




County of San Diego
Stormwater Quality Management Plan (SWQMP)
For Priority Development Projects (PDPs)
 Use for all PDPs (see Storm Water Intake Form, Part 4)



Project Information		Development type <input checked="" type="checkbox"/> New development <input type="checkbox"/> Redevelopment	
Project Name	Quarry Storage MPA		
Project Address	5780 Quarry Road		
Assessor's Parcel # (APN)	586-050-36, -44, & -48		
Permit # / Record ID	PDS2021-MPA-21-009		
Project category (select one)	<input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Minor subdivision* <input type="checkbox"/> Industrial <input type="checkbox"/> Major subdivision* <input type="checkbox"/> Single family residential lot <input type="checkbox"/> Multi-family residential*		
*If residential, is a Homeowners Association (HOA) proposed? <input type="checkbox"/> Yes <input type="checkbox"/> No			

Project Applicant / Project Proponent	
Name	Insite Property Group, LLC
Address	811 N. Catalina Avenue, Redondo Beach, CA 90277
Phone	310-954-1264
Email:	Email

SWQMP Preparer	
Name	Ben Huber, P.E.
Company (if applicable)	Kimley-Horn and Associates
Address	4637 Chabot Drive, Suite 300, Pleasanton, CA 94588
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PE Number (if applicable)	88412

Preparer's Certification	
<p>I understand that the County of San Diego has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the County of San Diego BMP Design Manual. The BMP Design Manual is a design manual for compliance with local County of San Diego Watershed Protection Ordinance (Sections 67.801 et seq.) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001, as amended by Order No. R9-2015-0001 and Order No. R9-2015-0100) requirements for storm water management.</p> <p>This SWQMP is intended to comply with applicable requirements of the BMP Design Manual. I certify that it 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 SWQMP by County staff is confined to a review and does not relieve me as the person in charge of overseeing the selection and design of storm water BMPs for this project, of my responsibilities for project design.</p>	
Signature 	Date September 19, 2023

<i>COUNTY ACCEPTED</i>	
SWQMP Approved By:	Approval Date:
* NOTE* Approval does not constitute compliance with regulatory requirements.	

Scope of SWQMP Submittal (Required)	
Select the option that describes the scope of this SWQMP Submittal. Document your selection as indicated.	
SWQMP Scope	Required Documentation
<input checked="" type="checkbox"/> a. SWQMP addresses the entire project	No additional documentation.
<input type="checkbox"/> b. SWQMP implements requirements of an earlier master SWQMP submittal	Include a copy of the previous submittal as Attachment 4.
<input type="checkbox"/> c. First of multiple SWQMP submittals	Identify below the elements addressed in this submittal and in future submittals.
(1) Elements addressed in current submittal (streets, common areas, first project phase, etc.):	
(2) Elements to be addressed in future submittal(s) (individual lots, future project phases, etc.):	

Submittal Record: List the dates of SWQMP and plan submittals and updates. Briefly describe key changes from previous versions. If responding to plan check comments, note this in the entry and attach the responses as applicable.

No.	Date	Summary of Changes
Preliminary Design / Planning / CEQA		
1	9/1/2021	Initial Submittal
2	5/31/2022	Second Preliminary Submittal
3	10/3/2022	Third Preliminary Submittal
4	9/19/2023	Fourth Preliminary Submittal
Final Design		
1	Date	Initial Submittal
2	Date	Summary of Change
3	Date	Summary of Change
No.	Date	Summary of Change
Plan Changes		
1	Date	Initial Submittal
2	Date	Summary of Change
3	Date	Summary of Change
No.	Date	Summary of Change

General Directions

Note: These directions may be omitted from the print version of the SWQMP submittal.

① Scope of SWQMP Submittal and Submittal Record (inside front cover)

Use the *Submittal Scope* table to document the scope of activities covered under this SWQMP Form. Select one of the three options presented.

- *SWQMP addresses the entire project.* If this SWQMP form addresses the entire project from start to finish, additional documentation of the project scope is not required.
- *SWQMP implements requirements of an earlier master SWQMP submittal.* If this SWQMP Form implements requirements identified in an earlier master SWQMP Form, documentation of those earlier requirements must be provided. Include a copy of the previous submittal as Attachment 4.
- *First of multiple SWQMP submittals.* If this is the first of multiple SWQMP submittals, use the spaces provided under Part c to identify and briefly describe which project elements are addressed in this submittal and which ones will be addressed in future submittals. For example, this PDP addresses only streets and roads, but individual lots will be documented in future submittals.

Use the *Submittal Record* table to list the dates of any updates to the SWQMP or construction plans. Briefly describe key changes from previous versions. If responding to plan check comments, note this in the entry and attach the responses as applicable.

② PDP SWQMP Submittal Checklist

The checklist on Page 1 summarizes the tables and attachments to be included with this PDP SWQMP submittal. It should be filled out after completing the remainder of the form. Tables and attachments with boxes already checked () are required for all projects. All tables are required. The applicability of attachments not already checked will be identified during the completion of this form.

③ Attachment 1: Stormwater Intake Form

Submit a copy of your completed *Storm Water Intake Form* as Attachment 1.

④ Tables 1, 2, and 3: Baseline Site Design and Source Control BMPs

Table 1 Completion: Complete Table 1 to document existing and proposed site features and the BMPs to be implemented for them. All BMPs must be implemented *where applicable and feasible*. Applicability is generally assumed if a feature exists or is proposed.

Table 2 Completion: Table 2 is not required for Small Residential Projects. Applicants should check the box at the top of the table to confirm it does not apply.

Small Residential Projects are those requiring *either*: a Building Permit, Minor Residential Grading Permit, or Site Plan Permit for a single family home; *or* a Tentative Parcel Map Permit for up to 4 single family homes and a remainder parcel.

All other projects must complete Table 2 to identify applicable requirements for documenting pollutant-generating sources/ features and source control BMPs.

BMPs must be implemented for Table 1 and 2 features *where feasible*. Leaving the box for a BMP unchecked means it will not be implemented (either partially or fully) either because it is inapplicable or infeasible. Explanations must be provided in Table 3. Tables 1 and 2 both provide specific instructions on when explanations are required.

⑤ Attachment 5: Existing Site and Drainage Description

Complete Attachment 5 to provide a description of (1) the existing pre-development condition of the site, and (2) existing and proposed drainage conditions for the site. If required, include a copy of the site Drainage Study with Attachment 5.

⑥ Structural Performance Standards

Determine which Structural Performance Standards apply to the PDP, where they apply, and which compliance strategies you will use to satisfy them. Record your selections in Table 4 as follows.

Table 4, Part A.1, Selection of Standards: First select the standards that apply to the project.

- *Pollutant control plus hydromodification* Select if the PDP is not exempt from hydromodification management requirements. It must satisfy both the Pollutant Control Performance Standard (BMPDM Section 2.2) and the Hydromodification Management Performance Standard (BMPDM Section 2.3).
- *Pollutant control only* Select if the PDP is exempt from hydromodification management requirements per BMPDM Section 6.1. Document the exemption in Attachment 9.

Table 4, Part A.2, Application of Standards: Next indicate where on the site the standards apply.

- If this is a New Development Project, the standards apply to all impervious surfaces on the site.
- If this is a Redevelopment Project, their applicability will depend on the ratio of created or replaced impervious areas to existing impervious areas (see BMPDM Section 1.7). Complete the calculations in the table to determine your obligation. The percent (%) impervious created or replaced (c) is determined by dividing the impervious area created or replaced (b) by the existing impervious area (a) and multiplying the result by 100.
 - If c is 50% or more: The standards apply to all impervious surfaces on the site (a + b).
 - If c is less than 50%: The standards apply only to created or replaced impervious surfaces (b only).

Table 4, Part B.1: Summary of Required Attachments (1 through 5)

Use this part of the table to summarize which of Attachments 1 through 5 will be included with the SWQMP submittal. If you are completing an electronic version of this form, your selections will be automatically recorded based on your previous input. If you are completing a hard copy of this form, you must manually select Attachments 3 and 4 as applicable (see pages 4 and 6). Note that Attachments 1,2, and 5 are required for all projects.

Table 4, Part B.2: Selection of Compliance Strategies

Complete Part B.2 to document which compliance options will be used to satisfy the applicable standards for the site. Before doing so, you must determine which option will be used for each DMA. The following four potential design options are presented in detail in BMPDM Chapters 5 and 6.

1. Self-mitigating DMAs (BMPDM Section 5.2.1)
2. De Minimis DMAs (BMPDM Section 5.2.2)
3. Self-retaining DMAs (BMPDM Section 5.2.3)
4. Structural BMPs
 - Pollutant Control BMPs (BMPDM Sections 5.4)
 - Hydromodification BMPs (BMPDM Chapter 6)
 - Alternative Compliance Project (BMPDM Section 1.8)

Only one compliance option may be used per individual DMA. Regardless of which option is selected for any DMA, it must fully satisfy the applicable standard(s) determined in Part A.1.

On the left side of Part B, check the applicable boxes for each compliance option to be used.

⑦ Summary of Additional Required Attachments (6 through 12)

You must complete and submit each attachment identified for the compliance options selected. Applicable attachments are listed to the right of each compliance option. If you are completing an electronic version of this form, the required attachments for each design option will automatically be selected when you choose the compliance option. As noted above, these selections will also be recorded on the PDP SWQMP Submittal Checklist (Page 1). If you are completing a hard copy of this form, you will need to manually check the boxes for each applicable attachment on both pages.

Note that Attachment 9 (Critical Coarse Sediment Yield Areas) is required for all PDPs. If the PDP is exempt from hydromodification requirements, the exemption must be documented in Attachment 9.

⑧ Table 5: Critical Coarse Sediment Yield Area Requirements

Complete Table 5 to select a compliance pathway for addressing Critical Coarse Sediment Yield Area (CCSYA) requirements for the PDP. See BMPDM Appendix H for additional description of requirements and options. Document Table 5 selections, including hydromodification management exemptions, in Attachment 9.

⑨ Tables 6 and 7: Temporary Construction Phase BMPs

Complete Table 6 to document the minimum construction BMPs to be implemented for the project. Each BMP must be implemented *where applicable and feasible*. At least one BMP must be selected for each construction activity listed in the table (except Erosion Control for Disturbed Slopes, which requires one BMP per season).

If applicable, use Table 7 to describe why BMPs not selected in Table 6 are either infeasible or are only partially feasible. Justifications must be provided for all construction activity types for which NO BMPs were selected. If requested by County staff, also justify why specific individual BMPs were not selected.

⑩ Attachment 2: DMA Exhibits and Construction Plans

Exhibits and construction plan sets incorporating all applicable site features, activities, and BMPs identified in Tables 1, 2, and 6 must be submitted as Attachment 2 (DMA Exhibits and Construction Plan Sheets). See the Attachment 2 cover sheet for additional instructions.

PDP SWQMP Submittal Checklist

SWQMP Tables: All of the tables below must be completed.

- Table 1: Baseline BMPs for Existing and Proposed Site Features Page 2
- Table 2: Baseline BMPs for Pollutant-generating Sources Page 3
- Table 3: Explanations and Justifications for Table 1 and 2 Baseline BMPs Page 4
- Table 4: DMA Structural Compliance Strategies and Documentation Page 5
- Table 5: Critical Coarse Sediment Yield Area (CCSYA) Requirements Page 6
- Table 6: Minimum Construction Stormwater BMPs Page 7
- Table 7: Explanations and Justifications for Construction Phase BMPs Page 8

SWQMP Attachments¹: Use the checklist below to identify which attachments will be included with this submittal. Attachments with boxes already checked () are required for all projects. The applicability of other attachments will be determined upon completing this form.

- Attachment 1: Storm Water Intake Form
- Attachment 2: DMA Exhibits and Construction Plan Sheets
- Attachment 3: Reserved for Future Use
- Attachment 4: Previous SWQMP Submittals
- Attachment 5: Existing Site and Drainage Description
- Attachment 6: Documentation of DMAs without Structural BMPs
- Attachment 7: Documentation of DMAs with Structural Pollutant Control BMPs
- Attachment 8: Documentation of DMAs with Structural Hydromodification Management BMPs
- Attachment 9: Management of Critical Coarse Sediment Yield Areas
- Attachment 10: BMP Installation Verification Form
- Attachment 11: BMP Maintenance Agreements and Plans
- Attachment 12: Documentation of Alternative Compliance Projects (ACPs)

After completing the remainder of this form, check the applicable SWQMP Attachment boxes to summarize your selections.

¹ All SWQMP Attachments are available at www.sandiego.gov/stormwater under the Development Resources tab, Submittal Templates.

Table 1 – Baseline BMPs for Existing and Proposed Site Features

A. BMPs for Existing Natural Site Features (See Fact Sheet BL-1)									
<p>1. Check the boxes below for each existing feature on the site.</p> <p><input checked="" type="checkbox"/> Natural waterbodies</p> <p><input checked="" type="checkbox"/> Natural storage reservoirs & drainage corridors</p> <p><input checked="" type="checkbox"/> Natural areas, soils, & vegetation (incl. trees)</p>	<p>2. Select the BMPs to be implemented for each identified feature. Explain why any BMP not selected is infeasible in Table 3.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; border-right: 1px dotted black; padding: 5px;"> Conserve natural features (SD-G) </td> <td style="width: 50%; text-align: center; padding: 5px;"> Provide buffers around waterbodies (SD-H) </td> </tr> <tr> <td style="text-align: center; border-right: 1px dotted black; padding: 5px;"><input checked="" type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center; border-right: 1px dotted black; padding: 5px;"><input checked="" type="checkbox"/></td> <td style="text-align: center; padding: 5px;">---</td> </tr> <tr> <td style="text-align: center; border-right: 1px dotted black; padding: 5px;"><input checked="" type="checkbox"/></td> <td style="text-align: center; padding: 5px;">---</td> </tr> </table>	Conserve natural features (SD-G)	Provide buffers around waterbodies (SD-H)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	---	<input checked="" type="checkbox"/>	---
Conserve natural features (SD-G)	Provide buffers around waterbodies (SD-H)								
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								
<input checked="" type="checkbox"/>	---								
<input checked="" type="checkbox"/>	---								
B. BMPs for Common Impervious Outdoor Site Features (See Fact Sheet BL-2)									
<p>1. Check the boxes below for each proposed feature.</p> <p><input type="checkbox"/> Streets and roads</p> <p><input checked="" type="checkbox"/> Sidewalks & walkways</p> <p><input checked="" type="checkbox"/> Parking areas & lots</p> <p><input checked="" type="checkbox"/> Driveways</p> <p><input type="checkbox"/> Patios, decks, & courtyards</p> <p><input type="checkbox"/> Hardcourt recreation areas</p> <p><input type="checkbox"/> Other:</p>	<p>a. Direct runoff to pervious areas (SD-B)</p> <p><input type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>b. Construct surfaces from permeable materials (SD-I)</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>c. Minimize the size of impervious areas</p> <p><input checked="" type="checkbox"/> Check this box to confirm that all impervious areas on the site will be minimized where feasible.</p> <p><i>If this box is not checked, identify the surfaces that cannot be minimized in Table 3, and explain why it is infeasible to do so.</i></p>						
C. <input checked="" type="checkbox"/> BMPs for Rooftop Areas: Check this box if rooftop areas are proposed and select at least one BMP below. (See Fact Sheet BL-3)									
<p><i>If no BMPs are selected, explain why they are infeasible in Table 3.</i></p>									
<p>1. Direct runoff to pervious areas (SD-B)</p> <p><input checked="" type="checkbox"/></p>	<p>2. Install green roofs (SD-C)</p> <p><input type="checkbox"/></p>	<p>3. Install rain barrels (SD-E)</p> <p><input type="checkbox"/></p>							
D. <input checked="" type="checkbox"/> BMPs for Landscaped Areas: Check this box if landscaping is proposed and select at least one BMP below. (See Fact Sheet BL-4)									
<p><i>If no BMPs are selected, explain why they are infeasible in Table 3.</i></p>									
<p>1. Sustainable Landscaping (SD-K)</p> <p><input checked="" type="checkbox"/></p>									

Note: All features and BMPs must be shown on applicable construction plans. See applicable Fact Sheets in Appendix C of the BMP Design Manual for additional information.

Note: Use Table 3 to explain BMP infeasibility or inapplicability, or to describe features or BMPs not listed in this table. Additional explanation may be required by the County.

Table 2 – Baseline BMPs for Pollutant-generating Sources

If this is a Small Residential Project, check this box and skip the rest of this table.

A. Management of Stormwater Discharges

1. Identify all proposed outdoor work areas below (<input type="checkbox"/> Check here if none are proposed)	2. Which BMPs will be used to prevent materials from contacting rainfall or runoff? (See Fact Sheet BL-5) (Select all feasible BMPs for each work area ²)			3. Where will runoff from the work area be routed? (See Fact Sheet BL-6) (Select one or more option for each work area)			
	Overhead covering (rooftops, etc.) (SC-A)	Separation of flows from adjacent areas (berms, etc.) (SC-B)	Wind protection (screens, etc.) (SC-C)	Sanitary sewer ³ (SC-D)	Containment system (SC-E)	Stormwater S-BMP or SSD-BMP ⁴	Other ⁵
<input checked="" type="checkbox"/> Trash & Refuse Storage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Materials & Equipment Storage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Loading & Unloading	<input type="checkbox"/>	<input type="checkbox"/>	---	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Fueling	<input type="checkbox"/>	<input type="checkbox"/>	---	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Maintenance & Repair	<input type="checkbox"/>	<input type="checkbox"/>	---	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Vehicle & Equipment Cleaning	<input type="checkbox"/>	<input type="checkbox"/>	---	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other:	<input type="checkbox"/>	<input type="checkbox"/>	---	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B. Prevention of Non-stormwater Discharges (See Fact Sheet BL-7)

Select one option for each feature below:

- Storm drain inlets and catch basins ... are not proposed will be labeled with stenciling or signage to discourage dumping (SC-F)
- Educational BMP Signage ... are not proposed will be labeled with educational signage for BMP (SC-G)
- Interior work surfaces, floor drains, & sumps ... are not proposed will not discharge directly or indirectly to the MS4 or receiving waters
- Drain lines (e.g., air conditioning, boiler, etc.) ... are not proposed will not discharge directly or indirectly to the MS4 or receiving waters
- Fire sprinkler test water ... are not proposed will not discharge directly or indirectly to the MS4 or receiving waters

Note: All outdoor features and BMPs in this table must be shown on applicable construction plans. See applicable Fact Sheets in Appendix C of the BMP Design Manual for additional information.

Note: Use Table 3 to explain BMP infeasibility or inapplicability, or to describe features or BMPs not listed in this table. Additional explanation may be required by the County.

² Each BMP is required where feasible. If none are selected for any feature, explain why they are infeasible in Table 3.

³ Separate wastewater agency approvals may be required.

⁴ Structural Treatment Control BMPs (S-BMPs) and Significant Site Design BMPs (SSD-BMPs) may not receive discharges from work areas that concentrate pollutants in a manner that will impair their functioning. Discharges from the proposed work area must also be included in DCV calculations for the applicable BMP.

⁵ Describe other proposed options for managing stormwater discharges in Table 3.

Table 3 – Explanations and Justifications for Table 1 and 2 Baseline BMPs

<input checked="" type="checkbox"/> Check here if no explanations or justifications for Table 1 or 2 BMPs are required.		
<ul style="list-style-type: none"> • Required Justifications: Provide explanations of BMP inapplicability and/or infeasibility as indicated per Tables 1 and 2. • If Requested: Justify why specific BMPs will not be implemented or will only be partially implemented. • Additional Explanation: Describe any proposed features and/or BMPs not listed in Tables 1 or 2. 		
BMP-Feature Combination		Explanation
Feature	Natural Site Features (Natural waterbodies, natural storage resevoirs & drainage corridors, and natural areas, soils, and vegetation)	Not applicable, no natural areas in existing development.
BMP	SD-G, SD-H	
Feature	Impervious Outdoor Site Features (Parking areas and lots and driveways)	All parking areas, lots, and driveways have been designed to be minimized where feasible.
BMP	SD-B, SD-I	
Feature	Rooftop Areas	Runoff from Rooftop will flow south via a downspout and drain and sheet flow towards the bioretention basins.
BMP	SD-B, SD-C, SD-E	
Feature	Stormwater Discharges (Materials & Equipment Storage, Loading & Unloading, Fueling, Maintenance and Repair, Vehicle and Equipment Cleaning)	All materials and storage will be kept covered and free from all drainage points including but not limited to: storm drain inlets, catch basins, and BMP treatment systems. Fueling, maintenance and repair, as well as vehicle equipment cleaning is not applicable on the proposed development.
BMP	SC-A, SC-B, SC-C, SC-D, SC-E, S-BMP, SSD-BMP	

Feature	Non-stormwater Discharges	Not applicable, not proposed for the development.
BMP	SC-F, SC-G	
Feature	Feature	Explanation
BMP	BMP	
Feature	Feature	Explanation
BMP	BMP	

Table 4: DMA Structural Compliance Strategies and Documentation

Part A – Selection and Application Structural Performance Standards									
1. <i>Selection of Standards</i> (select one; see BMPDM Section 6.1)									
<input checked="" type="checkbox"/> a. Pollutant control + hydromodification <input type="checkbox"/> b. Pollutant control only (project is exempt from hydromodification requirements)									
2. <i>Application of Structural Performance Standards</i> (select one; see BMPDM Section 1.7)									
<input checked="" type="checkbox"/> New Development Projects: Standards apply to <u>all impervious surfaces</u> .									
<input type="checkbox"/> Redevelopment Projects: Complete the calculations below. Select <u>the</u> applicable scenario based on the results.									
a. Existing impervious area (ft ²)		b. Impervious area created / replaced (ft ²)		c. % Impervious created / replaced [(b/a)*100]					
<input type="checkbox"/> <i>Scenario 1: c is 50% or more:</i> Performance standards apply to all impervious surfaces (a + b).									
<input type="checkbox"/> <i>Scenario 2: c is less than 50%:</i> Performance standards apply only to created or replaced impervious surfaces (b only).									
Part B – Compliance Strategies and Required Attachments									
1. <i>Complete and submit each of the applicable attachments on the right.</i>									
Att. 1		Att. 2		Att. 3		Att. 4		Att. 5	
Storm Water Intake Form		DMA Exhibits and Construction Plan Sheets		N/A		Previous SWQMP Submittals (see inside cover)		Existing Site and Drainage Description	
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	
2. <i>Indicate each compliance strategy below that will be used for one or more DMAs on the site.</i>									
		Att. 6	Att. 7	Att. 8	Att. 9	Att. 10	Att. 11	Att. 12	
		DMAs without Structural BMPs	DMAs w/ Structural Pollutant Control BMPs	DMAs w/ Structural Hydromod. BMPs	Critical Coarse Sediment Yield Areas	BMP Installation Verification Form	Maintenance Agreements/ Plans	Alternative Compliance Projects	
<input checked="" type="checkbox"/> Self-mitigating DMAs (BMPDM Section 5.2.1)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/> De Minimis DMAs (BMPDM Section 5.2.2)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/> Self-retaining DMAs (BMPDM Section 5.2.3)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Structural BMPs (select all that apply)									
<input checked="" type="checkbox"/> Pollutant Control BMPs (BMPDM Section 5.4)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/> Hydromodification Control BMPs (BMPDM Chapter 6)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Alternative Compliance Project (BMPDM Section 1.8)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Please check this box after you complete this list. Corresponding attachments will be automatically selected on the right.									

• Attachments 1, 2, and 5 are required for all projects.

Table 5: Critical Coarse Sediment Yield Area (CCSYA) Requirements

<ul style="list-style-type: none"> o Identify one applicable compliance pathway for the PDP below. o Document your selection in Attachment 9.
<p>A. Hydromodification Management Exemption (BMPDM Sections 1.6 and 6.1)</p>
<p><input type="checkbox"/> PDP is Exempt from Hydromodification Management Requirements</p> <p>Select if hydromodification management exemption was selected in Table 4 Part A.1.</p>
<p>B. Watershed Management Area (WMAA) Mapping (BMPDM Appendix H.1.1.2)</p>
<p><input checked="" type="checkbox"/> WMAA mapping demonstrates the following:</p> <ul style="list-style-type: none"> a. <5% of potential onsite CCYSAs will be impacted (built on or obstructed) b. All potential upstream offsite CCYSAs will be bypassed
<p>C. Resource Protection Ordinance (RPO) Methods (BMPDM Appendix H.1.1.1)</p>
<p><input type="checkbox"/> RPO Scenario 1: PDP is subject to and in compliance with RPO requirements</p> <ul style="list-style-type: none"> a. Project requires one or more discretionary permits (RPO applicability is confirmed during discretionary review) b. Onsite AND upstream offsite CCSYAs will be avoided and/or bypassed <p><input type="checkbox"/> RPO Scenario 2: PDP is entirely exempt/not subject to RPO requirements⁶</p> <ul style="list-style-type: none"> a. Project does not require discretionary permits b. Project will bypass all upstream offsite CCSYAs (no requirements for onsite CCSYAs)
<p>D. No Net Impact Analysis (BMPDM Appendix H.4)</p>
<p><input type="checkbox"/> Project demonstrates no net impact to receiving waters</p>

⁶ Does not include PDPs utilizing exemption(s) via RPO Section 86.604(e)(2)(cc) or 86.604(e)(3).

Table 6 –Minimum Construction Stormwater BMPs

Minimum Required BMPs by Activity Type Select all applicable activities and at least one BMP for each.	References	
	Caltrans ⁷	County of San Diego
<input checked="" type="checkbox"/> Erosion Control for Disturbed Slopes (choose at least 1 per season)		
<input type="checkbox"/> Vegetation Stabilization Planting ⁸ (Summer)	SS-2, SS-4	
<input checked="" type="checkbox"/> Hydraulic Stabilization Hydroseeding (Summer)	SS-4	
<input checked="" type="checkbox"/> Bonded Fiber Matrix or Stabilized Fiber Matrix ⁹ (Winter)	SS-3	
<input type="checkbox"/> Physical Stabilization Erosion Control Blanket (Winter)	SS-7	
<input checked="" type="checkbox"/> Erosion control for disturbed flat areas (slope < 5%)		
<input checked="" type="checkbox"/> County Standard Lot Perimeter Protection Detail	SC-2	PDS 659 ¹⁰
<input type="checkbox"/> Use of Item A erosion control measures on flat areas	SS-3, SS-4, SS-7	
<input type="checkbox"/> County Standard Desilting Basin (must treat all site runoff)	SC-2	PDS 660 ¹¹
<input checked="" type="checkbox"/> Mulch, straw, wood chips, soil application	SS-6, SS-8	
<input checked="" type="checkbox"/> Energy dissipation (required to control velocity for concentrated runoff or dewatering discharge)		
<input checked="" type="checkbox"/> Energy Dissipater Outlet Protection	SS-10	RSD D-40 ¹²
<input checked="" type="checkbox"/> Sediment control for all disturbed areas		
<input checked="" type="checkbox"/> Silt Fence	SC-1	
<input checked="" type="checkbox"/> Fiber Rolls (Straw Wattles)	SC-5	
<input checked="" type="checkbox"/> Gravel & Sand Bags	SC-6, SC-8	
<input type="checkbox"/> Dewatering Filtration	NS-2	
<input checked="" type="checkbox"/> Storm Drain Inlet Protection	SC-10	
<input type="checkbox"/> Engineered Desilting Basin (sized for 10-year flow)	SC-2	
<input checked="" type="checkbox"/> Preventing offsite tracking of sediment		
<input checked="" type="checkbox"/> Stabilized Construction Entrance	TC-1	
<input checked="" type="checkbox"/> Construction Road Stabilization	TC-2	
<input checked="" type="checkbox"/> Entrance/Exit Tire Wash	TC-3	
<input checked="" type="checkbox"/> Entrance/Exit Inspection & Cleaning Facility	TC-1	
<input checked="" type="checkbox"/> Street Sweeping and Vacuuming	SC-7	
<input checked="" type="checkbox"/> Materials Management		
<input checked="" type="checkbox"/> Material Delivery & Storage	WM-1	
<input checked="" type="checkbox"/> Spill Prevention and Control	WM-4	
<input checked="" type="checkbox"/> Waste Management ¹³		
<input checked="" type="checkbox"/> Waste Management Concrete Waste Management	WM-8	
<input checked="" type="checkbox"/> Solid Waste Management	WM-5	
<input checked="" type="checkbox"/> Sanitary Waste Management	WM-9	
<input checked="" type="checkbox"/> Hazardous Waste Management	WM-6	

⁷ See Caltrans 2017 Construction Site Best Management Practices (BMP) Manual available at: <https://dot.ca.gov/programs/construction/storm-water-and-water-pollution-control/manuals-and-handbooks>

⁸ Planting or Hydroseeding may be installed between May 1st and August 15th. Slope irrigation must be in place and operable for slopes >3 feet. Vegetation must be watered and established prior to October 1st. A contingency physical BMP must be implemented by August 15th if vegetation is not established by that date. If landscaping is proposed, erosion control measures must also be used while landscaping is being established. Established vegetation must have a subsurface mat of intertwined mature roots with a uniform vegetative coverage of 70 percent of the natural vegetative coverage or more on all disturbed areas.

⁹ All slopes over three feet must have established vegetative cover prior to final permit approval.

¹⁰ County PDS 659. Standard Lot Perimeter Protection Design System (Bldg. Division)

¹¹ County PDS 660. County Standard Desilting Basin for Disturbed Areas of 1 Acre or Less Bldg. Division

¹² Regional Standard Drawing D-40 – Rip Rap Energy Dissipater (also acceptable for velocity reduction)

¹³ Applicants are responsible to apply appropriate BMPs for specific wastes (e.g., BMP WM-8 for concrete).

Table 7 – Explanations and Justifications for Construction Phase BMPs

<input type="checkbox"/> Check here if no explanations or justifications for Table 6 BMPs are required.		
Justifications for Table 6 Temporary Construction Phase BMPs <ul style="list-style-type: none"> • Required Justifications: Justify all construction activity types for which NO BMPs were selected. • If Requested: Justify why specific individual BMPs were not selected. • Additional Explanation: Describe any proposed features and/or BMPs not listed in Table 6. 		
Activity Type / BMP		Explanation
Activity Type	Erosion Control for Disturbed Slopes (Vegetation Stabilization Planting, Hydraulic Stabilization hydroseeding, bonded fiber matrix or stabilized fiber matrix, and physical stabilization erosion control blanket)	Not applicable as there are no disturbed slopes in proposed project.
BMP	SS-2, SS-3, SS-4, SS-7	
Activity Type	Erosion Control for Disturbed Flat Areas (County Standard Lot Perimeter Protection Detail, use of Item A Erosion Control Measures on Flat Areas, County Standard Desilting Basin)	Not applicable to proposed site.
BMP	SC-2, SS-3, SS-4, SS-7, SC-2, SS-6, SS-8	
Activity Type	Energy Dissipation (Energy Dissipater Outlet Protection)	Not applicable as there is no concentrated runoff or dewatering discharge for this proposed project.
BMP	SS-10, RSD D-40	

Activity Type	Sediment Control for all disturbed areas (Dewatering Filtration, Engineered Desilting Basin)	Given the construction schedule and are of project, this is not applicable.
BMP	NS-2, SC-2	
Activity Type	Activity Type	Explanation
BMP	BMP	
Activity Type	Activity Type	Explanation
BMP	BMP	
Activity Type	Activity Type	Explanation
BMP	BMP	



County of San Diego
 Stormwater Quality Management Plan (SWQMP)
 Attachment 1: Storm Water Intake Form for All Permit Applications

This form establishes Stormwater Quality Management Plan (SWQMP) requirements for Development Projects per Sections 67.809 and 67.811 of the County of San Diego Watershed Protection Ordinance (WPO). See *Storm Water Intake Form Instructions* for additional guidance and explanation of terms.

