County of San Diego
Storm Water Intake Form for All Permit Applications

This form must be completed in its entirety and accompany applications for any of the discretionary or ministerial permits and approvals referenced in Sections 67.809 and 67.811 of the County of San Diego Watershed Protection, Stormwater Management and Discharge Control Ordinance (WPO). The purpose of this form is to establish the Stormwater Quality Management Plan (SWQMP) requirements applicable to the project.

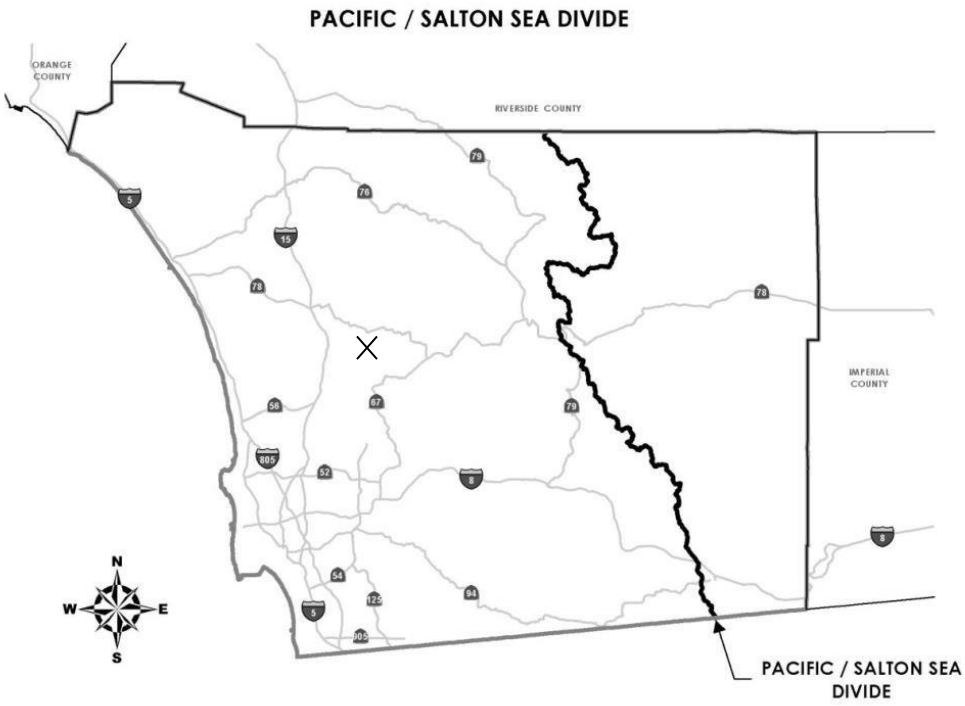
Step 1: Project identification

Applicant name: GILDRED BUILDING COMPANY	APN: 276-100-40	Record ID:

Step 2: Geographic location

Step	Answer	Progression
Is the project west or east of the Pacific / Salton Sea Divide? See below for discussion and an exhibit of the Pacific / Salton Sea Divide.	☑West	**Go to Step 3.**
	☐East	Standard Project requirements apply, including Standard Project SWQMP. **Complete Standard Project SWQMP.**

PDP requirements in the BMP Design Manual only pertain to projects in areas west of the Pacific/Salton Sea Divide (Region 9 of the Water Quality Control Board). Projects east of the Pacific/Salton Sea Divide are subject to Standard Project requirements in the County BMP Design Manual and, as applicable, Post-Construction Standards of the Construction General Permit.



Show with an "X" the Approximate Project Location

Step 3: Project type determination (Standard or Priority Development Project)

Is the project part of another Priority Development Project (PDP)? If so, a PDP SWQMP is required. Go to Step 4.	☐ Yes ☑ No
The project is (select one): ☑ New Development ☐ Redevelopment[1]	
The total proposed newly created or replaced impervious area is:	2.0 Acres
The total existing (pre-project) impervious area is:	16.8 Acres
The total area disturbed by the project is:	4.9 Acres

If the total area disturbed by the project is 1 acre (43,560 sq. ft.) or more OR the project is part of a larger common plan of development (e.g., a building permit within a previously approved subdivision) disturbing 1 acre or more, a Waste Discharger Identification (WDID) number must be obtained from the State Water Resources Control Board.
WDID: _____

Is the project in any of the following categories, (a) through (f)?

Yes	No		
☑	☐	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
☐	☑	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
☑	☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

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

Project type determination (continued)			
Yes ☐	No ☑	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.*
Yes ☐	No ☑	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☑	No ☐	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See BMP Design Manual Section 1.4.2 for additional guidance.*

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

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

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

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

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

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

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

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

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

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

OR

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

Step 4: Storm Water Quality Management Plan requirements

Step	Answer	Progression
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete the Project Type Determination Checklist on Pages 2 and 3 of this form, and see PDP exemption information below. For further guidance, see Section 1.4 of the BMP Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply, including Standard Project SWQMP. **Complete Standard Project SWQMP.**
	☑ PDP	Standard and PDP requirements apply, including PDP SWQMP. **Complete PDP SWQMP.**
	☐ PDP Exemption	**Go to Step 5 below.**

Step 5: Exception to PDP definitions

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

Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:

Step 6: Certification

Applicant Certification: I have read and understand that the County of San Diego has adopted minimum requirements for managing urban runoff, including storm water, from construction and land development activities, as described in the BMP Design Manual. I certify that this intake form has been completed to the best of my ability and accurately reflects the project being proposed. I also understand that non-compliance with the County's WPO and Grading Ordinance may result in enforcement by the County, including fines, cease and desist orders, or other actions.

Signature of Applicant:	*Date: 1/25/2017*

For County Only:
☐ Standard SQWMP
☐ PDP SQWMP
☐ Green Streets PDP Exempt SWQMP

County of San Diego
PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

GILDRED TPM
PDS2010-3200-21176

HIGHLAND VALLEY ROAD
RAMONA, CA 92027

ASSESSOR'S PARCEL NUMBER(S):
276-100-40

ENGINEER OF WORK:

[DAVID YEH, RCE 62717 EXP 6-30-2018]

PREPARED FOR: GREG HAGGART
GILDRED BUILDING COMPANY
550 W. C STREET, #1820
SAN DIEGO, CA 92101
619-232-6361

PDP SWQMP PREPARED BY:

LANDMARK CONSULTING
9555 GENESEE AVE, SUITE 200
SAN DIEGO, CA 92121
858-587-8070

DATE OF SWQMP:
7/26/2017

PLANS PREPARED BY:
LANDMARK CONSULTING
9555 GENESEE AVE, SUITE 200
SAN DIEGO, CA 92121
858-587-8070

SWQMP APPROVED BY:
[FOR COUNTY STAFF ONLY]

APPROVAL DATE:

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ATTACHMENTS

Attachment 1: Backup for PDP Pollutant Control BMPs
- Attachment 1a: Storm Water Pollutant Control Worksheet Calculations
- Attachment 1b: DMA Exhibit
- Attachment 1c: Individual Structural BMP DMA Mapbook

Attachment 2: Backup for PDP Hydromodification Control Measures
- Attachment 2a: Flow Control Facility Design
- Attachment 2b: Hydromodification Management Exhibit
- Attachment 2c: Management of Critical Coarse Sediment Yield Areas
- Attachment 2d: Geomorphic Assessment of Receiving Channels (optional)
- Attachment 2e: Vector Control Plan (if applicable)

Attachment 3: Structural BMP Maintenance Plan
- Attachment 3a: Structural BMP Maintenance Thresholds and Actions
- Attachment 3b: Draft Maintenance Agreements / Notifications (when applicable)

Attachment 4: County of San Diego PDP Structural BMP Verification for DPW Permitted Land Development Projects

Attachment 5: Copy of Plan Sheets Showing Permanent Storm Water BMPs

Attachment 6: Copy of Project's Drainage Report

Attachment 7: Copy of Project's Geotechnical and Groundwater Investigation Report

ACRONYMS

ACP	Alternative Compliance Project
APN	Assessor's Parcel Number
BMP	Best Management Practice
BMP DM	Best Management Practice Design Manual
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
NRCS	Natural Resources Conservation Service
PDCI	Private Development Construction Inspection Section
PDP	Priority Development Project
PDS	Planning and Development Services
PE	Professional Engineer
RPO	Resource Protection Ordinance
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWQMP	Storm Water Quality Management Plan
WMAA	Watershed Management Area Analysis
WPO	Watershed Protection Ordinance
WQIP	Water Quality Improvement Plan

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Gildred TPM
Permit Application Number: PDS2010-3200-21176

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the 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 storm water BMPs for this project, of my responsibilities for project design.

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

DAVID YEH
Print Name

LANDMARK CONSULTING
Company

1/25/2017
Date

Engineer's Seal:

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Gildred TPM
Permit Application Number: PDS2010-3200-21176

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the 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 storm water BMPs for this project, of my responsibilities for project design.

