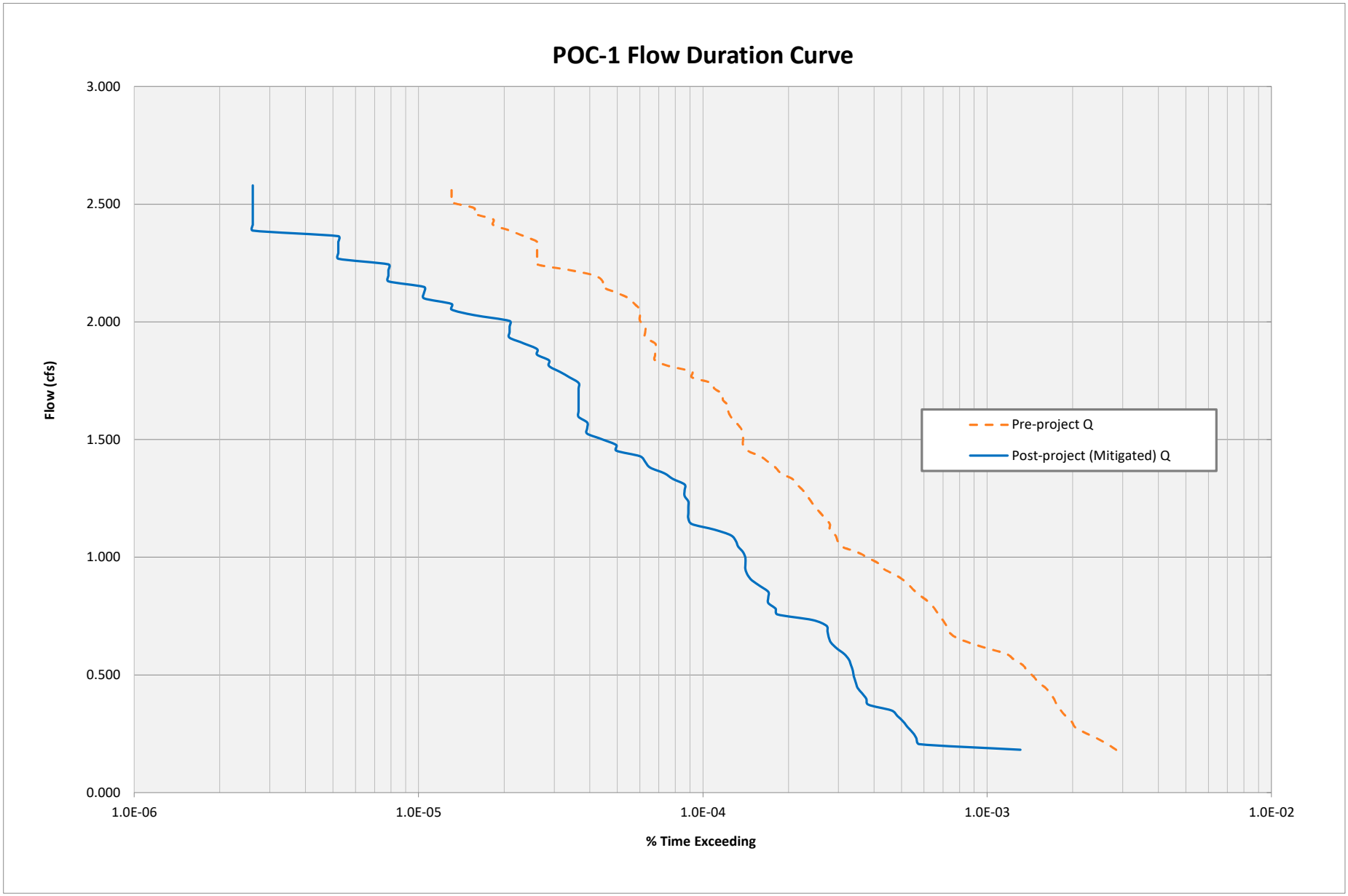
Low Flow Threshold:	10%	
0.1xQ2 (Pre):	0.182	cfs
Q10 (Pre):	2.580	cfs
# of Ordinates:	100	
Incremental Q (Pre):	0.02398	cfs
Total Hourly Data:	382736	hours

The proposed BMP: **PASSED**

Interval	Pre-project Flow (cfs)	Pre-project Hours	Pre-project % Time Exceeding	Post-project Hours	Post-project % Time Exceeding	Percentage	Pass/Fail
0	0.182	1087	2.84E-03	501	1.31E-03	46%	Pass
1	0.206	1014	2.65E-03	221	5.77E-04	22%	Pass
2	0.230	934	2.44E-03	216	5.64E-04	23%	Pass
3	0.254	847	2.21E-03	210	5.49E-04	25%	Pass
4	0.278	781	2.04E-03	201	5.25E-04	26%	Pass
5	0.302	758	1.98E-03	194	5.07E-04	26%	Pass
6	0.326	722	1.89E-03	185	4.83E-04	26%	Pass
7	0.350	694	1.81E-03	176	4.60E-04	25%	Pass
8	0.374	672	1.76E-03	146	3.81E-04	22%	Pass
9	0.398	658	1.72E-03	144	3.76E-04	22%	Pass
10	0.422	638	1.67E-03	139	3.63E-04	22%	Pass
11	0.446	613	1.60E-03	134	3.50E-04	22%	Pass
12	0.470	578	1.51E-03	132	3.45E-04	23%	Pass
13	0.494	557	1.46E-03	130	3.40E-04	23%	Pass
14	0.518	529	1.38E-03	129	3.37E-04	24%	Pass
15	0.542	511	1.34E-03	127	3.32E-04	25%	Pass
16	0.566	475	1.24E-03	125	3.27E-04	26%	Pass
17	0.589	447	1.17E-03	120	3.14E-04	27%	Pass
18	0.613	382	9.98E-04	113	2.95E-04	30%	Pass
19	0.637	330	8.62E-04	108	2.82E-04	33%	Pass
20	0.661	295	7.71E-04	106	2.77E-04	36%	Pass
21	0.685	280	7.32E-04	105	2.74E-04	38%	Pass
22	0.709	275	7.19E-04	104	2.72E-04	38%	Pass
23	0.733	267	6.98E-04	93	2.43E-04	35%	Pass
24	0.757	258	6.74E-04	70	1.83E-04	27%	Pass
25	0.781	250	6.53E-04	69	1.80E-04	28%	Pass
26	0.805	241	6.30E-04	65	1.70E-04	27%	Pass
27	0.829	227	5.93E-04	65	1.70E-04	29%	Pass
28	0.853	214	5.59E-04	65	1.70E-04	30%	Pass
29	0.877	205	5.36E-04	61	1.59E-04	30%	Pass
30	0.901	195	5.09E-04	57	1.49E-04	29%	Pass
31	0.925	182	4.76E-04	55	1.44E-04	30%	Pass
32	0.949	166	4.34E-04	54	1.41E-04	33%	Pass
33	0.973	159	4.15E-04	54	1.41E-04	34%	Pass
34	0.997	146	3.81E-04	54	1.41E-04	37%	Pass
35	1.021	134	3.50E-04	53	1.38E-04	40%	Pass
36	1.045	118	3.08E-04	51	1.33E-04	43%	Pass