Part 1. Project Information			
Project Name:	Quarry Storage MPA		
Record ID (Permit) No(s):	PDS2021-MPA-21-009		
Assessor's Parcel No(s):	586-050-36, -44, & -48		
Street Address (or Intersection):	5790 Quarry Road		
City, State, Zip:	Bonita, CA 91912		
Part 2. Applicant / Project Proponent Information			
Name:	Brian Sorenson		
Company:	Insite Property Group, LLC		
Street Address:	811 N. Catalina Avenue		
City, State, Zip:	Redondo Beach, CA 90277		
Phone Number	310-954-1264		
Email:			
Part 3. Required Information for All Development Projects			
(A)	1. Existing (pre-development) impervious surfaces (ft ²)	2. Created or replaced impervious surfaces (ft ²)	3. Total disturbed area (acres or ft ²)
	25,053	207,282	348,813
(B)	<input checked="" type="checkbox"/> Check here and provide a WDID# if this project is subject to the California Construction General Permit (Order No. 2009-0009-DWQ) ¹		WDID # (if issued)
			TBD

For County Use Only	Reviewed By:	Review Date:
<input type="checkbox"/> Standard SWQMP	<input type="checkbox"/> PDP SWQMP	<input type="checkbox"/> Green Streets PDP Exemption SWQMP

¹ Available at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html

Part 4. Priority Classification & SWQMP Form Selection**(A) If your project is the following ... (select one)****(B) You must complete ...** **Standard Project****→ Standard SWQMP Form**

- a. Project is East of the Pacific/Salton Sea Divide
- b. None of the PDP criteria below applies

 Priority Development Project (PDP)**→ PDP SWQMP Form**

1. Project is part of an existing PDP, OR
2. Project does any of the following:
- a. Creates or replaces a total of 10,000 ft² or more of impervious surface
 - b. Creates or replaces a combined total of 5,000 ft² or more of impervious surface within one or more of the following uses: (1) parking lots; (2) streets, roads, highways, freeways, and/or driveways; (3) restaurants; and (4) hillsides
 - c. Creates or replaces a combined total of 5,000 ft² or more of impervious surface within one or more of the following uses: (1) automotive repair shops; and (2) retail gasoline outlets
 - d. Discharges directly to an Environmentally Sensitive Area (ESA) AND creates or replaces 2,500 ft² or more of impervious surface
 - e. Disturbs one or more acres of land (43,560 ft²) and is expected to generate pollutants post-construction
 - f. Is a redevelopment project that creates or replaces 5,000 ft² or more of impervious surface on a site already having at least 10,000 ft² of impervious surface

 Green Streets PDP Exemption²**→ Green Streets PDP Exemption SWQMP Form****Part 5. Applicant Signature***I have reviewed the information in this form, and it is true and correct to the best of my knowledge.*

Applicant / Project Proponent Signature:



Date:

1/24/24

- **Upon completion** submit this form to the County.
- **If requested**, attach supporting documentation to justify selections made or exemptions claimed.
- **If this is a PDP that is part of a larger existing PDP**, you will be required to attach a copy of the existing SWQMP to the newer SWQMP submittal.

² **Green Streets PDP Exemption Projects** are those claiming exemption from PDP classification per WPO Section 67.811(b)(2) because they consist exclusively of *either* 1) development of new sidewalks, bike lanes, and/or trails; or 2) improvements to existing roads, sidewalks, bike lanes, and/or trails.



2.0 General Requirements

- Attachment 2 consolidates exhibits and plans required for the entire project.
- Complete the table below to indicate which sub-attachments are included with the submittal. Sub-attachments that are not applicable can be excluded from the submittal.
- Unless otherwise stated, features and BMPs identified and described in each corresponding Attachment (6 through 9) must be shown on applicable DMA Exhibits and construction plans submitted for the project.

Sub-attachments	Requirement
<input checked="" type="checkbox"/> 2.1: DMA Exhibits	All PDPs
<input checked="" type="checkbox"/> 2.2: Individual Structural BMP DMA Mapbook	PDPs with structural BMPs
<input checked="" type="checkbox"/> 2.3: Construction Plan Sets	All projects

2.1 DMA Exhibits

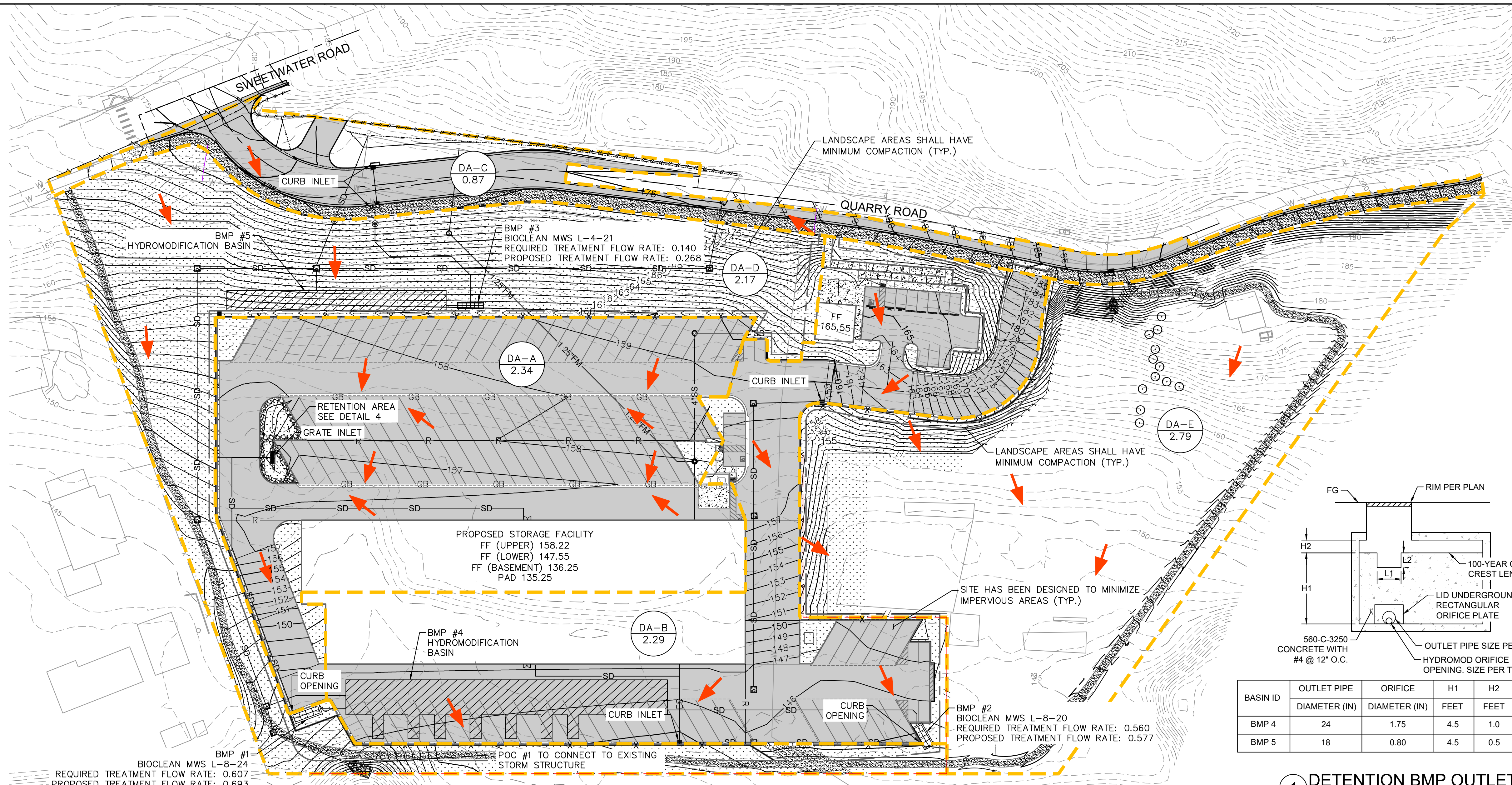
- DMA Exhibits must show all DMAs on the project site. Exhibits must include all applicable features identified in applicable SWQMP attachments.
- Exhibits may be prepared individually for the BMPs associated with each applicable SWQMP Attachment (6, 7, 8, and/or 9) or combined into one or more consolidated exhibits.
- Use this checklist to ensure required information is included on each exhibit (copy as needed).

DMA Exhibit ID #:	
A. Features required for all exhibits	
1. Existing Site Features	
<input checked="" type="checkbox"/> Underlying hydrologic soil group (A, B, C, D)	<input checked="" type="checkbox"/> Topography and impervious areas
<input type="checkbox"/> Approximate depth to groundwater	<input checked="" type="checkbox"/> Existing drainage network, directions, and offsite connections
<input checked="" type="checkbox"/> Natural hydrologic features	
2. Drainage Management Area (DMA) Information	
<input checked="" type="checkbox"/> Proposed drainage network, directions, and offsite connections	<input checked="" type="checkbox"/> DMA boundaries, ID numbers, areas, and type (structural BMP, de minimis, etc.)
3. Proposed Site Changes, Features, and BMPs	
<input checked="" type="checkbox"/> Proposed demolition and grading	<input checked="" type="checkbox"/> Construction BMPs ²
<input type="checkbox"/> Group 1, 2, and 3 Features ¹	<input type="checkbox"/> Baseline source control BMPs
<input type="checkbox"/> Group 4 Features	<input type="checkbox"/> Baseline source control BMPs
B. Proposed Features and BMPs Specific to Individual SWQMP Attachments³	
<input checked="" type="checkbox"/> Attachment 6	<input type="checkbox"/> SSD-BMP impervious dispersion areas <input checked="" type="checkbox"/> SSD-BMP tree wells
<input checked="" type="checkbox"/> Attachment 7	<input checked="" type="checkbox"/> Structural pollutant control BMPs
<input checked="" type="checkbox"/> Attachment 8	<input checked="" type="checkbox"/> Structural hydromodification management BMPs <input checked="" type="checkbox"/> Point(s) of Compliance (POC) for hydromodification management <input checked="" type="checkbox"/> Proposed drainage boundary and drainage area to each POC
<input checked="" type="checkbox"/> Attachment 9	<input type="checkbox"/> Onsite CCSYAs <input checked="" type="checkbox"/> Bypass of onsite CCSYAs <input type="checkbox"/> Bypass of upstream offsite CCSYAs

¹ Group 1-4 features and baseline BMPs from PDP SWQMP Tables 2 and 3.

² Minimum Construction Stormwater BMPs from PDP SWQMP Table 7.

³ Identify the location, ID numbers, type, and size/detail of BMPs.

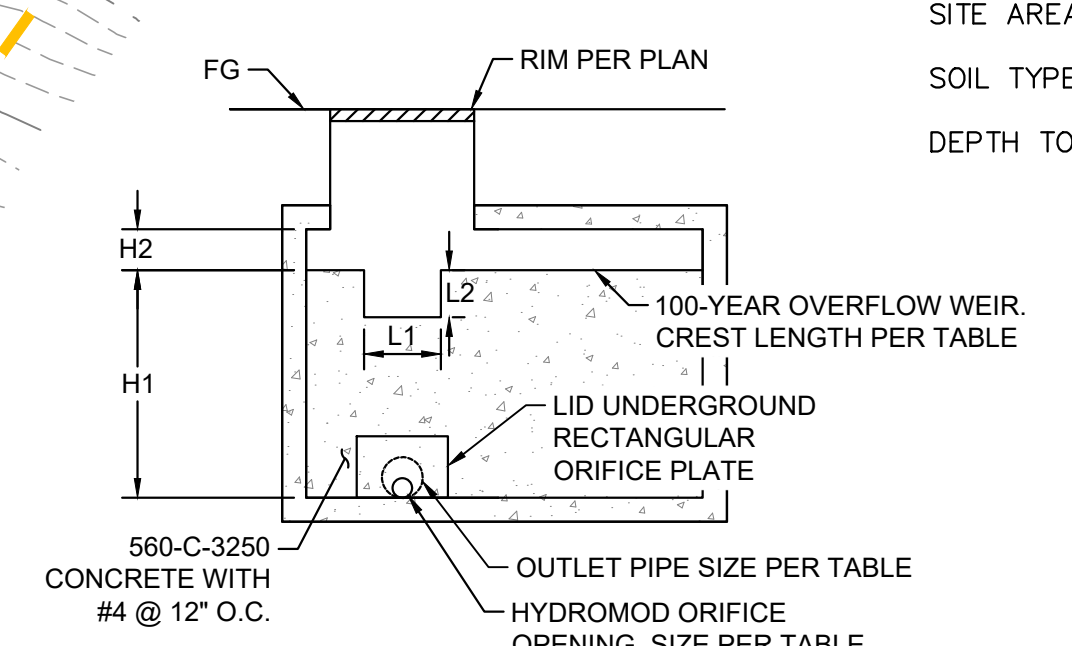


LEGEND

- PROPERTY LINE/ RIGHT OF WAY
- CENTER LINE
- EASEMENT LINE
- DMA LIMITS
- 88 PROPOSED CONTOUR
- 89 EXISTING CONTOUR
- R PROPOSED RIDGE LINE
- GB PROPOSED GRADE BREAK LINE
- >>> PROPOSED FLOW LINE
- SD PROPOSED STORM DRAIN
- [Pattern] LANDSCAPE AREA
- [Pattern] UNDERGROUND STORAGE - FLOW CONTROL BMP
- [Pattern] MODULAR WETLAND SYSTEM - POLLUTANT CONTROL BMP

SITE INFORMATION

SITE AREA: 10.8 AC
 SOIL TYPE: D
 DEPTH TO GROUNDWATER: >26'



BASIN ID	OUTLET PIPE DIAMETER (IN)	ORIFICE DIAMETER (IN)	H1 FEET	H2 FEET	L1 FEET	L2 FEET	CREST FEET
BMP 4	24	1.75	4.5	1.0	0.167	2.0	10.7
BMP 5	18	0.80	4.5	0.5	1.5	2.8	4.0

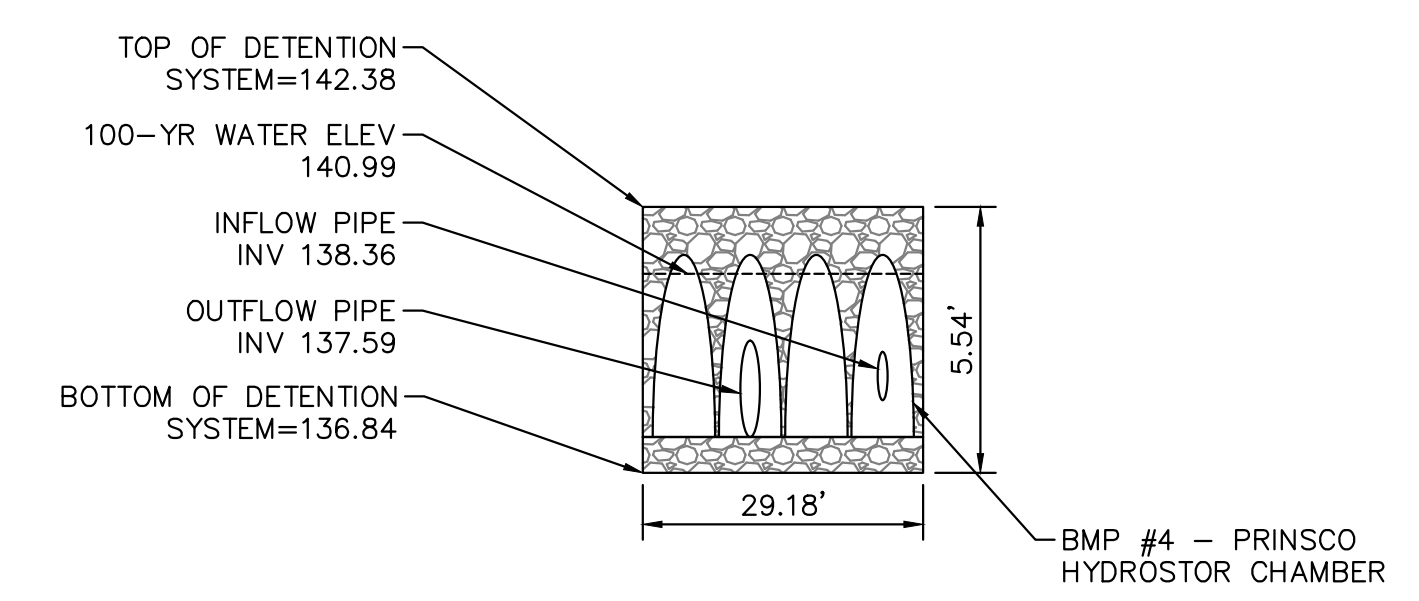
1 DETENTION BMP OUTLET STRUCTURE
NOT TO SCALE

WATER QUALITY BMPS

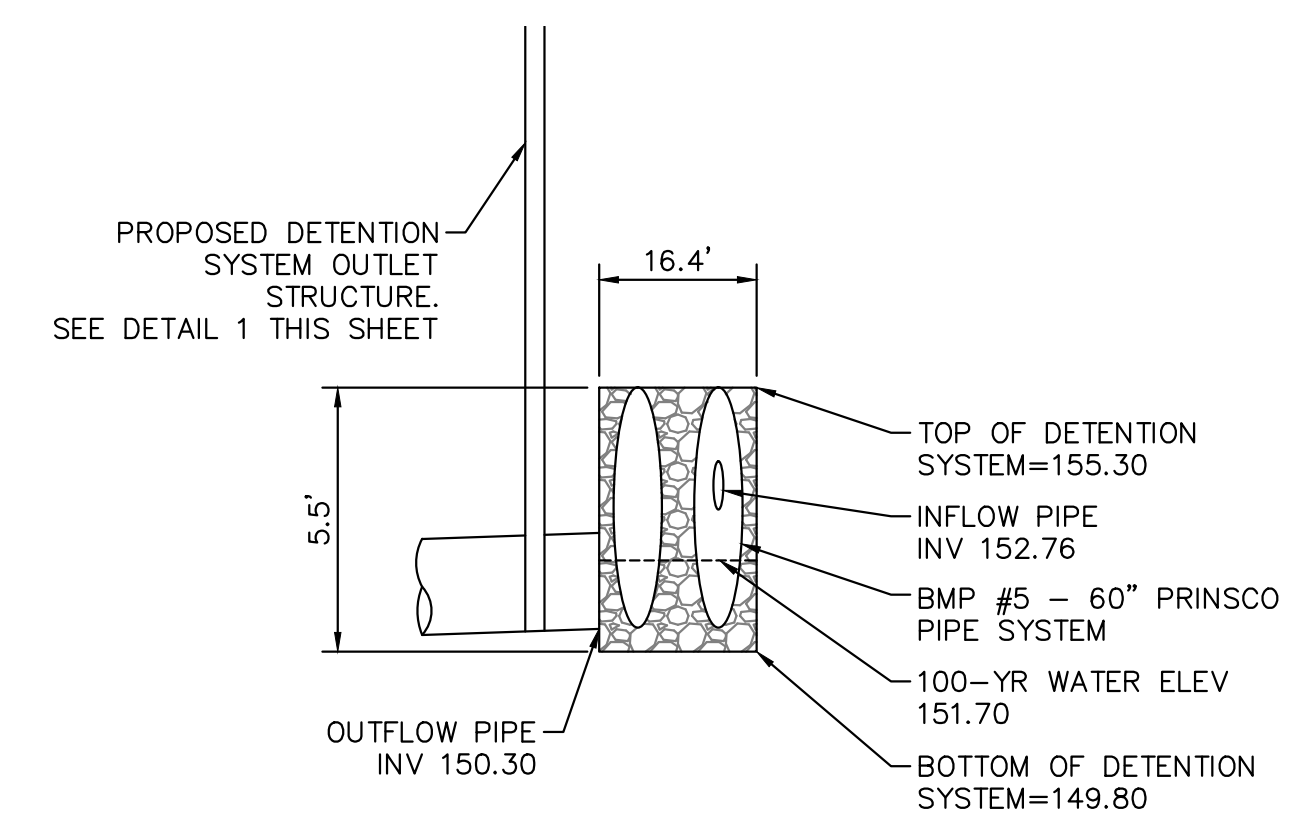
DMA #	TOTAL DRAINAGE AREA (SF)	TOTAL DRAINAGE AREA (AC)	IMPERVIOUS AREA (SF)	PERVIOUS AREA (SF)	DESIGN CAPTURE VOLUME (CF)	STRUCTURAL BMP ID #	BMP CLASSIFICATION	BMP PROVIDED	PERCENT IMPERVIOUS (%)	TREATMENT Q REQUIRED (CFS)	TREATMENT Q PROVIDED (CFS)	BMP TYPE
A	102,589	2.36	97,311	5,278	4,044	1	BIOFILTRATION	MODULAR WETLAND SYSTEM MWS-L-8-24	95	0.607	0.693	STRUCTURAL
B	98,505	2.26	89,243	9,262	3,702	2	BIOFILTRATION	MODULAR WETLAND SYSTEM MWS-L-8-20	91	0.560	0.577	STRUCTURAL
C	37,810	0.87	20,728	17,082	936	3	BIOFILTRATION	MODULAR WETLAND SYSTEM MWS-L-4-21	55	0.140	0.268	STRUCTURAL
D	94,380	2.17	--	94,380	--	--	SELF MITIGATING	--	0	--	--	--
E	121,564	2.79	--	121,564	--	--	SELF MITIGATING	--	0	--	--	--

HYDROMOD BMPS

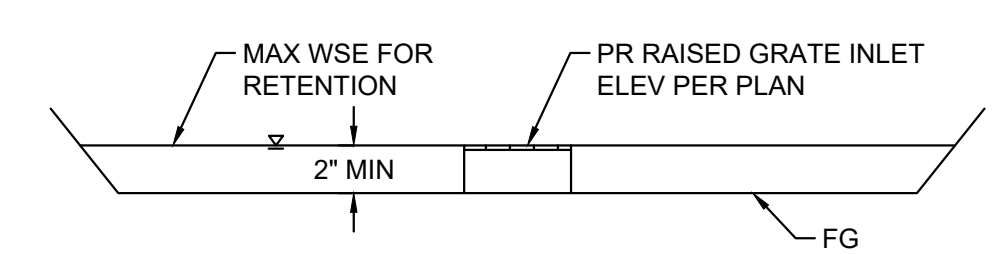
DMA #	TOTAL DRAINAGE AREA (SF)	TOTAL DRAINAGE AREA (AC)	IMPERVIOUS AREA (SF)	PERVIOUS AREA (SF)	BMP VOLUME REQUIRED (CF) (SPREADSHEET V3.1)	BMP VOLUME PROVIDED (CF)	STRUCTURAL BMP ID #	BMP CLASSIFICATION	BMP PROVIDED	BMP TYPE
A,B	201,094	4.62	186,554	14,540	16921	30743	4	CISTERN	PRINSCO HYDROSTOR CHAMBERS	STRUCTURAL
C	37,810	0.87	88,703	11,033	2019	7052	5	CISTERN	PRINSCO STORMWATER PIPE DETENTION SYSTEM	STRUCTURAL



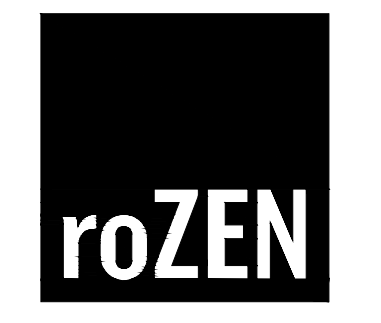
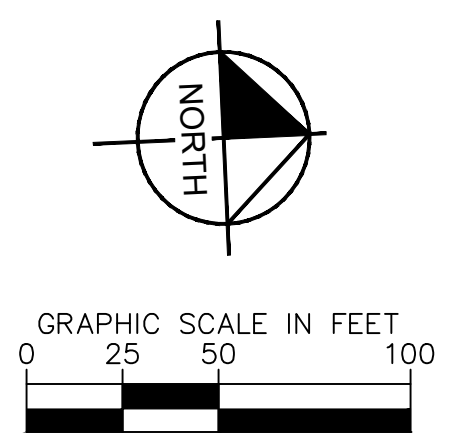
2 BMP #4 CROSS SECTION
NOT TO SCALE



3 BMP #5 CROSS SECTION
NOT TO SCALE



4 RETENTION AREA
NOT TO SCALE



No.	Description	Date
Revisions		

NOT FOR CONSTRUCTION

PRELIMINARY WQMP PLAN

RECORD ID: PDS2021-MUP-21-009

C8.0

2.2 Individual Structural BMP DMA Mapbook

- Use this page as a cover sheet for the Structural DMA Mapbook.
- An individual Structural DMA Mapbook must be submitted for any project site with one or more structural BMPs. One Mapbook is required for each unique subsequent owner with responsibility for maintenance of a Structural BMP. Mapbook exhibits will be incorporated as exhibits in Stormwater Maintenance Agreements (SWMAs) and Maintenance Notifications (MNs). See Attachment 11 for additional information on maintenance agreements. If the Mapbook has been provided for each subsequent owner in Attachment 11, they are not required here.
- Place each map on 8.5"x11" paper.
- Show at a minimum the DMA, Structural BMP, Assessor's parcel boundaries with parcel numbers, and any existing hydrologic features within the DMA.

<input checked="" type="checkbox"/>	<u>All Mapbooks are attached</u>
<input type="checkbox"/>	<u>All Mapbooks are in Attachment 11</u>

2.3 Construction Plan Sets

- DMAs, features, and BMPs identified and described in this attachment must also be shown on all applicable construction and landscape plans.
- As applicable, plan sheets must identify:
 - All features and BMPs identified in Sub-attachment 2.1 (DMA Exhibits).
 - The additional information listed below.
- Use this checklist to ensure required information is included on each plan (copy as needed).

Plan Type	Entitlement Plans
Required Information ⁴	
<input checked="" type="checkbox"/> Structural BMP(s) and Significant Site Design BMPs (if applicable) with ID numbers. <input checked="" type="checkbox"/> The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit. <input checked="" type="checkbox"/> Details and specifications for construction of Structural BMP(s) and Significant Site Design BMPs (if applicable). <input checked="" type="checkbox"/> Signage indicating the location and boundary of structural BMP(s) as required by County staff. <input checked="" type="checkbox"/> How to access the structural BMP(s) to inspect and perform maintenance. <input checked="" type="checkbox"/> 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). <input checked="" type="checkbox"/> 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). <input checked="" type="checkbox"/> Recommended equipment to perform maintenance. <input checked="" type="checkbox"/> When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management. <input checked="" type="checkbox"/> Include landscaping plan sheets (if available) showing vegetation requirements for vegetated structural BMP(s). <input checked="" type="checkbox"/> All BMPs must be fully dimensioned on the plans. <input checked="" type="checkbox"/> When proprietary BMPs are used, site-specific cross-section with outflow, inflow, and manufacturer model number must be provided. Photocopies of general brochures are not acceptable. <input checked="" type="checkbox"/> Include all source control and site design measures described in the SWQMP. <input checked="" type="checkbox"/> Include all construction BMPs described in the SWQMP.	

⁴ For Building Permit Applications, refer to Form PDS 272,
<https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/pds272.pdf>



Kimley»Horn

401 B STREET, SUITE 600, SAN DIEGO, CA 92101
PHONE: 619-234-9411
WWW.KIMLEY-HORN.COM

LEGEND

- (160.50 TC)
(160.00 FS) EXISTING SPOT ELEVATION
- 160.50 TC
160.00 FS PROPOSED SPOT ELEVATION
- 1.0% PROPOSED FLOW (SLOPE AND DIRECTION).
- (1.0%) EXISTING FLOW (SLOPE AND DIRECTION).
- PROPERTY LINE/ RIGHT OF WAY
- SAWCUT LINE
- DAYLIGHT LINE
- 88 PROPOSED CONTOUR
- 89 EXISTING CONTOUR
- SD PROPOSED STORM DRAIN
- W EXISTING WATER LINE
- S EXISTING SEWER LINE
- OE EXISTING OVERHEAD ELECTRICAL LINE
- PROPOSED LOW IMPACT DEVELOPMENT (LID) FACILITY (UNDERGROUND OR DETENTION SYSTEM)
- PROPOSED DECOMPOSED GRANITE
- PROPOSED ASPHALT CONCRETE
- PROPOSED CONCRETE
- PROPOSED LANDSCAPING

CONSTRUCTION NOTES

- 1 PROPOSED CONCRETE CURB/ CURB AND GUTTER
- 2 PROPOSED SIDEWALK
- 3 PROPOSED PRIVATE STORM DRAIN LINE
- 4 PROPOSED STORM DRAIN MANHOLE
- 5 PROPOSED STORM DRAIN CURB INLET
- 6 PROPOSED STORM DRAIN CATCH BASIN
- 7 PROPOSED RETAINING WALL
- 8 PROPOSED RIBBON WALL
- 9 PROPOSED HEADWALL
- 10 EXISTING HEADWALL TO BE REMOVED
- 11 PROPOSED SUBSURFACE DETENTION SYSTEM. MAINTENANCE MANHOLES TO BE GRADED FLAT IN SLOPED AREAS FOR ACCESSIBILITY.
- 12 PROPOSED MODULAR WETLAND TREATMENT UNIT (OR EQUAL)
- 13 PROPOSED BIKE RACK
- 14 PROPOSED G-14 COMMERCIAL DRIVEWAY
- 15 PROPOSED PUBLIC STORM DRAIN LINE
- 16 PROPOSED DETENTION SYSTEM OUTLET STRUCTURE. SEE DETAIL 1. THIS SHEET.
- 17 INSTALL TYPE A STORM DRAIN CLEANOUT PER SAN DIEGO REGIONAL STANDARD DRAWING D-09. EXACT LOCATION TO BE COORDINATED WITH COUNTY STAFF DURING FINAL DESIGN.
- 18 INSTALL CROSS GUTTER PER SAN DIEGO REGIONAL STANDARD DRAWING G-12.
- 19 INSTALL CURB AND GUTTER PER SAN DIEGO REGIONAL STANDARD DRAWING G-02.
- 20 CONSTRUCT 10' COMMUNITY PATHWAY PER SAN DIEGO COUNTY TRAIL DESIGN MANUAL.
- 21 EXISTING PUBLIC STORM DRAIN INLET TO REMAIN.
- 22 EXISTING PUBLIC STORM DRAIN LINE TO BE CONNECTED TO PROPOSED MANHOLE.
- 23 RECONSTRUCT EXISTING HEADWALL TO REMAIN
- 24 EXISTING PUBLIC STORM DRAIN LINE TO BE REMOVED

GRADING INFORMATION:

TOTAL SITE AREA: 10.742 ACRES
 GRADED AREA: 8.3 ACRES
 CUT QUANTITIES: 30,275 CY
 FILL QUANTITIES: 22,535 CY
 EXPORT: 7,740 CY
 SITE RETAINING WALLS: 1,150 LF

NOTE: GRADING QUANTITIES ARE ESTIMATED FOR DESIGN AND PERMIT PURPOSES ONLY AND SHALL BE INDEPENDENTLY VERIFIED BY THE CONTRACTOR PRIOR TO BIDDING. ACTUAL QUANTITIES MAY VARY DUE TO SHRINKAGE LOSSES, CLEARING OPERATIONS, COMPACTION, SETTLEMENT, ETC. CONTRACTOR TO NOTIFY THE ENGINEER OF WORK OF ANY DISCREPANCIES PRIOR TO GRADING OPERATIONS. QUANTITIES DO NOT INCLUDE EXCAVATIONS SPILLS FROM UTILITY TRENCHES, STRUCTURAL FOOTINGS, EXISTING IMPROVEMENT DEMOLITION, OVEREXCAVATION AND REMEDIAL GRADING, OR SLOPE CUTBACKS.

THIS PROJECT PROPOSES TO EXPORT 7,740 CUBIC YARDS OF MATERIAL FROM THIS SITE. ALL EXPORT MATERIAL SHALL BE DISCHARGED TO A LEGAL DISPOSAL SITE.

SOURCE OF TOPOGRAPHY

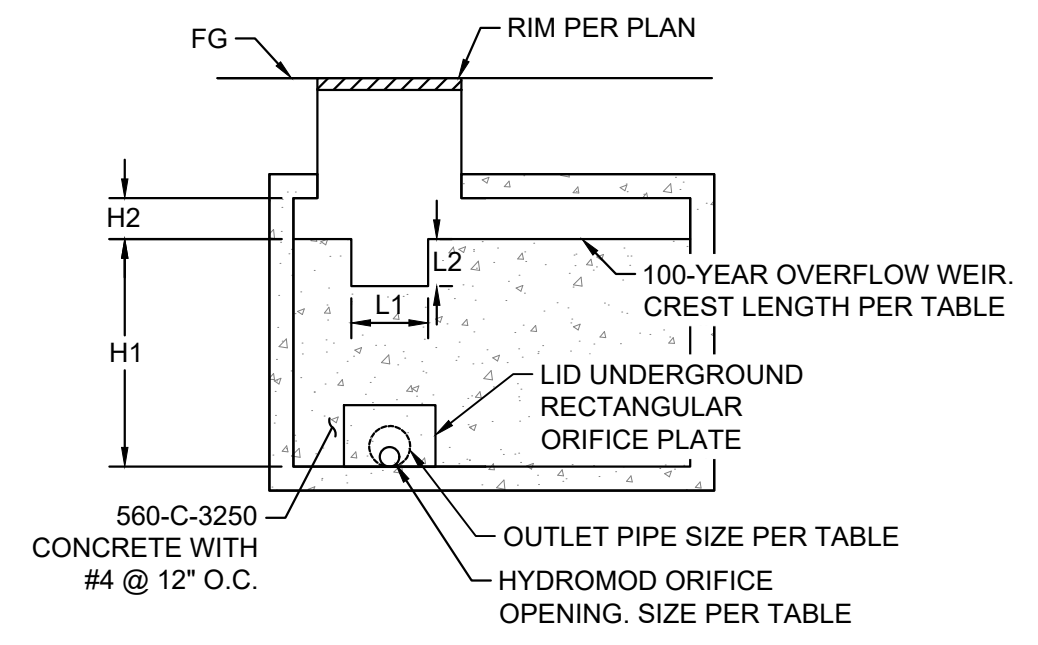
ONSITE FIELD SURVEY METHODS BY BWE.
 DATUM: CCS83, ZONE 6

EXISTING UTILITY NOTE

THE EXISTING UTILITIES SHOWN ON THE PLAN ARE BASED ON AVAILABLE RECORDS. THE CONTRACTOR MUST FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION, REPORT DISCREPANCIES AND POTENTIAL CONFLICTS WITH PROPOSED UTILITIES AND STRUCTURES TO ENGINEER OF RECORD PRIOR TO INSTALLATION OF ANY UNDERGROUND PIPING.