62717. Exp: 6/30/18

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

DAVID YEH

Print Name

LANDMARK CONSULTING

Company

1/25/2017

Date

Engineer's Seal:

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SUBMITTAL RECORD

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

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	3-28-16	Initial Submittal
2	6-3-16	Updated POC and drainage delineation. Update BMP sizes
3	1-25-17	Truncate POCs at subdivision boundary. Update DMA areas and names. Update BMP sizing.
4		

Final Design

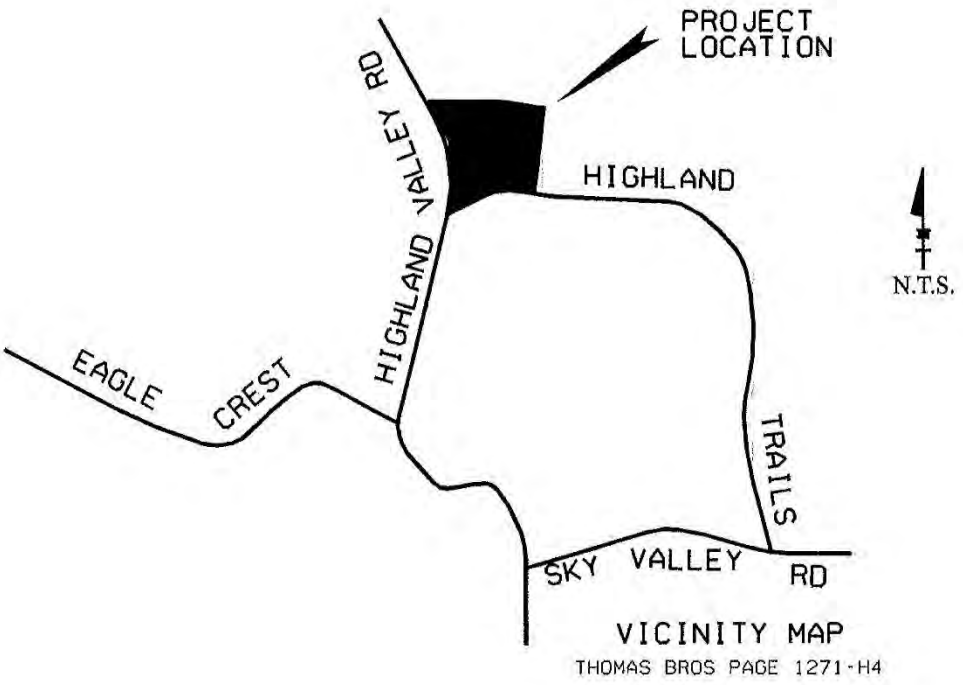
Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

Plan Changes

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

PROJECT VICINITY MAP

Project Name: Gildred TPM
Record ID: PDS2010-3200-21176



Step 1: Project type determination (Standard or Priority Development Project)

Is the project part of another Priority Development Project (PDP)? ☐ Yes ☑ No If so, a PDP SWQMP is required. Go to Step 2.			
The project is (select one): ☑ New Development ☐ Redevelopment[1]			
The total proposed newly created or replaced impervious area is: 2.0 ACRES			
The total existing (pre-project) impervious area is: 16.8 ACRES			
The total area disturbed by the project is: 4.9 ACRES			
If the total area disturbed by the project is 1 acre (43,560 sq. ft.) or more OR the project is part of a larger common plan of development disturbing 1 acre or more, a Waste Discharger Identification (WDID) number must be obtained from the State Water Resources Control Board. WDID: IN PROGRESS			
Is the project in any of the following categories, (a) through (f)?[2]			
Yes ☑	No ☐	(a)	New development projects that create 10,000 square feet or more of impervious surfaces [3](collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☐	No ☑	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☑	No ☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks,

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

[2] Applicants should note that any development project that will create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) is considered a new development.

[3] For solar energy farm projects, the area of the solar panels does not count toward the total impervious area of the site.

			motorcycles, and other vehicles.

Project type determination (continued)

Yes ☐	No ☑	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.*
Yes ☐	No ☑	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☑	No ☐	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See BMP Design Manual Section 1.4.2 for additional guidance.*

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

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

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

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

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

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

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

(B)

Percent impervious surface created or replaced (B/A)*100: _____% The percent impervious surface created or replaced is (select one based on the above calculation):

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

OR

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

Step 1.1: Storm Water Quality Management Plan requirements

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

Step 1.2: Exemption to PDP definitions

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

Step 2: Construction Storm Water BMP Checklist

Minimum Required Standard Construction Storm Water BMPs		
If you answer "Yes" to any of the questions below, your project is subject to Table 1 on the following page (Minimum Required Standard Construction Stormwater BMPs). As noted in Table 1, please select at least the minimum number of required BMPs, or as many as are feasible for your project. If no BMP is selected, an explanation must be given in the box provided. The following questions are intended to aid in determining construction BMP requirements for your project. **Note: All selected BMPs below must be included on the BMP plan incorporated into the construction plan sets.**		
1. Will there be soil disturbing activities that will result in exposed soil areas? (This includes minor grading and trenching.) **Reference Table 1 Items A, B, D, and E** Note: Soil disturbances NOT considered significant include, but are not limited to, change in use, mechanical/electrical/plumbing activities, signs, temporary trailers, interior remodeling, and minor tenant improvement.	☑Yes	☐No
2. Will there be asphalt paving, including patching? **Reference Table 1 Items D and F**	☑Yes	☐No
3. Will there be slurries from mortar mixing, coring, or concrete saw cutting? **Reference Table 1 Items D and F**	☑Yes	☐No
4. Will there be solid wastes from concrete demolition and removal, wall construction, or form work? **Reference Table 1 Items D and F**	☑Yes	☐No
5. Will there be stockpiling (soil, compost, asphalt, concrete, solid waste) for over 24 hours? **Reference Table 1 Items D and F**	☑Yes	☐No
6. Will there be dewatering operations? **Reference Table 1 Items C and D**	☐Yes	☑No
7. Will there be temporary on-site storage of construction materials, including mortar mix, raw landscaping and soil stabilization materials, treated lumber, rebar, and plated metal fencing materials? **Reference Table 1 Items E and F**	☑Yes	☐No
8. Will trash or solid waste product be generated from this project? **Reference Table 1 Item F**	☑Yes	☐No
9. Will construction equipment be stored on site (e.g.: fuels, oils, trucks, etc.?) **Reference Table 1 Item F**	☑Yes	☐No
10. Will Portable Sanitary Services ("Porta-potty") be used on the site? **Reference Table 1 Item F**	☑Yes	☐No

Table 1. Construction Storm Water BMP Checklist

Minimum Required Best Management Practices (BMPs)	CALTRANS SW Handbook[4] Detail or County Std. Detail	✔ BMP Selected	Reference sheet No.'s where each selected BMP is shown on the plans. If no BMP is selected, an explanation must be provided.
A. Select Erosion Control Method for Disturbed Slopes (choose at least one for the appropriate season)			
Vegetation Stabilization Planting[5] (Summer)	SS-2, SS-4	☑	
Hydraulic Stabilization Hydroseeding[2] (Summer)	SS-4	☑	
Bonded Fiber Matrix or Stabilized Fiber Matrix[6] (Winter)	SS-3	☑	
Physical Stabilization Erosion Control Blanket[3] (Winter)	SS-7	☐	
B. Select erosion control method for disturbed flat areas (slope < 5%) (choose at least one)			
County Standard Lot Perimeter Protection Detail	PDS 659[7], SC-2	☐	
Will use erosion control measures from Item A on flat areas also	SS-3, 4, 7	☑	
County Standard Desilting Basin (must treat all site runoff)	PDS 660[8], SC-2	☐	
Mulch, straw, wood chips, soil application	SS-6, SS-8	☐	

[4] State of California Department of Transportation (Caltrans). 2003. Storm Water Quality Handbooks, Construction Site Best Management Practices (BMPs) Manual. March. Available online at: http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm.

[5] If Vegetation Stabilization (Planting or Hydroseeding) is proposed for erosion control it may be installed between May 1st and August 15th. Slope irrigation is in place and needs to be operable for slopes >3 feet. Vegetation must be watered and established prior to October 1st. The owner must implement a contingency physical BMP by August 15th if vegetation establishment does not occur 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.

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

[7] County of San Diego, Planning & Development Services. 2012. Standard Lot Perimeter Protection Design System. Building Division. PDS 659. Available online at http://www.sandiegocounty.gov/pds/docs/pds659.pdf.

[8] County of San Diego, Planning & Development Services. 2012. County Standard Desilting Basin for Disturbed Areas of 1 Acre or Less Building Division. PDS 659. Available online at http://www.sandiegocounty.gov/pds/docs/pds660.pdf.

Table 1. Construction Storm Water BMP Checklist (continued)

Minimum Required Best Management Practices (BMPs)	CALTRANS SW Handbook Detail or County Std. Detail	✔ BMP Selected	Reference sheet No.'s where each selected BMP is shown on the plans. If no BMP is selected, an explanation must be provided.
C. If runoff or dewatering operation is concentrated, velocity must be controlled using an energy dissipater			
Energy Dissipater Outlet Protection[9]	SS-10	☑	
D. Select sediment control method for all disturbed areas (choose at least one)			
Silt Fence	SC-1	☑	
Fiber Rolls (Straw Wattles)	SC-5	☑	
Gravel & Sand Bags	SC-6 & 8	☑	
Dewatering Filtration	NS-2	☐	
Storm Drain Inlet Protection	SC-10	☑	
Engineered Desilting Basin (sized for 10-year flow)	SC-2	☐	
E. Select method for preventing offsite tracking of sediment (choose at least one)			
Stabilized Construction Entrance	TC-1	☑	
Construction Road Stabilization	TC-2	☐	
Entrance/Exit Tire Wash	TC-3	☐	
Entrance/Exit Inspection & Cleaning Facility	TC-1	☐	
Street Sweeping and Vacuuming	SC-7	☑	
F. Select the general site management BMPs			
F.1 Materials Management			
Material Delivery & Storage	WM-1	☑	
Spill Prevention and Control	WM-4	☑	
F.2 Waste Management[10]			
Waste Management Concrete Waste Management	WM-8	☑	
Solid Waste Management	WM-5	☑	
Sanitary Waste Management	WM-9	☑	
Hazardous Waste Management	WM-6	☑	

Note: The Construction General Permit (Order No. 2009-0009-DWQ) also requires all projects not subject to the BMP Design Manual to comply with runoff reduction requirements through the implementation of post-construction BMPs as described in Section XIII of the order.