37	1.069	114	2.98E-04	50	1.31E-04	44%	Pass
38	1.093	112	2.93E-04	48	1.25E-04	43%	Pass
39	1.117	107	2.80E-04	42	1.10E-04	39%	Pass
40	1.141	107	2.80E-04	35	9.14E-05	33%	Pass
41	1.165	103	2.69E-04	34	8.88E-05	33%	Pass
42	1.189	99	2.59E-04	34	8.88E-05	34%	Pass
43	1.213	95	2.48E-04	34	8.88E-05	36%	Pass
44	1.237	92	2.40E-04	34	8.88E-05	37%	Pass
45	1.261	89	2.33E-04	33	8.62E-05	37%	Pass
46	1.285	86	2.25E-04	33	8.62E-05	38%	Pass
47	1.309	82	2.14E-04	33	8.62E-05	40%	Pass
48	1.333	79	2.06E-04	30	7.84E-05	38%	Pass
49	1.357	72	1.88E-04	28	7.32E-05	39%	Pass
50	1.381	69	1.80E-04	25	6.53E-05	36%	Pass
51	1.405	65	1.70E-04	24	6.27E-05	37%	Pass
52	1.429	61	1.59E-04	23	6.01E-05	38%	Pass
53	1.453	55	1.44E-04	19	4.96E-05	35%	Pass
54	1.477	53	1.38E-04	19	4.96E-05	36%	Pass
55	1.501	53	1.38E-04	17	4.44E-05	32%	Pass
56	1.525	53	1.38E-04	15	3.92E-05	28%	Pass
57	1.549	52	1.36E-04	15	3.92E-05	29%	Pass
58	1.573	50	1.31E-04	15	3.92E-05	30%	Pass
59	1.597	48	1.25E-04	14	3.66E-05	29%	Pass
60	1.621	47	1.23E-04	14	3.66E-05	30%	Pass
61	1.645	47	1.23E-04	14	3.66E-05	30%	Pass
62	1.669	45	1.18E-04	14	3.66E-05	31%	Pass
63	1.693	45	1.18E-04	14	3.66E-05	31%	Pass
64	1.717	42	1.10E-04	14	3.66E-05	33%	Pass
65	1.741	41	1.07E-04	14	3.66E-05	34%	Pass
66	1.764	35	9.14E-05	13	3.40E-05	37%	Pass
67	1.788	35	9.14E-05	12	3.14E-05	34%	Pass
68	1.812	29	7.58E-05	11	2.87E-05	38%	Pass
69	1.836	26	6.79E-05	11	2.87E-05	42%	Pass
70	1.860	26	6.79E-05	10	2.61E-05	38%	Pass
71	1.884	26	6.79E-05	10	2.61E-05	38%	Pass
72	1.908	26	6.79E-05	9	2.35E-05	35%	Pass
73	1.932	24	6.27E-05	8	2.09E-05	33%	Pass
74	1.956	24	6.27E-05	8	2.09E-05	33%	Pass
75	1.980	24	6.27E-05	8	2.09E-05	33%	Pass
76	2.004	23	6.01E-05	8	2.09E-05	35%	Pass
77	2.028	23	6.01E-05	6	1.57E-05	26%	Pass
78	2.052	23	6.01E-05	5	1.31E-05	22%	Pass
79	2.076	22	5.75E-05	5	1.31E-05	23%	Pass
80	2.100	21	5.49E-05	4	1.05E-05	19%	Pass
81	2.124	19	4.96E-05	4	1.05E-05	21%	Pass
82	2.148	17	4.44E-05	4	1.05E-05	24%	Pass
83	2.172	17	4.44E-05	3	7.84E-06	18%	Pass

84	2.196	16	4.18E-05	3	7.84E-06	19%	Pass
85	2.220	13	3.40E-05	3	7.84E-06	23%	Pass
86	2.244	10	2.61E-05	3	7.84E-06	30%	Pass
87	2.268	10	2.61E-05	2	5.23E-06	20%	Pass
88	2.292	10	2.61E-05	2	5.23E-06	20%	Pass
89	2.316	10	2.61E-05	2	5.23E-06	20%	Pass
90	2.340	10	2.61E-05	2	5.23E-06	20%	Pass
91	2.364	9	2.35E-05	2	5.23E-06	22%	Pass
92	2.388	8	2.09E-05	1	2.61E-06	13%	Pass
93	2.412	7	1.83E-05	1	2.61E-06	14%	Pass
94	2.436	7	1.83E-05	1	2.61E-06	14%	Pass
95	2.460	6	1.57E-05	1	2.61E-06	17%	Pass
96	2.484	6	1.57E-05	1	2.61E-06	17%	Pass
97	2.508	5	1.31E-05	1	2.61E-06	20%	Pass
98	2.532	5	1.31E-05	1	2.61E-06	20%	Pass
99	2.556	5	1.31E-05	1	2.61E-06	20%	Pass
100	2.580	5	1.31E-05	1	2.61E-06	20%	Pass


POC-1 Flow Duration Curve
3.000
2.500
2.000
1.500
1.000
0.500
0.000
Flow (cfs)
1.0E-06
1.0E-05
1.0E-04
1.0E-03
1.0E-02
% Time Exceeding
Pre-project Q
Post-project (Mitigated) Q

SWMM Model Flow Coefficient Calculation

BMP-1 VAULT PARAMETER	ABBREV.	Bio-Retention Cell	
Ponding Depth	PD	68.00	in
Bioretention Soil Layer	S	0	in
Gravel Layer	G	0	in
TOTAL		5.67	ft
		68	in
Orifice Coefficient	c_g	0.6	--
Low Flow Orifice Diameter	D	1.75	in
Drain exponent	n	0.5	--
Flow Rate (volumetric)	Q	0.190	cfs
Ponding Depth Surface Area	A_{PD}	2,700	ft^2
Bioretention Surface Area	A_S, A_G	2,700	ft^2
	A_S, A_G	0.0620	ac
Porosity of Bioretention Soil		1.00	-
Flow Rate (per unit area)	q	3.043	in/hr
Effective Ponding Depth	PD_{eff}	**68.00**	in
Flow Coefficient	C	**0.3744**	--
Ponding Depth @ $V_{WQ, required}$	$PD_{orificeFL}$	24	in
Cutoff Flow	Q_{cutoff}	0.11165	cfs

Outlet Structure for Discharge of BMP-1

Discharge vs. Elevation Table

Slot orifice		Emergency Overflow		Tank Dimensions	
No.:	1	Invert:	5.17 ft	Area:	2,700 sq-ft
Invert:	2.00 ft	L:	6 ft	Height:	5.67 ft
Length:	2.00 ft	C_w:	3.1	Total Vol:	15,309 cu-ft
Height	0.25 ft				
A:	0.50 sf				
C_o:	0.6				

***Note: h = head above the invert of the lowest surface discharge opening.**

H (ft)	h* (ft)	$Q_{slot\text{-}mid}$ (cfs)	Q_{emerg} (cfs)	Q_{total} (cfs)
2.0000	0.000	0.000	0.000	0.000
2.2500	0.250	1.204	0.000	1.204
2.5000	0.500	1.702	0.000	1.702
2.7500	0.750	2.085	0.000	2.085
3.0000	1.000	2.407	0.000	2.407
3.2500	1.250	2.692	0.000	2.692
3.5000	1.500	2.949	0.000	2.949
3.7500	1.750	3.185	0.000	3.185
4.0000	2.000	3.405	0.000	3.405
4.2500	2.250	3.611	0.000	3.611
4.5000	2.500	3.807	0.000	3.807
4.7500	2.750	3.992	0.000	3.992
5.0000	3.000	4.170	0.000	4.170
5.2500	3.250	4.340	0.421	4.761
5.5000	3.500	4.504	3.526	8.030
5.6700	3.670	4.612	6.576	11.188

Note:

1. Weir equation, $Q=C_wL_e(h)^{3/2}$
2. Orifice equation, $Q=C_oA_e(2gh)^{1/2}$
3. Slot orifice acts as a weir when $h^* < h_{slot}$; slot orifice acts as an orifice when $h^* \geq h_{slot}$

Drawdown Calculation - BMP-1

Surface Ponding Depth:	PD	68	in
Ponding Depth Surface Area:	A_{PD}	2700	ft^2
Surface Ponding Volume:	V_{PD}	15,300	ft^3
Low Flow Orifice Diameter:	D	1.75	in
Flow Rate (volumetric):	Q	0.190	ft^3/s
Drawdown Time:		22.34	hrs

Manning's *n* Values for Overland Flow[1]

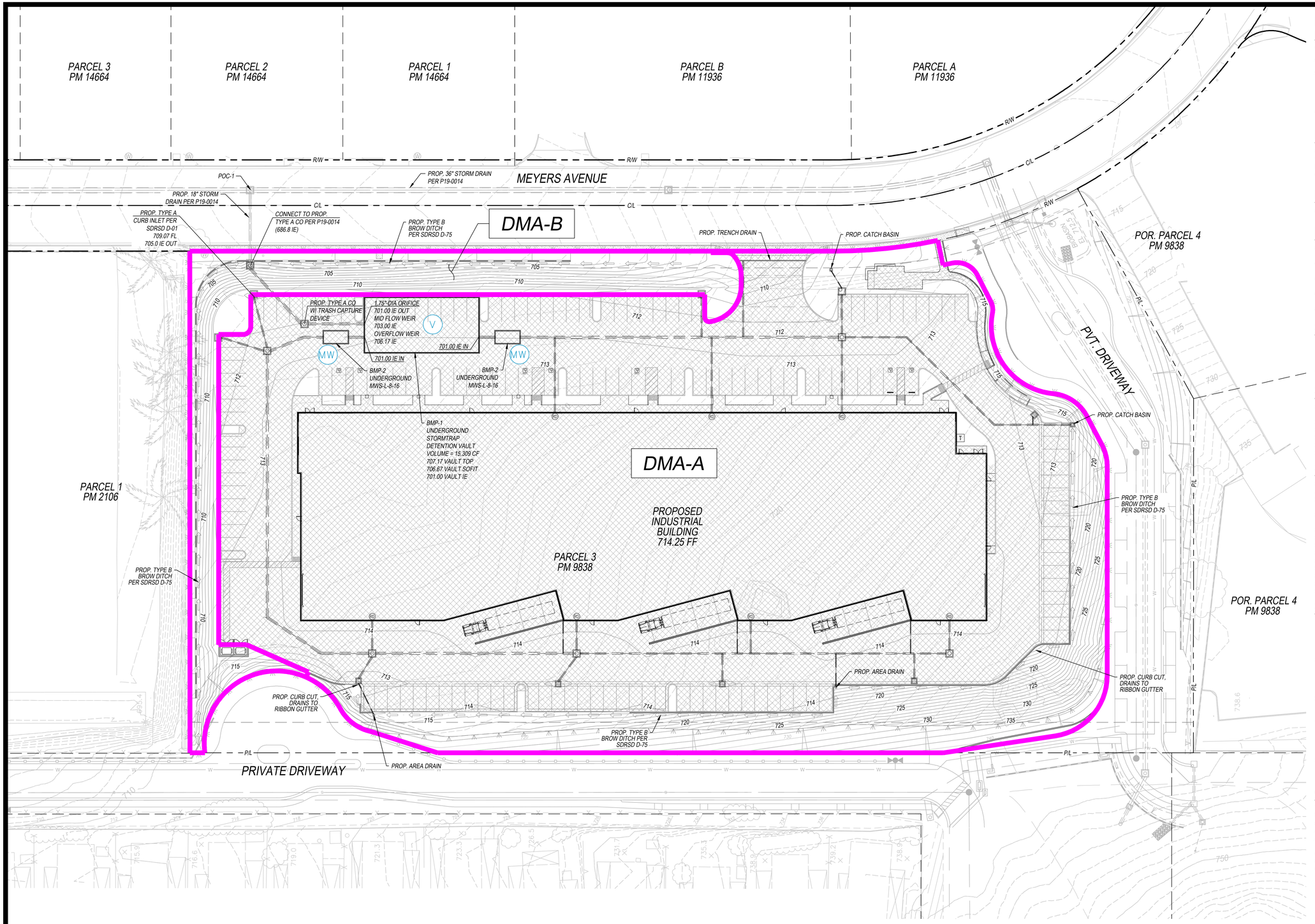
The BMP Design Manuals within the County of San Diego allow for a land surface description other than short prairie grass to be used for hydromodification BMP design only if documentation provided is consistent with Table A.6 of the SWMM 5 User's Manual.