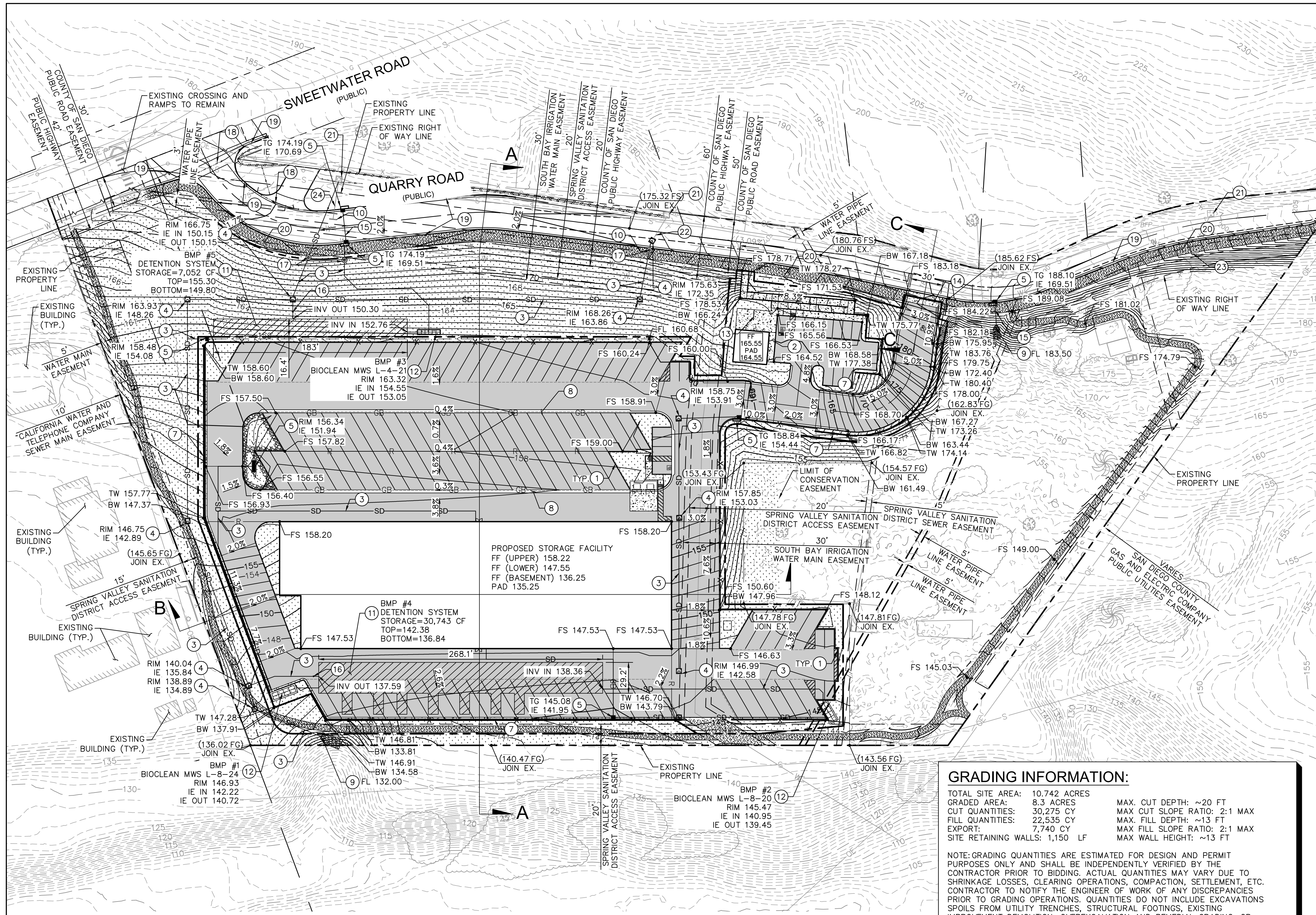
PRIOR TO PRECONSTRUCTION MEETING

NOTICE: IN THE EVENT THAT ANY ACTIVITY, INCLUDING EARTHMOVING OR CONSTRUCTION, DISCOVERS THE PRESENCE OF UNDERGROUND STORAGE TANKS, SEPTIC TANKS, WELLS, SITE DEBRIS, AND/OR CONTAMINATED SOILS ON-SITE, THE CONTRACTOR AND/OR PROPERTY OWNER SHALL NOTIFY THE COUNTY OF SAN DIEGO PLANNING & DEVELOPMENT SERVICES DEPARTMENT AND THE DEPARTMENT OF ENVIRONMENTAL HEALTH. THE PRESENCE OF CONTAMINATED SOILS WILL REQUIRE SOIL TESTING AND REMEDIATION IN ACCORDANCE WITH STANDARD COUNTY PROCEDURES. THIS PROCESS WILL BE DETERMINED ONCE THE COUNTY IS NOTIFIED OF THE PRESENCE OF CONTAMINATED SOILS.



BASIN ID	OUTLET PIPE DIAMETER (IN)	ORIFICE DIAMETER (IN)	H1 FEET	H2 FEET	L1 FEET	L2 FEET	CREST FEET
BMP 4	24	1.75	4.5	1.0	0.167	2.0	10.7
BMP 5	18	0.80	4.5	0.5	1.5	2.8	4.0

1 DETENTION BMP OUTLET STRUCTURE
 NOT TO SCALE



Sheet Number	Sheet Title
C1.0	PRELIMINARY GRADING PLAN
C2.0	SITE SECTIONS
C3.0	QUARRY RD SECTIONS
C4.0	PRELIMINARY UTILITY PLAN
C5.0	EXISTING SLOPE ANALYSIS PLAN
C6.0	PROPOSED SLOPE ANALYSIS PLAN
C7.0	DEMOLITION PLAN
C8.0	PRELIMINARY WQMP
-	PRELIMINARY ROUTE STUDY

CONTACT INFORMATION

OWNER:
 INSITE PROPERTY GROUP
 19191 S VERMONT AVE., SUITE 680
 TORRANCE, CA 90502
 TKARP@INSITEPG.COM
 949-690-8311

CIVIL ENGINEER:
 BEN HUBER, P.E.
 KIMLEY-HORN AND ASSOCIATES
 4637 CHABOT DRIVE, SUITE 350
 PLEASANTON, CA 94588
 BEN.HUBER@KIMLEY-HORN.COM

PROJECT SUMMARY

PROJECT ADDRESS: 5780 QUARRY ROAD
 BONITA, CA 91902

ASSESSOR PARCEL NUMBER(S):
 586-050-36-00
 586-050-44-00
 586-050-48-00

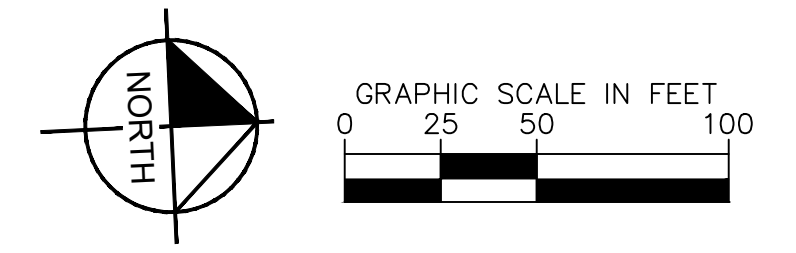
LEGAL DESCRIPTION

THE PROPERTY CONSISTS OF PARCEL 1-5 FROM THE SOUTHEAST QUARTER OF QUARTER SECTION 24 OF RANCHO DE LA NACION, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP NO. 166, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MADE BY GEO MORRILL.

GENERAL NOTE

THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF THE PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL TO PERFORM AND GRADING SHOWN HEREON, AND AGREES TO OBTAIN VALID GRADING PERMISSIONS BEFORE COMMENCING SUCH ACTIVITY.

IN THE EVENT THAT ANY ACTIVITY, INCLUDING EARTHMOVING OR CONSTRUCTION, DISCOVERS THE PRESENCE OF UNDERGROUND STORAGE TANKS, SEPTIC TANKS, WELLS, SITE DEBRIS, AND/OR CONTAMINATED SOILS ON-SITE, THE CONTRACTOR AND/OR PROPERTY OWNER SHALL NOTIFY THE COUNTY OF SAN DIEGO PLANNING & DEVELOPMENT SERVICES DEPARTMENT AND THE DEPARTMENT OF ENVIRONMENTAL HEALTH AND QUALITY. THE PRESENCE OF CONTAMINATED SOILS WILL REQUIRE SOIL TESTING AND REMEDIATION IN ACCORDANCE WITH STANDARD COUNTY PROCEDURES. THIS PROCESS WILL BE DETERMINED ONCE THE COUNTY IS NOTIFIED OF THE PRESENCE OF CONTAMINATED SOILS.



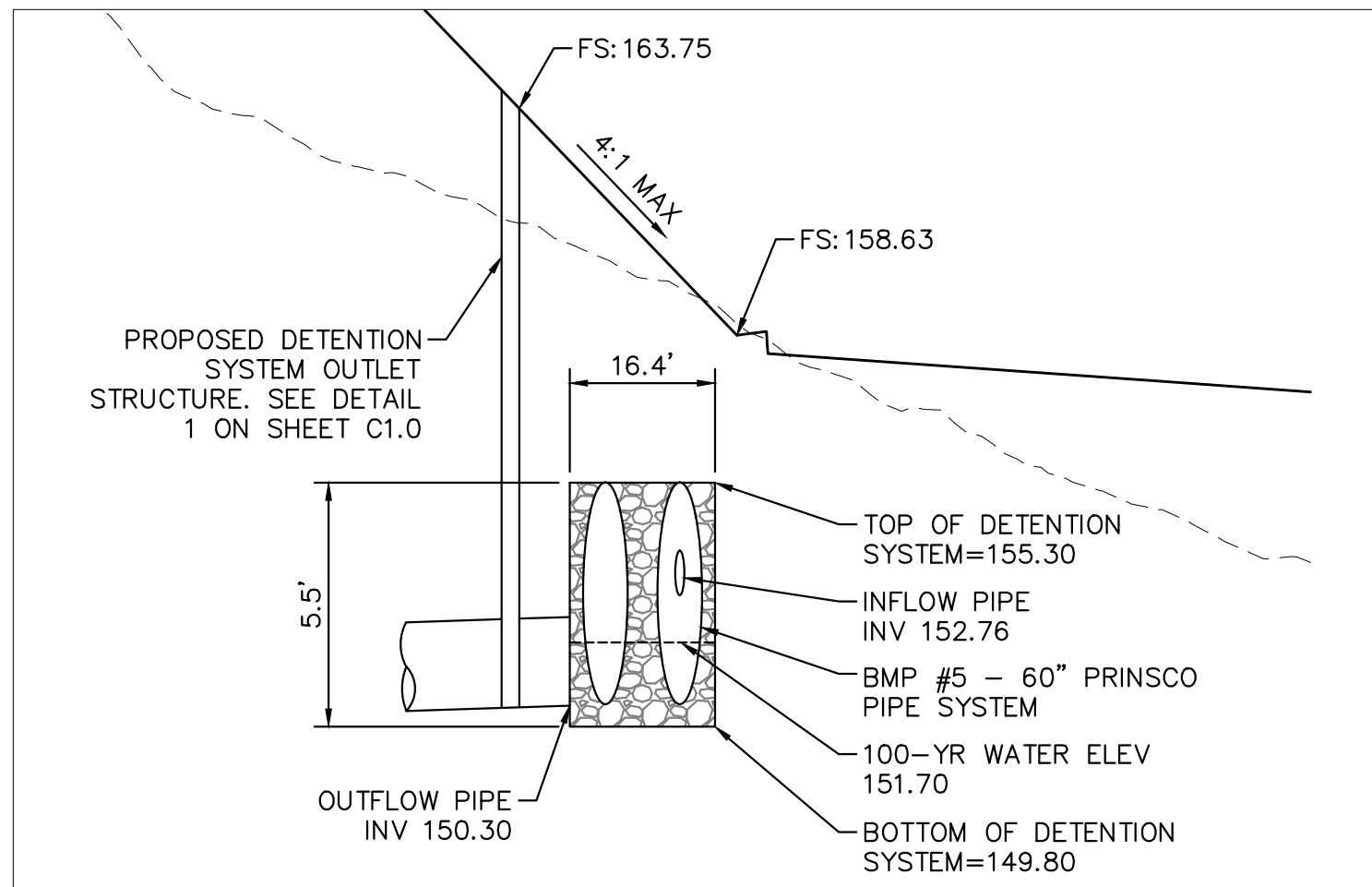
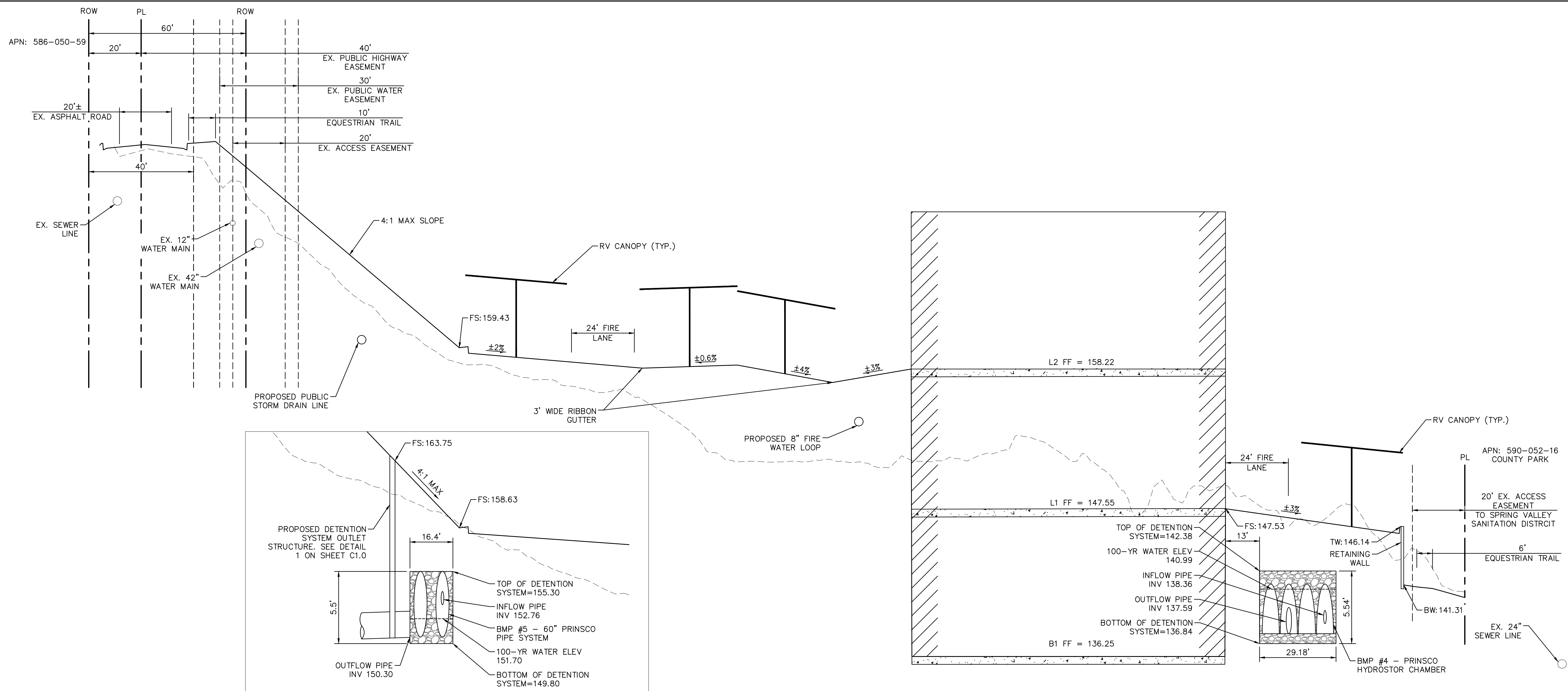
No.	Description	Date
Revisions		

NOT FOR CONSTRUCTION

PRELIMINARY GRADING PLAN

RECORD ID: PDS2021-MUP-21-009

C1.0

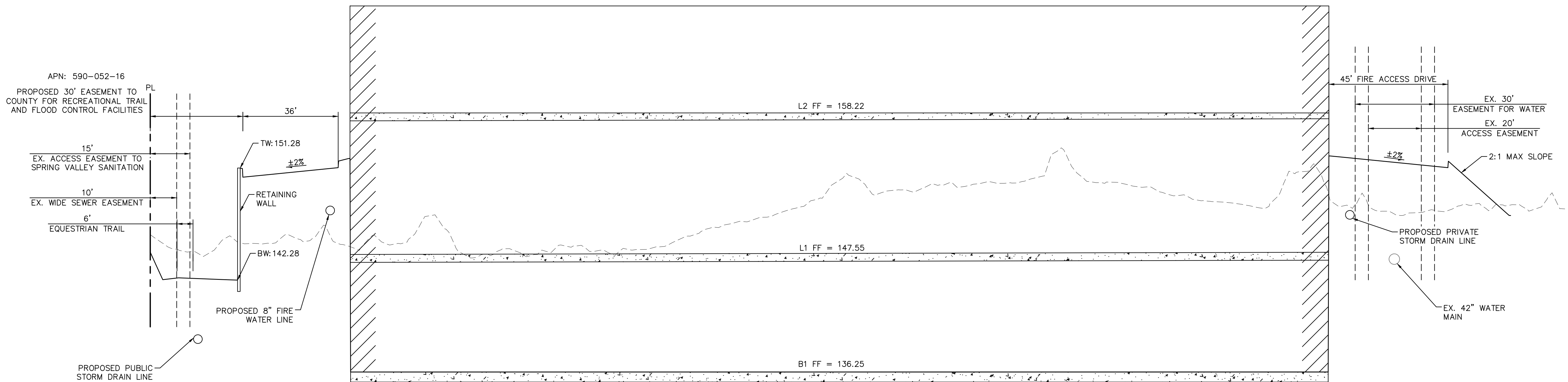


BMP #5

HORIZONTAL SCALE: 1"=20' VERTICAL SCALE: 1"=4'

SECTION A-A

HORIZONTAL SCALE: 1"=20' VERTICAL SCALE: 1"=4'



SECTION B-B

HORIZONTAL SCALE: 1"=20' VERTICAL SCALE: 1"=4'

No.	Description	Date

NOT FOR CONSTRUCTION

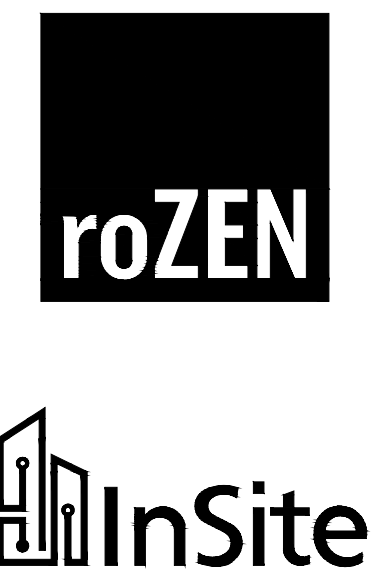
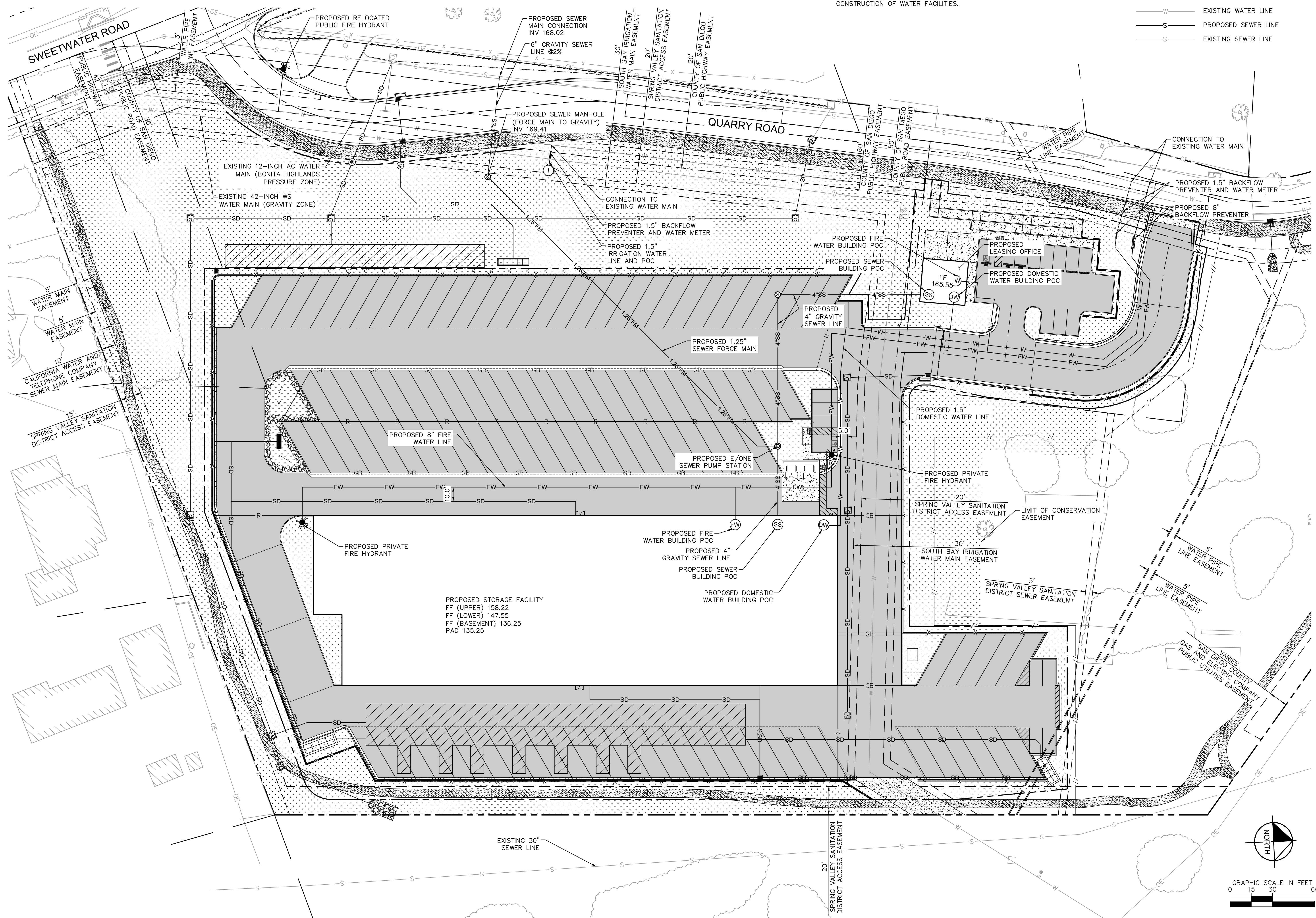
SITE SECTIONS

GENERAL NOTES

1. ALL WATER SERVICE LATERALS SHALL BE INSTALLED IN ACCORDANCE WITH SWEETWATER AUTHORITY DESIGN STANDARDS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF WATER FACILITIES.

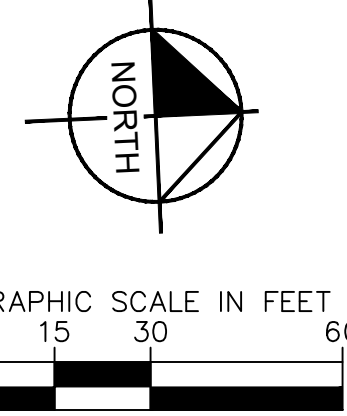
LEGEND

- FW PROPOSED FIRE WATER LINE
- W PROPOSED DOMESTIC WATER LINE
- W EXISTING WATER LINE
- S PROPOSED SEWER LINE
- S EXISTING SEWER LINE



No.	Description	Date
Revisions		

NOT FOR CONSTRUCTION



PRELIMINARY UTILITY PLAN

RECORD ID: PDS2021-MUP-21-009

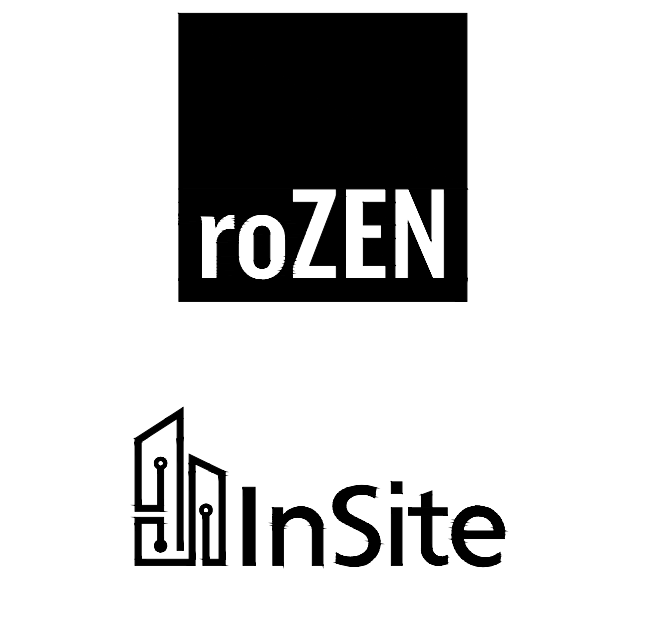
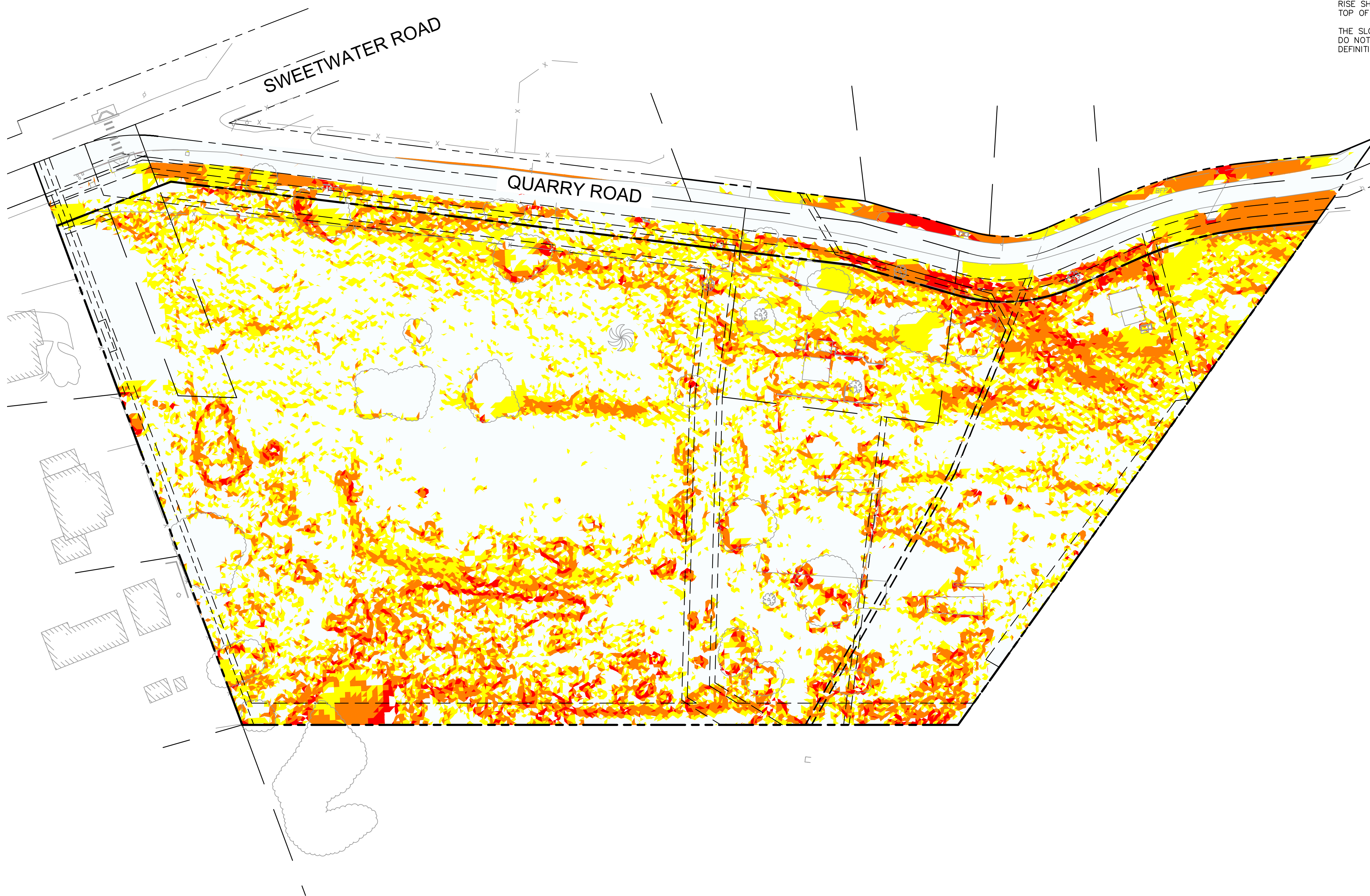
C4.0

SLOPE ANALYSIS FOR QUARRY STORAGE MPA

EXISTING SLOPES TABLE					
Number	Minimum Slope	Maximum Slope	Area (AC)	PERCENT	Color
1	0.00%	15.00%	6.30	59%	
2	15.00%	25.00%	2.48	23%	
3	25.00%	50.00%	1.68	15%	
4	50.00%	100.00%	0.28	3%	
TOTAL			10.74	100%	

THE RESOURCE PROTECTION ORDINANCE DEFINES "STEEP SLOPE LANDS" AS: ALL LANDS HAVING A SLOPE WITH NATURAL GRADIENT OF 25% OR GREATER AND A MINIMUM RISE OF 50 FEET, UNLESS SAID LAND HAS BEEN SUBSTANTIALLY DISTURBED BY PREVIOUS LEGAL GRADING. THE MINIMUM RISE SHALL BE MEASURED VERTICALLY FROM THE TOE OF SLOPE TO THE TOP OF SLOPE WITHIN THE PROJECT BOUNDARY.