[9] Regional Standard Drawing D-40 – Rip Rap Energy Dissipater is also acceptable for velocity reduction.

[10] Not all projects will have every waste identified. The applicant is responsible for identifying wastes that will be onsite and applying the appropriate BMP. For example, if concrete will be used, BMP WM-8 must be selected.

Step 3: County of San Diego PDP SWQMP Site Information Checklist

Step 3.1: Description of Existing Site Condition

Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	905.32 Las Lomas Muertas

Current Status of the Site (select all that apply):

☐Existing development
☐Previously graded but not built out
☐Demolition completed without new construction
☐Agricultural or other non-impervious use
☑Vacant, undeveloped/natural

Description / Additional Information: Existing site consists largely of undisturbed rolling hills with moderate to steep canyons and rock outcroppings.

Existing Land Cover Includes (select all that apply and provide each area on site):

☑Vegetative Cover 30.1 Acres
☐Non-Vegetated Pervious Areas 0 Acres
☑Impervious Areas 16.8 Acres*

* Consists of rock outcroppings on the project site.

Description / Additional Information: This area encompasses the entire project boundary. The disturbed area of 6.7 Acres consists of 0 Ac or impervious area and 6.7 Ac pervious area.

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):

☐NRCS Type A
☐NRCS Type B
☐NRCS Type C
☑NRCS Type D

Approximate Depth to Groundwater (GW) (or N/A if no no infiltration is used):

☐GW Depth < 5 feet
☐5 feet < GW Depth < 10 feet
☐10 feet < GW Depth < 20 feet
☑GW Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):

☐Watercourses
☐Seeps
☐Springs
☐Wetlands
☑None
☐Other

Description / Additional Information:

Step 3.2: Description of Existing Site Drainage Patterns

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

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

Describe existing site drainage patterns:

Under the existing conditions, there are three sub-basins on the project site - the northerly, central and southerly sub-basins. The northerly sub-basin drains the north westerly corner of the site into an existing natural swale that conveys the runoff northerly across the north project boundary. The southerly sub-basin lays parallel to the southerly project boundary. The runoff from this sub-basin is conveyed westerly in an existing natural swale along the southerly boundary. The runoff is eventually conveyed off-site crossing under Highland Valley Road near the southwesterly corner of the site via an existing culvert. This runoff then confluences with the off-site upstream runoff from the overall watershed and flows northerly approximately 500' along the westerly side of Highland Valley Road. The combined runoff then crosses Highland Valley Road via an existing culvert and discharges back onto the project site, in an existing natural channel along the easterly side of Highland Valley Road where it confluences with the runoff from the central sub-basin of the project site.

The central sub-basin, the largest of sub-basins of the project site, flows westerly via several existing natural swales. These existing natural swales confluence into an existing major natural channel along the westerly project boundary, just easterly of the existing Highland Valley Road. This major natural channel conveys the runoff from the central and southerly sub-basin than combines with the runoff from the overall watershed northerly and exits the project boundary at the northwesterly corner.

Step 3.3: Description of Proposed Site Development

Project Description / Proposed Land Use and/or Activities: The proposed development consists of the subdivision of the site into 4 single-family residential lots. Although no home construction is proposed for this project, the pollutant and flow-control BMPs are sized for future build-out conditions.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features): No home construction is proposed for this project, but all pollutant and flow-control BMPs are sized for future build-out conditions. The project proposes AC driveways and street improvements along Highland Trails Drive.

List/describe proposed pervious features of the project (e.g., landscape areas): Each graded pad will be landscaped. Also, the open space lots will remain undisturbed in the natural conditions. Runoff from the hardscapes on each pad will be dispersed into the surrounding impervious areas prior to entering the pollutant and flow-control BMPs.

Does the project include grading and changes to site topography?

☑Yes

☐No

Description / Additional Information:

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

Change in Land Cover Type Summary			
Land Cover Type	Existing acres or ft^2	Proposed acres	Percent Change
Vegetation	30.1	29.4	-2.3%
Pervious (non-vegetated)			
Impervious	16.8	17.5	4.2%

It should be noted that for this particular project, large areas of exposed rock and rock outcroppings exist within the proposed limits of disturbance. These areas are anticipated to be blasted during construction and replaced with a pad and future landscaping, which may result in the decrease, or limited increase of impervious areas in post-development conditions. Also, the design diverts a small amount of runoff from pre-development conditions, resulting in a slightly larger total area in the hydromodification analysis.

Step 3.4: Description of Proposed Site Drainage Patterns

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

☑Yes
☐No

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

Describe proposed site drainage patterns:

- The off-site runoff from the northerly project boundary is conveyed via the existing natural drainage conveyance channels through the project site. Bypass culverts are proposed to convey upstream runoff from off-site and the natural drainage channels beneath the proposed driveways and discharge into the natural channels as to not divert flow from pre development conditions. Brow ditches are also proposed along the driveways to prevent co-mingling with off-site and upstream runoff from the proposed development. The brow ditches discharge into the natural drainage channels to mimic pre-development flow conditions.

- The runoff from the proposed pads will be directed onto the AC driveways. The proposed ribbon gutter along the driveways will convey runoff into a proposed pollutant and flow control BMP on the site. The BMPs will outlet into the existing natural drainage channels to preserve pre-development runoff conditions.

- Please see the attached drainage report for detailed calculations. Below provides the basin summary for post-development conditions.

BASIN	NODE	AREA	PEAK Q	Tc	VEL
100	113	11.9	**11.3**	28.9	**4.1**
200	233	341.2	**357.5**	26.3	**5.6**
300	307	23.6	**33.5**	14.1	**5.2**

Step 3.5: Potential Pollutant Source Areas

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply). Select "Other" if the project is a phased development and provide a description:

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

Description / Additional Information:

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

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable): The westerly portion of the project site drains into a series of storm drain conveyance systems and natural channels that confluence within a major natural channel that directs runoff southerly into Dixon Lake. The runoff from the easterly portion of the project site is conveyed via storm drain conveyance systems and natural drainage courses onto existing Valley Center Road.

List any 303(d) impaired water bodies[11] within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Lake Hodges 905.21 San Dieguito River 905.11	Color, Manganese, Mercury, Nitrogen, phosphorus, turbidity, pH, heavy metals, enterococcus	Indicator Bacteria

Identification of Project Site Pollutants*

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

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

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

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

Pesticides			

Step 3.7: Hydromodification Management Requirements

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

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

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

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

☐No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA[12] for the watershed in which the project resides.

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

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

Step 3.7.1: Critical Coarse Sediment Yield Areas*

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

Projects must satisfy critical coarse sediment requirements by either avoiding impacts to onsite critical coarse sediment (Step A) AND bypassing upstream sources of critical coarse sediment (Step B), or by demonstrating the project has no net impact to the receiving water (Step C). Show the backup evidence of the following determinations in Attachment 2c. Refer to Appendix H of the BMP DM for more detailed critical coarse sediment guidance pertaining to identification, avoidance, bypass, and demonstration of no net impact.

A: Avoid Onsite Critical Coarse Sediment

Onsite sources of critical coarse sediment are protected through to the County's Resource Protection Ordinance. Applicants must characterize their project per one of the categories below and proceed as directed.

☑Project is subject to and in compliance with RPO requirements

- Applicant must provide mapping of coarse sediment areas that are ≥25% slope and ≥50' in height as determined per the County of San Diego Resource Protection Ordinance. *(Note: these areas may be further refined per guidance in Section H.1.2 of the BMP DM)*

☐Project is not subject to RPO requirements

- Applicant is not required to identify or avoid any onsite sources of coarse sediment.

☐Project was initially subject to RPO requirements but qualified for an exemption per RPO Section 86.604(e)(2)(cc) or 86.604(e)(3)

- Applicant is not preserving sources of onsite critical coarse sediment and must demonstrate no net impact to the receiving water (Step C)

B: Bypass Upstream and Onsite Critical Coarse Sediment

All project applicants must identify sources of upstream critical coarse sediment from hillslopes and first order streams that drain through the project site. Hillslope sources must be identified as coarse sediment areas that are ≥25% slope, ≥50' in height, and draining through the project site *(Note: these areas may be further refined per guidance in Section H.1.2 of the BMP DM)*. First order streams are identified as field ditches, gullies, ephemeral gullies, and/or NHD streams. Additionally, the sources of onsite critical coarse sediment preserved in Step A must also be effectively bypassed.

☑Project bypasses all sources of upstream and onsite critical coarse sediment

- Applicant has satisfied bypass requirements.

☐Project does not bypass all sources of upstream and onsite critical coarse sediment

- Applicant has not satisfied bypass requirements and must demonstrate the project has no net impact to the receiving water (Step C).

☐Project does not have upstream and onsite sources of critical coarse sediment.

- Applicant has satisfied bypass requirements.

C: Demonstrate No Net Impact

Project applicants that do not satisfy all of the criteria above must achieve compliance by demonstrating the project has no net impact to the receiving water.

☐N/A, project satisfies all criteria specified in Steps B and C.

- Applicant has satisfied all critical coarse sediment requirements

☐Project did not satisfy all criteria from Step B and C.

- Applicant has not satisfied critical coarse sediment requirements and must demonstrate the project has no net impact to the receiving water per Appendix H.4

Step 3.7.2: Flow Control for Post-Project Runoff*

*This Section only required if hydromodification management requirements apply
List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit. *The POCs are shown in the attached hydromodification plan on the Points of Compliance Map. They are located downstream of the structural BMPs. The POCs are identified as POC-1 through POC-6*
Has a geomorphic assessment been performed for the receiving channel(s)? ☑No, the low flow threshold is 0.1Q2 (default low flow threshold) ☐Yes, the result is the low flow threshold is 0.1Q2 ☐Yes, the result is the low flow threshold is 0.3Q2 ☐Yes, the result is the low flow threshold is 0.5Q2 *If a geomorphic assessment has been performed, provide title, date, and preparer:* *Discussion / Additional Information: (optional)*

Step 3.8: Other Site Requirements and Constraints

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

Optional Additional Information or Continuation of Previous Sections As Needed

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

Step 4: Source Control BMP Checklist

Source Control BMPs

All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the County BMP Design Manual for information to implement source control BMPs shown in this checklist.