In January 2016, the EPA released the SWMM Reference Manual Volume I – Hydrology (SWMM Hydrology Reference Manual). The SWMM Hydrology Reference Manual complements the SWMM 5 User's Manual by providing an in-depth description of the program's hydrologic components. Table 3-5 of the SWMM Hydrology Reference Manual expounds upon Table A.6 of the SWMM 5 User's Manual by providing Manning's *n* values for additional overland flow surfaces. Therefore, in order to provide SWMM users with a wider range of land surfaces suitable for local application and to provide Copermittees with confidence in the design parameters, we recommend using the values published by Yen and Chow in Table 3-5 of the EPA SWMM Reference Manual Volume I – Hydrology. The values are provided in the table below:

Overland Surface	**Manning value (*n*)**
Smooth asphalt pavement	0.010
Smooth impervious surface	0.011
Tar and sand pavement	0.012
Concrete pavement	0.014
Rough impervious surface	0.015
Smooth bare packed soil	0.017
Moderate bare packed soil	0.025
Rough bare packed soil	0.032
Gravel soil	0.025
Mowed poor grass	0.030
Average grass, closely clipped sod	0.040
Pasture	0.040
Timberland	0.060
Dense grass	0.060
Shrubs and bushes	0.080
Land Use	
Business	0.014
Semibusiness	0.022
Industrial	0.020
Dense residential	0.025
Suburban residential	0.030
Parks and lawns	0.040

[1]Content summarized from *Improving Accuracy in Continuous Simulation Modeling: Guidance for Selecting Pervious Overland Flow Manning's n Values in the San Diego Region* (TRWE, 2016).

Attachment 2b



LEGEND

DESCRIPTION	SYMBOL
RIGHT-OF-WAY	
PROPERTY LINE	
DMA BOUNDARY	
FLOWLINE	
PROPOSED BROW DITCH	
PROPOSED IMPERVIOUS AREA	

HYDROLOGIC SOIL GROUP

HYDROLOGIC SOIL TYPE: B & C*
*FOR THE PURPOSE OF DRAINAGE CALCS, THE ENTIRE SITE WILL BE MODELED WITH TYPE D SOILS. SEE "PRELIMINARY HYDROLOGY AND HYDRAULICS STUDY FOR MEYERS INDUSTRIAL" BY PLSA DATED APRIL 2022 FOR DISCUSSION.

DEPTH TO GROUNDWATER

DEPTH TO GROUNDWATER > 20 FT

PROJECT CHARACTERISTICS

PARCEL AREA:	5.00 AC
PROPOSED DRAINAGE BASIN:	4.26 AC
DISTURBED AREA:	4.10 AC
PROPOSED IMPERVIOUS AREA:	3.20 AC
PROPOSED LANDSCAPE AREA:	0.90 AC

STRUCTURAL BMPS

UNDERGROUND DETENTION VAULT (HU-1) (V)
MODULAR WELTAND SYSTEM (BF-3) (MW)

SITE DESIGN BMPS

SD-1	MAINTAIN NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES
SD-2	CONSERVE NATURAL AREAS, SOILS AND VEGETATION
SD-3	MINIMIZE IMPERVIOUS AREAS
SD-4	MINIMIZE SOIL COMPACTION
SD-5	IMPERVIOUS AREA DISPERSION
SD-7	LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES

SOURCE CONTROL BMPS

SC-1	PREVENTION OF ILLICIT DISCHARGES TO THE MS4
SC-2	STORM DRAIN STENCILING AND SIGNAGE
SC-5	PROTECT TRASH STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF OR WIND DISPERSAL
SC-6	ADDITIONAL BMPS BASED ON POTENTIAL RUNOFF POLLUTANTS:
SC-6A	ONSITE STORM DRAIN INLETS
SC-6D	NEED FOR FUTURE INDOOR & STRUCTURAL PEST CONTROL
SC-6E	LANDSCAPE/OUTDOOR PESTICIDE USE
SC-6H	REFUSE AREAS
SC-6I	INDUSTRIAL PROCESSES
SC-6N	LOADING DOCKS
SC-6O	FIRE SPRINKLER TEST WATER
SC-6P	MISCELLANEOUS DRAIN OR WASH WATER
SC-6Q	PLAZAS, SIDEWALKS, AND PARKING LOTS

SELF-MITIGATING DMAS

1. VEGETATION IN THE NATURAL OR LANDSCAPED AREA SHALL BE NATIVE AND/OR NON-NATIVE/NON-INVASIVE DROUGHT TOLERANT SPECIES THAT DO NOT REQUIRE REGULAR APPLICATION OF FERTILIZERS AND PESTICIDES.
2. SOILS SHALL BE UNDISTURBED NATIVE TOPSOIL, OR DISTURBED SOILS SHALL BE AMENDED AND AERATED TO PROMOTE WATER RETENTION CHARACTERISTICS EQUIVALENT TO UNDISTURBED NATIVE TOPSOIL.
3. THE INCIDENTAL IMPERVIOUS AREA SHALL BE LESS THAN 5 PERCENT OF THE SELF-MITIGATING AREA.
4. IMPERVIOUS AREA WITHIN THE SELF-MITIGATED AREA SHALL NOT BE HYDRAULICALLY CONNECTED TO OTHER IMPERVIOUS AREA UNLESS IT IS A STORM WATER CONVEYANCE SYSTEM (SUCH AS A BROW DITCH).
5. THE SELF-MITIGATING AREA SHALL BE HYDRAULICALLY SEPARATE FROM DMAS THAT CONTAIN PERMANENT STORM WATER POLLUTANT CONTROL BMPS.

CCSYAS

THE PROJECT IS ENTIRELY EXEMPT/NOT SUBJECT TO RPO REQUIREMENTS WITHOUT UTILIZATION OF RPO EXEMPTIONS AS THERE ARE NO AREAS ONSITE OR UPSTREAM TO PROTECT; THEREFORE THE PROJECT EFFECTIVELY AVOIDS AND BYPASSES SOURCES OF MAPPED CCSYAS PER APPROACHES OUTLINED IN APPENDIX H.2 AND H.3 AS NONE WERE IDENTIFIED.

REFER TO THE WMAA MAP INCLUDED IN THE "CITY OF ESCONDIDO PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP FOR MEYERS INDUSTRIAL" BY PASCO LARET SUITER & ASSOCIATES.