THE SLOPES DEPICTED HEREON REPRESENTING GRADES IN EXCESS OF 25% DO NOT EXCEED THE MINIMUM RISE OF 50 FEET AND DO NOT MEET THE DEFINITION OF "STEEP SLOPE LANDS"



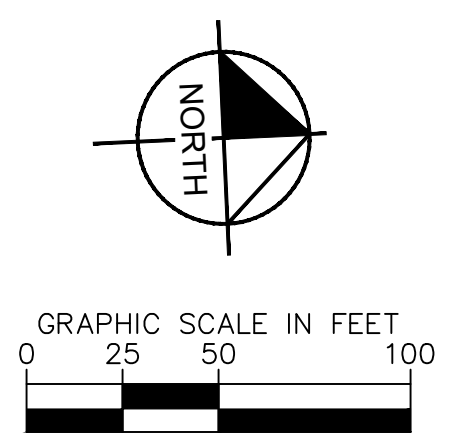
No.	Description	Date
Revisions		

**NOT FOR
CONSTRUCTION**

EXISTING CONDITIONS
SLOPE ANALYSIS

RECORD ID: PDS2021-MUP-21-009

C5.0

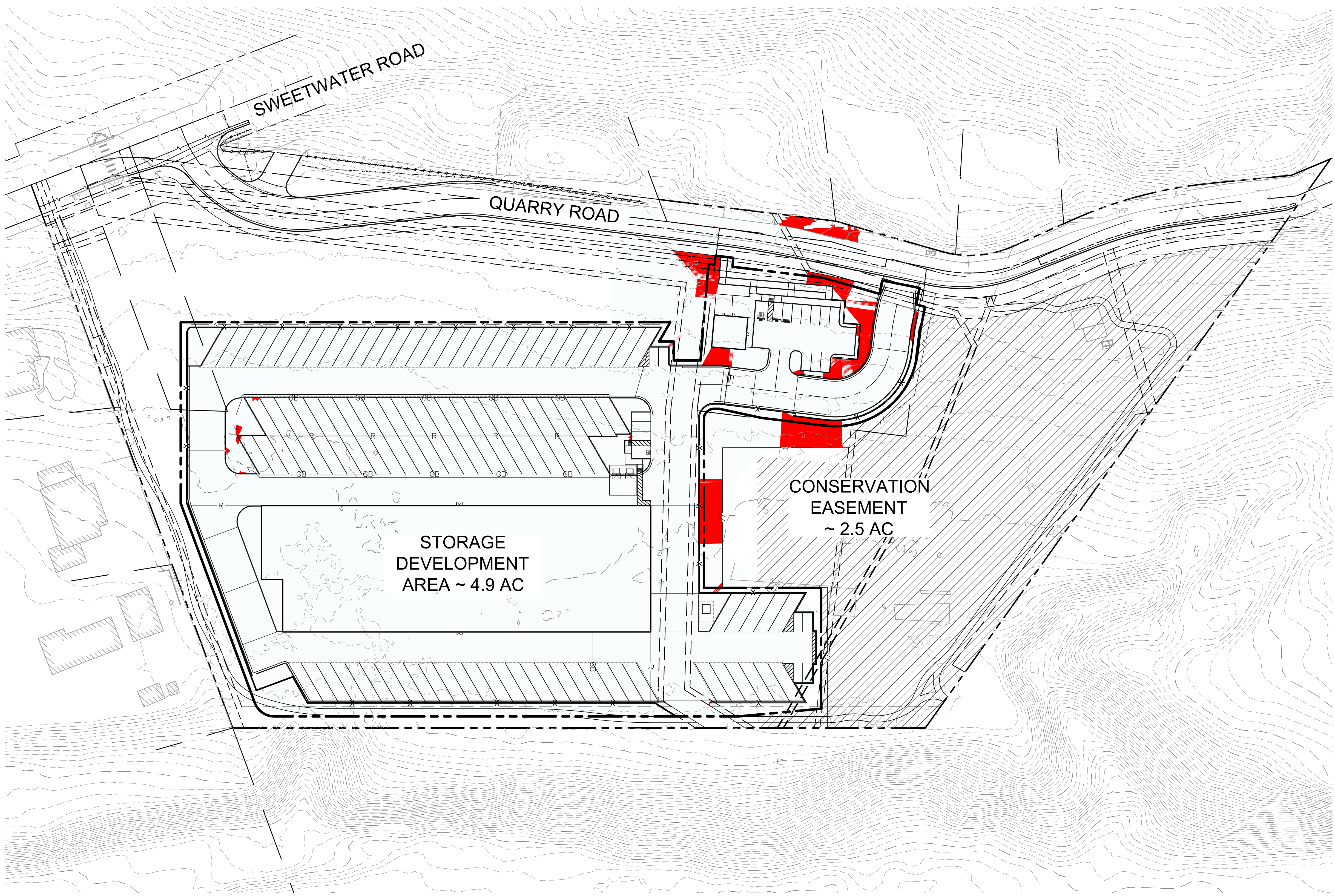


SWEEP ANALYSIS FOR QUARRY STORAGE MPA

PROPOSED SLOPES TABLE					
Number	Minimum Slope	Maximum Slope	Area (AC)	PERCENT	Color
1	0.00%	25.00%	9.79	91%	□
2	25.10%	100.00%	0.95	9%	■
TOTAL			10.74	100%	

THE RESOURCE PROTECTION ORDINANCE DEFINES "STEEP SLOPE LANDS" AS: ALL LANDS HAVING A SLOPE WITH NATURAL GRADIENT OF 25% OR GREATER AND A MINIMUM RISE OF 50 FEET, UNLESS SAID LAND HAS BEEN SUBSTANTIALLY DISTURBED BY PREVIOUS LEGAL GRADING. THE MINIMUM RISE SHALL BE MEASURED VERTICALLY FROM THE TOE OF SLOPE TO THE TOP OF SLOPE WITHIN THE PROJECT BOUNDARY.

THE SLOPES DEPICTED HEREON REPRESENTING GRADES IN EXCESS OF 25% DO NOT EXCEED THE MINIMUM RISE OF 50 FEET AND DO NOT MEET THE DEFINITION OF "STEEP SLOPE LANDS"

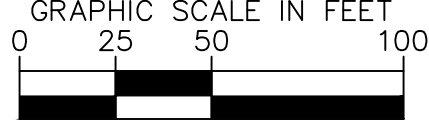
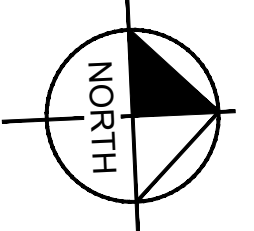


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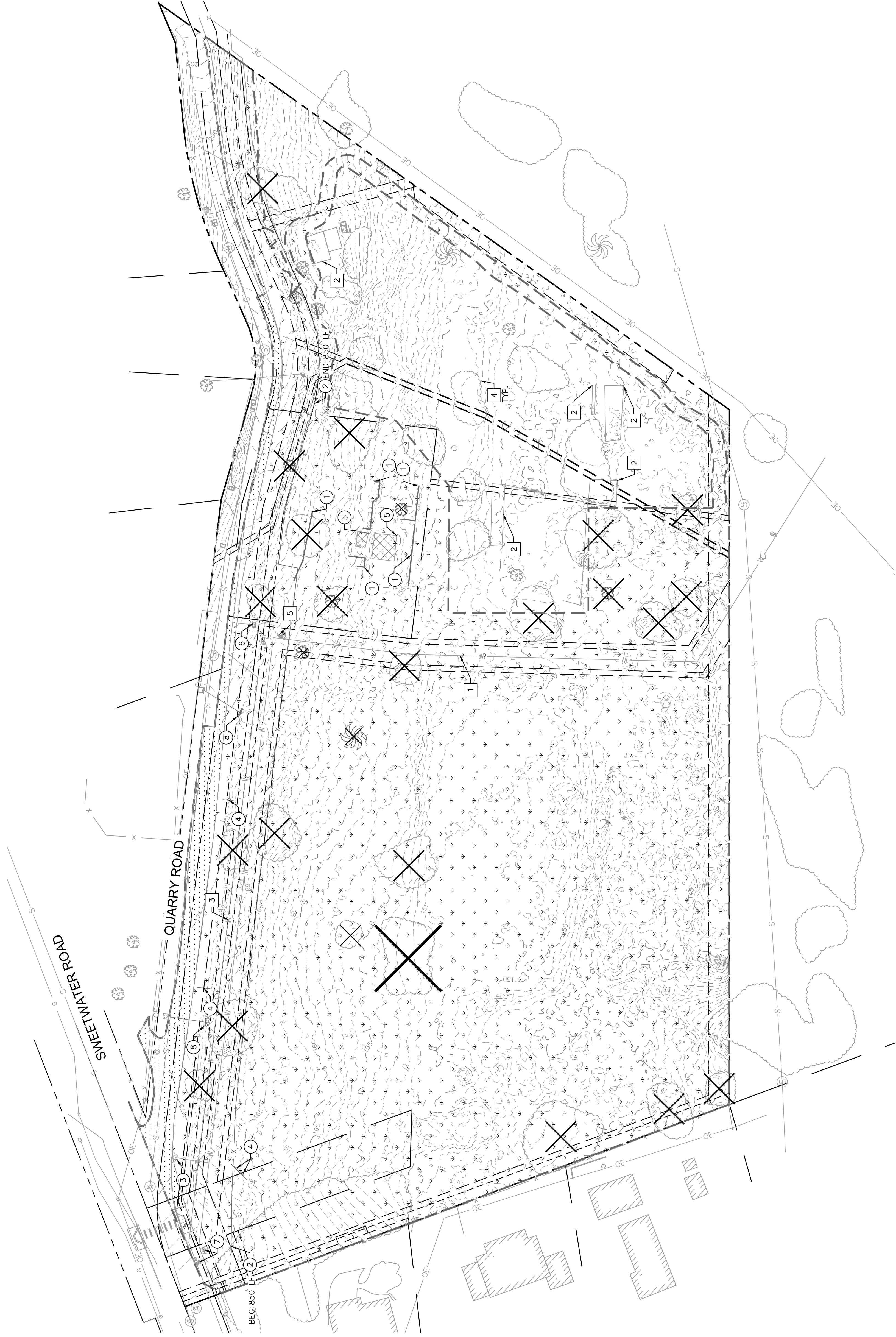
PROPOSED CONDITIONS
SLOPE ANALYSIS

RECORD ID: PDS2021-MUP-21-009

C6.0

LEGEND

- RIGHT OF WAY
- PROPERTY LINE/ RIGHT OF WAY
- EXISTING CONTOUR
- LIMITS OF DEMOLITION
- EASEMENT LINE
- EXISTING WATER LINE
- DEMOLISH EXISTING ASPHALT PAVEMENT
- DEMOLISH EXISTING CONCRETE
- CLEAR AND GRUB
- DEMOLISH UNPROTECTED TREE

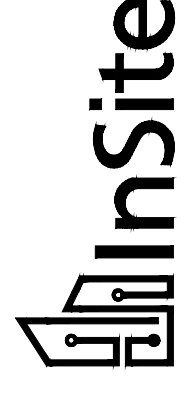


DEMOLITION NOTES

- 1 EXISTING WALL TO BE DEMOLISHED AND REMOVED.
- 2 EXISTING CHAIN LINK FENCE TO BE REMOVED.
- 3 EXISTING FIRE HYDRANT TO BE RELOCATED.
- 4 EXISTING SIGN TO BE REMOVED.
- 5 EXISTING CONCRETE PAD TO BE DEMOLISHED.
- 6 EXISTING WATER METER TO BE REMOVED. ABANDON EXISTING WATER LATERAL. PLUG AT MAIN.
- 7 EXISTING WATER VALVE TO BE REMOVED. ABANDON EXISTING WATER LATERAL. PLUG AT MAIN.
- 8 EXISTING HEADWALL TO BE DEMOLISHED AND REMOVED.

EXISTING SITE NOTES

- 1 EXISTING 42" WATER TRANSMISSION MAIN TO REMAIN.
- 2 EXISTING CONCRETE PAD TO REMAIN.
- 3 EXISTING 12" WATER LINE TO REMAIN.
- 4 EXISTING TREE TO BE PROTECTED.
- 5 EXISTING WATER VALVE TO REMAIN.



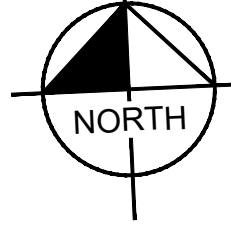
Kimley»Horn

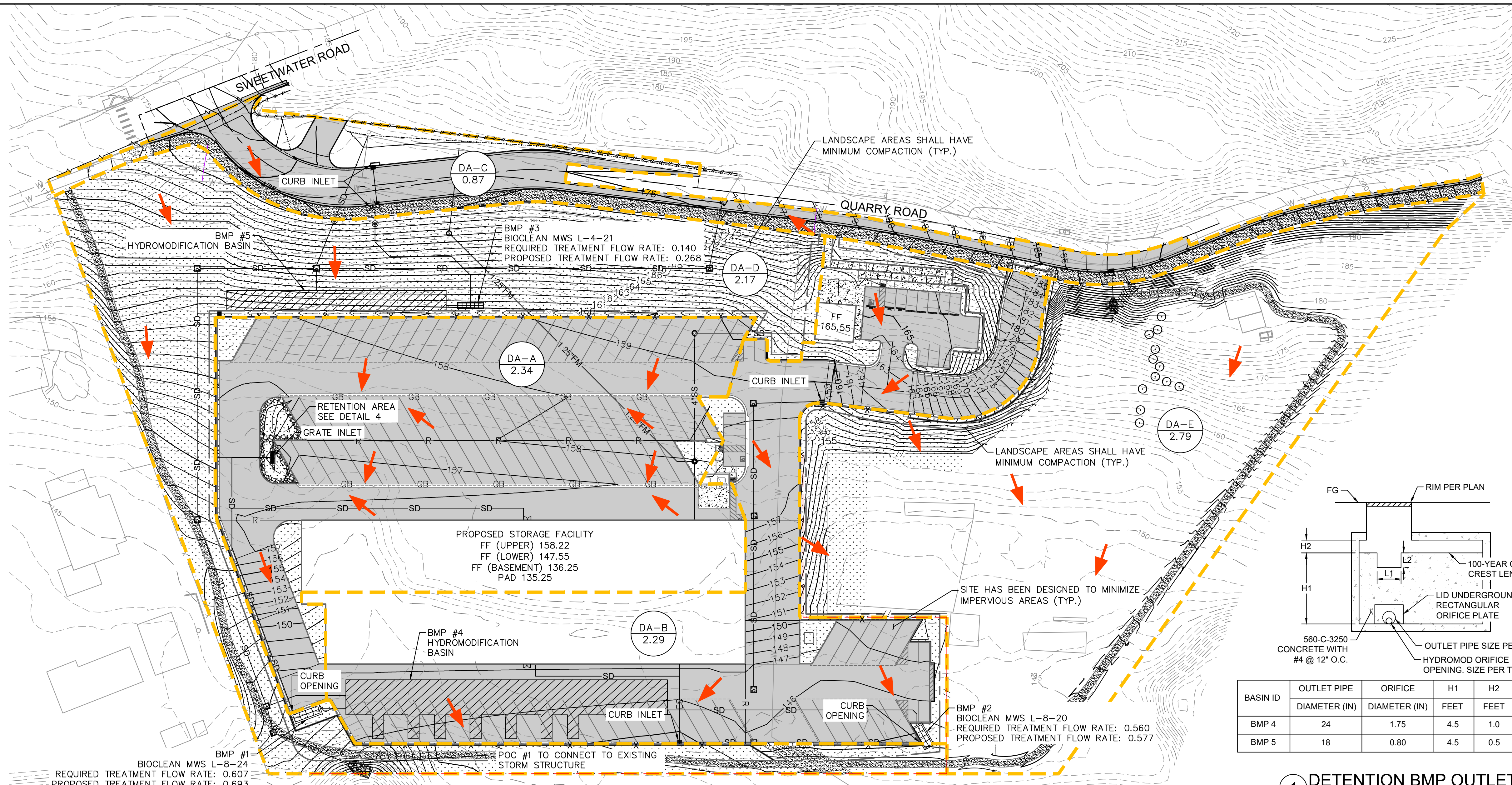
401 B STREET, SUITE 800, SAN DIEGO, CA 92101
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 PHONE: 619-234-9411

No.	Description	Date

**NOT FOR
CONSTRUCTION**

DEMOLITION PLAN



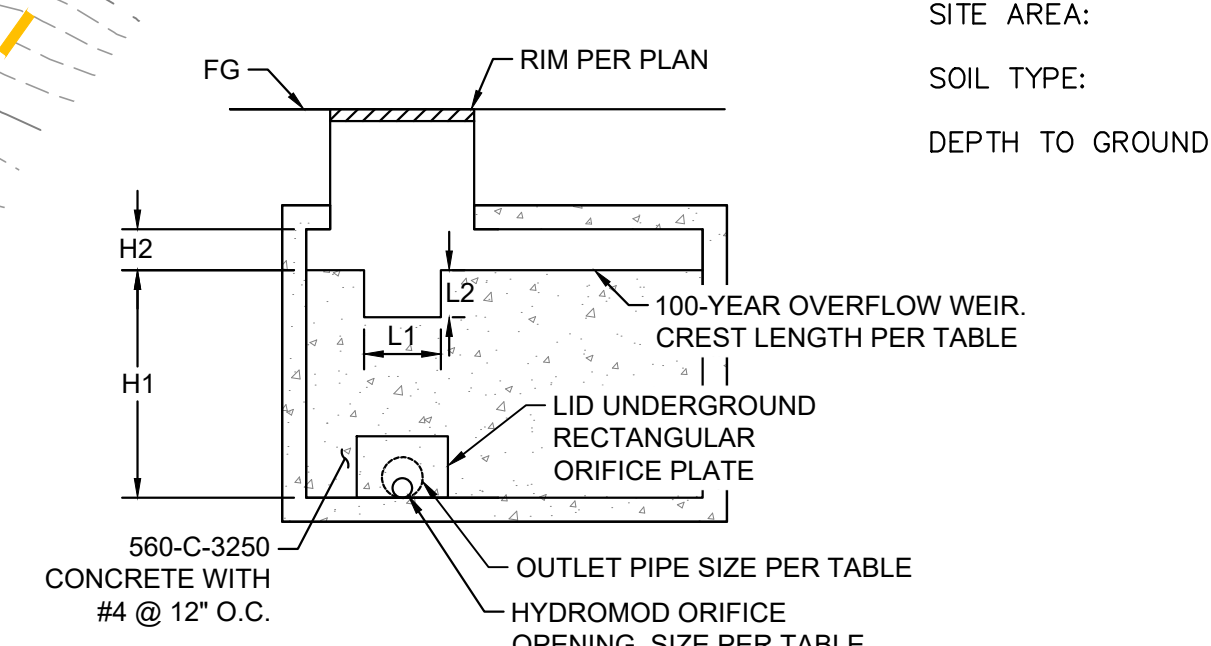


LEGEND

- PROPERTY LINE/ RIGHT OF WAY
- CENTER LINE
- EASEMENT LINE
- DMA LIMITS
- 88 PROPOSED CONTOUR
- 89 EXISTING CONTOUR
- R PROPOSED RIDGE LINE
- GB PROPOSED GRADE BREAK LINE
- >>> PROPOSED FLOW LINE
- SD PROPOSED STORM DRAIN
- [Pattern] LANDSCAPE AREA
- [Pattern] UNDERGROUND STORAGE - FLOW CONTROL BMP
- [Pattern] MODULAR WETLAND SYSTEM - POLLUTANT CONTROL BMP

SITE INFORMATION

SITE AREA: 10.8 AC
 SOIL TYPE: D
 DEPTH TO GROUNDWATER: >26'



BASIN ID	OUTLET PIPE DIAMETER (IN)	ORIFICE DIAMETER (IN)	H1 FEET	H2 FEET	L1 FEET	L2 FEET	CREST FEET
BMP 4	24	1.75	4.5	1.0	0.167	2.0	10.7
BMP 5	18	0.80	4.5	0.5	1.5	2.8	4.0

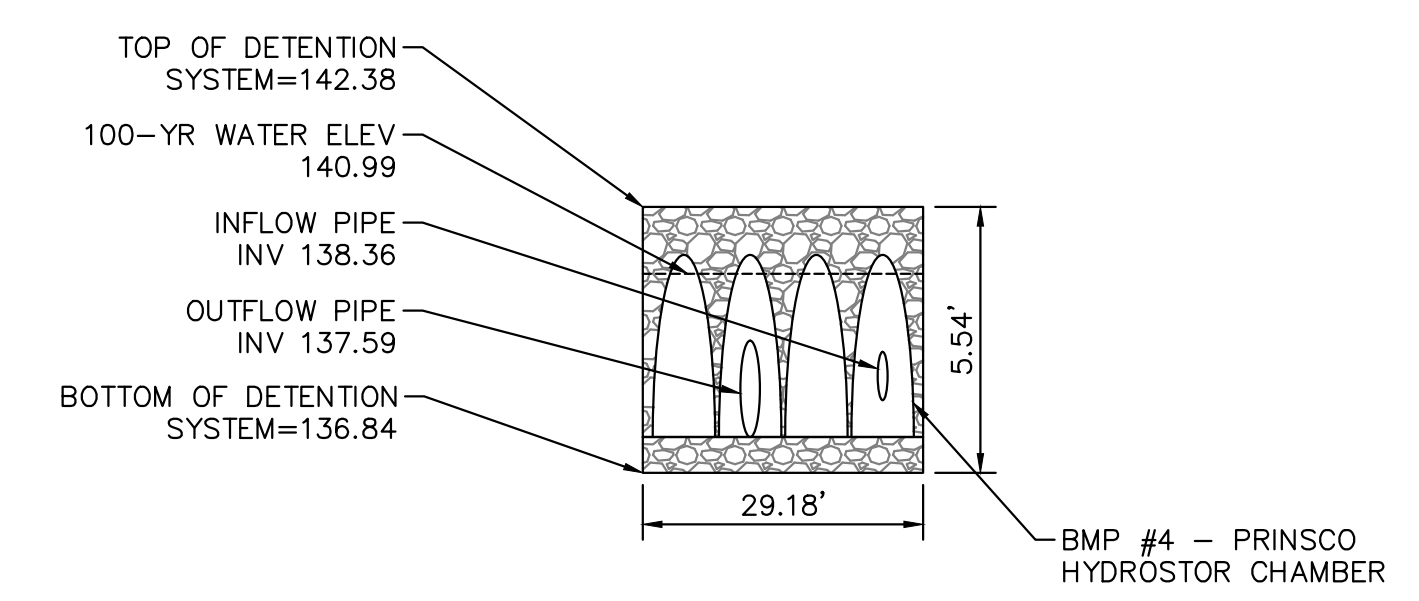
1 DETENTION BMP OUTLET STRUCTURE
NOT TO SCALE

WATER QUALITY BMPS

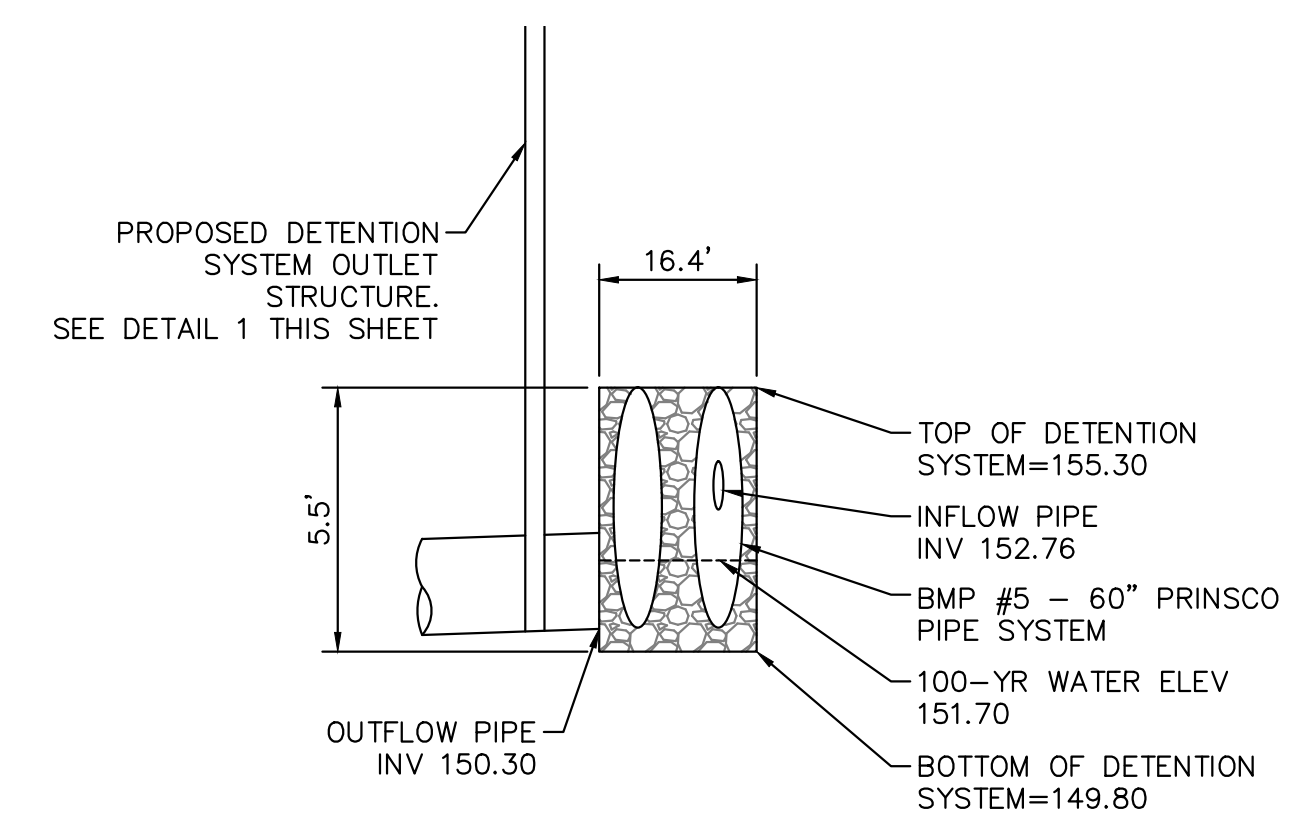
DMA #	TOTAL DRAINAGE AREA (SF)	TOTAL DRAINAGE AREA (AC)	IMPERVIOUS AREA (SF)	PERVIOUS AREA (SF)	DESIGN CAPTURE VOLUME (CF)	STRUCTURAL BMP ID #	BMP CLASSIFICATION	BMP PROVIDED	PERCENT IMPERVIOUS (%)	TREATMENT Q REQUIRED (CFS)	TREATMENT Q PROVIDED (CFS)	BMP TYPE
A	102,589	2.36	97,311	5,278	4,044	1	BIOFILTRATION	MODULAR WETLAND SYSTEM MWS-L-8-24	95	0.607	0.693	STRUCTURAL
B	98,505	2.26	89,243	9,262	3,702	2	BIOFILTRATION	MODULAR WETLAND SYSTEM MWS-L-8-20	91	0.560	0.577	STRUCTURAL
C	37,810	0.87	20,728	17,082	936	3	BIOFILTRATION	MODULAR WETLAND SYSTEM MWS-L-4-21	55	0.140	0.268	STRUCTURAL
D	94,380	2.17	--	94,380	--	--	SELF MITIGATING	--	0	--	--	--
E	121,564	2.79	--	121,564	--	--	SELF MITIGATING	--	0	--	--	--

HYDROMOD BMPS

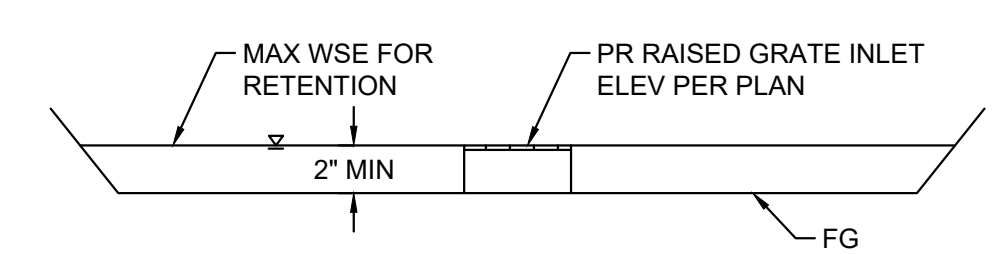
DMA #	TOTAL DRAINAGE AREA (SF)	TOTAL DRAINAGE AREA (AC)	IMPERVIOUS AREA (SF)	PERVIOUS AREA (SF)	BMP VOLUME REQUIRED (CF) (SPREADSHEET V3.1)	BMP VOLUME PROVIDED (CF)	STRUCTURAL BMP ID #	BMP CLASSIFICATION	BMP PROVIDED	BMP TYPE
A,B	201,094	4.62	186,554	14,540	16921	30743	4	CISTERN	PRINSCO HYDROSTOR CHAMBERS	STRUCTURAL
C	37,810	0.87	88,703	11,033	2019	7052	5	CISTERN	PRINSCO STORMWATER PIPE DETENTION SYSTEM	STRUCTURAL



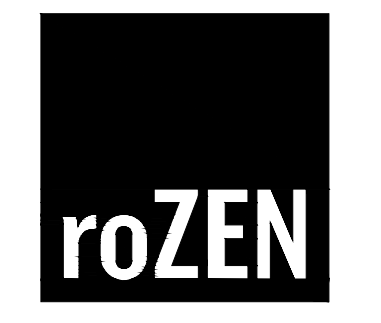
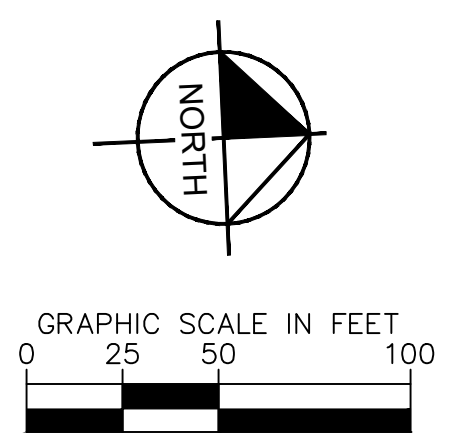
2 BMP #4 CROSS SECTION
NOT TO SCALE



3 BMP #5 CROSS SECTION
NOT TO SCALE



4 RETENTION AREA
NOT TO SCALE



No.	Description	Date
Revisions		

NOT FOR CONSTRUCTION

PRELIMINARY WQMP PLAN

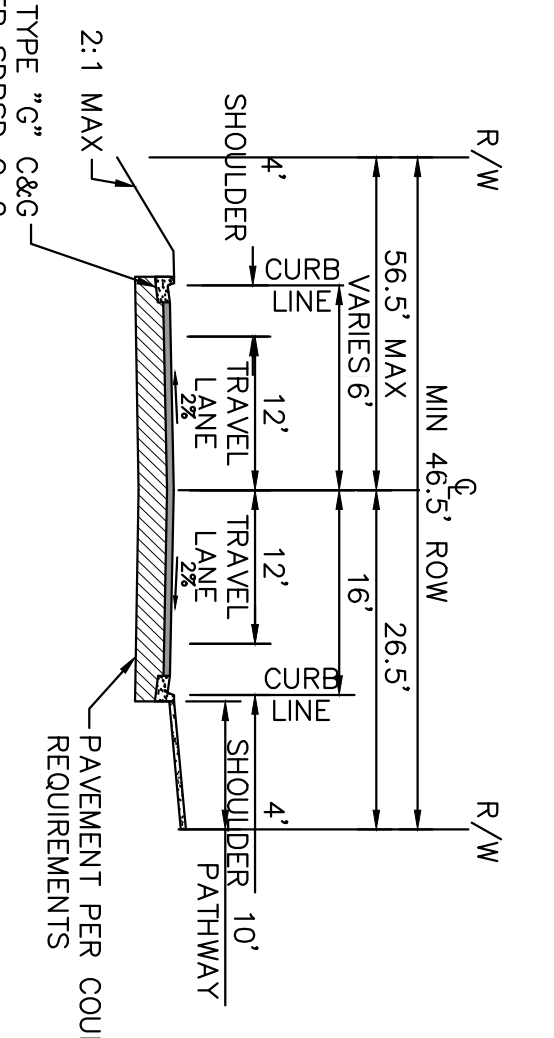
RECORD ID: PDS2021-MUP-21-009

C8.0

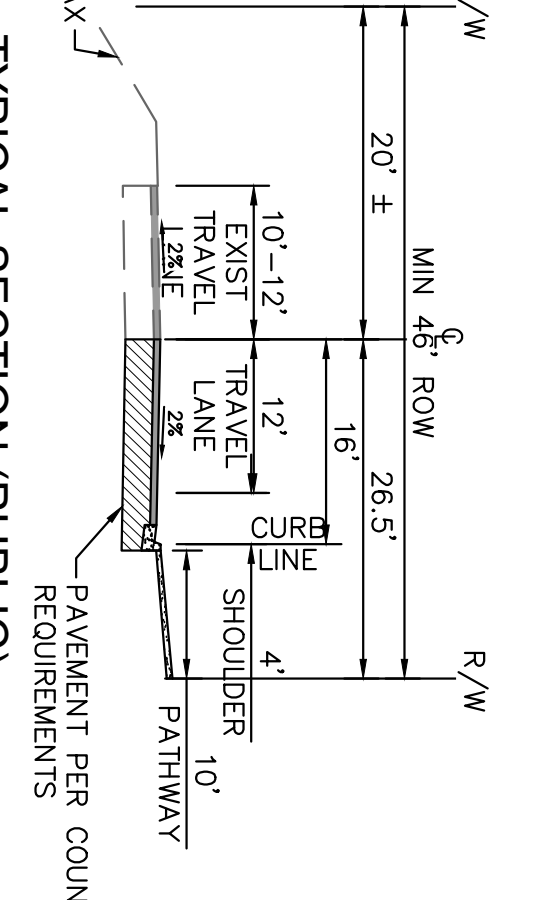
QUARRY CL ALIGNMENT	
1	N 72°59' E 100.0'
2	N 72°59' E 100.0'
3	N 72°59' E 100.0'
4	N 72°59' E 100.0'
5	N 72°59' E 100.0'
6	N 72°59' E 100.0'
7	N 72°59' E 100.0'
8	N 72°59' E 100.0'
9	N 72°59' E 100.0'
10	N 72°59' E 100.0'
11	N 72°59' E 100.0'
12	N 72°59' E 100.0'
13	N 72°59' E 100.0'
14	N 72°59' E 100.0'
15	N 72°59' E 100.0'
16	N 72°59' E 100.0'
17	N 72°59' E 100.0'
18	N 72°59' E 100.0'
19	N 72°59' E 100.0'
20	N 72°59' E 100.0'
21	N 72°59' E 100.0'