Answer each category below pursuant to the following:

- "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the County BMP Design Manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided.

Source Control Requirement	Applied?		
4.2.1 Prevention of Illicit Discharges into the MS4	☑Yes	☐No	☐N/A
Discussion / justification if 4.2.1 not implemented:			
4.2.2 Storm Drain Stenciling or Signage	☑Yes	☐No	☐N/A
Discussion / justification if 4.2.2 not implemented:			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	☑N/A
Discussion / justification if 4.2.3 not implemented: No outdoor material storage areas proposed			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	☑N/A
Discussion / justification if 4.2.4 not implemented: No outdoor work areas proposed.			

Source Control Requirement	Applied?		
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☑Yes	☐No	☐N/A
Discussion / justification if 4.2.5 not implemented:			
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
☐ A. On-site storm drain inlets	☑Yes	☐No	☐N/A
☐ B. Interior floor drains and elevator shaft sump pumps	☐Yes	☐No	☑N/A
☐ C. Interior parking garages	☐Yes	☐No	☑N/A
☐ D. Need for future indoor & structural pest control	☑Yes	☐No	☐N/A
☐ E. Landscape/outdoor pesticide use	☑Yes	☐No	☐N/A
☐ F. Pools, spas, ponds, fountains, and other water features	☐Yes	☐No	☑N/A
☐ G. Food service	☐Yes	☐No	☑N/A
☐ H. Refuse areas	☐Yes	☐No	☑N/A
☐ I. Industrial processes	☐Yes	☐No	☑N/A
☐ J. Outdoor storage of equipment or materials	☐Yes	☐No	☑N/A
☐ K. Vehicle and equipment cleaning	☐Yes	☐No	☑N/A
☐ L. Vehicle/equipment repair and maintenance	☐Yes	☐No	☑N/A
☐ M. Fuel dispensing areas	☐Yes	☐No	☑N/A
☐ N. Loading docks	☐Yes	☐No	☑N/A
☐ O. Fire sprinkler test water	☐Yes	☐No	☑N/A
☐ P. Miscellaneous drain or wash water	☐Yes	☐No	☑N/A
☐ Q. Plazas, sidewalks, and parking lots	☐Yes	☐No	☑N/A
Discussion / justification if 4.2.6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.			

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

Step 5: Site Design BMP Checklist

Site Design BMPs			
All development projects must implement site design BMPs SD-A through SD-H where applicable and feasible. See Chapter 4.3 and Appendix E of the County BMP Design Manual for information to implement site design BMPs shown in this checklist. Answer each category below pursuant to the following: • "Yes" means the project will implement the site design BMP as described in Chapter 4.3 and/or Appendix E of the County BMP Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided.			
Site Design Requirement	**Applied?**		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	☑Yes	☐No	☐N/A
Discussion / justification if 4.3.1 not implemented:			
4.3.2 Conserve Natural Areas, Soils, and Vegetation	☑Yes	☐No	☐N/A
Discussion / justification if 4.3.2 not implemented:			
4.3.3 Minimize Impervious Area	☑Yes	☐No	☐N/A
Discussion / justification if 4.3.3 not implemented:			
4.3.4 Minimize Soil Compaction	☑Yes	☐No	☐N/A
Discussion / justification if 4.3.4 not implemented:			
4.3.5 Impervious Area Dispersion	☑Yes	☐No	☐N/A
Discussion / justification if 4.3.5 not implemented:			

Site Design Requirement	Applied?		
4.3.6 Runoff Collection	☐Yes	☑No	☐N/A
Discussion / justification if 4.3.6 not implemented: Runoff from hardscapes will be dispersed onto adjacent landscaped areas whenever feasible prior to being discharged into the proposed biofiltration basins.			
4.3.7 Landscaping with Native or Drought Tolerant Species	☑Yes	☐No	☐N/A
Discussion / justification if 4.3.7 not implemented:			
4.3.8 Harvesting and Using Precipitation	☐Yes	☑No	☐N/A
Discussion / justification if 4.3.8 not implemented: Harvest and use was deemed infeasible per analysis on for I-4.			

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

Step 6: PDP Structural BMPs

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

PDP structural BMPs must be verified by the County at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity, and the County must confirm the maintenance (see Section 7 of the BMP Design Manual).

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

Step 6.1: Description of structural BMP strategy

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

The infiltration rate of the native soils on this project site is too low for infiltration facilities to be deemed feasible. Therefore, biofiltration basins are proposed to treat the runoff from both the pads and proposed driveways. The project will bypass upstream runoff from natural areas into the existing natural drainage channels via bypass culverts. The biofiltration basins will be both pollutant and flow control. The Points of Compliance are located where the runoff is conveyed out of the project boundaries through the existing natural drainage channels.

(Continue on following page as necessary.)

BMP Identifier	Type	Size
BMP-1 **(POC-1)**	Biofiltration basin.	A 5.0' effective depth biofiltration basin with a bottom area of 220 sf. A 36" riser and a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer will regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 0.75' of ponding and 6" of freeboard. No infiltration condition.
BMP-2 **(POC-2)**	biofiltration basin adjacent to driveway serving parcel 2	A 4.75' effective depth biofiltration basin with a bottom area of 760 sf. A 24" riser and a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer will regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 0.50' of ponding and 6" of freeboard. No infiltration condition.
BMP-3 **(POC-2)**	Biofiltration basin on Parcel 1 pad	A 4.75' effective depth infiltration basin with a bottom area of 360sf. A 24" riser with a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 6" of ponding and 6" of freeboard. No infiltration condition.
BMP-4 **(POC-5)**	Biofiltration basin on westerly side of driveway serving parcel 3	A 4.75' effective depth infiltration basin with a bottom area of 360sf. A 24" riser with a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 6" of ponding and 6" of freeboard. No infiltration condition.
BMP-5 **(POC-4)**	Biofiltration basin on westerly side of driveway to parcel 4	A 4.92' effective depth infiltration basin with a bottom area of 640 sf. A 36" riser with a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 8" of ponding and 6" of freeboard. No infiltration condition.
BMP-6 **(POC-5)**	Biofiltration basin on fill pad of parcel 4.	A 4.08' effective depth infiltration basin with a bottom area of 445 sf. A 24" riser with a 6" underdrain with no orifice at 4" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 1.33' of clean, washed gravel, with 6" of ponding and 6" of freeboard. No infiltration condition
BMP 7 **(POC-3)**	Biofiltration basin w/ partial retention	A 4.75' effective depth infiltration basin with a bottom area of 1085 sf. A 36" riser with a 6" underdrain with a 1" orifice at 6" from the bottom of the gravel layer will regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 6" of ponding and 6" of freeboard. 0.43 in/hr assumed per previous infiltration testing with appropriate factor of safety.
BMP-8 **(POC-6)**	Biofiltration basin on northerly side of Highland Trails Drive	A 5' effective depth infiltration basin with a bottom area of 200 sf. A 36" riser with a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 9" of ponding and 6" of freeboard. No infiltration condition.

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

(Continued from previous page)

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. BMP-1	
Construction Plan Sheet No. PGP-2	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☑Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☐Pollutant control only ☐Hydromodification control only ☑Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 1.12 of the BMP Design Manual)	David Yeh Landmark Consulting
Who will be the final owner of this BMP?	☐HOA ☑Property Owner ☐County ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☑Property Owner ☐County ☐Other (describe)
What Category (1-4) is the Structural BMP? Refer to the Category definitions in Section 7.3 of the BMP DM. Attach the appropriate maintenance agreement in Attachment 3.	Category 1
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-2

Construction Plan Sheet No. PGP-2

Type of structural BMP:
☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☐Partial retention by biofiltration with partial retention (PR-1)
☑Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:
☐Pollutant control only
☐Hydromodification control only
☑Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 1.12 of the BMP Design Manual)	David Yeh Landmark Consulting
Who will be the final owner of this BMP?	☐HOA ☑Property Owner ☐County ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☑Property Owner ☐County ☐Other (describe)
What Category (1-4) is the Structural BMP? Refer to the Category definitions in Section 7.3 of the BMP DM. Attach the appropriate maintenance agreement in Attachment 3.	Category 1

Discussion (as needed):

(Continue on subsequent pages as necessary)

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-3

Construction Plan Sheet No. PGP-2

Type of structural BMP:
☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☐Partial retention by biofiltration with partial retention (PR-1)
☑Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:
☐Pollutant control only
☐Hydromodification control only
☑Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 1.12 of the BMP Design Manual)	David Yeh Landmark Consulting
Who will be the final owner of this BMP?	☐HOA ☑Property Owner ☐County ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☑Property Owner ☐County ☐Other (describe)
What Category (1-4) is the Structural BMP? Refer to the Category definitions in Section 7.3 of the BMP DM. Attach the appropriate maintenance agreement in Attachment 3.	Category 1

Discussion (as needed):

(Continue on subsequent pages as necessary)

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-4

Construction Plan Sheet No. PGP-4

Type of structural BMP:
☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☐Partial retention by biofiltration with partial retention (PR-1)
☑Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:
☐Pollutant control only
☐Hydromodification control only
☑Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 1.12 of the BMP Design Manual)	David Yeh Landmark Consulting
Who will be the final owner of this BMP?	☐HOA ☑Property Owner ☐County ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☑Property Owner ☐County ☐Other (describe)
What Category (1-4) is the Structural BMP? Refer to the Category definitions in Section 7.3 of the BMP DM. Attach the appropriate maintenance agreement in Attachment 3.	Category 1