30' 15" 0 30' 60' 90'
SCALE: 1" = 30'

SUMMARY OF DRAINAGE MANAGEMENT AREAS

DMA	DRAINAGE AREA (AC)	IMPERVIOUS AREA (AC)	% IMP	DMA RUNOFF COEFFICIENT, C	DCV (CU-FT)	TREATED BY (BMP ID)	STRUCTURAL BMP TYPE	STRUCTURAL BMP PERFORMANCE
DMA-A	3.86	3.20	83%	0.76	6,424 CU-FT	BMP-2 & BMP-3	PROPRIETARY BIOFILTRATION (BF-3)	WQ TREATMENT
DMA-B	0.40	0.00	0%	- -	- -	N/A - SELF-MITIGATING	- -	- -

PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

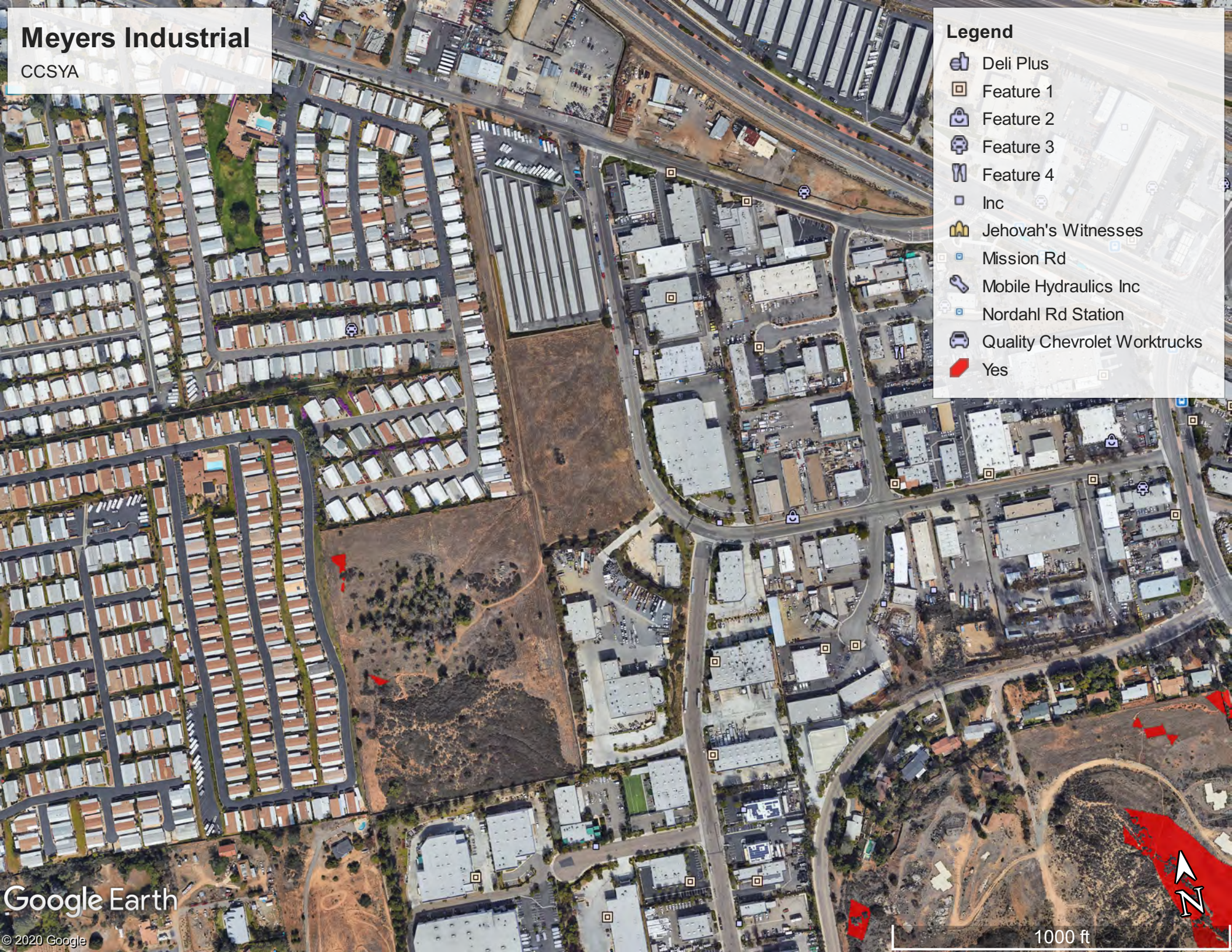
DMA & HYDROMODIFICATION MANAGEMENT EXHIBIT

MEYERS AVE
MEYERS AVE
ESCONDIDO, CA 92029
PLSA JOB NO. 3446
SCALE 1"=30'
APRIL 2022
SHEET 1 OF 1

Attachment 2c

Meyers Industrial

CCSYA



Attachment 2d

Not performed

Attachment 2e

N/A, BMPs will drain in less than 96 hours

ATTACHMENT 3

Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Plan (Required)	☒ Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Storm Water Control Facilities Maintenance Agreement (SWCFMA) (when applicable)	☐ Included ☐ Not Applicable

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Attachment 3a must identify:

- ☒ Specific maintenance indicators and actions for proposed structural BMP(s). This must be based on Section 7.7 of the Storm Water Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- ☒ How to access the structural BMP(s) to inspect and perform maintenance
- ☒ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☒ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☒ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☒ Recommended equipment to perform maintenance
- ☒ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For all Structural BMPs, Attachment 3b must include a draft maintenance agreement in the City's standard format (PDP applicant to contact City staff to obtain the current maintenance agreement forms or download from City's website).

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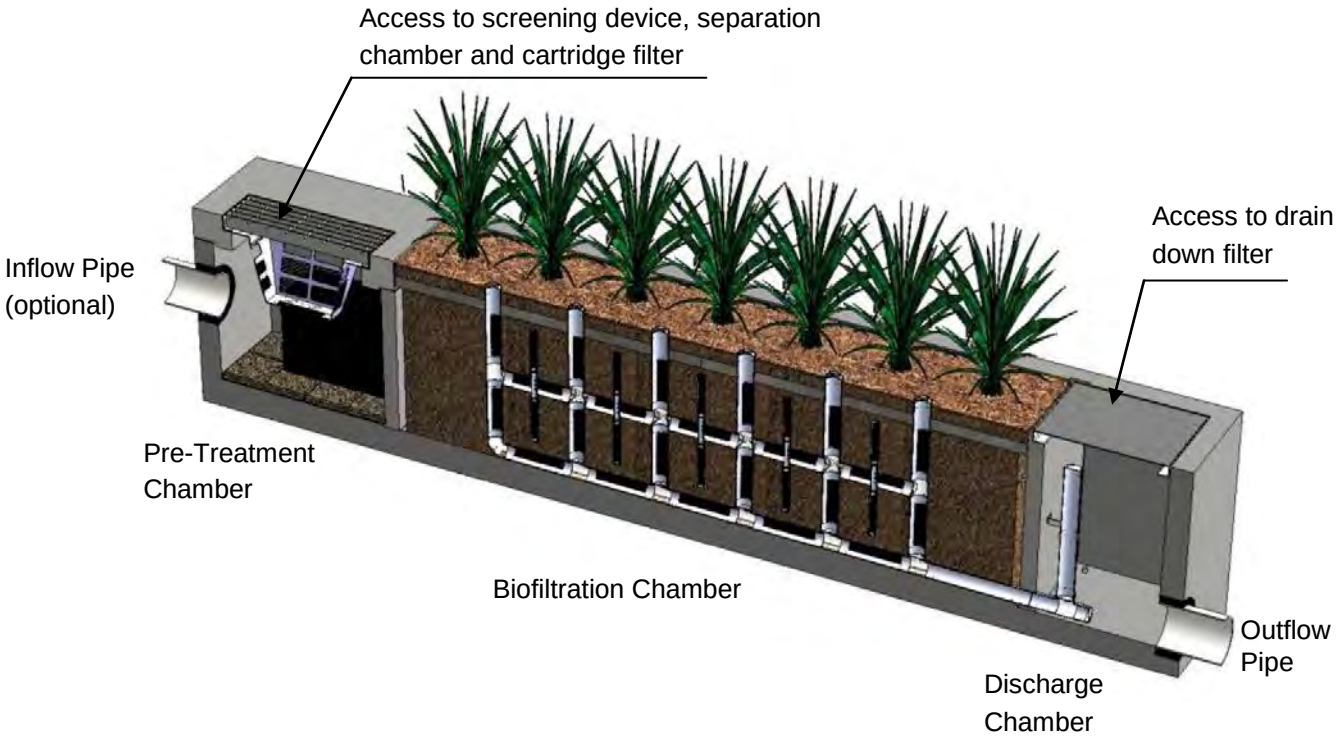
Maintenance Guidelines for Modular Wetland System - Linear

Maintenance Summary

- Remove Trash from Screening Device – average maintenance interval is 6 to 12 months.
  - (*5 minute average service time*).
- Remove Sediment from Separation Chamber – average maintenance interval is 12 to 24 months.
  - (*10 minute average service time*).
- Replace Cartridge Filter Media – average maintenance interval 12 to 24 months.
  - (*10-15 minute per cartridge average service time*).
- Replace Drain Down Filter Media – average maintenance interval is 12 to 24 months.
  - (*5 minute average service time*).
- Trim Vegetation – average maintenance interval is 6 to 12 months.
  - (*Service time varies*).

System Diagram



Maintenance Procedures

Screening Device

1. Remove grate or manhole cover to gain access to the screening device in the Pre-Treatment Chamber. Vault type units do not have screening device. Maintenance can be performed without entry.
2. Remove all pollutants collected by the screening device. Removal can be done manually or with the use of a vacuum truck. The hose of the vacuum truck will not damage the screening device.
3. Screening device can easily be removed from the Pre-Treatment Chamber to gain access to separation chamber and media filters below. Replace grate or manhole cover when completed.