DESIGN EXCEPTION REQUIRED

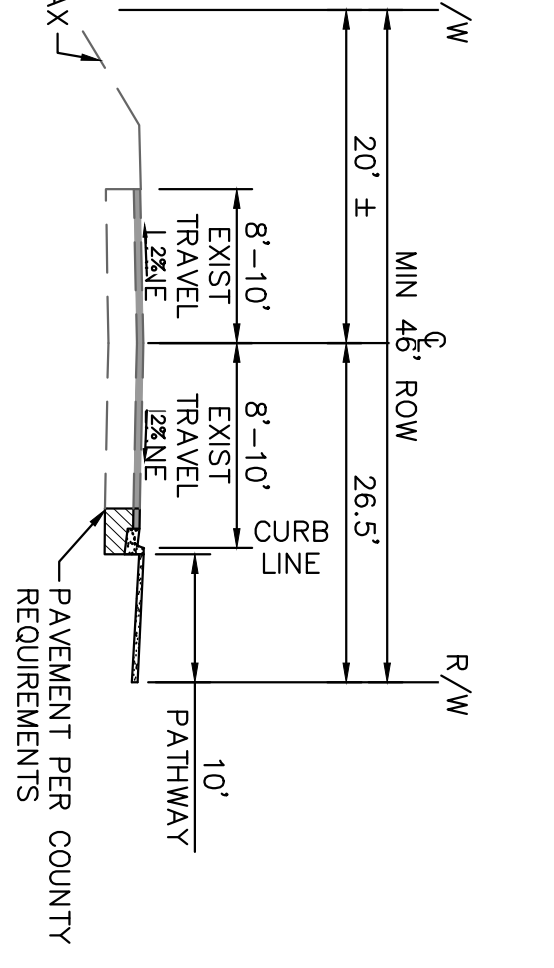
TYPICAL SECTION (PUBLIC)
QUARRY ROAD
10+30 TO STA. 13+35
NOT TO SCALE



TYPICAL SECTION (PUBLIC)
QUARRY ROAD
14+45 TO STA. 18+50
NOT TO SCALE

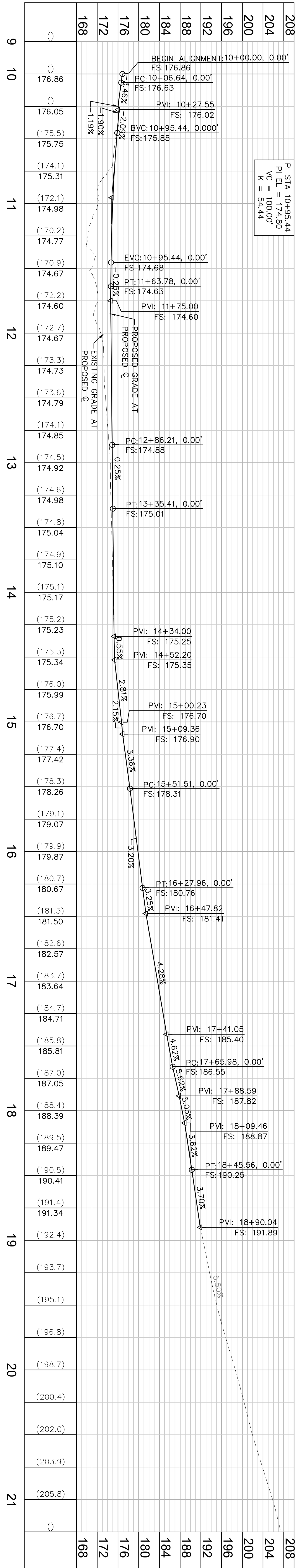


TYPICAL SECTION (PUBLIC)
QUARRY ROAD
18+50 TO STA. 21+25
NOT TO SCALE

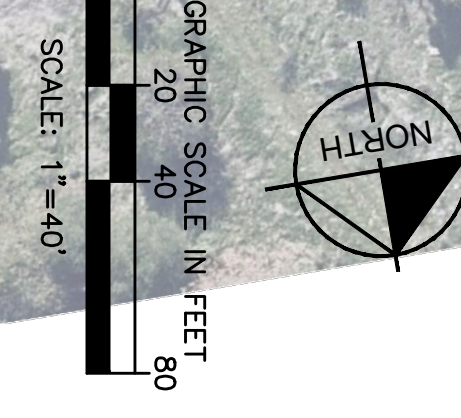


LEGEND

- (160.50 TO 180.00 FS) EXISTING SPOT ELEVATION
- (180.00 TO 180.00 FS) PROPOSED SPOT ELEVATION
- 1.0% EXISTING FLOW (SLOPE AND DIRECTION)
- 1.0% PROPOSED FLOW (SLOPE AND DIRECTION)
- PROPOSED LINE/ RIGHT OF WAY
- SAWTOOTH LINE
- DAYLIGHT LINE
- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED STORM DRAIN
- PROPOSED FLOW LINE
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING OVERHEAD ELECTRICAL LINE
- PROPOSED LOW IMPACT DEVELOPMENT (LID) FACILITY (UNDERGROUND OR DETENTION SYSTEM)
- PROPOSED ASPHALT OVERLAY
- PROPOSED ASPHALT CONCRETE
- PROPOSED CONCRETE
- PROPOSED LANDSCAPING
- PROPOSED DECOMPOSED GRANITE



PROFILE SCALES:
HORIZ: 1" = 40'
VERT: 1" = 8'



No.	Description	Date
	Revisions	

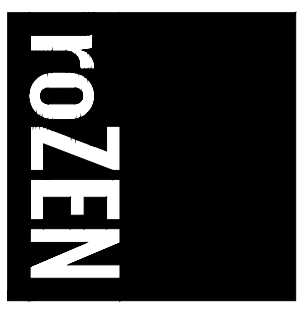
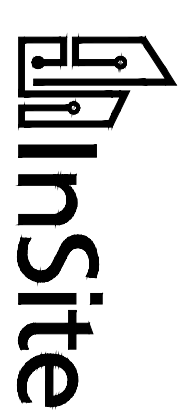
NOT FOR CONSTRUCTION

PRELIMINARY ROUTE STUDY
QUARRY ROAD @ SWEETWATER ROAD

PROPOSED DESIGN
EXHIBIT
RECORD ID: PDS2021-MUP-21-009
C9.0

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County of San Diego
Stormwater Quality Management Plan (SWQMP)
Attachment 5: Site and Drainage Description

5.0 General Requirements

- Each Priority Development Project (PDP) must provide a description of existing site conditions and proposed changes to them, including changes to topography and drainage.
- Has a Drainage Report has been prepared for the PDP?

Yes

- Review of the Drainage Report must be concurrent with the PDP SWQMP.
- Include the summary page of the Drainage Report with this cover page, and provide the following information:

Title: Drainage Report

Prepared By: Tammie Moreno, P.E.

Date: 09/2023

- Do not complete the rest of this attachment (also exclude these additional pages from your submittal). Additional documentation of site and drainage conditions is not required unless requested by County staff.

No -- Complete and submit the remainder of this attachment below.



County of San Diego
 Stormwater Quality Management Plan (SWQMP)
 Attachment 5: Site and Drainage Description

5.1 Description of Existing Site Condition

Provide the requested information below for the project site in its existing condition.

a. Current Site Status			
<i>Select all that apply to any portion of the site.</i>			
<input type="checkbox"/> Existing development			
<input type="checkbox"/> Previously graded but not built out			
<input type="checkbox"/> Agricultural or other non-impervious use			
<input checked="" type="checkbox"/> Vacant, undeveloped/natural			
<input type="checkbox"/> Demolition completed without new construction			
b. Existing Land Cover			
<i>Provide the area (in acres or square feet) within all applicable categories of land cover below. The total area should equal that of the entire project site.</i>			
	<i>Area (acres or ft²)</i>		
<input type="checkbox"/> Vegetative Cover	Click here to enter text.		
<input checked="" type="checkbox"/> Non-Vegetated Pervious Areas	10.8ac		
<input checked="" type="checkbox"/> Impervious Areas	0.75 ac		
c. Underlying Soil			
<i>Select all soil groups that are present on the site.</i>			
NRCS Hydrologic Soil Group(s)			
Type A	Type B	Type C	Type D
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



5.2 Description of Existing Site Drainage

Describe how storm water runoff is conveyed from the site. At a minimum, address the following:

- Is the existing drainage conveyance natural or urban?
- Is runoff from offsite conveyed through the site? Yes No
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.
- Describe the existing project site drainage conveyance network (including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels).
- 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. Summarize the pre-project drainage areas and design flows to each of the existing runoff discharge locations.
- Provide additional information as necessary or requested to describe the site drainage.

Description (add pages as necessary to provide all requested information).

The pre-project parcel is entirely vacant and undeveloped with natural vegetative cover. There are 2 existing headwalls which are assumed to deliver off-site runoff from the 2 existing drainage inlets along Quarry Road. The headwalls currently discharge onto the vacant/undeveloped property along the western property line. The 10.8-acres of natural area sheet flows southeast towards Sweetwater River.



5.3 Description of Proposed Site Development

Provide a general description of the proposed site development, including at a minimum the information requested below. Add pages as necessary.

a. Project description/ Proposed land use and/or activities (project location, development type, size, numbers of units, etc.)

The proposed project consists of a commercial development of a 133,425 SF self-storage building with approximately 127,000 SF of surface parking area. In addition, it is proposed that a portion of the property north of the MUP boundary will remain undisturbed and be donated to open space, parks, and equestrian amenities as a community benefit (DA-E). Site access is proposed via Quarry Road.

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

Impervious features include:

- 133,425 SF Building
- 127,000 SF Parking Lot

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

Pervious features include lawn areas, cut and fill slopes, and approximately 5 acres for open space, parks, and equestrian amenities.

d. Does the project include grading and changes to site topography? Yes No

If yes, describe below.

The project is located along a hillside and will require cut and fill to create the building pad, level parking, and driveway. The drainage pattern for the site during larger storm events will match the existing condition.



County of San Diego
Stormwater Quality Management Plan (SWQMP)
Attachment 5: Site and Drainage Description

5.4 Description of Proposed Site Drainage

A. Changes to Site Drainage -- Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)? Yes No

If yes:

- Describe (1) the proposed project site drainage conveyance network (including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels), and (2) 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.

Description (add pages as necessary to provide all requested information).

Drainage from the proposed building pad and driveway will be collected into a storm drain system that will connect to the storm drain piping located on the southern end of the site. Drainage is split into five drainage areas: DMA A, DMA B, DMA C, DMA D, and DMA E. DMA A, DMA B and DMA D consist of onsite flows whereas DMA C includes offsite, public street drainage. DMA E includes undisturbed vegetated area and the existing drainage patterns remain.

DMA A (2.36 ac) will drain via inlets to one Modular Wetland Systems (MWS-L-8-24-V providing 0.693 cfs) before discharging to the onsite detention system (30,743 cf) and outfalling southerly to the site point of compliance. DMA B (2.26 ac) will drain via inlets to one Modular Wetland System (MWS-L-8-20-V) before discharging to the onsite detention system. DMA C (0.87 ac) drainage is conveyed to a Modular Wetland System (MWS-L-4-21-V providing 0.268 cfs) before discharging into a second detention system (7,052 cf) and ultimately the site point of compliance to the South. DMA D and DMA E are 100% impervious and is self mitigating.

To meet retention requirements on site, the grate inlet in 1684 square feet of landscaping in DMA A will be raised to allow at least 2" of ponding below the top of grate to achieve at least 174 cf of retention.



6.0 General Requirements

- Use this attachment to document all proposed (1) self-mitigating, (2) de minimis, and (3) self-retaining DMAs. Indicate under “DMA Compliance Option” below which design options will be used to satisfy structural performance requirements for one or more DMA.

DMA Compliance Option	Required Sub-attachments or Printouts	BMPDM Design Resources
<input checked="" type="checkbox"/> Self-mitigating	<ul style="list-style-type: none"> • Sub-attachment 6.1 	<ul style="list-style-type: none"> • BMPDM Section 5.2.1
<input type="checkbox"/> De minimis	<ul style="list-style-type: none"> • Sub-attachment 6.2 	<ul style="list-style-type: none"> • BMPDM Section 5.2.2
<input type="checkbox"/> Self-retaining ¹ <u>SSD-BMP Type(s)</u> <input type="checkbox"/> Impervious Area Dispersion <input type="checkbox"/> Tree Wells	<ul style="list-style-type: none"> • Sub-attachment 6.3 <ul style="list-style-type: none"> • DCV calculations from SSD-BMP tool • Dispersion Areas calculations from SSD-BMP tool <ul style="list-style-type: none"> • DCV calculations from SSD-BMP tool • Tree Well calculations from SSD-BMP tool 	<ul style="list-style-type: none"> • BMPDM Section 5.2.3 (all options) <ul style="list-style-type: none"> • Fact Sheet SD-B (Appendix E.8) • Appendix I <ul style="list-style-type: none"> • Fact Sheet SD-A (Appendix E.7) • Appendix I

- Submit this cover page and all “Required Sub-attachments or Printouts” listed for each selected DMA compliance option.
- See the BMPDM sections and appendices listed under “BMPDM Design Resources” for additional explanation of design requirements. Each constructed feature must fully satisfy the requirements described in these resources, and any other guidance identified by the County.
- DMA Exhibits and Construction Plans: DMAs, features, and BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.

¹ If “Self-retaining” is selected, also choose the types of Significant Site Design BMPs (SSD-BMPs) to be used. SSD-BMPs are Site Design BMPs that are sized and constructed to fully satisfy all applicable Structural Performance Standards for a DMA.

6.1 Self-mitigating DMAs (complete this page once for ALL self-mitigating DMAs)

Self-mitigating DMAs consist of natural or landscaped areas that drain directly offsite or to the public storm drain system. These DMAs are excluded from DCV calculations.

- Provide the information requested below for each proposed self-mitigating DMA. Add rows or copy the table if additional entries are needed.

DMA #	a. DMA Area (ft ²)	Incidental Impervious Area		Permit # and Sheet #
		b. Size(ft ²)	c. % (b/a*100)	
D	94,380	N/A	N/A	Preliminary WQMP Exhibit
E	121,564	N/A	N/A	Preliminary WQMP Exhibit

- "DMA #", "DMA Area", and "Permit # and Sheet #" are required for all DMAs listed.
- "Incidental Impervious Area" calculations are required only where applicable (see below).
- Each self-mitigating DMA must fully satisfy all design requirements and restrictions described in BMPDM Section 5.2.1 and any other guidance or instruction identified by the County. Check the boxes below to confirm that all required conditions are satisfied for every DMA listed.

Each DMA is hydraulically separate from other DMAs that contain permanent storm water pollutant control BMPs.

Natural and Landscaped Areas

Each DMA consists solely of natural or landscaped areas, except for incidental impervious areas (see below).

Each area drains directly offsite or to the public storm drain system.

Soils are undisturbed native topsoil, or disturbed soils that have been amended and aerated to promote water retention characteristics equivalent to undisturbed native topsoil.

Vegetation is native and/or non-native/non-invasive drought tolerant species that do not require regular application of fertilizers and pesticides.

Incidental Impervious Areas (if applicable: see above)

Minor impervious areas may be permitted within the DMA if they satisfy the following criteria:

They are not hydraulically connected to other impervious areas (unless it is a storm water conveyance system such as a brow ditch).

They comprise less than 5% of the total DMA. Calculate the % incidental impervious area in the table above (c= b/a). DMAs are not self-mitigating if this area is 5% or greater.

6.2 De Minimis DMAs (complete this page once for ALL de minimis DMAs)

De minimis DMAs consist of areas too small to be considered significant contributors of pollutants and not practicable to drain to a BMP. They are excluded from DCV calculations. Examples include driveway aprons connecting to existing streets, portions of sidewalks, retaining walls, and similar features at the external boundaries of a project.

- Provide the information requested below for each proposed de minimis DMA. Add rows or copy the table if additional entries are needed.

<i>DMA #</i>	<i>DMA Area (ft²)</i>	<i>Permit # and Sheet #</i>
N/A	N/A	N/A

- "DMA #", "DMA Area", and "Permit # and Sheet #" are required.
- Check the boxes below to confirm that each required condition is satisfied for ALL de minimis DMAs on the site.
 - Each DMA listed is less than 250 square feet and not adjacent or hydraulically connected to each other.
 - Each DMA listed fully satisfies all design requirements and restrictions described in BMPDM Section 5.2.2 De Minimis DMAs.

6.3 Self-retaining DMAs using Significant Site Design BMPs

Self-retaining DMAs use Site Design BMPs to fully-retain the entire DCV, at a minimum. Site Design BMPs that fully retain the DCV, at a minimum, therefore replacing the need for a Structural BMP (S-BMP), are classified as Significant Site Design BMPs (SSD-BMPs). To satisfy pollutant control requirements only, self-retaining means retention of the entire DCV. However, under some circumstances, a self-retaining DMA can also satisfy hydromodification management requirements by implementing BMPs that retain a greater volume of runoff.

- Provide the information requested below for each proposed self-retaining DMA. Add rows or copy the table if additional entries are needed.

DMA #	DMA Area (ft ²)	BMP Type (choose one per DMA)		Permit # and Sheet #
		Dispersion Area (Att. 6.3.1)	Tree Wells (Att. 6.3.2)	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
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		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	

Copy and Paste table here for additional DMAs

- "DMA #", "DMA Area", and "Permit # and Sheet #" are required.
- Select one BMP Type per DMA. Provide detailed documentation for each DMA in Attachments 6.3.1 (Impervious Dispersion Areas) and/or 6.3.2 (Tree Wells) below.
- Each self-retaining DMA must fully satisfy all design requirements and restrictions described in BMPDM Section 5.2.3, applicable BMPDM Appendix E Fact Sheets, BMPDM Appendix I, and any other guidance or instruction identified by the County.

6.3.1 Self-retaining DMAs with Impervious Dispersion Areas

Impervious area dispersion (dispersion) refers to the practice of effectively disconnecting impervious areas from directly draining to the storm drain system by routing runoff from impervious areas such as rooftops (through downspout disconnection), walkways, and driveways onto the surface of adjacent pervious areas. The intent is to slow runoff discharges and reduce volumes. Dispersion with partial or full infiltration results in significant volume reduction by means of infiltration and evapotranspiration. When adequately sized, dispersion can also be used to satisfy both the pollutant control and hydromodification management structural performance standards for a DMA.

- Each self-retaining DMA with impervious area dispersion must fully satisfy all design requirements and restrictions described in BMPDM Section 5.2.3, Fact Sheet SD-B: Impervious Area Dispersion, and any other guidance or instruction identified by the County.
- Documentation of compliance with all applicable conditions must be submitted with this sub-attachment using the *Summary Sheet for DMAs with Impervious Area Dispersion* on the next page. One version of this Summary Sheet must be completed for each applicable DMA.
- Applicants are responsible to comply with all other applicable requirements, regardless of whether they are included in the summary sheet.
- The following applies if the dispersion area is native soil (SD-B in Appendix E):
 - For pollutant control only, the DMA is considered self-retaining if the impervious to pervious ratio is:
 - 2:1 when the pervious area is composed of Hydrologic Soil Group A
 - 1:1 when the pervious area is composed of Hydrologic Soil Group B
- The following applies if the dispersion area includes amended soil (SD-B in Appendix E):
 - DMAs using impervious area dispersion can be considered to meet both pollutant control and hydromodification flow control requirements if the impervious to pervious area ratio is 1:1 or less and all other design requirements of SD-B are satisfied, including 11 inches of amended soil.

Summary Sheet for Self-retaining DMAs with Impervious Area Dispersion

Attach Printouts from SSD-BMP tool below

- DCV calculations from SSD-BMP tool
- Dispersion Areas calculations from SSD-BMP tool

6.3.2 Self-retaining DMAs with Tree Wells

Trees wells can provide a variety of benefits such as interception and increased infiltration of rainfall, reduced erosion, energy conservation, air quality improvement, and aesthetic enhancement. They can also be used to satisfy both pollutant control and hydromodification management performance standards for a DMA.

- Each self-retaining DMA with tree wells must fully satisfy all design requirements and restrictions described in BMPDM Section 5.2.3, Fact Sheet SD-A: Tree Wells, and any other guidance or instruction identified by the County.
- For pollutant control only, the DMA must retain the entire DCV. For hydromodification management, an additional volume must be retained in accordance with the sizing requirements presented in the DCV multiplier table in Fact Sheet SD-A.
- Documentation of compliance with applicable conditions must be submitted using the *Summary Sheet for Self-retaining DMAs with Tree Wells* on the next page. One version of this Summary Sheet must be completed for each applicable DMA.
- If both pollutant control and hydromodification standards apply, the soil depth of all tree wells in the DMA must be selected before determining the Required Retention Volume (RRV). Each tree well must be constructed to the selected depth. For pollutant control only, tree wells within a DMA may be constructed to different soil depths.
- In most cases tree wells must use Amended Soil per Fact Sheet SD-F. However, Structural Soil is required in some cases (e.g., placing the tree well next to a curb). See *Structural Requirements for Confined Tree Well Soil Volume* in Fact Sheet SD-A for additional explanation. If applicable, list the DMAs and Tree Well #s below for all tree wells requiring Structural Soil.

DMA #	Tree Wells Requiring Structural Soil (list Tree Well #s)
N/A	N/A

- The Design Capture Volume (DCV) must be known for each DMA in order to determine the volume to be mitigated by the tree wells. Instructions for DCV calculation are provided in BMPDM Appendix I.1. An automated version of Worksheet I.1 (Calculation of Design Capture Volume) is available at www.sandiegocounty.gov/stormwater under the Development Resources tab.

Summary Sheet for Self-retaining DMAs with Tree Wells

Attach Printouts from SSD-BMP tool below

- DCV calculations from SSD-BMP tool
- Tree Wells calculations from SSD-BMP tool



7.0 General Requirements

- Submit this cover page and all required Sub-attachments for all structural BMPs proposed for the project.
- See the BMPDM sections and appendices listed under “BMPDM Design Resources” in the table below for additional explanation of design requirements. Constructed features must fully satisfy the requirements described in these resources, and any other guidance identified by the County.
- PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management. Completion of SWQMP Attachment 8 is also required for these BMPs.
- DMA Exhibits and Construction Plans: DMAs, features, and BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.
- Structural BMP Certification. All structural BMPs documented this attachment and in Attachment 8 must be certified by a registered engineer in Sub-attachment 7.1.
- Structural BMP Verification. Structural BMP installation must be verified by the County at the completion of construction. Applicants must complete an Installation Verification Form (Attachment 10).

Sub-attachments (check all that are completed)	Requirement	BMPDM Design Resources
<input checked="" type="checkbox"/> 7.1: Preparer’s Certification	Required	• N/A
<input checked="" type="checkbox"/> 7.2: Structural BMP Strategy	Required	• BMPDM Sections 5.1., 5.3, 5.4, and Chapter 6 • BMPDM Appendix E (pages E-78 through E-210)
<input checked="" type="checkbox"/> 7.3: Structural BMP Checklist(s)	Required	
<input checked="" type="checkbox"/> 7.4: Stormwater Pollutant Control Worksheet Calculations	Required	• BMPDM Appendix B
<input checked="" type="checkbox"/> 7.5: Identification and Narrative of Receiving Water and Pollutants of Concern	Required if flow-thru BMPs are proposed	• N/A

7.1 Engineer of Work Certification for Structural BMPs

Project Name Quarry Storage MPA
Permit Application Number PDS2021-MPA-21-004

CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of structural 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 County of San Diego BMP Design Manual, which is a design manual for compliance with local County of San Diego Watershed Protection Ordinance (Sections 67.801 et seq.) 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 County of San Diego has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP 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 County staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of structural storm water BMPs for this project, of my responsibilities for their design.

In addition to the structural pollutant control BMPs described in this attachment, this certification applies to the Structural Hydromodification Management BMPs described in Attachment 8 (check if applicable).

RCE 88412

Engineer of Work's Signature, PE Number & Expiration Date

Benjamin Huber, P.E.

Print Name

Kimley-Horn and Associates, Inc.

Company

9/19/2023

Date

Engineer's Seal:

7.2 Structural BMP Strategy

7.2.1 Narrative Strategy (Continue description on subsequent pages as necessary)

Describe the general strategy for structural BMP implementation at the project site. For pollutant control BMPs, your description must address the key points outlined in Section 5.1 of the BMP Design Manual, and the type of BMPs selected. For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

There are (5) main DMAs for the proposed development.

BMP 1 is a Modular Wetland System for DMA A pollutant control. For BMP 1, the required flow is 0.607 CFS and the proposed proprietary Modular Wetland System can accommodate 0.693 CFS of flow. BMP 1 is a MWS-L_8-24.

DMA B is treated for pollutant control with BMP 2, Modular Wetland System MWS-L-8-20. DMA B requires a flow rate of 0.560 cfs with the Modular Wetland System providing 0.577 cfs. See attachment F.1.2 for calculations.

DMA C is treated with BMP 3, Modular Wetland System MWS-L-4-21 that is sized for the required flow of 0.140 cfs. BMP 3 provides a treatment flow rate of 0.239 cfs. See attachment F.1.2 for calculations.

DMA D and E are 100% pervious and are self-mitigating.

BMP 4 and 5 are detention systems sized for hydromodification. BMP 4 is sized to provide hydromodification for DMA A and DMA B. BMP 4 provides 30,743 cf of detention with a 1.75" orifice for flow control. BMP 5 is sized to provide hydromodification for DMA C. BMP 5 provides 7,052 cf of detention with a 0.8" orifice for flow control.

To meet retention requirements on site, the grate inlet in 1684 square feet of landscaping in DMA A will be raised to allow at least 2" of ponding below the top of grate to achieve at least 174 cf of retention.

7.2.2 Structural BMP Summary Table (Complete for all proposed structural BMPs)

- List and provide the information requested below for all pollutant control and hydromodification management BMPs proposed for the project.
- For each BMP listed, complete the Structural BMP Checklist on the next page. Copy the Checklist as many times as needed.

BMP ID #	DMA #	DMA Area (ft ²)	Structural BMP Type							Permit # and Sheet #
			Harvest and Use	Infiltration	Unlined Biofiltration	Lined Biofiltration	Flow-thru treatment	Hydromodification Management ¹	Other	
1	A	102,589	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preliminary WQMP Plan
2	B	98,505	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preliminary WQMP Plan
3	C	37,810	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preliminary WQMP Plan
4	A, B	201,094	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preliminary WQMP Plan
5	C	37,810	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preliminary WQMP Plan
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

¹ Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

7.3 Structural BMP Checklist (Complete once for each proposed structural BMP)

Structural BMP ID #	1	Permit # and Sheet #	Preliminary WQMP Plan		
BMP Type					
Infiltration		Harvest and Use			
<input type="checkbox"/> Infiltration basin (INF-1)		<input type="checkbox"/> Cistern (HU-1)			
<input type="checkbox"/> Bioretention (INF-2)		Flow-thru Treatment (describe below)			
<input type="checkbox"/> Permeable pavement (INF-3)		<input type="checkbox"/> With prior lawful approval to meet earlier PDP requirements			
Unlined Biofiltration		<input type="checkbox"/> Pre-treatment/forebay for an onsite retention or biofiltration BMP ²			
<input type="checkbox"/> Biofiltration with partial retention (PR-1)		<input type="checkbox"/> With alternative compliance			
Lined Biofiltration		Hydromodification Management ³			
<input type="checkbox"/> Biofiltration (BF-1)		<input type="checkbox"/> Detention pond or vault			
<input type="checkbox"/> Nutrient Sensitive Media Design (BF-2)		<input type="checkbox"/> Other (describe below)			
<input checked="" type="checkbox"/> Proprietary Biofiltration (BF-3)					
BMP Purpose					
<input checked="" type="checkbox"/> Pollutant control only		<input type="checkbox"/> Pre-treatment/forebay for another BMP			
<input type="checkbox"/> Hydromodification control only		<input type="checkbox"/> Other (describe below)			
<input type="checkbox"/> Combined pollutant control and hydromodification					
BMP Verification (See BMPDM Section 8.3)					
Provide name and contact information for the party responsible to sign BMP verification forms		Brian Sorensen InSite Property Group, LLC			
BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)					
BMP Maintenance Category		Cat. 1	Cat. 2	Cat. 3	Cat. 4
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final owner of BMP		<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County	
		<input type="checkbox"/> Other (describe):			
Maintenance of BMP into perpetuity		<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County	
		<input type="checkbox"/> Other (describe):			
Discussion (As needed; Continue on subsequent pages as necessary)					

² Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.

³ Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

7.3 Structural BMP Checklist (Complete once for each proposed structural BMP)

Structural BMP ID # 2		Permit # and Sheet # Preliminary WQMP Plan			
BMP Type					
Infiltration		Harvest and Use			
<input type="checkbox"/> Infiltration basin (INF-1)		<input type="checkbox"/> Cistern (HU-1)			
<input type="checkbox"/> Bioretention (INF-2)		Flow-thru Treatment (describe below)			
<input type="checkbox"/> Permeable pavement (INF-3)		<input type="checkbox"/> With prior lawful approval to meet earlier PDP requirements			
Unlined Biofiltration		<input type="checkbox"/> Pre-treatment/forebay for an onsite retention or biofiltration BMP ²			
<input type="checkbox"/> Biofiltration with partial retention (PR-1)		<input type="checkbox"/> With alternative compliance			
Lined Biofiltration		Hydromodification Management ³			
<input type="checkbox"/> Biofiltration (BF-1)		<input type="checkbox"/> Detention pond or vault			
<input type="checkbox"/> Nutrient Sensitive Media Design (BF-2)		<input type="checkbox"/> Other (describe below)			
<input checked="" type="checkbox"/> Proprietary Biofiltration (BF-3)					
BMP Purpose					
<input checked="" type="checkbox"/> Pollutant control only		<input type="checkbox"/> Pre-treatment/forebay for another BMP			
<input type="checkbox"/> Hydromodification control only		<input type="checkbox"/> Other (describe below)			
<input type="checkbox"/> Combined pollutant control and hydromodification					
BMP Verification (See BMPDM Section 8.3)					
Provide name and contact information for the party responsible to sign BMP verification forms		Brian Sorensen InSite Property Group, LLC			
BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)					
BMP Maintenance Category		Cat. 1	Cat. 2	Cat. 3	Cat. 4
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final owner of BMP		<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County	
		<input type="checkbox"/> Other (describe):			
Maintenance of BMP into perpetuity		<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County	
		<input type="checkbox"/> Other (describe):			
Discussion (As needed; Continue on subsequent pages as necessary)					

² Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.

³ Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

7.3 Structural BMP Checklist (Complete once for each proposed structural BMP)

Structural BMP ID #	3	Permit # and Sheet #	Preliminary WQMP Plan		
BMP Type					
Infiltration		Harvest and Use			
<input type="checkbox"/> Infiltration basin (INF-1)		<input type="checkbox"/> Cistern (HU-1)			
<input type="checkbox"/> Bioretention (INF-2)		Flow-thru Treatment (describe below)			
<input type="checkbox"/> Permeable pavement (INF-3)		<input type="checkbox"/> With prior lawful approval to meet earlier PDP requirements			
Unlined Biofiltration		<input type="checkbox"/> Pre-treatment/forebay for an onsite retention or biofiltration BMP ²			
<input type="checkbox"/> Biofiltration with partial retention (PR-1)		<input type="checkbox"/> With alternative compliance			
Lined Biofiltration		Hydromodification Management ³			
<input type="checkbox"/> Biofiltration (BF-1)		<input type="checkbox"/> Detention pond or vault			
<input type="checkbox"/> Nutrient Sensitive Media Design (BF-2)		<input type="checkbox"/> Other (describe below)			
<input checked="" type="checkbox"/> Proprietary Biofiltration (BF-3)					
BMP Purpose					
<input checked="" type="checkbox"/> Pollutant control only		<input type="checkbox"/> Pre-treatment/forebay for another BMP			
<input type="checkbox"/> Hydromodification control only		<input type="checkbox"/> Other (describe below)			
<input type="checkbox"/> Combined pollutant control and hydromodification					
BMP Verification (See BMPDM Section 8.3)					
Provide name and contact information for the party responsible to sign BMP verification forms		Brian Sorensen InSite Property Group, LLC			
BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)					
BMP Maintenance Category	Cat. 1	Cat. 2	Cat. 3	Cat. 4	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Final owner of BMP	<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County		
	<input type="checkbox"/> Other (describe):				
Maintenance of BMP into perpetuity	<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County		
	<input type="checkbox"/> Other (describe):				
Discussion (As needed; Continue on subsequent pages as necessary)					

² Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.

³ Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

7.3 Structural BMP Checklist (Complete once for each proposed structural BMP)

Structural BMP ID #	4	Permit # and Sheet #	Preliminary WQMP Plan		
BMP Type					
Infiltration		Harvest and Use			
<input type="checkbox"/> Infiltration basin (INF-1)		<input type="checkbox"/> Cistern (HU-1)			
<input type="checkbox"/> Bioretention (INF-2)		Flow-thru Treatment (describe below)			
<input type="checkbox"/> Permeable pavement (INF-3)		<input type="checkbox"/> With prior lawful approval to meet earlier PDP requirements			
Unlined Biofiltration		<input type="checkbox"/> Pre-treatment/forebay for an onsite retention or biofiltration BMP ²			
<input type="checkbox"/> Biofiltration with partial retention (PR-1)		<input type="checkbox"/> With alternative compliance			
Lined Biofiltration		Hydromodification Management ³			
<input type="checkbox"/> Biofiltration (BF-1)		<input checked="" type="checkbox"/> Detention pond or vault			
<input type="checkbox"/> Nutrient Sensitive Media Design (BF-2)		<input type="checkbox"/> Other (describe below)			
<input type="checkbox"/> Proprietary Biofiltration (BF-3)					
BMP Purpose					
<input type="checkbox"/> Pollutant control only		<input type="checkbox"/> Pre-treatment/forebay for another BMP			
<input checked="" type="checkbox"/> Hydromodification control only		<input type="checkbox"/> Other (describe below)			
<input type="checkbox"/> Combined pollutant control and hydromodification					
BMP Verification (See BMPDM Section 8.3)					
Provide name and contact information for the party responsible to sign BMP verification forms		Brian Sorensen InSite Property Group, LLC			
BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)					
BMP Maintenance Category		Cat. 1	Cat. 2	Cat. 3	Cat. 4
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final owner of BMP		<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County	
		<input type="checkbox"/> Other (describe):			
Maintenance of BMP into perpetuity		<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County	
		<input type="checkbox"/> Other (describe):			
Discussion (As needed; Continue on subsequent pages as necessary)					

² Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.

³ Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

7.3 Structural BMP Checklist (Complete once for each proposed structural BMP)

Structural BMP ID #	5	Permit # and Sheet #	Preliminary WQMP Plan		
BMP Type					
Infiltration		Harvest and Use			
<input type="checkbox"/> Infiltration basin (INF-1)		<input type="checkbox"/> Cistern (HU-1)			
<input type="checkbox"/> Bioretention (INF-2)		Flow-thru Treatment (describe below)			
<input type="checkbox"/> Permeable pavement (INF-3)		<input type="checkbox"/> With prior lawful approval to meet earlier PDP requirements			
Unlined Biofiltration		<input type="checkbox"/> Pre-treatment/forebay for an onsite retention or biofiltration BMP ²			
<input checked="" type="checkbox"/> Biofiltration with partial retention (PR-1)		<input type="checkbox"/> With alternative compliance			
Lined Biofiltration		Hydromodification Management ³			
<input type="checkbox"/> Biofiltration (BF-1)		<input checked="" type="checkbox"/> Detention pond or vault			
<input type="checkbox"/> Nutrient Sensitive Media Design (BF-2)		<input type="checkbox"/> Other (describe below)			
<input type="checkbox"/> Proprietary Biofiltration (BF-3)					
BMP Purpose					
<input type="checkbox"/> Pollutant control only		<input type="checkbox"/> Pre-treatment/forebay for another BMP			
<input checked="" type="checkbox"/> Hydromodification control only		<input type="checkbox"/> Other (describe below)			
<input type="checkbox"/> Combined pollutant control and hydromodification					
BMP Verification (See BMPDM Section 8.3)					
Provide name and contact information for the party responsible to sign BMP verification forms		Brian Sorensen InSite Property Group, LLC			
BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)					
BMP Maintenance Category		Cat. 1	Cat. 2	Cat. 3	Cat. 4
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final owner of BMP		<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County	
		<input type="checkbox"/> Other (describe):			
Maintenance of BMP into perpetuity		<input type="checkbox"/> HOA	<input checked="" type="checkbox"/> Property Owner	<input type="checkbox"/> County	
		<input type="checkbox"/> Other (describe):			
Discussion (As needed; Continue on subsequent pages as necessary)					

² Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.

³ Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

7.4 Storm Water Pollutant Control Worksheet Calculations

- Use this page as a cover sheet for the submittal of any required worksheets below.
- Complete the checklist to identify which BMPDM Appendix B (Storm Water Pollutant Control Hydrologic Calculations and Sizing Methods) worksheets are included with this attachment.
- See BMPDM Appendix B for an explanation of the applicability of individual worksheets and detailed guidance on their completion.

Worksheet	Requirement
<input checked="" type="checkbox"/> Worksheet B.1 Calculation of Design Capture Volume (DCV)	Required
<input checked="" type="checkbox"/> Worksheet B.2 Retention Requirements	Required
<input checked="" type="checkbox"/> Worksheet B.3 BMP Performance	Required
<input checked="" type="checkbox"/> Worksheet B.4 Major Maintenance Intervals for Reduced-sized BMPs	If applicable
<input type="checkbox"/> Other worksheets	As required

Automated Worksheet B.1: Calculation of Design Capture Volume (V2.0)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units	
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA A	DMA B	DMA C								unitless	
	2	85th Percentile 24-hr Storm Depth	0.55	0.55	0.55								inches	
	3	Impervious Surfaces <u>Not Directed to Dispersion Area</u> (C=0.90)	97,311	89,243	20,728									sq-ft
	4	Semi-Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.30)												sq-ft
	5	Engineered Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.10)	5,278	9,262	17,082									sq-ft
	6	Natural Type A Soil <u>Not Serving as Dispersion Area</u> (C=0.10)												sq-ft
	7	Natural Type B Soil <u>Not Serving as Dispersion Area</u> (C=0.14)												sq-ft
	8	Natural Type C Soil <u>Not Serving as Dispersion Area</u> (C=0.23)												sq-ft
	9	Natural Type D Soil <u>Not Serving as Dispersion Area</u> (C=0.30)												sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	No	yes/no	
	11	Impervious Surfaces Directed to Dispersion Area per SD-B (Ci=0.90)												sq-ft
	12	Semi-Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.30)												sq-ft
	13	Engineered Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.10)												sq-ft
	14	Natural Type A Soil Serving as Dispersion Area per SD-B (Ci=0.10)												sq-ft
	15	Natural Type B Soil Serving as Dispersion Area per SD-B (Ci=0.14)												sq-ft
	16	Natural Type C Soil Serving as Dispersion Area per SD-B (Ci=0.23)												sq-ft
	17	Natural Type D Soil Serving as Dispersion Area per SD-B (Ci=0.30)												sq-ft
	18	Number of Tree Wells Proposed per SD-A												#
	19	Average Mature Tree Canopy Diameter												ft
	20	Number of Rain Barrels Proposed per SD-E												#
Initial Runoff Factor Calculation	21	Average Rain Barrel Size											gal	
	22	Total Tributary Area	102,589	98,505	37,810	0	0	0	0	0	0	0	sq-ft	
	23	Initial Runoff Factor for Standard Drainage Areas	0.86	0.82	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.86	0.82	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	26	Initial Design Capture Volume	4,044	3,702	936	0	0	0	0	0	0	0	0	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft	
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft	
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.86	0.82	0.54	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	32	Design Capture Volume After Dispersion Techniques	4,044	3,702	936	0	0	0	0	0	0	0	0	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet	
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet	
Results	35	Final Adjusted Runoff Factor	0.86	0.82	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless	
	36	Final Effective Tributary Area	88,227	80,774	20,417	0	0	0	0	0	0	0	sq-ft	
	37	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	4,044	3,702	936	0	0	0	0	0	0	0	0	cubic-feet

No Warning Messages

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>	<i>ix</i>	<i>x</i>	Units	
Basic Analysis	1	Drainage Basin ID or Name	DMA A	DMA B	DMA C	-	-	-	-	-	-	-	unitless	
	2	85th Percentile Rainfall Depth	0.55	0.55	0.55	-	-	-	-	-	-	-	inches	
	3	Predominant NRCS Soil Type Within BMP Location	D	D	D	D							unitless	
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted	Restricted	Restricted	Restricted								unitless
	5	Nature of Restriction	Soil Type	Soil Type	Soil Type	Soil Type								unitless
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	No	No	No								yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	Yes	Yes	Yes	Yes							yes/no	
	9	Design Infiltration Rate Recommended by Geotechnical Engineer											in/hr	
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	0.000	0.000	0.000	-	-	-	-	-	-	in/hr	
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	4.5%	4.5%	1.5%	-	-	-	-	-	-	percentage	
	12	Fraction of DCV Requiring Retention	0.02	0.02	0.02	0.01	-	-	-	-	-	-	ratio	
	13	Required Retention Volume	81	74	19	0	-	-	-	-	-	-	cubic-feet	

No Warning Messages

Automated Worksheet B.3: BMP Performance (V2.0)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
BMP Inputs	1	Drainage Basin ID or Name	DMA A	DMA B	DMA C	-	-	-	-	-	-	-	sq-ft
	2	Design Infiltration Rate Recommended	0.000	0.000	0.000	-	-	-	-	-	-	-	in/hr
	3	Design Capture Volume Tributary to BMP	4,044	3,702	936	-	-	-	-	-	-	-	cubic-feet
	4	Is BMP Vegetated or Unvegetated?	Vegetated	Vegetated	Vegetated								unitless
	5	Is BMP Impermeably Lined or Unlined?	Lined	Lined	Lined								unitless
	6	Does BMP Have an Underdrain?	Underdrain	Underdrain	Underdrain								unitless
	7	Does BMP Utilize Standard or Specialized Media?	Specialized	Specialized	Specialized								unitless
	8	Provided Surface Area	302	252	117								sq-ft
	9	Provided Surface Ponding Depth	0	0	0								inches
	10	Provided Soil Media Thickness	8	8	8								inches
	11	Provided Gravel Thickness (Total Thickness)	0	0	0								inches
	12	Underdrain Offset	0	0	0								inches
	13	Diameter of Underdrain or Hydromod Orifice (Select Smallest)	6.00	6.00	6.00								inches
	14	Specialized Soil Media Filtration Rate	100.00	100.00	100.00								in/hr
	15	Specialized Soil Media Pore Space for Retention	0.24	0.24	0.24								unitless
	16	Specialized Soil Media Pore Space for Biofiltration	0.24	0.24	0.24								unitless
	17	Specialized Gravel Media Pore Space	0.48	0.48	0.48								unitless
Retention Calculations	18	Volume Infiltrated Over 6 Hour Storm	0	0	0	0	0	0	0	0	0	0	cubic-feet
	19	Ponding Pore Space Available for Retention	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	unitless
	20	Soil Media Pore Space Available for Retention	0.24	0.24	0.24	0.05	0.05	0.05	0.05	0.05	0.05	0.05	unitless
	21	Gravel Pore Space Available for Retention (Above Underdrain)	0.00	0.00	0.00	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	22	Gravel Pore Space Available for Retention (Below Underdrain)	0.48	0.48	0.48	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	23	Effective Retention Depth	1.92	1.92	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
	24	Fraction of DCV Retained (Independent of Drawdown Time)	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
	25	Calculated Retention Storage Drawdown Time	120	120	120	0	0	0	0	0	0	0	hours
	26	Efficacy of Retention Processes	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
	27	Volume Retained by BMP (Considering Drawdown Time)	49	45	23	0	0	0	0	0	0	0	cubic-feet
	28	Design Capture Volume Remaining for Biofiltration	3,995	3,657	913	0	0	0	0	0	0	0	cubic-feet
Biofiltration Calculations	29	Max Hydromod Flow Rate through Underdrain	0.6103	0.6103	0.6103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	cfs
	30	Max Soil Filtration Rate Allowed by Underdrain Orifice	87.30	104.62	225.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	in/hr
	31	Soil Media Filtration Rate per Specifications	100.00	100.00	100.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	in/hr
	32	Soil Media Filtration Rate to be used for Sizing	87.30	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	in/hr
	33	Depth Biofiltered Over 6 Hour Storm	523.78	600.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
	34	Ponding Pore Space Available for Biofiltration	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	35	Soil Media Pore Space Available for Biofiltration	0.24	0.24	0.24	0.20	0.20	0.20	0.20	0.20	0.20	0.20	unitless
	36	Gravel Pore Space Available for Biofiltration (Above Underdrain)	0.48	0.48	0.48	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	37	Effective Depth of Biofiltration Storage	1.92	1.92	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
	38	Drawdown Time for Surface Ponding	0	0	0	0	0	0	0	0	0	0	hours
	39	Drawdown Time for Effective Biofiltration Depth	0	0	0	0	0	0	0	0	0	0	hours
	40	Total Depth Biofiltered	525.70	601.92	601.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
	41	Option 1 - Biofilter 1.50 DCV: Target Volume	5,993	5,486	1,370	0	0	0	0	0	0	0	cubic-feet
	42	Option 1 - Provided Biofiltration Volume	5,993	5,486	1,370	0	0	0	0	0	0	0	cubic-feet
	43	Option 2 - Store 0.75 DCV: Target Volume	2,996	2,743	685	0	0	0	0	0	0	0	cubic-feet
	44	Option 2 - Provided Storage Volume	48	40	19	0	0	0	0	0	0	0	cubic-feet
	45	Portion of Biofiltration Performance Standard Satisfied	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
Result	46	Do Site Design Elements and BMPs Satisfy Annual Retention Requirements?	No	No	Yes	-	-	-	-	-	-	-	yes/no
	47	Overall Portion of Performance Standard Satisfied (BMP Efficacy Factor)	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
	48	Deficit of Effectively Treated Stormwater	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	cubic-feet

Attention!

- BMPs sized at <3% of the effective tributary areas must be accompanied by Reduced Size BMP Maintenance calculations (see last tab).

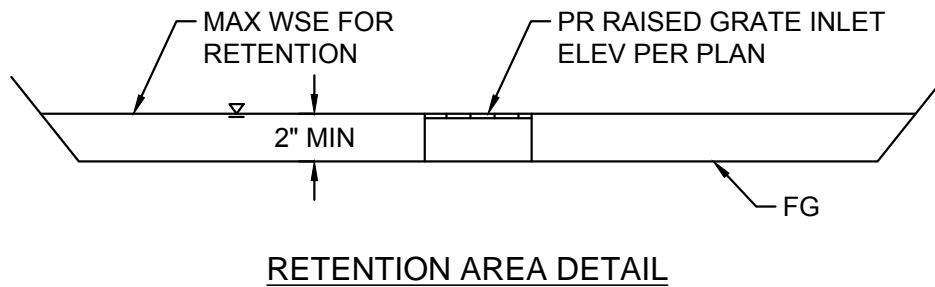
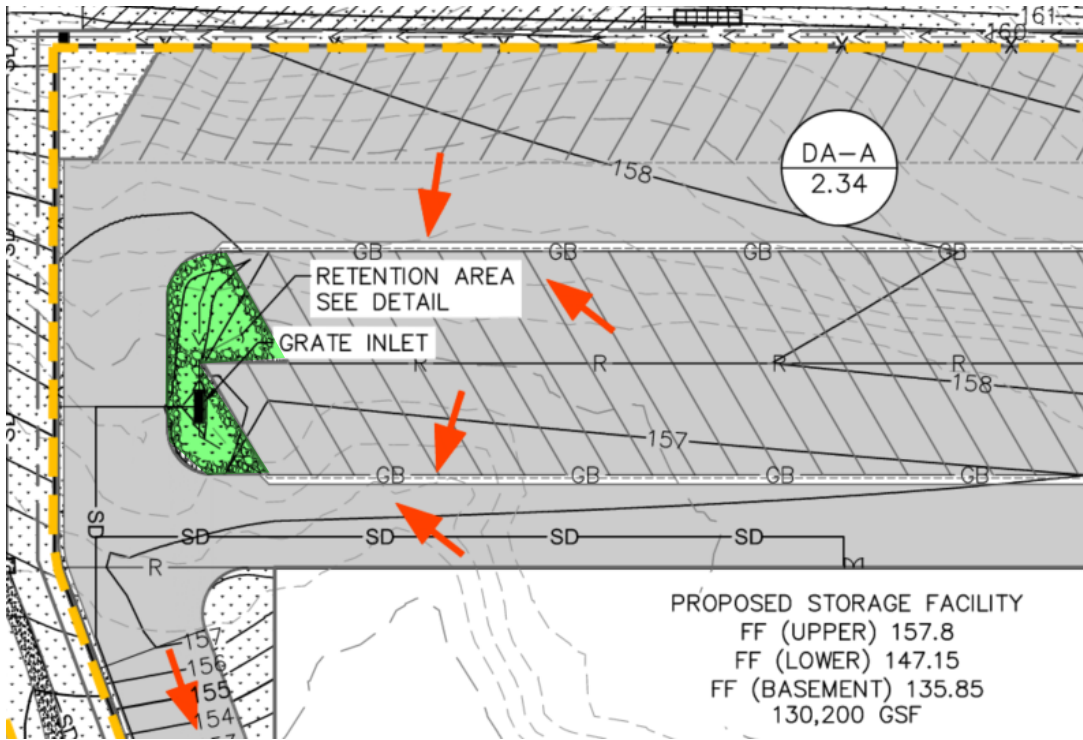
-Use of specialized or proprietary media requires submittal of supplemental information outlined in Appendix F of the BMPDM.

-Minimum annual retention criteria are not satisfied for each individual drainage area. Implement additional site design elements, increase structural BMP retention capacity, or demonstrate that such requirements are satisfied at the project-level.

***Supplemental hand calculations following this spreadsheet to address retention requirements.**

Automated Worksheet B.4: Reduced Size BMP Maintenance Interval (V2.0)

Category	#	Description	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>	<i>ix</i>	<i>x</i>	Units	
Drainage Basin Info	1	Drainage Basin ID or Name	DMA A	DMA B	DMA C	-	-	-	-	-	-	-	unitless	
	2	Final Effective Tributary Area	88,227	80,774	20,417	-	-	-	-	-	-	-	sq-ft	
	3	Provided BMP Surface Area	302	252	117	-	-	-	-	-	-	-	sq-ft	
Biofiltration Clogging Inputs	4	Average Annual Precipitation	12.0	12.0	12.0								inches	
	5	Load to Clog (default =2.0)	2.0	2.0	2.0								lb/sq-ft	
	6	TSS Pretreatment Efficacy	0.80	0.80	0.80								yes/no	
	7	Percentage "Commercial"												percentage
	8	Percentage "Education"												percentage
	9	Percentage "Industrial"												percentage
	10	Percentage "Low Traffic Areas"	75%	74%	100%									percentage
	11	Percentage "Multi-Family Residential"												percentage
	12	Percentage "Roof Areas"	25%	26%										percentage
	13	Percentage "Single Family Residential"												percentage
	14	Percentage "Transportation"												percentage
	15	Percentage "Vacant/Open Space"												percentage
	16	Percentage "Steep Hillslopes"												percentage
Result	17	Total Percentage of Above Land Uses	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	percentage	
	18	Average TSS Concentration for Tributary After Pretreatment	4	4	5	0	0	0	0	0	0	0	mg/L	
	19	Average Annual Runoff Volume	88,227	80,774	20,417	0	0	0	0	0	0	0	cubic-feet	
	20	Average Annual TSS Load	22	20	6	0	0	0	0	0	0	0	lb/yr	
	21	Available Sediment Storage within BMP	604	504	234	0	0	0	0	0	0	0	lb	
	22	Anticipated Major Maintenance Frequency	27.4	25.0	36.7	-	-	-	-	-	-	-	-	years
No Warning Messages														



Retention Volume Required:

DMA A - 81 cf

DMA B - 74 cf

DMA C - 19 cf

Total = 174 cf

Using the 1684 square foot landscape area in DMA A:

$$174 \text{ CF} / 1864 \text{ SF} = 0.103' = 1.24''$$

****ROUND UP TO 2" PONDING**

MWS Flow Based BMP Sizing

$I_{TREAT} = 0.2$ in/hr (Intensity of rainfall)
 $Q_{TREAT} = C \times I_{TREAT} \times A$ cfs (Treatment flow rate)
Design Flow (cfs) = $1.5 \times Q_{Treat}$ (Per Section F.1.2.2 of Storm Water Standards)

DMAs A

Surface Type	Area - A (sf)	C - Factor	C X A	Weighted C-Factor
Impervious	97,311	0.90	87,580	
Landscape	5,278	0.10	528	
Total	102,589		88,108	0.859

DMAs B

Surface Type	Area - A (sf)	C - Factor	C X A	Weighted C-Factor
Impervious	89,243	0.90	80,319	
Landscape	9,262	0.10	926	
Total	98,505		81,245	0.825

DMAs C

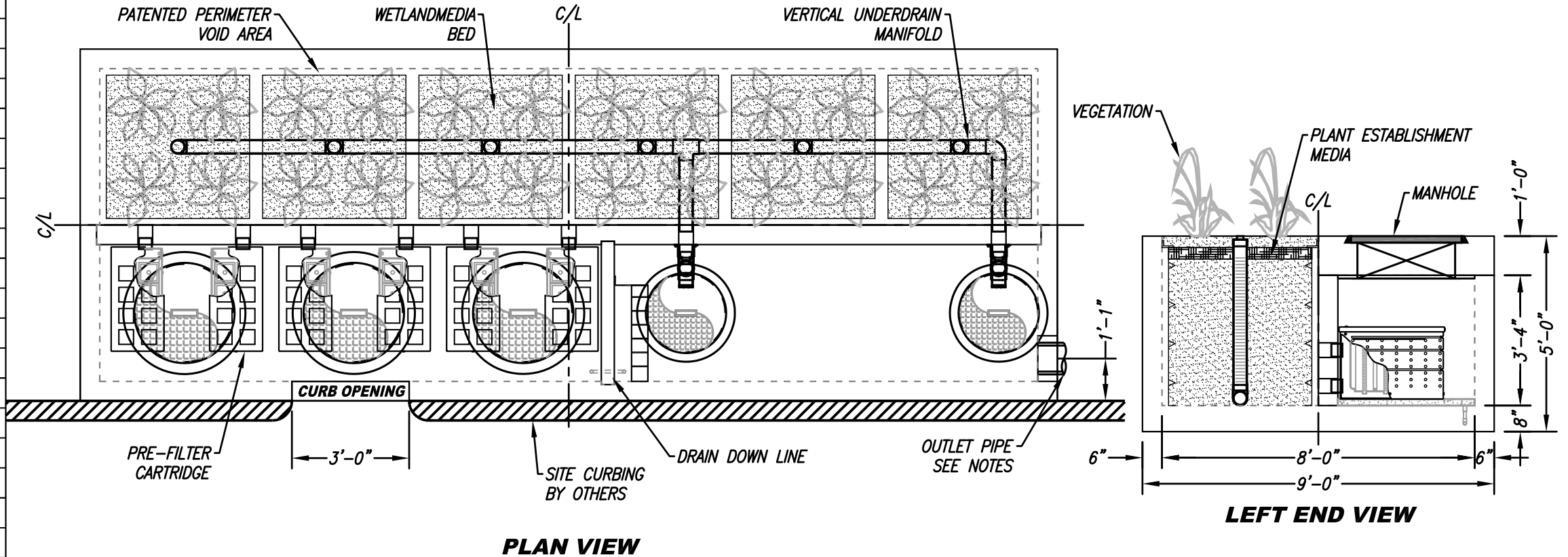
Surface Type	Area - A (sf)	C - Factor	C X A	Weighted C-Factor
Impervious	20,728	0.90	18,655	
Landscape	17,082	0.10	1,708	
Total	37,810		20,363	0.539

BMP #	DMA		Runoff Coefficient (C)	$Q_{TREAT} =$	Design Flow (cfs)	BMP Sizing	
	ID #	Area (ac)				MWS Model	Selected BMP's Flow Rate (cfs)
1	DMA A	2.36	0.86	0.40	0.607	MWS-L-8-24-V	0.693
2	DMA B	2.26	0.82	0.37	0.560	MWS-L-8-20-V	0.577
3	DMA C	0.87	0.54	0.09	0.140	MWS-L-4-21-V	0.268

Note: All selected modular wetlands treatment flow rates exceed the DMAs' design flow

MODEL #	DIMENSIONS	WETLAND MEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-4	4' x 4'	23	0.052
MWS-L-4-6	4' x 6'	32	0.073
MWS-L-4-8	4' x 8'	50	0.115
MWS-L-4-13	4' x 13'	63	0.144
MWS-L-4-15	4' x 15'	76	0.175
MWS-L-4-17	4' x 17'	90	0.206
MWS-L-4-19	4' x 19'	103	0.237
MWS-L-4-21	4' x 21'	117	0.268
MWS-L-6-8	7' x 9'	64	0.147
MWS-L-8-8	8' x 8'	100	0.230
MWS-L-8-12	8' x 12'	151	0.346
MWS-L-8-16	8' x 16'	201	0.462
MWS-L-8-20	9' x 21'	252	0.577
MWS-L-8-24	9' x 25'	302	0.693
MWS-L-10-20	10' x 20'	302	0.693

SITE SPECIFIC DATA			
PROJECT NUMBER			
ORDER NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID		BMP 1	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
TREATMENT HGL AVAILABLE (FT)			
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE			
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN	OPEN PLANTER	PEDESTRIAN
FRAME & COVER	3 EA Ø30"	N/A	2 EA Ø24"
WETLAND MEDIA VOLUME (CY)			TBD
ORIFICE SIZE (DIA. INCHES)			TBD
NOTES: PRELIMINARY NOT FOR CONSTRUCTION.			

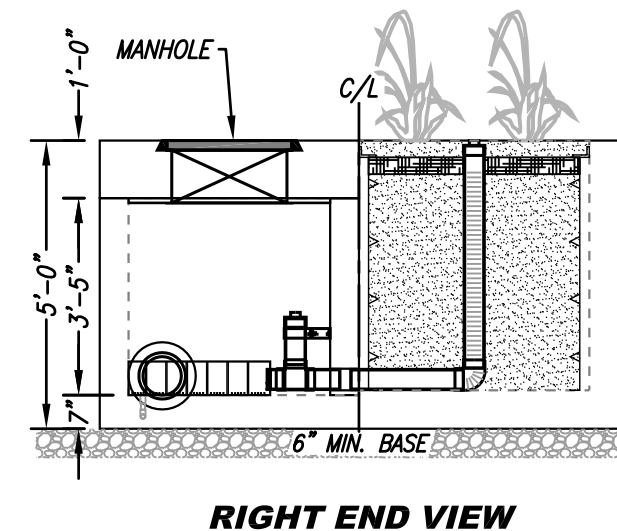
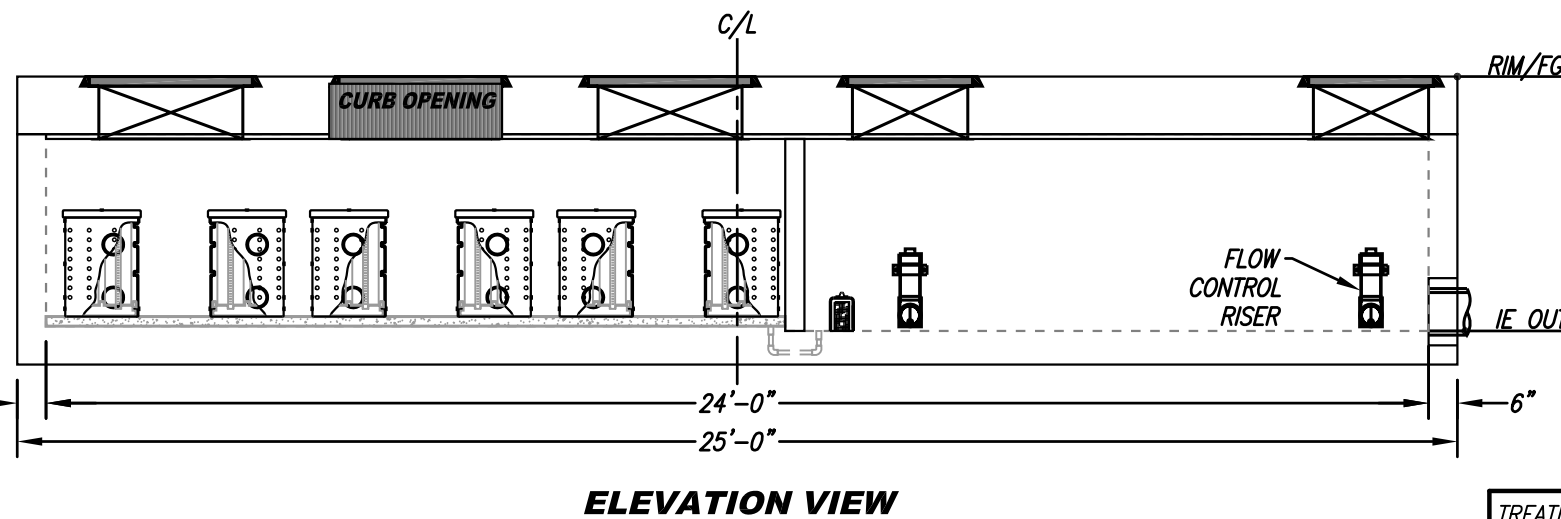


INSTALLATION NOTES

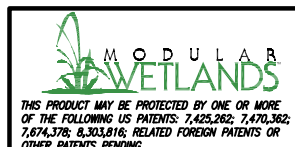
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- CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
- CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
- DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.
- CONTRACTOR RESPONSIBLE FOR CONTACTING MODULAR WETLANDS FOR ACTIVATION OF UNIT. MANUFACTURES WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A MODULAR WETLANDS REPRESENTATIVE.

GENERAL NOTES

- MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.