Discussion (as needed):

(Continue on subsequent pages as necessary)

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-5

Construction Plan Sheet No. PGP-4

Type of structural BMP:
☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☐Partial retention by biofiltration with partial retention (PR-1)
☑Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:
☐Pollutant control only
☐Hydromodification control only
☑Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 1.12 of the BMP Design Manual)	David Yeh Landmark Consulting
Who will be the final owner of this BMP?	☐HOA ☑Property Owner ☐County ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☑Property Owner ☐County ☐Other (describe)
What Category (1-4) is the Structural BMP? Refer to the Category definitions in Section 7.3 of the BMP DM. Attach the appropriate maintenance agreement in Attachment 3.	Category 1

Discussion (as needed):

(Continue on subsequent pages as necessary)

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-6

Construction Plan Sheet No. PGP-4

Type of structural BMP:
☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☐Partial retention by biofiltration with partial retention (PR-1)
☑Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:
☐Pollutant control only
☐Hydromodification control only
☑Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 1.12 of the BMP Design Manual)	David Yeh Landmark Consulting
Who will be the final owner of this BMP?	☐HOA ☑Property Owner ☐County ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☑Property Owner ☐County ☐Other (describe)
What Category (1-4) is the Structural BMP? Refer to the Category definitions in Section 7.3 of the BMP DM. Attach the appropriate maintenance agreement in Attachment 3.	Category 1

Discussion (as needed):

(Continue on subsequent pages as necessary)

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-7

Construction Plan Sheet No. PGP-2

Type of structural BMP:
☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☑Partial retention by biofiltration with partial retention (PR-1)
☐Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:
☐Pollutant control only
☐Hydromodification control only
☑Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 1.12 of the BMP Design Manual)	David Yeh Landmark Consulting
Who will be the final owner of this BMP?	☐HOA ☑Property Owner ☐County ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☑Property Owner ☐County ☐Other (describe)
What Category (1-4) is the Structural BMP? Refer to the Category definitions in Section 7.3 of the BMP DM. Attach the appropriate maintenance agreement in Attachment 3.	Category 2

Discussion (as needed):

(Continue on subsequent pages as necessary)

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BMP-8

Construction Plan Sheet No. PGP-2

Type of structural BMP:
☐Retention by harvest and use (HU-1)
☐Retention by infiltration basin (INF-1)
☐Retention by bioretention (INF-2)
☐Retention by permeable pavement (INF-3)
☐Partial retention by biofiltration with partial retention (PR-1)
☑Biofiltration (BF-1)
☐Biofiltration with Nutrient Sensitive Media Design (BF-2)
☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
☐Detention pond or vault for hydromodification management
☐Other (describe in discussion section below)

Purpose:
☐Pollutant control only
☐Hydromodification control only
☑Combined pollutant control and hydromodification control
☐Pre-treatment/forebay for another structural BMP
☐Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 1.12 of the BMP Design Manual)	David Yeh Landmark Consulting
Who will be the final owner of this BMP?	☐HOA ☑Property Owner ☐County ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☑Property Owner ☐County ☐Other (describe)
What Category (1-4) is the Structural BMP? Refer to the Category definitions in Section 7.3 of the BMP DM. Attach the appropriate maintenance agreement in Attachment 3.	Category 2

Discussion (as needed):

(Continue on subsequent pages as necessary)

Step 6.3: Offsite Alternative Compliance Participation Form

PDP INFORMATION	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
What are your PDP Pollutant Control Debits? *See Attachment 1 of the PDP SWQMP	
What are your PDP HMP Debits? (if applicable) *See Attachment 2 of the PDP SWQMP	
ACP Information	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
Project Owner/Address	
What are your ACP Pollutant Control Credits? *See Attachment 1 of the ACP SWQMP	
What are your ACP HMP Debits? (if applicable) *See Attachment 2 of the ACP SWQMP	
Is your ACP in the same watershed as your PDP? ☐Yes ☐No	Will your ACP project be completed prior to the completion of the PDP? ☐Yes ☐No
Does your ACP account for all Deficits generated by the PDP? ☐Yes ☐No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.	What is the difference between your PDP debits and ACP Credits? *(ACP Credits -Total PDP Debits = Total Earned Credits)

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	Storm Water Pollutant Control Worksheet Calculations -Worksheet B.2-1 (Required) -Worksheet B.4-1 (if applicable) -Worksheet B.4-2 (if applicable) -Worksheet B.5-1 (if applicable) -Worksheet B.5-2 (if applicable) -Worksheet B.5-3 (if applicable) -Worksheet B.6-1 (if applicable) -Worksheet B.3-1 (optional) -Summary Worksheet (optional)	☑Included
Attachment 1b	Form I-8, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the BMP Design Manual to complete Form I-8.	☑Included ☐Not included because the entire project will use harvest and use BMPs
Attachment 1c	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	☑Included
Attachment 1d	Individual Structural BMP DMA Mapbook (Required) -Place each map on 8.5”x11” paper. -Show at a minimum the DMA, Structural BMP, and any existing hydrologic features within the DMA.	☑Included

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

The DMA Exhibit must identify:

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

Harvest and Use Feasibility Checklist	Form I-4

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?

☑ Toilet and urinal flushing

☑ Landscape irrigation

Other:_____

☐

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.
4 units*2.5 residents/unit=10 residents, 10 res*(9.3 gal/day)=93 gal/day
Mod ETWU = 2.7in/month[(0.30*125,077)/0.90]*.015=1688 gal/day
93 gal/day + 1688 gal/day = 1781 gal/day => **357 cf/36 hrs**

3. Calculate the DCV using worksheet B-1.1.

DCV = 6,738 (cubic feet)

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

Is harvest and use feasible based on further evaluation?

☐ Yes, refer to Appendix E to select and size harvest and use BMPs.

☑ No, select alternate BMPs.

Categorization of Infiltration Feasibility Condition		Form I-5	
Part 1 - Full Infiltration Feasibility Screening Criteria **Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?**			
Criteria	Screening Question	**Yes**	**No**
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X
Provide basis: The estimated infiltration rate in this area is very low due to the large presence of rock outcrops and the underlying 'D' type soil according to the 2016 BMP Manual. Certain areas, however, are expected to have greater than 0.5in/hr infiltration near the proposed leach fields. However, since the proposed BMPs are required to be far away from the leach fields, a low infiltration rate corresponding to the on-site Type D soils is used in the BMP calculations. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X
Provide basis: Infiltration greater than 0.5 in/hr cannot be allowed on-site without impacts to slope stability. The proposed BMP are all located either on compacted home pads or compacted fill slopes. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			

Criteria	Screening Question	Yes	No
3	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: There are no known groundwater impairments on the project site. The groundwater table is deep (>20') and project-site pollutants would not pose contamination risk. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	**Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: No water balance issues would be cause as a result of infiltration. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result*	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** If any answer from row 1-4 is "**No**", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		NO

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

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

Criteria	Screening Question	Yes	No
5	**Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	X	

Provide basis:
Yes, infiltration in some areas is rather high, while slower rates are possible in the rest of the project site, outside of the rock outcroppings.

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

6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	X	

Provide basis:

Infiltration can be allowed away from adjacent steep slopes and within the defined natural drainage channels without increasing the risk of geotechnical hazards.

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

Criteria	Screening Question	Yes	No
7	**Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	

Provide basis:

The proposed project does not pose significant groundwater contamination concerns.

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

8	**Can infiltration be allowed without violating downstream water rights**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: No water rights issues known to affect the site. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
Part 2 Result*	If all answers from row 5-8 are yes then partial infiltration design is potentially feasible. The feasibility screening category is **Partial Infiltration.** If any answer from row 5-8 is no, then infiltration of any volume is considered to be **infeasible** within the drainage area. The feasibility screening category is **No Infiltration.**		Partial Infiltration