Separation Chamber

1. Perform maintenance procedures of screening device listed above before maintaining the separation chamber.
2. With a pressure washer spray down pollutants accumulated on walls and cartridge filters.
3. Vacuum out Separation Chamber and remove all accumulated pollutants. Replace screening device, grate or manhole cover when completed.

Cartridge Filters

1. Perform maintenance procedures on screening device and separation chamber before maintaining cartridge filters.
2. Enter separation chamber.
3. Unscrew the two bolts holding the lid on each cartridge filter and remove lid.
4. Remove each of 4 to 8 media cages holding the media in place.
5. Spray down the cartridge filter to remove any accumulated pollutants.
6. Vacuum out old media and accumulated pollutants.
7. Reinstall media cages and fill with new media from manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase.
8. Replace the lid and tighten down bolts. Replace screening device, grate or manhole cover when completed.

Drain Down Filter

1. Remove hatch or manhole cover over discharge chamber and enter chamber.
2. Unlock and lift drain down filter housing and remove old media block. Replace with new media block. Lower drain down filter housing and lock into place.
3. Exit chamber and replace hatch or manhole cover.

Maintenance Notes

1. Following maintenance and/or inspection, it is recommended the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.

2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.

3. Transport all debris, trash, organics and sediments to approved facility for disposal in accordance with local and state requirements.

4. Entry into chambers may require confined space training based on state and local regulations.

5. No fertilizer shall be used in the Biofiltration Chamber.

6. Irrigation should be provided as recommended by manufacturer and/or landscape architect. Amount of irrigation required is dependent on plant species. Some plants may require irrigation.

Maintenance Procedure Illustration

Screening Device

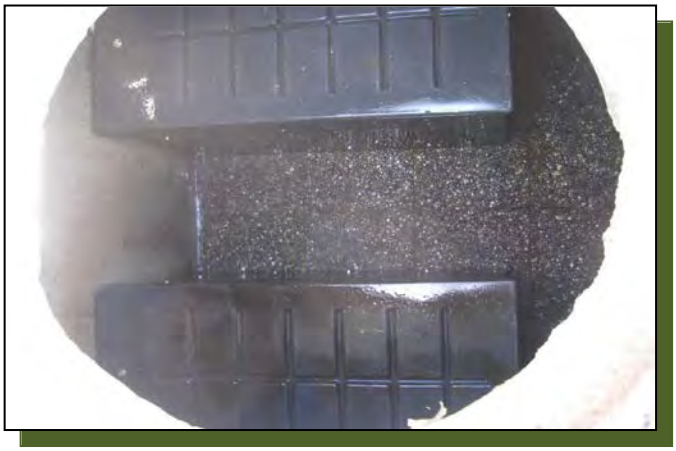
The screening device is located directly under the manhole or grate over the Pre-Treatment Chamber. It's mounted directly underneath for easy access and cleaning. Device can be cleaned by hand or with a vacuum truck.

Separation Chamber

The separation chamber is located directly beneath the screening device. It can be quickly cleaned using a vacuum truck or by hand. A pressure washer is useful to assist in the cleaning process.

Cartridge Filters

The cartridge filters are located in the Pre-Treatment chamber connected to the wall adjacent to the biofiltration chamber. The cartridges have removable tops to access the individual media filters. Once the cartridge is open media can be easily removed and replaced by hand or a vacuum truck.



Drain Down Filter

The drain down filter is located in the Discharge Chamber. The drain filter unlocks from the wall mount and hinges up. Remove filter block and replace with new block.

Bio Clean
A Forterra Company

Trim Vegetation

Vegetation should be maintained in the same manner as surrounding vegetation and trimmed as needed. No fertilizer shall be used on the plants. Irrigation per the recommendation of the manufacturer and or landscape architect. Different types of vegetation requires different amounts of irrigation.

Inspection Form

Bio Clean
P. 855-566-3938
F. 760-433-3176
E. Info@BioCleanEnvironmental.com

Bio Clean
A Forterra Company

Inspection Report
Modular Wetlands System

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ___/___/___ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Inspection Checklist

Modular Wetland System Type (Curb, Grate or UG Vault): _____ Size (22', 14' or etc.): _____

Structural Integrity:	**Yes**	**No**	**Comments**
Damage to pre-treatment access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Damage to discharge chamber access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Does the MWS unit show signs of structural deterioration (cracks in the wall, damage to frame)?			
Is the inlet/outlet pipe or drain down pipe damaged or otherwise not functioning properly?			
Working Condition:			
Is there evidence of illicit discharge or excessive oil, grease, or other automobile fluids entering and clogging the unit?			
Is there standing water in inappropriate areas after a dry period?			
Is the filter insert (if applicable) at capacity and/or is there an accumulation of debris/trash on the shelf system?			
Does the depth of sediment/trash/debris suggest a blockage of the inflow pipe, bypass or cartridge filter? If yes, specify which one in the comments section. Note depth of accumulation in in pre-treatment chamber.			Depth:
Does the cartridge filter media need replacement in pre-treatment chamber and/or discharge chamber?			Chamber:
Any signs of improper functioning in the discharge chamber? Note issues in comments section.			
Other Inspection Items:			
Is there an accumulation of sediment/trash/debris in the wetland media (if applicable)?			
Is it evident that the plants are alive and healthy (if applicable)? Please note Plant Information below.			
Is there a septic or foul odor coming from inside the system?			

Waste:	**Yes**	**No**
Sediment / Silt / Clay		
Trash / Bags / Bottles		
Green Waste / Leaves / Foliage		

Recommended Maintenance	
No Cleaning Needed	
Schedule Maintenance as Planned	
Needs Immediate Maintenance	

Plant Information	
Damage to Plants	
Plant Replacement	
Plant Trimming	

Additional Notes:

398 Via El Centro, Oceanside, CA 92058 P. 855-566-3938 F. 760.433.3176

Bio Clean
A Forterra Company

Maintenance Report

Bio Clean
P. 855-566-3938
F. 760-433-3176
E. Info@BioCleanEnvironmental.com

Bio Clean
A Forterra Company

Cleaning and Maintenance Report
Modular Wetlands System

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ____/____/____ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Manufacturer / Description / Sizing	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Total Debris Accumulation	Condition of Media 25/50/75/100 (will be changed @ 75%)	Operational Per Manufactures' Specifications (If not, why?)
	Lat: Long:	MWS Catch Basins						
		MWS Sedimentation Basin						
		Media Filter Condition						
		Plant Condition						
		Drain Down Media Condition						
		Discharge Chamber Condition						
		Drain Down Pipe Condition						
		Inlet and Outlet Pipe Condition						

Comments:

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WASHINGTON STATE DEPARTMENT OF ECOLOGY

July 2017

GENERAL USE LEVEL DESIGNATION FOR BASIC, ENHANCED, AND PHOSPHORUS TREATMENT

For the

MWS-Linear Modular Wetland

Ecology's Decision:

Based on Modular Wetland Systems, Inc. application submissions, including the Technical Evaluation Report, dated April 1, 2014, Ecology hereby issues the following use level designation:

1. General use level designation (GULD) for the MWS-Linear Modular Wetland Stormwater Treatment System for Basic treatment

   - Sized at a hydraulic loading rate of 1 gallon per minute (gpm) per square foot (sq ft) of wetland cell surface area. For moderate pollutant loading rates (low to medium density residential basins), size the Prefilters at 3.0 gpm/sq ft of cartridge surface area. For high loading rates (commercial and industrial basins), size the Prefilters at 2.1 gpm/sq ft of cartridge surface area.

2. General use level designation (GULD) for the MWS-Linear Modular Wetland Stormwater Treatment System for Phosphorus treatment

   - Sized at a hydraulic loading rate of 1 gallon per minute (gpm) per square foot (sq ft) of wetland cell surface area. For moderate pollutant loading rates (low to medium density residential basins), size the Prefilters at 3.0 gpm/sq ft of cartridge surface area. For high loading rates (commercial and industrial basins), size the Prefilters at 2.1 gpm/sq ft of cartridge surface area.

3. General use level designation (GULD) for the MWS-Linear Modular Wetland Stormwater Treatment System for Enhanced treatment

   - Sized at a hydraulic loading rate of 1 gallon per minute (gpm) per square foot (sq ft) of wetland cell surface area. For moderate pollutant loading rates (low to medium density residential basins), size the Prefilters at 3.0 gpm/sq ft of cartridge surface area. For high loading rates (commercial and industrial basins), size the Prefilters at 2.1 gpm/sq ft of cartridge surface area.

4. Ecology approves the MWS - Linear Modular Wetland Stormwater Treatment System units for Basic, Phosphorus, and Enhanced treatment at the hydraulic loading rate listed above. Designers shall calculate the water quality design flow rates using the following procedures:

    - Western Washington: For treatment installed upstream of detention or retention, the water quality design flow rate is the peak 15-minute flow rate as calculated using the latest version of the Western Washington Hydrology Model or other Ecology-approved continuous runoff model.
    - Eastern Washington: For treatment installed upstream of detention or retention, the water quality design flow rate is the peak 15-minute flow rate as calculated using one of the three methods described in Chapter 2.2.5 of the Stormwater Management Manual for Eastern Washington (SWMMEW) or local manual.
    - Entire State: For treatment installed downstream of detention, the water quality design flow rate is the full 2-year release rate of the detention facility.