TREATMENT FLOW (CFS)	0.693
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0



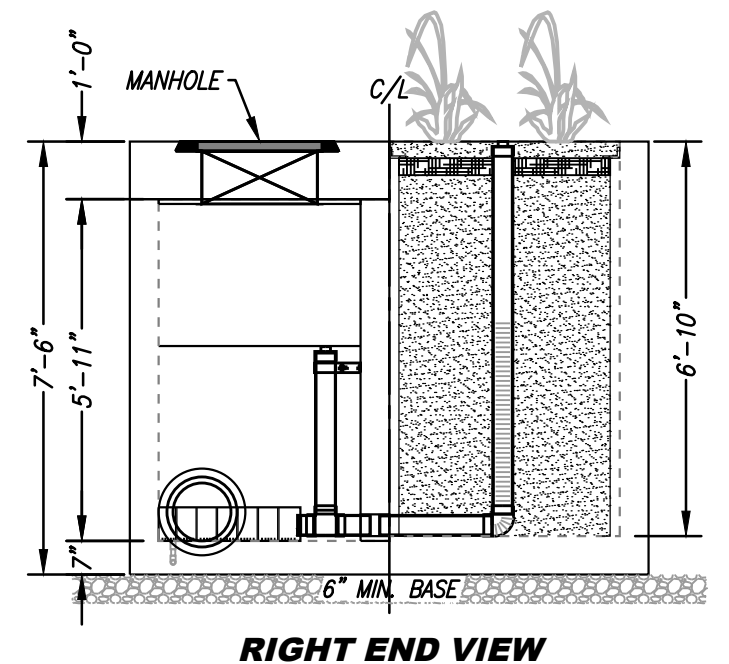
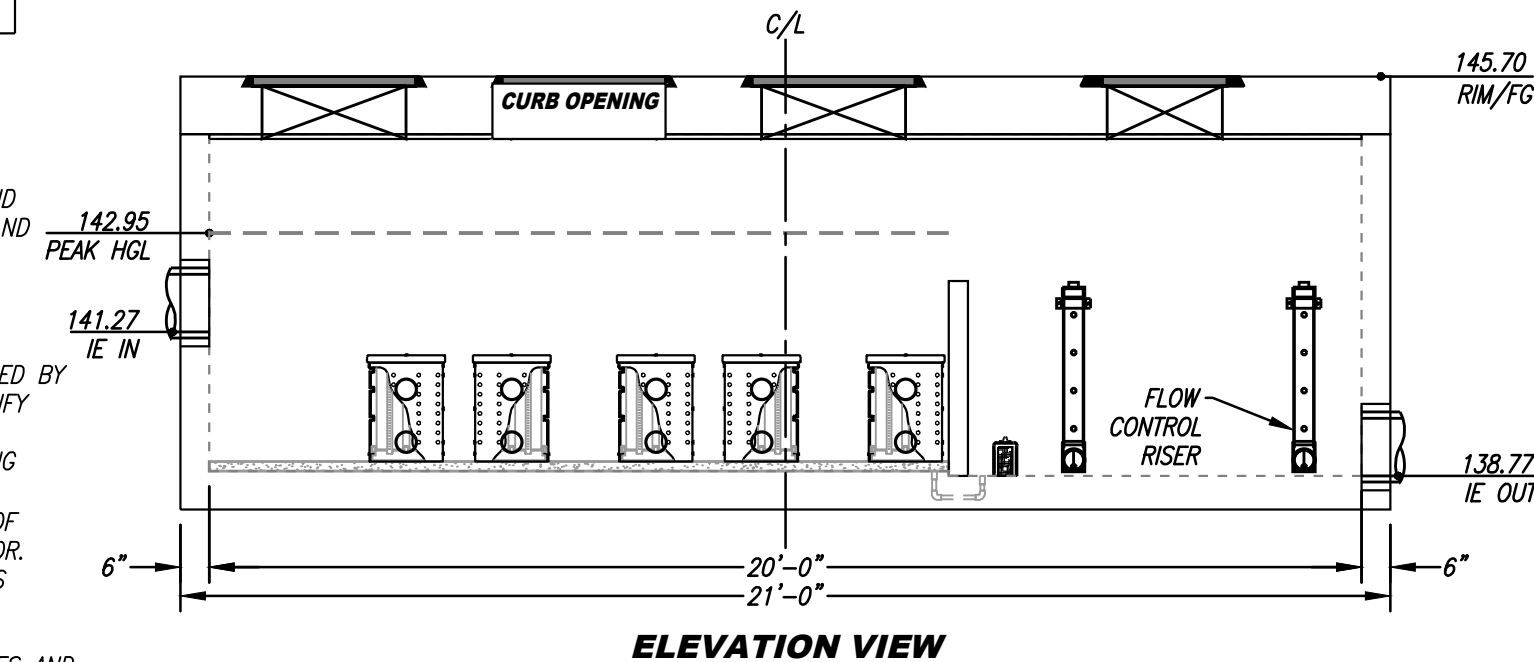
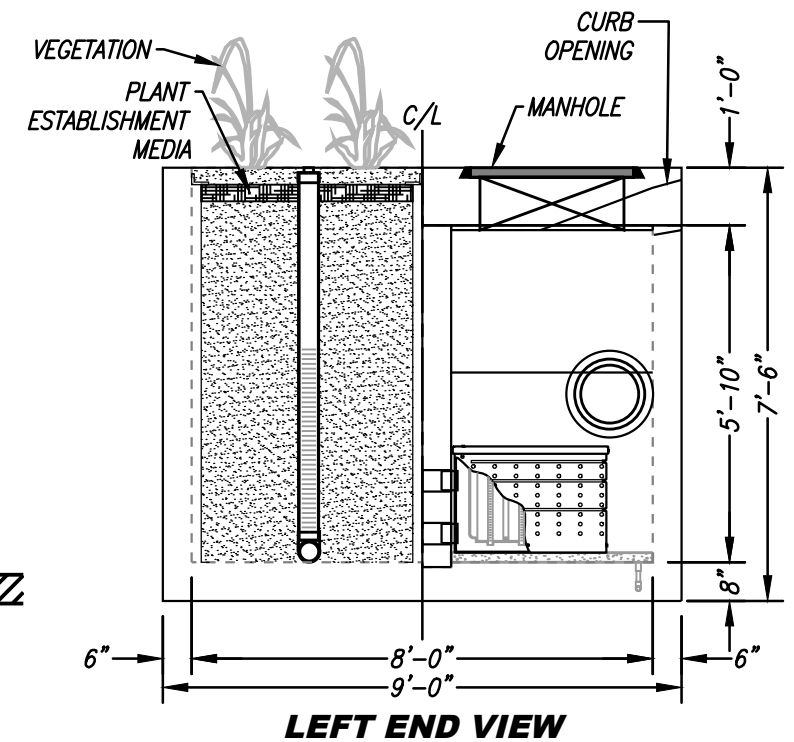
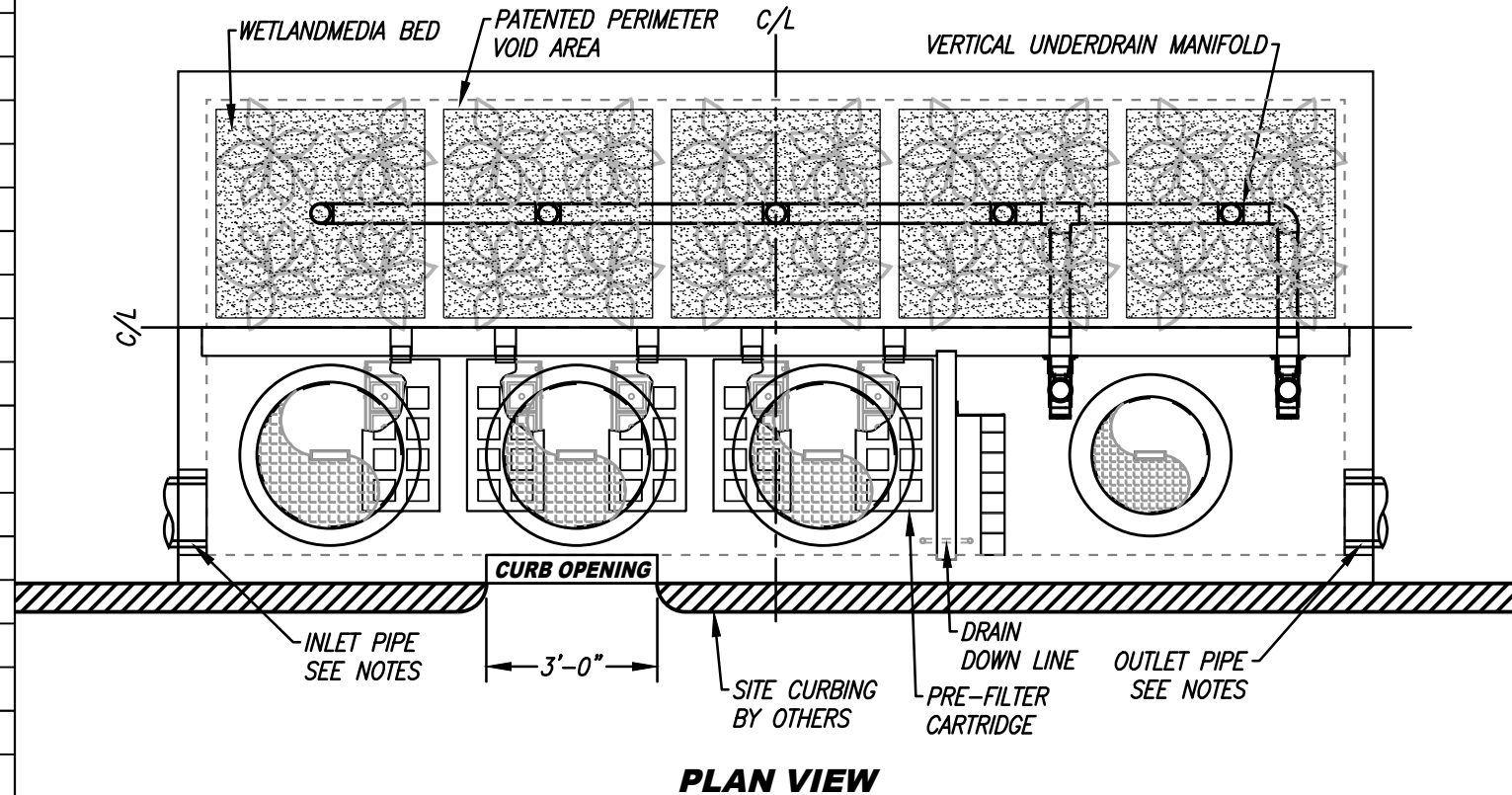
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MWS-L-8-24-C
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA			
PROJECT NUMBER	15429		
ORDER NUMBER	----		
PROJECT NAME	QUARRY STORAGE MPA		
PROJECT LOCATION	BONITA, CA		
STRUCTURE ID	BMP 2		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.557		
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	9.42		
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	141.27	PVC	12"
OUTLET PIPE	138.77	PVC	12"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	145.70	145.70	145.70
SURFACE LOAD	PEDESTRIAN	OPEN PLANTER	PEDESTRIAN
FRAME & COVER	3EA Ø30"	N/A	Ø24"
WETLANDMEDIA VOLUME (CY)	17.36		
ORIFICE SIZE (DIA. INCHES)	10 EA Ø1.30"		
NOTES: PRELIMINARY NOT FOR CONSTRUCTION.			



INSTALLATION NOTES

- CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
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- CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATER TIGHT PER MANUFACTURERS STANDARD CONNECTION DETAIL.
- CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
- VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
- CONTRACTOR RESPONSIBLE FOR CONTACTING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURERS WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

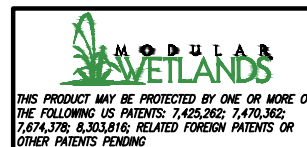
GENERAL NOTES

- MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.

INTERNAL BYPASS DISCLOSURE:

THE DESIGN AND CAPACITY OF THE PEAK CONVEYANCE METHOD TO BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD. HGL(S) AT PEAK FLOW SHALL BE ASSESSED TO ENSURE NO UPSTREAM FLOODING. PEAK HGL AND BYPASS CAPACITY SHOWN ON DRAWING ARE USED FOR GUIDANCE ONLY.

TREATMENT FLOW (CFS)	0.557
OPERATING HEAD (FT)	3.3
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

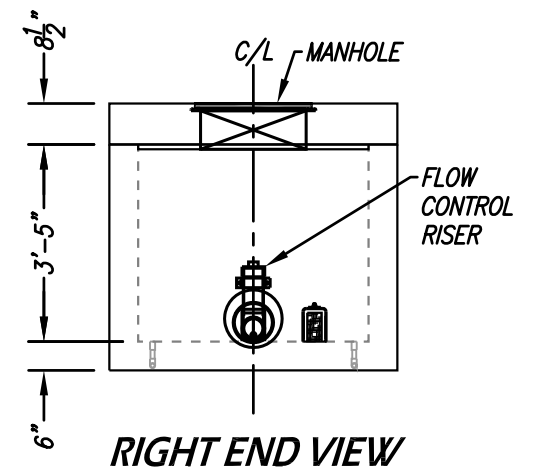
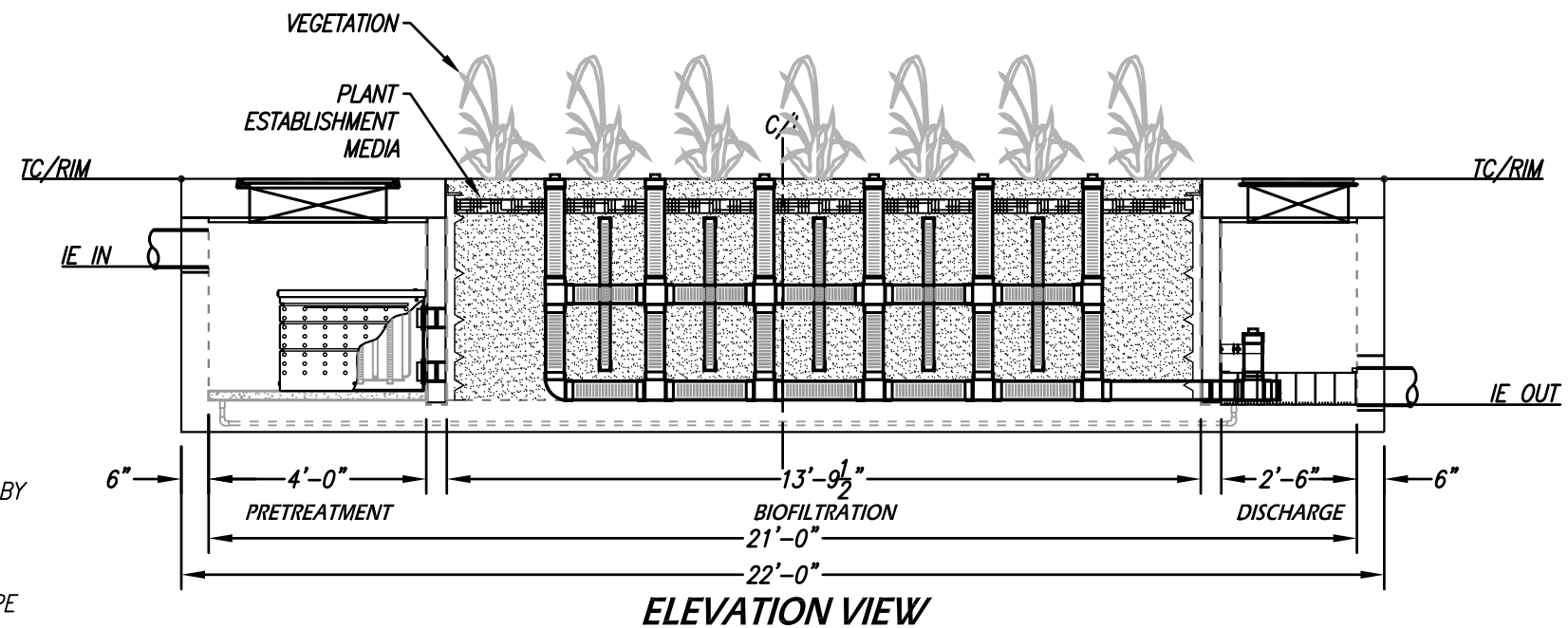
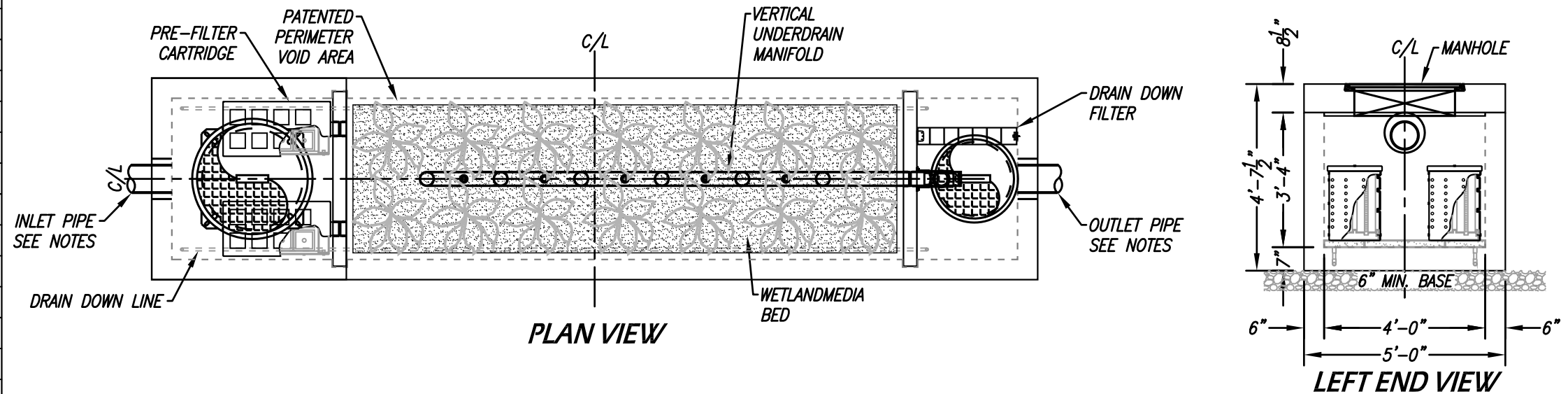


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MWS-L-8-20-6'-10.2"-C
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID		BMP 3	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
TREATMENT HGL AVAILABLE (FT)			
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE			
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PARKWAY	OPEN PLANTER	PARKWAY
FRAME & COVER	ø30"	N/A	ø24"
WETLANDMEDIA VOLUME (CY)	7.63		
WETLANDMEDIA DELIVERY METHOD	TBD		
ORIFICE SIZE (DIA. INCHES)	ø2.34"		
MAXIMUM PICK WEIGHT (LBS)	43000		
NOTES:			



INSTALLATION NOTES

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GENERAL NOTES

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TREATMENT FLOW (CFS)	0.268
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	TBD
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

THE PRODUCT DESCRIBED MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING US PATENTS: 7,425,262; 7,470,362; 7,674,378; 8,303,816; RELATED FOREIGN PATENTS OR OTHER PATENTS PENDING

PROPRIETARY AND CONFIDENTIAL:

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MWS-L-4-21-V STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL



December 2015

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: Greg Kent
Modular Wetland Systems, Inc.
P.O. Box 869
Oceanside, CA 92054
gkent@biocleanenvironmental.net

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.

7.5 Identification and Narrative of Receiving Water and Pollutants of Concern

- Complete this sub-attachment *only if flow-thru treatment BMPs are implemented onsite* in lieu of retention or biofiltration BMPs. Unless excepted because of a Prior Lawful Approval⁴, PDPs must also participate in an alternative compliance program⁵.

<p>A. General Description 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). Discharge from the Project flows south into Streetwater River, which ultimately discharges southeasterly to San Diego Bay.</p>		
<p>B. Water Body Impairments and Priorities List any 303(d) impaired water bodies⁶ 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:</p>		
303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Streetwater River, Lower (below Streetwater Reservoir)	Benthic Community Effects	
Streetwater River, Lower (below Streetwater Reservoir)	Chlorpyrifos	
Streetwater River, Lower (below Streetwater Reservoir)	Indicator Bacteria	
Streetwater River, Lower (below Streetwater Reservoir)	Nitrogen	
Streetwater River, Lower (below Streetwater Reservoir)	Phosphorus	
Streetwater River, Lower (below Streetwater Reservoir)	Selenium	
Streetwater River, Lower (below Streetwater Reservoir)	Total Dissolved Solids	
Streetwater River, Lower (below Streetwater Reservoir)	Toxicity	
Streetwater River, Lower (below Streetwater Reservoir)	Oxygen, Dissolved	
San Diego Bay	Mercury	
San Diego Bay	PAHs (Polycyclic Aromatic Hydrocarbons)	
San Diego Bay	PCBs (Polychlorinated biphenyls)	

⁴ See BMPDM Appendix L: Prior Lawful Approval Requirements and Guidance.

⁵ See SWQMP Attachment 12 (Alternative Compliance Projects) and BMPDM Appendix J (Offsite Alternative Compliance Requirements and Guidance).

⁶ The current list of Section 303(d) impaired water bodies can be found at:

https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

C. Identification of Project Site Pollutants

Identify pollutants expected from the project site based on all proposed use(s) of the site (see BMP Design Manual Appendix J.5)

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heavy Metals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organic Compounds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trash & Debris	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oxygen Demanding Substances	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oil & Grease	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bacteria & Viruses	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pesticides	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



8.0 General Requirements

- Completion of this attachment is required for all PDPs subject to hydromodification management requirements (see PDP SWQMP Form Table 5). Do not submit this attachment if exempt from Hydromodification Management requirements. Document the PDP exemption in Attachment 9.
- Submit this cover page and all required Sub-attachments for all structural hydromodification management BMPs proposed for the project.
- Constructed features must fully satisfy the requirements described in applicable BMPDM sections and appendices, and any other guidance identified by the County.
- DMA Exhibits and Construction Plans: DMAs, features, and BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.
- Structural BMP Certification. All structural hydromodification management BMPs documented this attachment must be certified by a registered engineer in Attachment 7, Sub-attachment 7.1.
- Structural BMP Verification. BMP installation must be verified by the County at the completion of construction. Applicants must complete an Installation Verification Form (Attachment 10).

Sub-attachments (check all that are completed)	
<input checked="" type="checkbox"/> 8.1: Flow Control Facility Design (required) ¹	Submit using <input checked="" type="checkbox"/> the Sub-attachment 8.1 cover sheet provided, or <input type="checkbox"/> as a separate stand-alone document labeled Sub-attachment 8.1.
<input checked="" type="checkbox"/> 8.2: Hydromodification Management Points of Compliance (required)	Complete the table provided in Sub-attachment 8.2.
8.3: Geomorphic Assessment of Receiving Channels	
1. Has a geomorphic assessment been performed for the receiving channel(s)?	
<input checked="" type="checkbox"/> No, the low flow threshold is 0.1Q2 (default low flow threshold)	
<input type="checkbox"/> Yes (provide the information below):	
Low flow threshold: <input type="checkbox"/> 0.1Q2 <input type="checkbox"/> 0.3Q2 <input type="checkbox"/> 0.5Q2	
Title:	
Date:	Preparer:
Submit using <input checked="" type="checkbox"/> the Sub-attachment 8.3 cover sheet provided, or <input type="checkbox"/> as a separate stand-alone document labeled Sub-attachment 8.3.	
8.4: Vector Control Plan (required if BMPs will not drain in less than 96 hours)	
<input type="checkbox"/> Included with this attachment <input checked="" type="checkbox"/> Not required	

¹ Including Structural BMP Drawdown Calculations and Overflow Design Summary. See BMPDM Chapter 6 and Appendix G for additional design guidance.

8.1 Flow Control Facility Design

Insert Flow Control Facility Design behind this cover page or submit as a separate stand-alone document labeled Sub-attachment 8.1.

BMP 4

BMP Sizing Spreadsheet V3.1

Project Name:	Insite Bonita
Project Applicant:	Tammie Moreno
Jurisdiction:	San Diego County
Parcel (APN):	5860-504-800
Hydrologic Unit:	
Rain Gauge:	Lindbergh
Total Project Area (sf):	201,094
Channel Susceptibility:	High

BMP Sizing Spreadsheet V3.1			
Project Name:	Insite Bonita	Hydrologic Unit:	0
Project Applicant:	Tammie Moreno	Rain Gauge:	Lindbergh
Jurisdiction:	San Diego County	Total Project Area:	201,094
Parcel (APN):	5860-504-800	Low Flow Threshold:	0.1Q2
BMP Name:	BMP 4	BMP Type:	Cistern
BMP Native Soil Type:	D	BMP Infiltration Rate (in/hr):	NA

Areas Draining to BMP						HMP Sizing Factors	Minimum BMP Size
DMA Name	Area (sf)	Pre Project Soil Type	Pre-Project Slope	Post Project Surface Type	Area Weighted Runoff Factor (Table G.2-1) ¹	Volume	Volume (CF)
ONSITE IMPERVIOUS	186,554	D	Moderate	Mixed	1.0	0.09	16790
ONSITE PERVIOUS	14,540	D	Moderate	Landscape	0.1	0.09	131
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
BMP Tributary Area	201,094						
						Minimum BMP Size	16921
						Proposed BMP Size*	30743
						Standard Cistern Depth (Overflow Elevation)	3.5 ft
						Provided Cistern Depth (Overflow Elevation)	4.5 ft
						Minimum Required Cistern Footprint)	3760 CF

* Assumes standard configuration

Notes:
 1. Runoff factors which are used for hydromodification management flow control (Table G.2-1) are different from the runoff factors used for pollutant control BMP sizing (Table B.1-1). Table references are taken from the San Diego Region Model BMP Design Manual

Describe the BMP's in sufficient detail in your PDP SWQMP to demonstrate the area, volume, and other criteria can be met within the constraints of the site.

BMP's must be adapted and applied to the conditions specific to the development project such as unstable slopes or the lack of available head. Designated Staff have final review and approval authority over the project design.

This BMP Sizing Spreadsheet has been updated in conformance with the San Diego Region Model BMP Design Manual, May 2018. For questions or concerns please contact the jurisdiction in which your project is located.

BMP Sizing Spreadsheet V3.1

Project Name:	Insite Bonita	Hydrologic Unit:	0
Project Applicant:	Tammie Moreno	Rain Gauge:	Lindbergh
Jurisdiction:	San Diego County	Total Project Area:	201,094
Parcel (APN):	5860-504-800	Low Flow Threshold:	0.1Q2
BMP Name	BMP 4	BMP Type:	Cistern

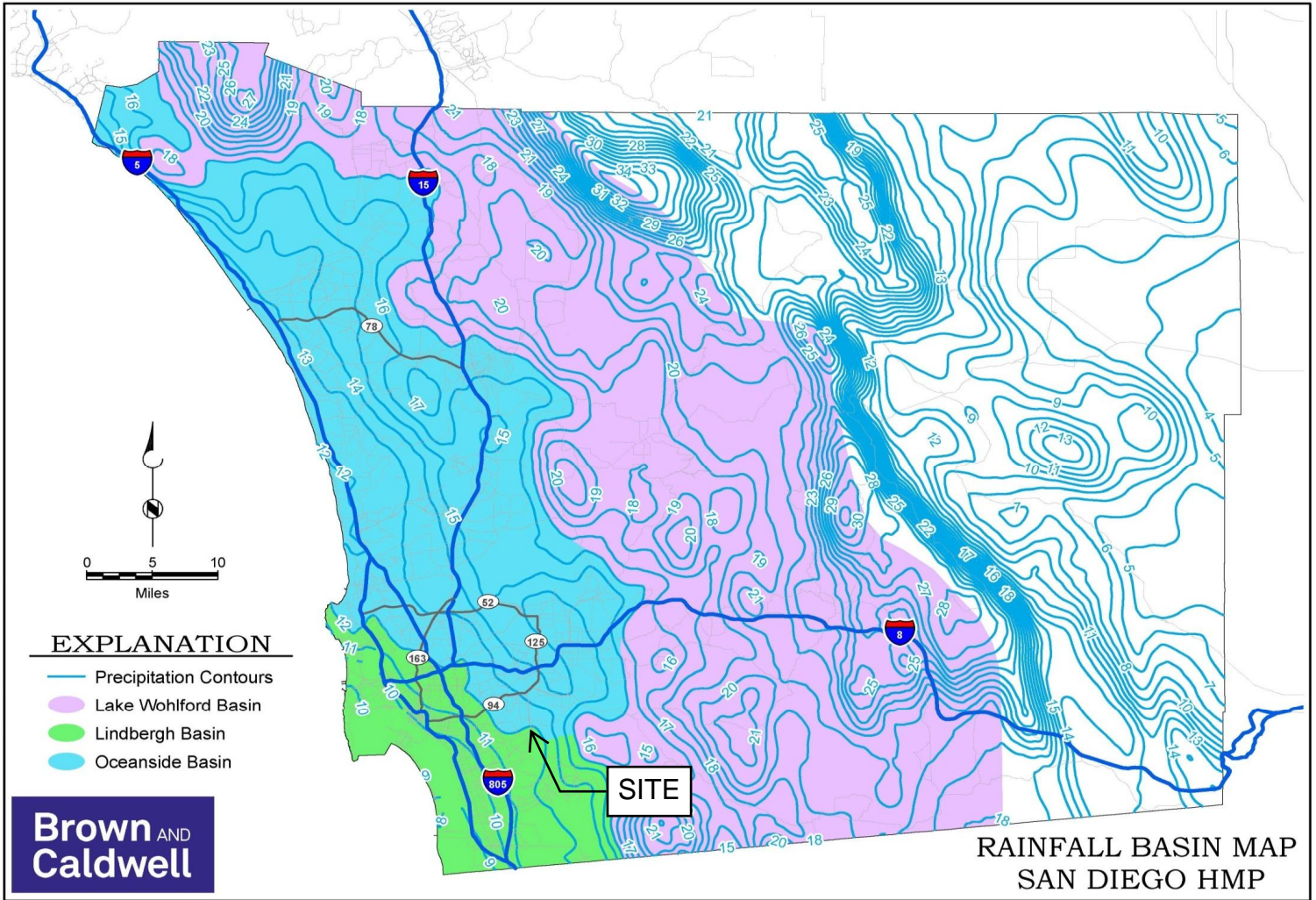
DMA Name	Rain Gauge	Pre-developed Condition		Unit Runoff Ratio (cfs/ac)	DMA Area (ac)	Orifice Flow - %Q ₂ (cfs)	Orifice Area (in ²)
		Soil Type	Slope				
ONSITE IMPERVIOUS	Lindbergh	D	Moderate	0.437	4.283	0.187	2.44
ONSITE PERVIOUS	Lindbergh	D	Moderate	0.437	0.334	0.015	0.19

4.50	0.202	2.63	1.83
Max Orifice Head (feet)	Max Tot. Allowable Orifice Flow (cfs)	Max Tot. Allowable Orifice Area (in ²)	Max Orifice Diameter (in)

Provide Hand Calc.	0.185	2.41	1.750
Average outflow during surface drawdown (cfs)	Max Orifice Outflow (cfs)	Actual Orifice Area (in ²)	Selected Orifice Diameter (in)

Drawdown (Hrs)	Provide Hand Calculation
----------------	--------------------------

File Name: P:\Projects\San Diego County\139942 - HMP Implementation Assistance\GIS\HMF GIS\Basins.mxd



PROJECT DESCRIPTION

Project Name: BMP 4 Date: / / City/State: / Phone #:
 Engineer: Contractor: Designed By: Prinsco Rep:

DESIGN CRITERIA - BASED ON STORAGE VOLUME

**For Metric units, visit Prinsco.com

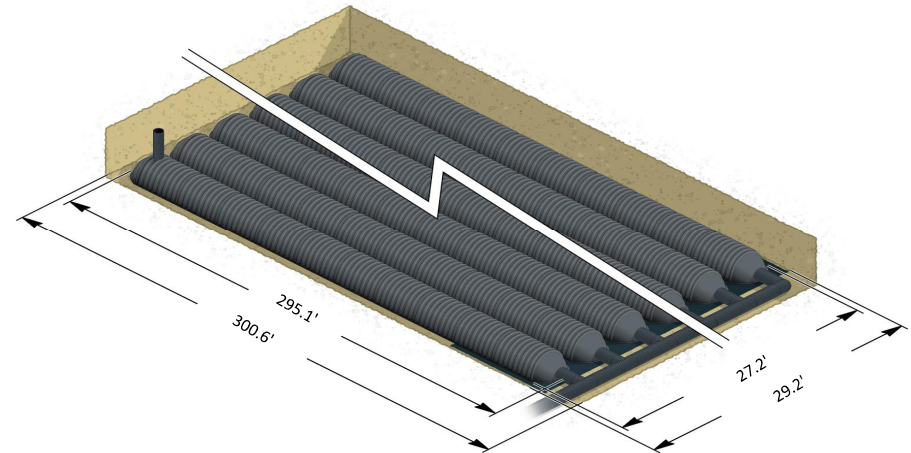
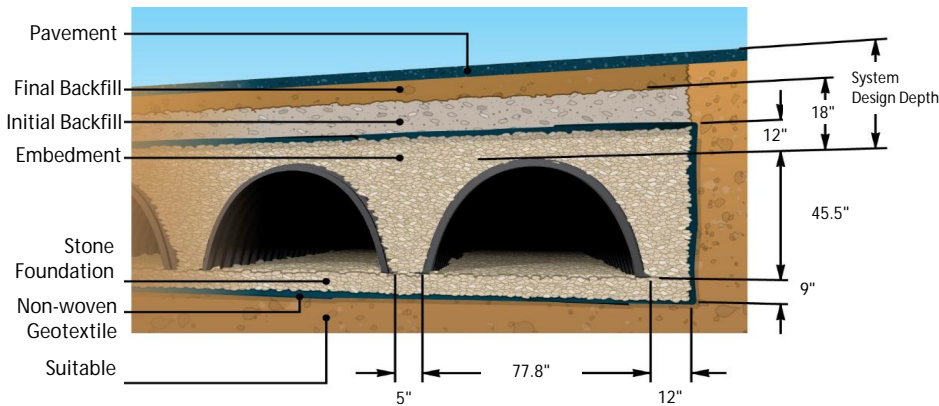
Chamber Size: HS18C Constraint on System Dimensions: Width Number of Manifolds: 1 Manifold Diameter: 24 (in) Include Manifold Volume?: Yes Units: Standarc **

Target Storage Volume: 30550 (cf) Constraint Limit: 30 (ft) Stone Porosity: 40 % Bottom of Stone Elevation: 0 (ft) Max. Pavement Elevation: 12.5 (ft) Min. Pavement Elevation: 6.5 (ft)

Additional Stone Above Chamber*: 0 (in) Additional Stone Below Chamber*: 0 (in) Additional Stone Side of Chamber*: 0 (in) Additional Stone Between Chambers Rows*: 0 (in)

* Minimum recommended values are already included in calculations

SYSTEM LAYOUT



NOTES ON COVER ABOVE CHAMBER:

Min. Burial Depth: 18"
 Max. Burial Depth: 8'

SYSTEM STORAGE & QUANTITIES

System Layout 4 rows of 41 chambers & 0 rows of 40 chambers		System Footprint 8778 (sf)	Stone Storage 11913 (cf)	Manifold Storage 82 (cf)	Chamber Storage 18748 (cf)	Total System Storage 30743 (cf)
Number of Chambers 164	Number of End Caps 8	Required Stone (For Embedment Backfill) 1103 (cy)	Non-Woven Geotextile (Includes 20% Overlap) 2836 (sy)	Woven Geotextile - Scour 38 (sy)	Woven Geotextile - Sediment Row 495 (sy)	

ASSISTANCE: For assistance with design, drawings or pricing please have your completed system design aid ready, and contact your Prinsco sales representative

This tool is intended to assist in sizing stormwater management systems using Prinsco products. It should be used for estimating purposes only and is not intended to be a final design tool. The design engineer needs to verify all the values and ensure they meet all project design criteria.