Automated Worksheet B.5-1: Sizing Lined or Unlined Biofiltration BMPs (V1.3)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	Units
BMP Inputs	0	Drainage Basin ID or Name	DMA-2	DMA-5	DMA-6	DMA-8	DMA-10	DMA-11	DMA-12	DMA-14	-	-	sq-ft
	1	Design Infiltration Rate Recommended by Geotechnical Engineer	0.430	0.430	0.430	0.430	0.430	0.430	0.430	0.430	-	-	in/hr
	2	Effective Tributary Area	7,232	24,927	10,980	18,407	15,649	10,728	9,602	6,149	-	-	sq-ft
	3	Minimum Biofiltration Footprint Sizing Factor	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	-	-	ratio
	4	Design Capture Volume Tributary to BMP	470	1,620	714	1,196	1,017	697	624	400	-	-	cubic-feet
	5	Is Biofiltration Basin Impermeably Lined or Unlined?	Unlined	Unlined	Unlined	Unlined	Unlined	Unlined	Unlined	Unlined			unitless
	6	Provided Biofiltration BMP Surface Area	220	760	360	640	500	445	350	200			sq-ft
	7	Provided Surface Ponding Depth	6	6	6	6	8	6	6	9			inches
	8	Provided Soil Media Thickness	18	18	18	18	18	18	18	18			inches
	9	Provided Depth of Gravel Above Underdrain Invert	18	18	18	18	18	12	18	18			inches
	10	Diameter of Underdrain or Hydromod Orifice (Select Smallest)	1.50	1.50	1.50	2.00	1.50	6.00	1.00	1.50			inches
	11	Provided Depth of Gravel Below the Underdrain	6	6	6	6	6	4	6	6			inches
Retention Calculations	12	Volume Infiltrated Over 6 Hour Storm	47	163	77	138	108	96	75	43	0	0	cubic-feet
	13	Soil Media Pore Space Available for Retention	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	unitless
	14	Gravel Pore Space Available for Retention	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.00	0.00	unitless
	15	Effective Retention Depth	3.30	3.30	3.30	3.30	3.30	2.50	3.30	3.30	0.00	0.00	inches
	16	Calculated Retention Storage Drawdown (Including 6 Hr Storm)	12	12	12	12	12	10	12	12	0	0	hours
	17	Volume Retained by BMP	108	372	176	314	245	188	172	98	0	0	cubic-feet
	18	Fraction of DCV Retained	0.23	0.23	0.25	0.26	0.24	0.27	0.27	0.25	0.00	0.00	ratio
	19	Portion of Retention Performance Standard Satisfied	0.59	0.59	0.63	0.64	0.61	0.72	0.66	0.63	0.00	0.00	ratio
	20	Fraction of DCV Retained (normalized to 36-hr drawdown)	0.40	0.40	0.44	0.45	0.42	0.54	0.47	0.44	0.00	0.00	ratio
	21	Design Capture Volume Remaining for Biofiltration	282	972	400	658	590	321	331	224	0	0	cubic-feet
Biofiltration Calculations	22	Max Hydromod Flow Rate through Underdrain	0.1096	0.1096	0.1096	0.1942	0.1122	1.5678	0.0488	0.1135	n/a	n/a	CFS
	23	Max Soil Filtration Rate Allowed by Underdrain Orifice	21.51	6.23	13.15	13.11	9.69	152.20	6.03	24.51	n/a	n/a	in/hr
	24	Soil Media Filtration Rate per Specifications	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	in/hr
	25	Soil Media Filtration Rate to be used for Sizing	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	in/hr
	26	Depth Biofiltered Over 6 Hour Storm	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	inches
	27	Soil Media Pore Space Available for Biofiltration	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	unitless
	28	Effective Depth of Biofiltration Storage	16.80	16.80	16.80	16.80	18.80	14.40	16.80	19.80	0.00	0.00	inches
	29	Drawdown Time for Surface Ponding	1	1	1	1	1	1	1	2	0	0	hours
	30	Drawdown Time for Effective Biofiltration Depth	3	3	3	3	3	3	3	4	0	0	hours
	31	Total Depth Biofiltered	46.80	46.80	46.80	46.80	48.80	44.40	46.80	49.80	30.00	30.00	inches
	32	Option 1 - Biofilter 1.50 DCV: Target Volume	423	1,458	600	987	885	482	497	336	0	0	cubic-feet
	33	Option 1 - Provided Biofiltration Volume	423	1,458	600	987	885	482	497	336	0	0	cubic-feet
	34	Option 2 - Store 0.75 DCV: Target Volume	212	729	300	494	443	241	248	168	0	0	cubic-feet
	35	Option 2 - Provided Storage Volume	212	729	300	494	443	241	248	168	0	0	cubic-feet
	36	Portion of Biofiltration Performance Standard Satisfied	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	ratio
Result	37	Do Site Design Elements and BMPs Satisfy Annual Retention Requirements?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	yes/no
	38	Overall Portion of Performance Standard Satisfied	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	ratio
	39	This BMP Overflows to the Following Drainage Basin	-	-	-	-	-	-	-	-	-	-	unitless
	40	**Deficit of Effectively Treated Stormwater**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**n/a**	**n/a**	cubic-feet

Worksheet B.5-1 General Notes:

A. Applicants may use this worksheet to size Lined or Unlined Biofiltration BMPs (BF-1, PR-1) for up to 10 basins. User input must be provided for yellow shaded cells, values for blue cells are automatically populated based on user inputs from previous worksheets, values for all other cells will be automatically generated, errors/notifications will be highlighted in red/orange and summarized below. BMPs fully satisfying the pollutant control performance standards will have a deficit treated volume of zero and be highlighted in green.

Automated Worksheet B.1-1: Calculation of Design Capture Volume (V1.3)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	Units
Standard Drainage Basin Inputs	0	Drainage Basin ID or Name	DMA-2	DMA-5	DMA-6	DMA-8	DMA-10	DMA-11	DMA-12	DMA-14			unitless
	1	Basin Drains to the Following BMP Type	Biofiltration	Biofiltration	Biofiltration	Biofiltration	Biofiltration	Biofiltration	Biofiltration	Biofiltration			unitless
	2	85th Percentile 24-hr Storm Depth	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78			inches
	3	Design Infiltration Rate Recommended by Geotechnical Engineer	0.430	0.430	0.430	0.430	0.430	0.430	0.430	0.430			in/hr
	4	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	7,405	13,500			7,500	2,750	7,840	6,534			sq-ft
	5	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)											sq-ft
	6	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)											sq-ft
	7	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)											sq-ft
	8	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)											sq-ft
	9	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)											sq-ft
	10	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)	1,750	11,325	5,230	6,550	2,180	27,900	8,715	875			sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	11	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	Yes	Yes	Yes	Yes	No	No	No	No	No	yes/no
	12	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)		7,500	9,150	17,860	7,500						sq-ft
	13	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	14	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	15	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	16	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)											sq-ft
	17	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)											sq-ft
	18	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)		16,552	13,070	17,425	13,505						sq-ft
	19	Number of Tree Wells Proposed per SD-A											#
	20	Average Mature Tree Canopy Diameter											ft
	21	Number of Rain Barrels Proposed per SD-E											#
	22	Average Rain Barrel Size											gal
Treatment Train Inputs & Calculations	23	Does BMP Overflow to Stormwater Features in Downstream Drainage?	No	No	No	No	No	No	No	No	No	No	unitless
	24	Identify Downstream Drainage Basin Providing Treatment in Series											unitless
	25	Percent of Upstream Flows Directed to Downstream Dispersion Areas											percent
	26	Upstream Impervious Surfaces Directed to Dispersion Area (Ci=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
	27	Upstream Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
Initial Runoff Factor Calculation	28	Total Tributary Area	9,155	48,877	27,450	41,835	30,685	30,650	16,555	7,409	0	0	sq-ft
	29	Initial Runoff Factor for Standard Drainage Areas	0.79	0.63	0.30	0.30	0.76	0.35	0.58	0.83	0.00	0.00	unitless
	30	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.49	0.55	0.60	0.51	0.00	0.00	0.00	0.00	0.00	unitless
	31	Initial Weighted Runoff Factor	0.79	0.56	0.50	0.55	0.59	0.35	0.58	0.83	0.00	0.00	unitless
	32	Initial Design Capture Volume	470	1,779	892	1,496	1,177	697	624	400	0	0	cubic-feet
Dispersion Area Adjustments	33	Total Impervious Area Dispersed to Pervious Surface	0	7,500	9,150	17,860	7,500	0	0	0	0	0	sq-ft
	34	Total Pervious Dispersion Area	0	16,552	13,070	17,425	13,505	0	0	0	0	0	sq-ft
	35	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	0.50	0.70	1.00	0.60	n/a	n/a	n/a	n/a	n/a	ratio
	36	Adjustment Factor for Dispersed & Dispersion Areas	1.00	0.77	0.77	0.77	0.77	1.00	1.00	1.00	1.00	1.00	ratio
	37	Runoff Factor After Dispersion Techniques	0.79	0.51	0.40	0.44	0.51	0.35	0.58	0.83	n/a	n/a	unitless
	38	Design Capture Volume After Dispersion Techniques	470	1,620	714	1,196	1,017	697	624	400	0	0	cubic-feet
Tree & Barrel Adjustments	39	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
	40	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	41	Final Adjusted Runoff Factor	0.79	0.51	0.40	0.44	0.51	0.35	0.58	0.83	0.00	0.00	unitless
	42	Final Effective Tributary Area	7,232	24,927	10,980	18,407	15,649	10,728	9,602	6,149	0	0	sq-ft
	43	Initial Design Capture Volume Retained by Site Design Elements	0	159	178	300	160	0	0	0	0	0	cubic-feet
	44	Final Design Capture Volume Tributary to BMP	470	1,620	714	1,196	1,017	697	624	400	0	0	cubic-feet

Worksheet B.1-1 General Notes:

A. Applicants may use this worksheet to calculate design capture volumes for up to 10 drainage areas User input must be provided for yellow shaded cells, values for all other cells will be automatically generated, errors/notifications will be highlighted in red and summarized below. Upon completion of this worksheet, proceed to the appropriate BMP Sizing worksheet(s).

Automated Worksheet B.3-1: Project-Scale BMP Feasibility Analysis (V1.3)

Category	#	Description	Value	Units
Capture & Use Inputs	0	Design Capture Volume for Entire Project Site	6,738	cubic-feet
	1	Proposed Development Type	Residential	unitless
	2	Number of Residents or Employees at Proposed Development	10	#
	3	Total Planted Area within Development	125,077	sq-ft
	4	Water Use Category for Proposed Planted Areas	Low	unitless
Infiltration Inputs	5	Is Average Site Design Infiltration Rate ≤0.500 Inches per Hour?	Yes	yes/no
	6	Is Average Site Design Infiltration Rate ≤0.010 Inches per Hour?	No	yes/no
	7	Is Infiltration of the Full DCV Anticipated to Produce Negative Impacts?	No	yes/no
	8	Is Infiltration of Any Volume Anticipated to Produce Negative Impacts?	No	yes/no
Calculations	9	36-Hour Toilet Use Per Resident or Employee	1.86	cubic-feet
	10	Subtotal: Anticipated 36 Hour Toilet Use	19	cubic-feet
	11	Anticipated 1 Acre Landscape Use Over 36 Hours	52.14	cubic-feet
	12	Subtotal: Anticipated Landscape Use Over 36 Hours	150	cubic-feet
	13	Total Anticipated Use Over 36 Hours	168	cubic-feet
	14	Total Anticipated Use / Design Capture Volume	0.02	cubic-feet
	15	Are Full Capture and Use Techniques Feasible for this Project?	No	unitless
	16	Is Full Retention Feasible for this Project?	No	yes/no
	17	Is Partial Retention Feasible for this Project?	Yes	yes/no
Result	18	Feasibility Category	4	1, 2, 3, 4, 5

Worksheet B.3-1 General Notes:

A. Applicants may use this worksheet to determine the types of structural BMPs that are acceptable for implementation at their project site (as required in Section 5 of the BMPDM). User input should be provided for yellow shaded cells, values for all other cells will be automatically generated. Projects demonstrating feasibility or potential feasibility via this worksheet are encouraged to incorporate capture and use features in their project.