5. These use level designations have no expiration date but may be revoked or amended by Ecology, and are subject to the conditions specified below.

Ecology's Conditions of Use:

Applicants shall comply with the following conditions:

1. Design, assemble, install, operate, and maintain the MWS – Linear Modular Wetland Stormwater Treatment System units, in accordance with Modular Wetland Systems, Inc. applicable manuals and documents and the Ecology Decision.
2. Each site plan must undergo Modular Wetland Systems, Inc. review and approval before site installation. This ensures that site grading and slope are appropriate for use of a MWS – Linear Modular Wetland Stormwater Treatment System unit.
3. MWS – Linear Modular Wetland Stormwater Treatment System media shall conform to the specifications submitted to, and approved by, Ecology.
4. The applicant tested the MWS – Linear Modular Wetland Stormwater Treatment System with an external bypass weir. This weir limited the depth of water flowing through the media, and therefore the active treatment area, to below the root zone of the plants. This GULD applies to MWS – Linear Modular Wetland Stormwater Treatment Systems whether plants are included in the final product or not.
5. Maintenance: The required maintenance interval for stormwater treatment devices is often dependent upon the degree of pollutant loading from a particular drainage basin. Therefore, Ecology does not endorse or recommend a "one size fits all" maintenance cycle for a particular model/size of manufactured filter treatment device.

    - Typically, Modular Wetland Systems, Inc. designs MWS - Linear Modular Wetland systems for a target prefilter media life of 6 to 12 months.
    - Indications of the need for maintenance include effluent flow decreasing to below the design flow rate or decrease in treatment below required levels.
    - Owners/operators must inspect MWS - Linear Modular Wetland systems for a minimum of twelve months from the start of post-construction operation to determine site-specific

maintenance schedules and requirements. You must conduct inspections monthly during the wet season, and every other month during the dry season. (According to the SWMMWW, the wet season in western Washington is October 1 to April 30. According to SWMMEW, the wet season in eastern Washington is October 1 to June 30). After the first year of operation, owners/operators must conduct inspections based on the findings during the first year of inspections.

- Conduct inspections by qualified personnel, follow manufacturer's guidelines, and use methods capable of determining either a decrease in treated effluent flowrate and/or a decrease in pollutant removal ability.
- When inspections are performed, the following findings typically serve as maintenance triggers:
    - Standing water remains in the vault between rain events, or
    - Bypass occurs during storms smaller than the design storm.
    - If excessive floatables (trash and debris) are present (but no standing water or excessive sedimentation), perform a minor maintenance consisting of gross solids removal, not prefilter media replacement.
    - Additional data collection will be used to create a correlation between pretreatment chamber sediment depth and pre-filter clogging (see *Issues to be Addressed by the Company* section below)

6. Discharges from the MWS - Linear Modular Wetland Stormwater Treatment System units shall not cause or contribute to water quality standards violations in receiving waters.

Applicant:	Modular Wetland Systems, Inc.
Applicant's Address:	*PO. Box 869* *Oceanside, CA 92054*

Application Documents:

- *Original Application for Conditional Use Level Designation*, Modular Wetland System, Linear Stormwater Filtration System Modular Wetland Systems, Inc., January 2011
- *Quality Assurance Project Plan*: Modular Wetland system – Linear Treatment System performance Monitoring Project, draft, January 2011.
- *Revised Application for Conditional Use Level Designation*, Modular Wetland System, Linear Stormwater Filtration System Modular Wetland Systems, Inc., May 2011
- *Memorandum: Modular Wetland System-Linear GULD Application Supplementary Data, April 2014*
- *Technical Evaluation Report: Modular Wetland System Stormwater Treatment System Performance Monitoring, April 2014.*

Applicant's Use Level Request:

General use level designation as a Basic, Enhanced, and Phosphorus treatment device in accordance with Ecology's Guidance for Evaluating Emerging Stormwater Treatment Technologies Technology Assessment Protocol – Ecology (TAPE) January 2011 Revision.

Applicant's Performance Claims:

- The MWS – Linear Modular wetland is capable of removing a minimum of 80-percent of TSS from stormwater with influent concentrations between 100 and 200 mg/l.
- The MWS – Linear Modular wetland is capable of removing a minimum of 50-percent of Total Phosphorus from stormwater with influent concentrations between 0.1 and 0.5 mg/l.
- The MWS – Linear Modular wetland is capable of removing a minimum of 30-percent of dissolved Copper from stormwater with influent concentrations between 0.005 and 0.020 mg/l.
- The MWS – Linear Modular wetland is capable of removing a minimum of 60-percent of dissolved Zinc from stormwater with influent concentrations between 0.02 and 0.30 mg/l.

Ecology Recommendations:

- Modular Wetland Systems, Inc. has shown Ecology, through laboratory and field-testing, that the MWS - Linear Modular Wetland Stormwater Treatment System filter system is capable of attaining Ecology's Basic, Total phosphorus, and Enhanced treatment goals.

Findings of Fact:

Laboratory Testing

The MWS-Linear Modular wetland has the:

- Capability to remove 99 percent of total suspended solids (using Sil-Co-Sil 106) in a quarter-scale model with influent concentrations of 270 mg/L.
- Capability to remove 91 percent of total suspended solids (using Sil-Co-Sil 106) in laboratory conditions with influent concentrations of 84.6 mg/L at a flow rate of 3.0 gpm per square foot of media.
- Capability to remove 93 percent of dissolved Copper in a quarter-scale model with influent concentrations of 0.757 mg/L.
- Capability to remove 79 percent of dissolved Copper in laboratory conditions with influent concentrations of 0.567 mg/L at a flow rate of 3.0 gpm per square foot of media.
- Capability to remove 80.5-percent of dissolved Zinc in a quarter-scale model with influent concentrations of 0.95 mg/L at a flow rate of 3.0 gpm per square foot of media.
- Capability to remove 78-percent of dissolved Zinc in laboratory conditions with influent concentrations of 0.75 mg/L at a flow rate of 3.0 gpm per square foot of media.

Field Testing

- Modular Wetland Systems, Inc. conducted monitoring of an MWS-Linear (Model # MWS-L-4-13) from April 2012 through May 2013, at a transportation maintenance facility in Portland, Oregon. The manufacturer collected flow-weighted composite samples of the system's influent and effluent during 28 separate storm events. The system treated approximately 75 percent of the runoff from 53.5 inches of rainfall during the monitoring period. The applicant sized the system at 1 gpm/sq ft. (wetland media) and 3gpm/sq ft. (prefilter).
- Influent TSS concentrations for qualifying sampled storm events ranged from 20 to 339 mg/L. Average TSS removal for influent concentrations greater than 100 mg/L (n=7) averaged 85 percent. For influent concentrations in the range of 20-100 mg/L (n=18), the upper 95 percent confidence interval about the mean effluent concentration was 12.8 mg/L.
- Total phosphorus removal for 17 events with influent TP concentrations in the range of 0.1 to 0.5 mg/L averaged 65 percent. A bootstrap estimate of the lower 95 percent confidence limit (LCL95) of the mean total phosphorus reduction was 58 percent.
- The lower 95 percent confidence limit of the mean percent removal was 60.5 percent for dissolved zinc for influent concentrations in the range of 0.02 to 0.3 mg/L (n=11). The lower 95 percent confidence limit of the mean percent removal was 32.5 percent for dissolved copper for influent concentrations in the range of 0.005 to 0.02 mg/L (n=14) at flow rates up to 28 gpm (design flow rate 41 gpm). Laboratory test data augmented the data set, showing dissolved copper removal at the design flow rate of 41 gpm (93 percent reduction in influent dissolved copper of 0.757 mg/L).

Issues to be addressed by the Company:

1. Modular Wetland Systems, Inc. should collect maintenance and inspection data for the first year on all installations in the Northwest in order to assess standard maintenance requirements for various land uses in the region. Modular Wetland Systems, Inc. should use these data to establish required maintenance cycles.
2. Modular Wetland Systems, Inc. should collect pre-treatment chamber sediment depth data for the first year of operation for all installations in the Northwest. Modular Wetland Systems, Inc. will use these data to create a correlation between sediment depth and pre-filter clogging.