BMP 5

BMP Sizing Spreadsheet V3.1

Project Name:	Insite Bonita
Project Applicant:	Tammie Moreno
Jurisdiction:	San Diego County
Parcel (APN):	5860-504-800
Hydrologic Unit:	
Rain Gauge:	Lindbergh
Total Project Area (sf):	37,810
Channel Susceptibility:	High

BMP Sizing Spreadsheet V3.1			
Project Name:	Insite Bonita	Hydrologic Unit:	0
Project Applicant:	Tammie Moreno	Rain Gauge:	Lindbergh
Jurisdiction:	San Diego County	Total Project Area:	37,810
Parcel (APN):	5860-504-800	Low Flow Threshold:	0.1Q2
BMP Name:	BMP 5	BMP Type:	Cistern
BMP Native Soil Type:	D	BMP Infiltration Rate (in/hr):	NA

Areas Draining to BMP						HMP Sizing Factors	Minimum BMP Size
DMA Name	Area (sf)	Pre Project Soil Type	Pre-Project Slope	Post Project Surface Type	Area Weighted Runoff Factor (Table G.2-1) ¹	Volume	Volume (CF)
OFFSITE IMPERVIOUS	20,728	D	Moderate	Mixed	1.0	0.09	1866
OFFSITE PERVIOUS	17,082	D	Moderate	Landscape	0.1	0.09	154
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
						0	0
BMP Tributary Area	37,810						
						Minimum BMP Size	2019
						Proposed BMP Size*	7052
Standard Cistern Depth (Overflow Elevation)						3.5	ft
Provided Cistern Depth (Overflow Elevation)						4.0	ft
Minimum Required Cistern Footprint						505	CF

* Assumes standard configuration

Notes:
 1. Runoff factors which are used for hydromodification management flow control (Table G.2-1) are different from the runoff factors used for pollutant control BMP sizing (Table B.1-1). Table references are taken from the San Diego Region Model BMP Design Manual

Describe the BMP's in sufficient detail in your PDP SWQMP to demonstrate the area, volume, and other criteria can be met within the constraints of the site.

BMP's must be adapted and applied to the conditions specific to the development project such as unstable slopes or the lack of available head. Designated Staff have final review and approval authority over the project design.

This BMP Sizing Spreadsheet has been updated in conformance with the San Diego Region Model BMP Design Manual, May 2018. For questions or concerns please contact the jurisdiction in which your project is located.

BMP Sizing Spreadsheet V3.1

Project Name:	Insite Bonita	Hydrologic Unit:	0
Project Applicant:	Tammie Moreno	Rain Gauge:	Lindbergh
Jurisdiction:	San Diego County	Total Project Area:	37,810
Parcel (APN):	5860-504-800	Low Flow Threshold:	0.1Q2
BMP Name	BMP 5	BMP Type:	Cistern

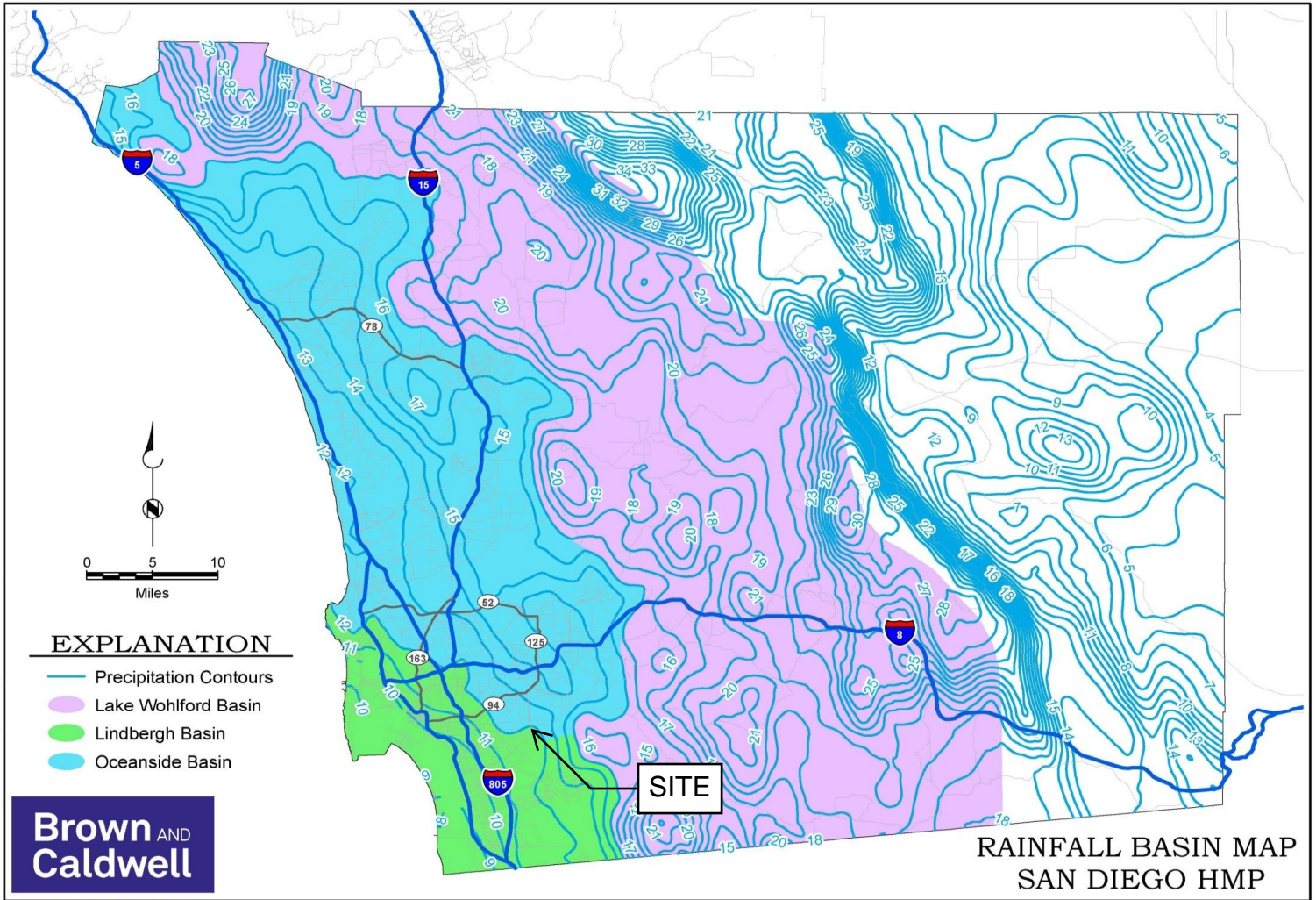
DMA Name	Rain Gauge	Pre-developed Condition		Unit Runoff Ratio (cfs/ac)	DMA Area (ac)	Orifice Flow - %Q ₂ (cfs)	Orifice Area (in ²)
		Soil Type	Slope				
OFFSITE IMPERVIOUS	Lindbergh	D	Moderate	0.437	0.476	0.021	0.29
OFFSITE PERVIOUS	Lindbergh	D	Moderate	0.437	0.392	0.017	0.24

4.00	0.038	0.52	0.82
Max Orifice Head (feet)	Max Tot. Allowable Orifice Flow (cfs)	Max Tot. Allowable Orifice Area (in ²)	Max Orifice Diameter (in)

Provide Hand Calc.	0.036	0.50	0.800
Average outflow during surface drawdown (cfs)	Max Orifice Outflow (cfs)	Actual Orifice Area (in ²)	Selected Orifice Diameter (in)

Drawdown (Hrs)	Provide Hand Calculation
----------------	--------------------------

File Name: P:\Projects\San Diego County\139942 - HMP Implementation Assistance\GIS\HMF GIS\Basins.mxd



PROJECT DESCRIPTION

Project Name: BMP #4 Date: MM / DD / YYYY City / State: / Phone #: 2

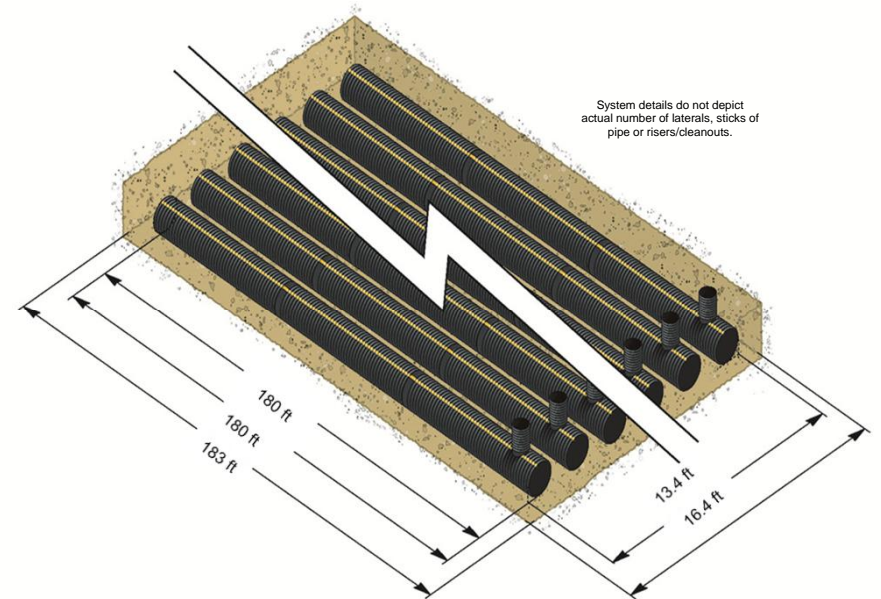
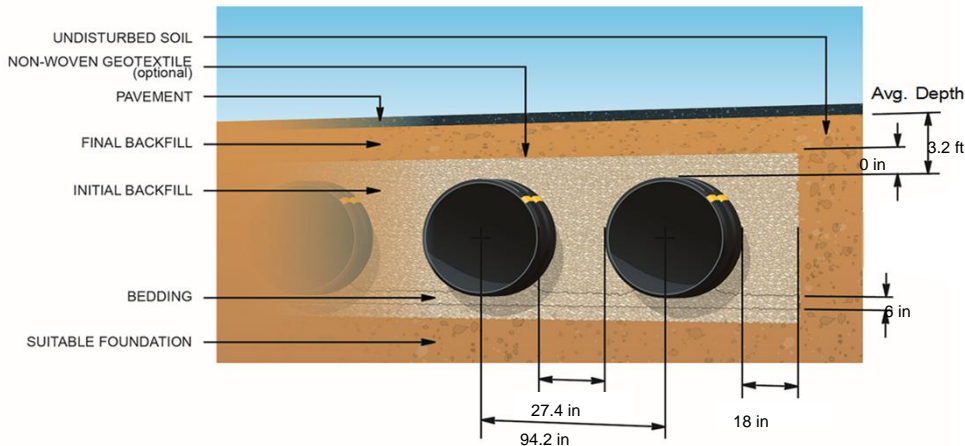
Engineer: Contractor: Designed By: Prinsco Rep:

DESIGN CRITERIA

Units	Standard ▼	Pipe Type	Solid ▼	Number of Headers	0 ▼	Header Diameter	60 in ▼	Lateral Diameter	60 in ▼	Include Header Volume	Yes ▼
Number of Laterals	2	Min. Depth to Invert of Pipe	9 (ft)	Stone Porosity	40 %	System Length		0 (ft) OR	Lateral Length		180 (ft)
Max. Depth to Invert of Pipe	8 (ft)	Additional Stone Below Pipe*	0 (in)	Additional Stone Side of Pipe*	0 (in)	CALCULATE SYSTEM (Click here after updating system variables)					
Additional Stone Above Pipe*	0 (in)										

* Minimum recommended values are already included in calculations

SYSTEM LAYOUT



NOTES:

Recommended riser diameter: 24 in
 Recommended cleanout size: 6 or 8 in

SYSTEM STORAGE

System Footprint	Stone Storage	Product Storage	Total System Storage	Required Stone (For Initial Backfill)	Non-Woven Geotextile (When Required - Includes 20% Overlap)
3,005 (sf)	0 (cf)	7,052 (cf)	7,052 (cf)	372 (cy)	1,124 (sy)

ASSISTANCE: For assistance with design, drawings or pricing please have your completed system design aid ready, and contact your Prinsco sales representative

Prinsco, Inc. | 1717 16th St NE | Willmar, MN 56201 | 320.222.6800 | 800.992.1725 | prinsco.com

8.2 Hydromodification Management Points of Compliance

- List and describe all points of compliance (POCs) for flow control for hydromodification management.
- For each POC, provide a POC identification name or number, and a receiving channel identification name or number correlating to the project's HMP Exhibit (see Attachment 2).

POC name or #	Channel name or #	POC Description
POC 1		The POC is designated near the southeast corner of the site, east of DMA B at the confluence of the onsite and offsite detention systems.

8.3 Geomorphic Assessment of Receiving Water Channels

Insert Geomorphic Assessment behind this cover page or submit as a separate stand-alone document labeled Sub-attachment 8.3.

8.4 Vector Control Plan

Insert Vector Control Plan behind this cover page or submit as a separate stand-alone document labeled Sub-attachment 8.4.



County of San Diego Stormwater Quality Management Plan (SWQMP)
Attachment 9: Management of Critical Coarse Sediment Yield Areas

9.0 General Requirements

- Complete the table below to indicate which compliance pathway was selected in PDP SWQMP Table 6. Include the corresponding sub-attachment with your SWQMP submittal. Other sub-attachments do not need to be included.
- See the BMPDM sections and appendices listed under “BMPDM Design Resources” for additional explanation of design requirements. Constructed features must fully satisfy the requirements described in these resources, and any other guidance identified by the County.
- DMA Exhibits and Construction Plans: CCSYAs and applicable BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.

Sub-attachments	BMPDM Design Resources
<input type="checkbox"/> 9.1: Documentation of Hydromodification Management Exemption ¹	Section 1.6
<input checked="" type="checkbox"/> 9.2: Watershed Management Area Analysis (WMAA) Mapping ¹	Appendix H.1.1.2
<input type="checkbox"/> 9.3: Resource Protection Ordinance (RPO) Methods	Appendix H.1.1.1
<input type="checkbox"/> 9.4: No Net Impact Analysis	Appendix H.4

¹ The San Diego County Regional comprehensive WMAA mapping data can be found on the Project Clean Water website here: http://www.projectcleanwater.org/download/wmaa_attc_data/

9.1 Documentation of Hydromodification Management Exemption (BMPDM Section 1.6)

- If the PDP is exempt from hydromodification management requirements (see Table 4 Part A.1 of the PDP SWQMP), use this Sub-attachment to document the exemption.
- Select the type of exemption below that applies and provide an explanation of the selection, including maps or other applicable documentation. Additional documentation may be requested by County staff.

Exemption Type per BMPDM Figure 1-2 (select one)
<input type="checkbox"/> a. The proposed project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
<input type="checkbox"/> b. The proposed 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.
<input type="checkbox"/> c. The proposed project will discharge runoff directly to an area identified by the County as appropriate for an exemption by the WMAA for the watershed in which the project resides ² .
Explanation (add or attach pages as necessary)
N/A

² This option must include an analysis of the project using the methodology presented in Attachment E of the Regional Watershed Management Area Analysis.

9.2 Watershed Management Area Analysis (WMAA) Mapping (BMPDM Appendix H.1.1.2)

Watershed Management Area Analysis (WMAA) mapping is a simple way to screen projects to determine the presence of onsite or offsite upstream Potential Critical Coarse Sediment Yield Areas (PCCSYAs). The San Diego County Regional WMAA mapping data can be found on the Project Clean Water website here: http://www.projectcleanwater.org/download/wmaa_attc_data/.³

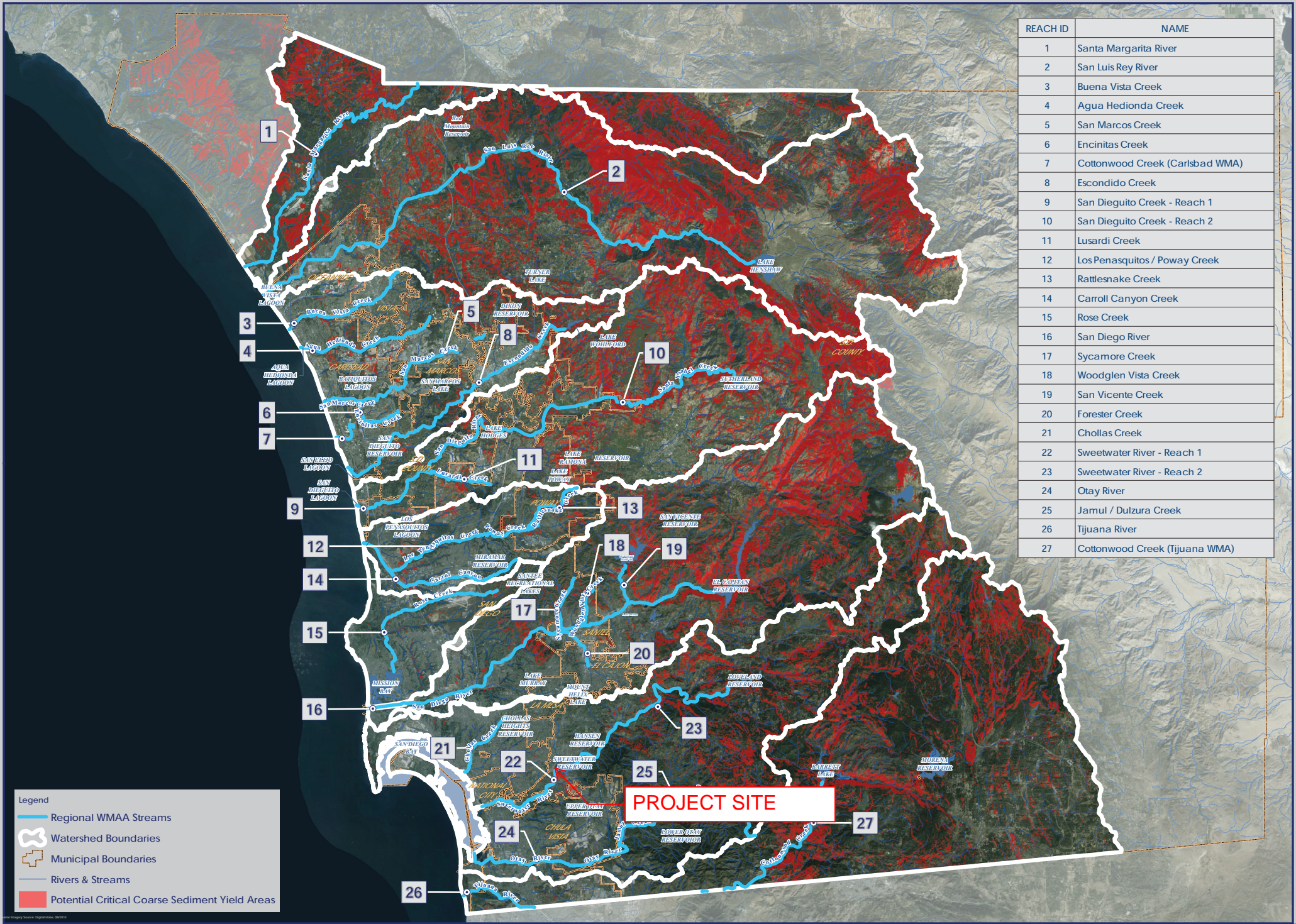
- Based on the WMAA map and the proposed project design, demonstrate below that both of the following conditions apply to the PDP:
 - (a) Less than 5% of PCCSYAs will be impacted (built on or obstructed) by the PDP, and
 - (b) All upstream offsite PCCSYAs will be bypassed (see BMPDM Appendix H.3).

A. Mapping Results -- At a minimum, show: (1) the project footprint, (2) areas of proposed development, (3) impacted onsite PCCSYAs, (4) offsite tributary areas⁴, and (5) bypass of upstream offsite PCCSYAs.

As shown in the attached Potential Critical Coarse Sediment Yield Areas Map, there are no potential critical coarse sediment areas on site or flowing from upstream. See next sheet for location of proposed site.

³ Applicants may refine initial mapping results using options identified in BMPDM Appendix H.1.2.

⁴ Tributary areas must be shown to demonstrate that upstream offsite PCCSYAs do not exist. If bypassing these areas, only the bypass should be shown.



REACH ID	NAME
1	Santa Margarita River
2	San Luis Rey River
3	Buena Vista Creek
4	Agua Hedionda Creek
5	San Marcos Creek
6	Encinitas Creek
7	Cottonwood Creek (Carlsbad WMA)
8	Escondido Creek
9	San Dieguito Creek - Reach 1
10	San Dieguito Creek - Reach 2
11	Lusardi Creek
12	Los Penasquitos / Poway Creek
13	Rattlesnake Creek
14	Carroll Canyon Creek
15	Rose Creek
16	San Diego River
17	Sycamore Creek
18	Woodglen Vista Creek
19	San Vicente Creek
20	Forester Creek
21	Chollas Creek
22	Sweetwater River - Reach 1
23	Sweetwater River - Reach 2
24	Otay River
25	Jamul / Dulzura Creek
26	Tijuana River
27	Cottonwood Creek (Tijuana WMA)

Legend

- Regional WMAA Streams
- Watershed Boundaries
- Municipal Boundaries
- Rivers & Streams
- Potential Critical Coarse Sediment Yield Areas

PROJECT SITE

Potential Critical Coarse Sediment Yield Areas

Regional San Diego County Watersheds

B. Explanation -- Provide documentation as needed to demonstrate that (1) impacts to PCCSYAs are below 5%, and (2) upstream offsite PCCYSAs are effectively bypassed. Add pages as necessary.

As shown in the attached Potential Critical Coarse Sediment Yield Areas Map, there are no potential critical coarse sediment areas on site or flowing from upstream. As there is no potential, there are no impacts to PCCSYAs and any upstream offsite PCCYSAs that need to be bypassed.

9.3 Resource Protection Ordinance (RPO) Methods (BMPDM Appendix H.1.1.1)

- Either of two Resource Protection Ordinance (RPO) methods may also be used to demonstrate compliance with CCSYA requirements. Select either option and document the selection below:
 - RPO Scenario 1: PDP is subject to and in compliance with RPO requirements⁵
 - Select if the project requires one or more discretionary permits;
 - Demonstrate that onsite AND upstream offsite CCSYAs will be avoided and/or bypassed.
 - RPO Scenario 2: PDP is entirely exempt/not subject to RPO requirements⁶
 - Select if the project does not require discretionary permits;
 - Demonstrate that all upstream offsite CCSYAs will be bypassed⁷.

A. Mapping Results -- At a minimum, show as applicable: (1) the project footprint, (2) areas of proposed development, (3) locations of onsite and upstream offsite CCSYAs, and (4) bypass of all identified CCSYAs.

N/A

⁵ RPO applicability is normally confirmed during discretionary review. Check with your project manager if you're not sure of your status.

⁶ Does not include PDPs utilizing exemption(s) via RPO Section 86.604(e)(2)(cc) or 86.604(e)(3).

⁷ This scenario does not impose requirements for onsite CCSYAs.

B. Explanation -- Provide documentation as needed to demonstrate that (1) onsite CCSYAs are avoided and bypassed [if applicable], and (2) upstream offsite CCYSAs are effectively bypassed. Add pages as necessary.

N/A

9.4 No Net Impact Analysis (BMPDM Appendix H.4)

- When impacts to CCSYAs cannot be avoided or effectively bypassed, applicants must demonstrate that their project generates no net impact to the receiving water per the performance metrics identified in BMPDM Appendix H.4.
- Use the space below to document that the PDP will generate no net impact to any receiving water.

No Net Impact Analysis (add or attach pages as necessary)

N/A



This form must be accepted by the County prior to the release of construction permits or granting of occupancy for applicable portions of a Priority Development Project (PDP). Its purpose is to provide documentation of the final installation of permanent Best Management Practices (BMPs) used to satisfy Structural Performance Standards for the development project. Compliance with these standards reduces the discharge of pollutants and flows from the completed project site. Applicable standards may be satisfied using Structural BMPs (S-BMPs), Significant Site Design BMPs (SSD-BMPs), or both. Applicants are responsible for providing all requested information.

PART 1 PROJECT INFORMATION

A. Project Summary Information	
<i>Project Name</i>	Quarry Storage MPA
<i>Record ID</i> (e.g. grading/improvement plan number, building permit)	PDS2021-MPA-21-009
<i>Project Address</i>	5790 Quarry Road
<i>Assessor's Parcel Number(s) APN(s)</i>	586-050-36, -44 & -48
<i>Project Watershed</i> (Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Sweetwater Watershed HU 909.00, 148,000 ac, Lower Sweetwater Subarea
B. Owner Information	
<i>Name</i>	Insite Property Group, LLC
<i>Address</i>	811 N Catalina Avenue, Redondo Beach, CA 90277
<i>Email Address</i>	
<i>Phone Number</i>	310-954-1264

COUNTY – OFFICIAL USE ONLY	
INTAKE ID#	
ACCEPTANCE ID#	



THIS PAGE IS FOR PARTIAL VERIFICATIONS ONLY

If final grade release or granting of occupancy is being requested for only a portion of the Priority Development Project (PDP) please fill out the table below. Include ALL of the Structural BMPs and/or Significant Site Design BMPs for the entire project in the table. Include a mark-up of the DMA map from the approved SWQMP with this Verification package that clearly shows which DMAs you are submitting for approval and which DMAs have already been accepted (if any).

DMA #	APN or Lot #	BMP ID #	WPP Acceptance Date (If applicable)	WPP Acceptance ID# (If applicable, e.g. 20/21-001)



County of San Diego
 Stormwater Quality Management Plan (SWQMP)
 Attachment 10: BMP Installation Verification for Priority Development Projects

PART 2 BMP INVENTORY INFORMATION

Use this table to document Structural BMPs (S-BMPs) and Significant Site Design BMPs (SSD-BMPs) for the PDP. All DMAs that are not self-mitigating or de minimis must have at least one Structural BMP or Significant Site Design BMP.

- In Part A list all Structural BMPs (including both Pollutant Control and/or Hydromodification as applicable) by DMA.
- Complete Part B for all DMAs that contain only Significant Site Design BMPs. SSD-BMPs are Site Design BMPs (SD-BMPs) that are sized and constructed to satisfy Structural Performance Standards for a DMA.
- The information provided for each BMP in the table must match that provided in the Stormwater Quality Management Plan (SWQMP), construction plans, maintenance agreements, and other relevant project documentation.

DMA #	BMP Information			Maintenance Category (1, 2, 3, or 4)	Maintenance Agreement Recorded DOC #	Construction Plan Sheet #	Landscape Plan Sheet #	FOR DPW-WPP USE ONLY
	Quantity	Description/Type of Structural BMP	BMP ID #					
A. Structural BMPs (S-BMPs)								
A	1	Modular Wetland MWS-L-8-24 / Flow-Through System	1	2		Preliminary WQMP Plan		
B	1	Modular Wetland MWS-L-8-20 / Flow-Through System	2	2		Preliminary WQMP Plan		
C	1	Modular Wetland MWS-L-4-21 / Flow-Through System	3	2		Preliminary WQMP Plan		
A,B	1	Detention for Hydromodification	4	2		Preliminary WQMP Plan		
C	1	Detention for Hydromodification	5	2		Preliminary WQMP Plan		
Add rows as needed. Click into the last column in the row below this, then press TAB to add a new row.								
B. Significant Site Design BMPs (SSD-BMPs)								
		Choose an item.		N/A				
		Choose an item.		Choose				
		Choose an item.		Choose				



County of San Diego
Stormwater Quality Management Plan (SWQMP)
Attachment 10: BMP Installation Verification for Priority Development Projects

		Choose an item.		Choose				
		Choose an item.		Choose				
		Choose an item.		Choose				
Add rows as needed. Click into the last column in the row below this, then press TAB to add a new row.								



PART 3 REQUIRED ATTACHMENTS

For the permanent BMPs listed in Part 2, submit the following to the County inspector along with this Verification form as a package (check all that are attached):

- PHOTOGRAPHS:** Final construction photos of every permanent BMP listed in Part 2 are required. Final photos must be recent and be labeled with the date and a BMP Identifier. Additional photographs illustrating proper construction of the BMPs are recommended to be included and may be requested by WPP prior to acceptance of this Verification (e.g. excavation depths, liners, hydromodification orifices, Biofiltration Soil Media (BSM), vegetation, mulch).
- MAINTENANCE AGREEMENTS:** Copies of approved and recorded Storm Water Maintenance Agreements (SWMA), Category 1 Maintenance Notification Agreements (MN), or Encroachment Maintenance and Removal Agreements (EMRA) for all S-BMPs.
Note: Significant Site Design (SSD) BMPs and most Category 4 BMPs do not require recorded maintenance agreements.
- CONSTRUCTION PLANS:** Submit electronic and/or 11" X 17" hard copies of the current approved Construction Plan sheets for the Record ID(s) listed on Page 1:
 - Grading Plans
 - Improvement Plans
 - Precise Grading Plan
 - Building Plan (Applicable BMP Sheets only)
 - Other (Please specify) _____

For each Construction Plan, the sheets submitted must incorporate all of the following:

- A BMP Table on Sheet 1, AND
 - A plan detail cross-section of each verified as-built BMP, AND
 - The location of each verified as-built BMP
- LANDSCAPE PLANS:** If the PDP includes vegetated BMPs and has a Landscape Plan, submit the following:
 - Final Landscape Plans
 - Proof of Irrigation Installed (if applicable)



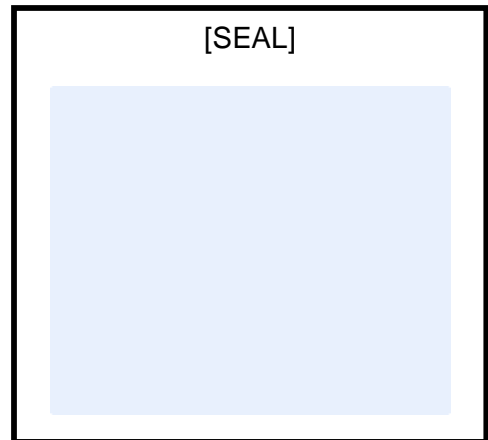
PART 4 PREPARER’S CERTIFICATION

By signing below, I certify that the BMP(s) listed in Part 2 of this Verification Form have been constructed and are in substantial conformance with the approved plans and applicable regulations. I understand the County reserves the right to inspect the above BMPs to verify compliance with the approved plans and Watershed Protection Ordinance (WPO). Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Note: Structural BMPs must be certified by a licensed professional engineer.

Please sign and, if applicable, provide your seal below.

Preparer’s Name:	Benjamin Huber, P.E.
Email Address:	Ben.Huber@kimley-horn.com
Phone Number:	925-398-4847
Preparer’s Signature:	
Date:	





PROJECT RECORD ID: _____

COUNTY - OFFICIAL USE ONLY

County Inspector Approval:

*NOTE: The County approved SWQMP document and any Addendums or Revisions must be included with this BMP Installation Verification submittal package.

- DPW Private Development Construction Inspection (PDCI)
- PDS Building
- DGS
- DPR

By signing below, the County Inspector concurs that every BMP listed in Part 2 of this BMP Installation Verification form has been installed per plan.

Inspector Name: _____

Inspector's Signature: _____ Date: _____

DPW Watershed Protection Program (WPP) Acceptance:

Date Received: _____

WPP Reviewer: _____

WPP Reviewer concurs that the BMPs accepted in Part 2 above may be entered into County inventory.

WPP Reviewer's Signature: _____ Date: _____

Enter Acceptance ID# on page 1.

NOTES:



County of San Diego Stormwater Quality Management Plan (SWQMP)
 Attachment 11: BMP Maintenance Agreements and Plans

11.0 Cover Sheet and General Requirements

- All Structural BMPs must have a plan and mechanism to ensure on-going maintenance. Use the table below to document the types of agreements to be submitted for the PDP and submit them under cover of this sheet.
- See BMPDM Section 7.3 for a description of maintenance categories and responsibilities. Note that since Category 3 and 4 BMPs are County-maintained, they do not require maintenance agreements.

a. Applicability of Maintenance Agreements

Check the boxes below to indicate which types of agreements are included with this attachment.

- Maintenance Notification Agreement for Category **1** Stormwater Structural BMPs
- Exhibit A: Project Site Map; and a Map for each BMP and its Drainage Management Area (DMA).
 - Exhibit B: BMP Maintenance Plan (see below)

CATEGORY 1 MAINTENANCE AGREEMENTS ARE RECORDED PRIOR TO OCCUPANCY.

- Storm Water Facilities Maintenance Agreement (SWMA) (Category **2** BMPs)
- Exhibit A: Legal Description of Property
 - Exhibit B: BMP Maintenance Program (see below)
 - Exhibit C: BMP Locations

CATEGORY 2 MAINTENANCE AGREEMENTS ARE RECORDED PRIOR TO PERMIT ISSUANCE.

Maintenance agreement templates and instructions are available on the County's website: www.sandiegocounty.gov/stormwater under the Development Resources tab, Submittal Templates.

b. Maintenance Plan Requirements

Maintenance plans should include the following:

- Specific maintenance indicators and actions for proposed structural BMP(s). These must be based on maintenance indicators presented in BMP Design Manual Fact Sheets in Appendix E and enhanced to reflect actual proposed components of the structural BMP(s).
- Access to inspect and perform maintenance on the structural BMP(s).
- Features 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.