B. Negative impacts associated with retention may include geotechnical, groundwater, water balance, or other issues identified by a geotechnical engineer and substantiated through completion of Form I-8.

C. Feasibility Category 1: Applicant must implement capture & use, retention, and/or infiltration elements for the entire DCV.

D. Feasibility Category 2: Applicant must implement capture & use elements for the entire DCV.

E. Feasibility Category 3: Applicant must implement retention and/or infiltration elements for all DMAs with Design Infiltration Rates greater than 0.50 in/hr.

F. Feasibility Category 4: Applicant must implement standard unlined biofiltration BMPs sized at ≥3% of the effective impervious tributary area for all DMAs with Design Infiltration Rates of 0.011 to 0.50 in/hr. Applicants may be permitted to implement lined BMPs, reduced size BMPs, and/or specialized biofiltration BMPs provided additional criteria identified in "Supplemental Retention Criteria for Non-Standard Biofiltration BMPs" are satisfied.

G. Feasibility Category 5: Applicant must implement standard lined biofiltration BMPs sized at ≥3% of the effective impervious tributary area for all DMAs with Design Infiltration Rates of 0.010 in/hr or less. Applicants may also be permitted to implement reduced size and/or specialized biofiltration BMPs provided additional criteria identified in "Supplemental Retention Criteria for Non-Standard Biofiltration BMPs" are satisfied.

H. PDPs participating in an offsite alternative compliance program are not held to the feasibility categories presented herein.

Summary of Stormwater Pollutant Control Calculations (V1.3)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	Units
General Info	0	Drainage Basin ID or Name	DMA-2	DMA-5	DMA-6	DMA-8	DMA-10	DMA-11	DMA-12	DMA-14	-	-	unitless
	1	85th Percentile Storm Depth	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	-	-	inches
	2	Design Infiltration Rate Recommended by Geotechnical Engineer	0.430	0.430	0.430	0.430	0.430	0.430	0.430	0.430	-	-	in/hr
	3	Total Tributary Area	9,155	48,877	27,450	41,835	30,685	30,650	16,555	7,409	-	-	sq-ft
	4	85th Percentile Storm Volume (Rainfall Volume)	595	3,177	1,784	2,719	1,995	1,992	1,076	482	-	-	cubic-feet
Initial DCV	5	Initial Weighted Runoff Factor	0.79	0.56	0.50	0.55	0.59	0.35	0.58	0.83	-	-	unitless
	6	Initial Design Capture Volume	470	1,779	892	1,496	1,177	697	624	400	-	-	cubic-feet
Site Design Volume Reductions	7	Dispersion Area Reductions	0	159	178	300	160	0	0	0	-	-	cubic-feet
	8	Tree Well and Rain Barrel Reductions	0	0	0	0	0	0	0	0	-	-	cubic-feet
BMP Volume Reductions	9	Effective Area Tributary to BMP	7,232	24,927	10,980	18,407	15,649	10,728	9,602	6,149	-	-	square feet
	10	Final Design Capture Volume Tributary to BMP	470	1,620	714	1,196	1,017	697	624	400	-	-	cubic-feet
	11	Basin Drains to the Following BMP Type	Biofiltration	Biofiltration	Biofiltration	Biofiltration	Biofiltration	Biofiltration	Biofiltration	Biofiltration	-	-	unitless
	12	Volume Retained by BMP (normalized to 36 hour drawdown)	188	648	314	538	427	376	293	176	-	-	cubic-feet
Total Volume Reductions	13	Total Fraction of Initial DCV Retained within DMA	0.40	0.45	0.55	0.56	0.50	0.54	0.47	0.44	-	-	fraction
	14	Percent of Average Annual Runoff Retention Provided	47.1%	50.7%	58.0%	58.8%	54.4%	57.3%	52.2%	50.0%	-	-	%
	15	Percent of Average Annual Runoff Retention Required	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	-	-	%
Performance Standard	16	Percent of Pollution Control Standard Satisfied	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	-	-	%
Treatment Train	17	Discharges to Secondary Treatment in Drainage Basin	-	-	-	-	-	-	-	-	-	-	unitless
	18	Impervious Surface Area Still Requiring Treatment	0	0	0	0	0	0	0	0	-	-	square feet
	19	Impervious Surfaces Directed to Downstream Dispersion Area	-	-	-	-	-	-	-	-	-	-	square feet
	20	Impervious Surfaces Not Directed to Downstream Dispersion Area	-	-	-	-	-	-	-	-	-	-	square feet
Result	21	Deficit of Effectively Treated Stormwater	0	0	0	0	0	0	0	0	-	-	cubic-feet

Summary Notes:

All fields in this summary worksheet are populated based on previous user inputs. If applicable, drainage basin elements that require revisions and/or supplemental information outside the scope of these worksheets are highlighted in orange and summairzed in the red text below. If all drainage basins achieve full compliance without a need for supplemental information, a green message will appear below.

-Congratulations, all specified drainage basins and BMPs are in compliance with stormwater pollutant control requirements. Include 11x17 color prints of this summary sheet and supporting worksheet calculations as part of the SWQMP submittal package.

False

Categorization of Infiltration Feasibility Condition	Form I-8

Part 1 - Full Infiltration Feasibility Screening Criteria

Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		✓

Provide basis:

The estimated infiltration rate in this area is very low due to the large presence of rock outcrops and the underlying 'D' type soil according to the 2016 BMP Manual. Certain areas, however, are expected to have greater than 0.5in/hr infiltration near the proposed leach fields. However, since the proposed BMPs are required to be far away from the leach fields, a low infiltration rate corresponding to the on-site Type D soils is used in the BMP calculations.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		✓

Provide basis:

Infiltration greater than 0.5 in/hr cannot be allowed on-site without impacts to slope stability. The proposed BMP are all located either on compacted home pads or compacted fill slopes.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

Form I-8 Page 2 of 4			
Criteria	Screening Question	Yes	No
3	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	✓	
Provide basis: There are no known groundwater impairments on the project site. The groundwater table is deep (>20') and project-site pollutants would not pose contamination risk. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	**Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	✓	
Provide basis: There are no ground water discharging to the surface reported on the project site. No ephemeral streams are identified within the project based on the biological report. Furthermore, the unlined bio-filtration basins are proposed over native soil, the storm water passing though the mulch and soil media layers will be clean before seepage into underlying native soil. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result *	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** If any answer from row 1-4 is "**No**", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

Form I-8 Page 3 of 4

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

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

Criteria	Screening Question	Yes	No
5	**Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	✓	

Provide basis:

The average infiltration rate is 0.43in/hr. The proposed BMPs consists of unlined bio-filtration basins over native soil.

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

6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	✓	

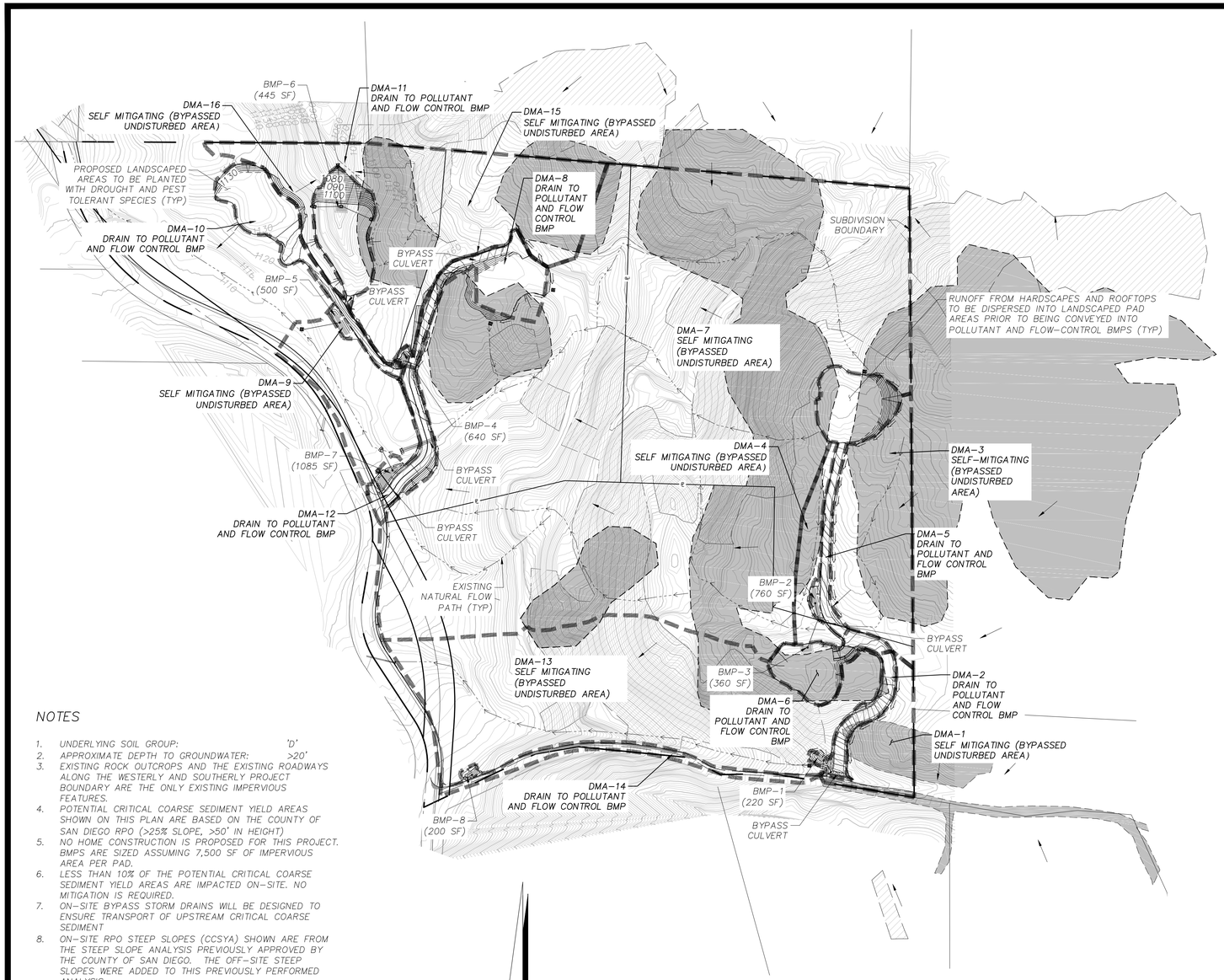
Provide basis:

Infiltration can be allowed away from adjacent steep slopes and within the defined natural drainage channels without increasing the risk of geotechnical hazards.