Technology Description:
Download at http://www.modularwetlands.com/

Contact Information:
Applicant: Zach Kent
BioClean A Forterra Company.
398 Vi9a El Centro
Oceanside, CA 92058
zach.kent@forterrabp.com

Applicant website: http://www.modularwetlands.com/

Ecology web link: http://www.ecy.wa.gov/programs/wg/stormwater/newtech/index.html

Ecology: Douglas C. Howie, P.E.
Department of Ecology
Water Quality Program
(360) 407-6444
douglas.howie@ecy.wa.gov

Revision History

Date	**Revision**
June 2011	Original use-level-designation document
September 2012	Revised dates for TER and expiration
January 2013	Modified Design Storm Description, added Revision Table, added maintenance discussion, modified format in accordance with Ecology standard
December 2013	Updated name of Applicant
April 2014	Approved GULD designation for Basic, Phosphorus, and Enhanced treatment
December 2015	Updated GULD to document the acceptance of MWS-Linear Modular Wetland installations with or without the inclusion of plants
July 2017	Revised Manufacturer Contact Information (name, address, and email)

STORMTRAP MAINTENANCE MANUAL

1. Introduction

Regular inspections are recommended to ensure that the system is functioning as designed. Please call your Authorized StormTrap Representative if you have questions in regards to the inspection and maintenance of the StormTrap system. Prior to entry into any underground storm sewer or underground detention systems, appropriate OSHA and local safety regulations and guidelines should be followed.

2. Inspection Schedules for Municipalities

StormTrap Stormwater Management Systems are recommended for inspection whenever the upstream and downstream catch basins and stormwater pipes of the stormwater collection system are inspected or maintained. This will economize the cost of the inspection if it is done at the same time the Municipal crews are visiting the area.

3. Inspection Schedules for Private Development

StormTrap Stormwater Mangement Systems, for a private development, are recommended for inspection after each major storm water event. At a minimum, until a cleaning schedule can be established, an annual inspection is recommended. If inspected on an annual basis, the inspection should be conducted before the stormwater season begins to be sure that everything is functioning properly for the upcoming storm season.

4. Inspection Process

Inspections should be done such that at least 2-3 days has lapsed since the most recent rain event to allow for draining. Visually inspect the system at all manhole locations. Utilizing a sediment pole, measure and document the amount of silt at each manhole location (Figure 1). Inspect each pipe opening to ensure that the silt level or any foreign objects are not blocking the pipes. Be sure to inspect the outlet pipe(s) because this is typically the smallest

pipe in the system. It is common that most of the larger materials will be collected upstream of the system in catch basins, and it is therefore important at time of inspections to check these structures for large trash or blockages.

Remove any blockages if you can during the inspection process only if you can do so safely from the top of the system without entering into the system. Do not go into the system under any circumstances without proper ventilation equipment and training. Pass any information requiring action onto the appropriate maintenance personnel if you cannot remove the blockages from above during the inspection process. Be sure to describe the location of each manhole and the type of material that needs to be removed.

The sediment level of the system should also be measured and recorded during the inspection process. Recording the sediment level at each manhole is very important in order get a history of sediment that can be graphed over time (i.e. years) in order to estimate when the system will need to be maintained next. It is also important to keep these records to verify that the inspection process was actually performed if anyone asks for your records in the future.

The sediment level in the underground detention system can be determined from the outside of the system by opening up all the manholes and using a sediment pole to measure the amount of sediment at each location. Force the stick to the bottom of the system and then remove it and measure the amount of sediment at that location. Again, do not go into the system under any circumstances without proper ventilation equipment and training.

5. When to Clean the System

Any blockages should be safely removed as soon as practical so that the Stormwater detention system will fill and drain properly before the next stormwater event.

The Dry Detention System should be completely cleaned whenever the sediment occupies more than 10% to 15% of the originally designed system's volume. The Wet Detention System should be cleaned when the sediment occupies more than 30% or 1/3rd of the originally designed system's volume. NOTE: Check with your municipality in regards to

cleaning criteria, as the allowable sediment before cleaning may be more or less then described above.

6. How to Clean the StormTrap

The system should be completely cleaned back to 100% of the originally designed storage volume whenever the above sediment levels have been reached. Be sure to wait at least 3 days after a stormwater event to be sure that the system is completely drained (if it is a Dry Detention System), and all of the sediments have settled to the bottom of the system (if it is a Wet Detention System).

Do not enter the System unless you are properly trained, equipped, and qualified to enter a confined space as identified by local occupational safety and health regulations.

There are many maintenance companies that are in business to help you clean your underground stormwater detention systems and water quality units. Please call your StormTrap representative for referrals in your area.

A. Dry Detention System Cleaning

Maintenance is typically performed using a vacuum truck. Sediment should be flushed towards a vacuum hose for thorough removal. For a Dry Detention System, remove the manhole cover at the top of the system and lower a vacuum hose into one of the rows of the StormTrap system. Open up the manhole at the opposite end of the StormTrap and use sewer jetting equipment to force water in the same row from one end of the StormTrap row to the opposite side. The rows of the StormTrap are completely open in one contiguous channel from one end to the other for easy cleaning.

Place the vacuum hose and the sewer jetting equipment in the next row and repeat the process until all of the rows have been cleaned.

When finished, replace all covers that were removed and dispose of the collected material properly.

B. Wet Detention System Cleaning

If the system was designed to maintain a permanent pool of water, floatables and any oil should be removed in a separate procedure prior to the removal of all sediment.

The floatable trash is removed first by using a bucket strainer to capture and remove any floating debris.

The floatable oils are then removed off the top of the water by using the vacuum truck to suck off any floatable fluids and liquids.

The next step is to use the vacuum truck to gently remove the clarified water above the sediment layer.

The final step is to clean the sediment for each row as described above in the paragraph "A. Dry Detention System Cleaning". For smaller systems, the vacuum truck can remove all of the sediment in the basin without using the sewer jetting equipment because of the smaller space.

7. Inspection Reports

Proof of these inspections is the responsibility of the property owner. All inspection reports and data should be kept on site or at a location where they will be accessible for years in the future. Some municipalities require these inspection and cleaning reports to be forwarded to the proper governmental permitting agency on an annual basis.

Refer to your local and national regulations for any additional maintenance requirements and schedules not contained herein. Inspections should be a part of your standard operating procedure.

PHONE 815 941 4549
FAX 331 318 5347
WEB www.stormtrap.com
EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

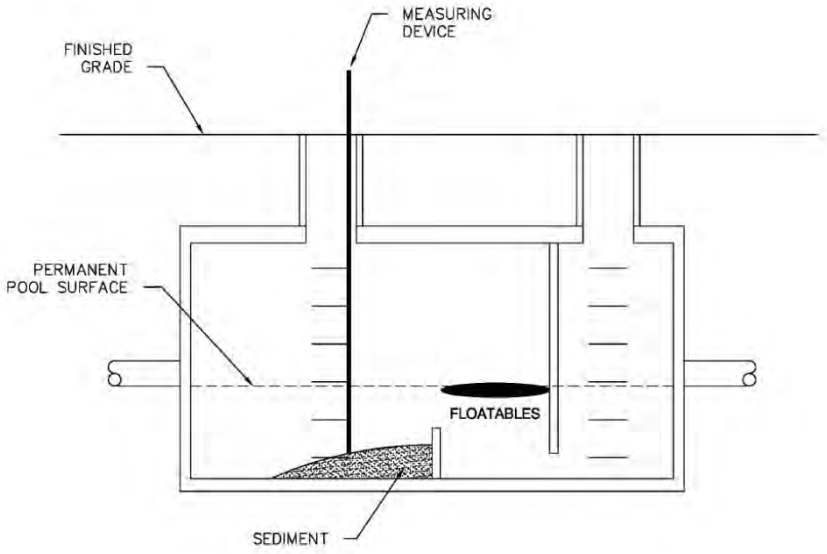

Figure 1. During inspection, measure the distance from finished grade to the top of the sediment inside the system.

Sample inspection and maintenance log

Date	Depth of Sediment	Accumulated Trash	Maintenance Performed	Maintenance Personnel	Comments
2/5/2012	3”	None	Sediment Removal/Vac	B. Johnson	

PHONE 815 941 4549
FAX 331 318 5347
WEB www.stormtrap.com
EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

ATTACHMENT 4

City of Escondido PDP Structural BMP Verification for Permitted Land Development Projects

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City of Escondido Storm Water Structural BMP Verification Form Page 1 of 4	
Project Summary Information	
Project Name	Meyers Industrial
Record ID (e.g., grading/improvement plan number)	PL 20-0654
Project Address	Meyers Avenue Escondido CA, 92029
Assessor's Parcel Number(s) (APN(s))	228-312-05
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Carlsbad 904.52
Maintenance Notification / Agreement No.	
Responsible Party for Construction Phase	
Developer's Name	VWP Escondido, LLC
Address	2390 E. Camelback Road, Suite 305 Phoenix, AZ 85016
Email Address	rboden@viawestgroup.com
Phone Number	(602) 957-8300
Engineer of Work	Pasco Laret Suiter & Associates
Engineer's Phone Number	(858) 259-8212
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	VWP Escondido, LLC
Address	2390 E. Camelback Road, Suite 305 Phoenix, AZ 85016
Email Address	rboden@viawestgroup.com
Phone Number	(602) 957-8300
*Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.	

City of Escondido Storm Water Structural BMP Verification Form Page 2 of 4				
Stormwater Structural Pollutant Control & Hydromodification Control BMPs* (List all from SWQMP)				
Description/Type of Structural BMP	**Plan Sheet #**	**Structural BMP ID#**	**Maintenance Agreement Recorded Doc #**	**Revisions**
StormTrap Single Trap (HU-1)	3	BMP-1		
Bioclean Modular Wetland System (BF-3)	3	BMP-2		
Bioclean Modular Wetland System (BF-3)	3	BMP-3		
*All Priority Development Projects (PDPs) require a Structural BMP				

Note: If this is a partial verification of Structural BMPs, provide a list and map denoting Structural BMPs that have already been submitted, those for this submission, and those anticipated in future submissions.

City of Escondido Storm Structural BMP Verification Form Page 3 of 4

Checklist for Engineer of Work (EOW) to submit to Field Engineering:

- ☐ Copy of the final accepted SWQMP and any accepted addendum.
- ☐ Copy of the most current plan showing the Storm Water Structural BMP Table, plans/cross-section sheets of the Structural BMPs and the location of each verified as-built Structural BMP.
- ☐ Photograph of each Structural BMP.
- ☐ Photograph(s) of each Structural BMP during the construction process to illustrate proper construction.
- ☐ Copy of the approved Structural BMP maintenance agreement and associated security

By signing below, I certify that the Structural BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the City reserves the right to inspect the above BMPs to verify compliance with the approved plans and Storm Water Ordinance. Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Please sign your name and seal.

Professional Engineer's Printed Name:

_____

Professional Engineer's Signed Name:

_____

Date: _____

[SEAL]

City of Escondido Storm Water Structural BMP Verification Form Page 4 of 4

CITY - OFFICIAL USE ONLY:

Permit #:_____

City Inspector: _____

Date Project has/expects to close:_____

Date verification received from Engineer of Work (EOW): _____

By signing below, City Inspector concurs that every noted Structural BMP has been installed per plan.

City Inspector's Signature: _____Date: _____

FOR Environmental Programs:

Date Received from Field Engineering:_____

Environmental Programs Submittal Reviewer:_____

Environmental Programs Reviewer concurs that the information provided for the following Structural BMPs is acceptable to enter into the Structural BMP Maintenance verification inventory:

List **acceptable** Structural BMPs:

Environmental Programs Reviewer's Signature: _____

Date: _____

ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Storm Water BMPs, Source Control, and Site Design

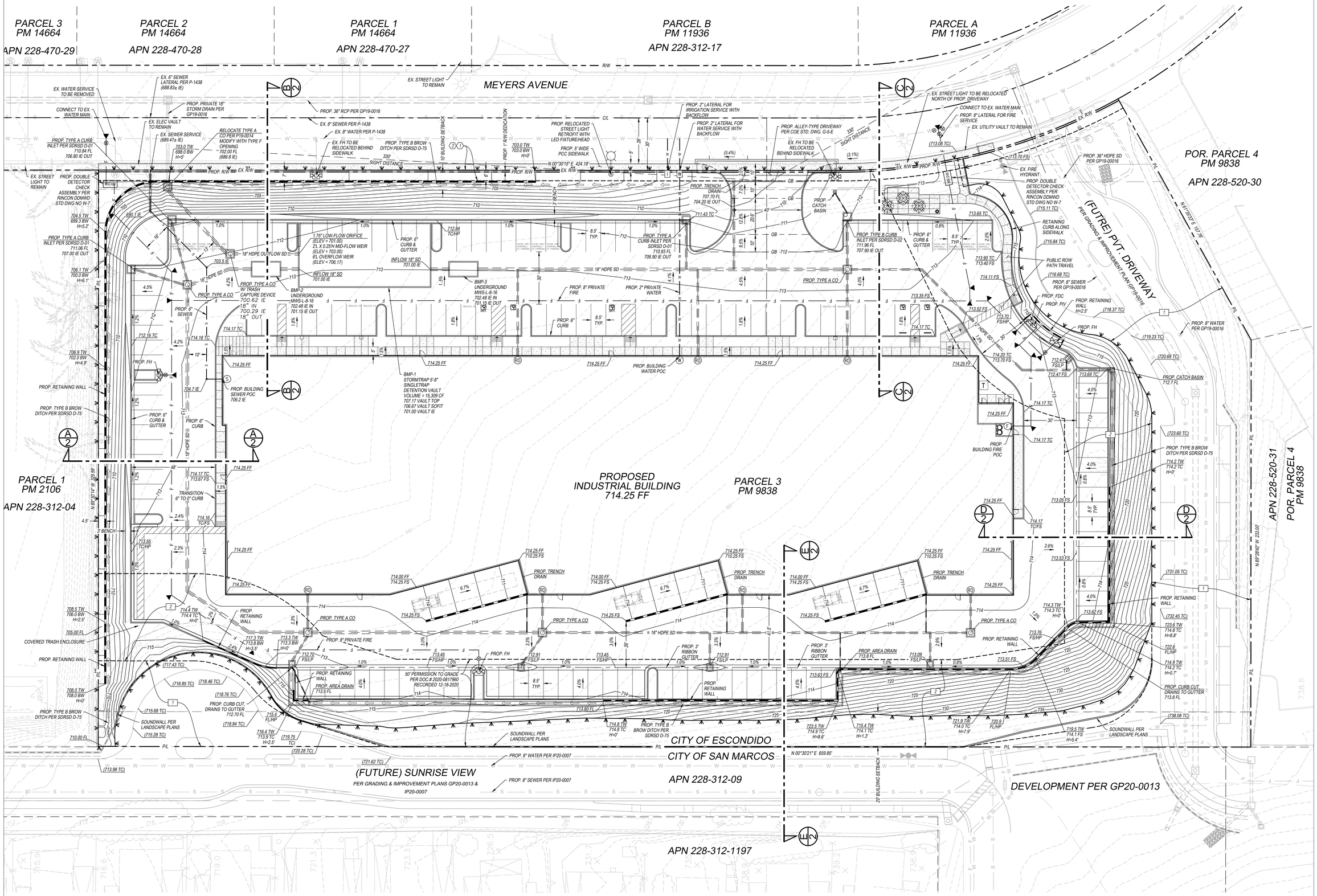
This is the cover sheet for Attachment 5.

Use this checklist to ensure the required information has been included on the plans: The plans must identify:

☐Structural BMP(s) with ID numbers matching Step 6 Summary of PDP Structural BMPs
☐The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
☐Details and specifications for construction of structural BMP(s)
☐Signage indicating the location and boundary of structural BMP(s) as required by City staff
☐How to access the structural BMP(s) to inspect and perform maintenance
☐Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
☐Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
☐Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
☐Recommended equipment to perform maintenance
☐When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
☐Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
☐All BMPs must be fully dimensioned on the plans
☐When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number must be provided. Photocopies of general brochures are not acceptable.
☐Include all source control and site design measures described in Steps 4 and 5 of the SWQMP. Can be included as a separate exhibit as necessary.

***Note: Plan sheets included in this attachment can be full size or half size.**

CITY OF ESCONDIDO PLOT PLAN



NOTES:

1. ALL EXISTING AND PROPOSED STREET LIGHTS SHALL BE RETROFITED WITH AN LED FIXTURE/HEAD.
2. ALL EXISTING AND PROPOSED CATCH BASINS AND CURB INLETS SHALL BE MARKED WITH THE WORDS "NO DUMPING- DRAINS TO RIVER" OR SIMILAR CITY APPROVED STORM DRAIN MARKER.

EASEMENTS OF RECORD:

1. EASEMENT FOR TREE PLANTING IN FAVOR OF CITY OF ESCONDIDO PER MAP 9838
2. PUBLIC UTILITY EASEMENT IN FAVOR OF CITY OF ESCONDIDO REC. DOC. NO. 1982-370549, O.R.
3. COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS IN THE DOCUMENT RECORDED APRIL 01, 1958 AS INSTRUMENT NO. 51554 IN BOOK 7018, PAGE 147 OF OFFICIAL RECORDS.

PROPOSED EASEMENTS:

1. EASEMENT FOR ACCESS PER ESCROW DOCUMENTS EXHIBIT "D"
2. EASEMENT FOR TEMPORARY CONSTRUCTION PER ESCROW DOCUMENTS EXHIBIT "E"

20' 10' 0 20' 40' 60'
GRAPHIC SCALE: 1" = 20'

PASCO LARET SUITER & ASSOCIATES
San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com

sca ARCHITECTURE
13280 Evening Creek Drive South | Suite 125
San Diego, CA 92128
858.793.4777 | sca-sd.com

REGISTERED PROFESSIONAL ENGINEER
GREGORY W. LANG
No. RCE 68075
EXP. 06-30-23
Civil
STATE OF CALIFORNIA

VIAWEST Group

2351 MEYERS AVE, ESCONDIDO, CA 92029

PROJECT ID: PL20-0654

Issue Dates

Planning	11.02.2020
Design Development	-
Plan Check	-
Bid Set	-
Permit Set	-
Construction Set	-

Drawing Date	04/10/2022
Check By	GL
Drawn By	MM
Scale	AS NOTED
Job Number	3446
Sheet Number	C3