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

Form I-8 Page 4 of 4			
Criteria	Screening Question	**Yes**	**No**
7	**Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	✓	
Provide basis: No ground water was encountered within project site. The proposed BMPs consist of unlined bio-filtration basins over native soil. The storm water runoff that passes through the mulch layer and soil media will be clean prior to seepage into the underlying native soil. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
8	**Can infiltration be allowed without violating downstream water rights**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	✓	
Provide basis: The unlined bio-filtration basins are proposed over native soil, no increase in native soil infiltration is infeasible. The proposed BMPs will not increase the volume of runoff currently infiltrating into the native soil, thus, will not violating any downstream water rights. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
Part 2 Result*	If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is **Partial Infiltration.** If any answer from row 5-8 is no, then infiltration of any volume is considered to be **infeasible** within the drainage area. The feasibility screening category is **No Infiltration.**	Partial Infiltration	

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings



SCALE: 1"= 150'

0 150' 300' 450'

SCALE: 1"= 150'

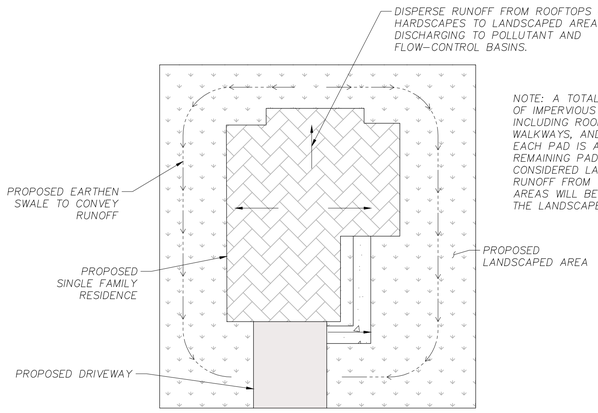
NOTES

1. UNDERLYING SOIL GROUP: 'D'
2. APPROXIMATE DEPTH TO GROUNDWATER: >20'
3. EXISTING ROCK OUTCROPS AND THE EXISTING ROADWAYS ALONG THE WESTERLY AND SOUTHERLY PROJECT BOUNDARY ARE THE ONLY EXISTING IMPERVIOUS FEATURES.
4. POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS SHOWN ON THIS PLAN ARE BASED ON THE COUNTY OF SAN DIEGO RPO (>25% SLOPE, >50' IN HEIGHT)
5. NO HOME CONSTRUCTION IS PROPOSED FOR THIS PROJECT. BMPS ARE SIZED ASSUMING 7,500 SF OF IMPERVIOUS AREA PER PAD.
6. LESS THAN 10% OF THE POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS ARE IMPACTED ON-SITE. NO MITIGATION IS REQUIRED.
7. ON-SITE BYPASS STORM DRAINS WILL BE DESIGNED TO ENSURE TRANSPORT OF UPSTREAM CRITICAL COARSE SEDIMENT
8. ON-SITE RPO STEEP SLOPES (CCSYA) SHOWN ARE FROM THE STEEP SLOPE ANALYSIS PREVIOUSLY APPROVED BY THE COUNTY OF SAN DIEGO. THE OFF-SITE STEEP SLOPES WERE ADDED TO THIS PREVIOUSLY PERFORMED ANALYSIS.

LEGEND

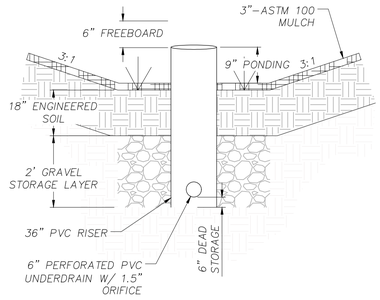
- PROJECT BOUNDARY
- DMA BOUNDARY
- NATURAL FLOW PATH
- BIOFILTRATION BASIN
- IMPERVIOUS ROCK OUTCROPS
- POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS (RPO)

DMA	DMA TYPE	AREA (AC)	TYPE OF BMP
1	SELF-MITIGATING	1.04	
2	DRAINS TO BMP	0.21	POLLUTANT/FLOW CONTROL
3	SELF-MITIGATING	2.30	
4	SELF-MITIGATING	0.60	
5	DRAINS TO BMP	1.12	POLLUTANT/FLOW CONTROL
6	DRAINS TO BMP	0.63	POLLUTANT/FLOW CONTROL
7	SELF-MITIGATING	25.98	
8	DRAINS TO BMP	0.96	POLLUTANT/FLOW CONTROL
9	SELF-MITIGATING	1.40	
10	DRAINS TO BMP	0.70	POLLUTANT/FLOW CONTROL
11	DRAINS TO BMP	0.70	POLLUTANT/FLOW CONTROL
12	DRAINS TO BMP	0.38	POLLUTANT/FLOW CONTROL
13	SELF-MITIGATING	5.27	
14	DRAINS TO BMP	0.17	POLLUTANT/FLOW CONTROL
15	SELF-MITIGATING	4.37	
16	SELF-MITIGATING	1.09	
	TOTAL	46.92	



NOTE: A TOTAL OF 7,500 SF OF IMPERVIOUS AREA INCLUDING ROOFTOPS, WALKWAYS, AND DRIVEWAYS ON EACH PAD IS ASSUMED. THE REMAINING PAD AREA IS CONSIDERED LANDSCAPED AND RUNOFF FROM THE IMPERVIOUS AREAS WILL BE DIRECTED INTO THE LANDSCAPED AREAS

DETAIL: TYPICAL LOT DRAINAGE
SCALE: NTS



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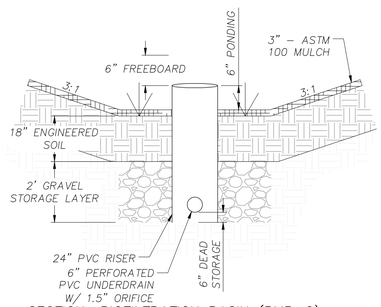

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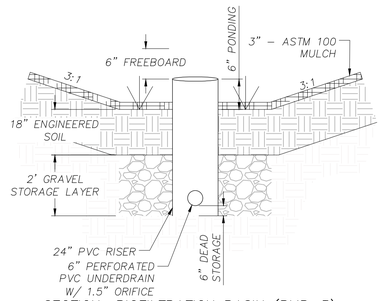

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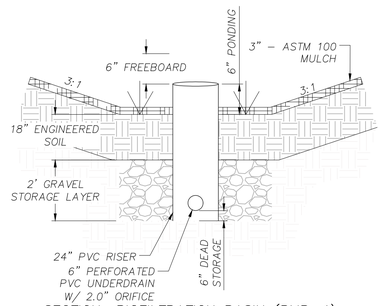

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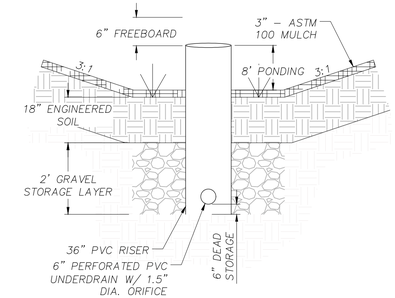

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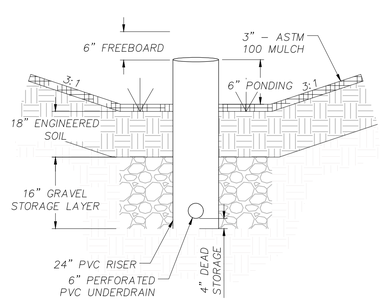

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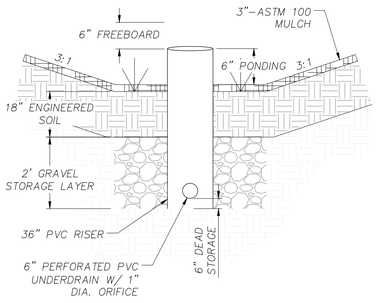

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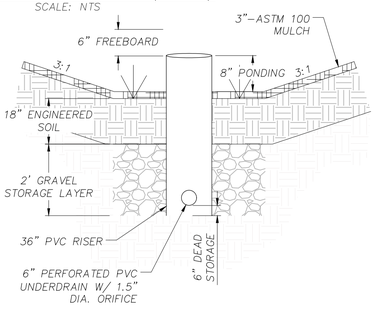

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SCALE: NTS

PRIVATE CONTRACT

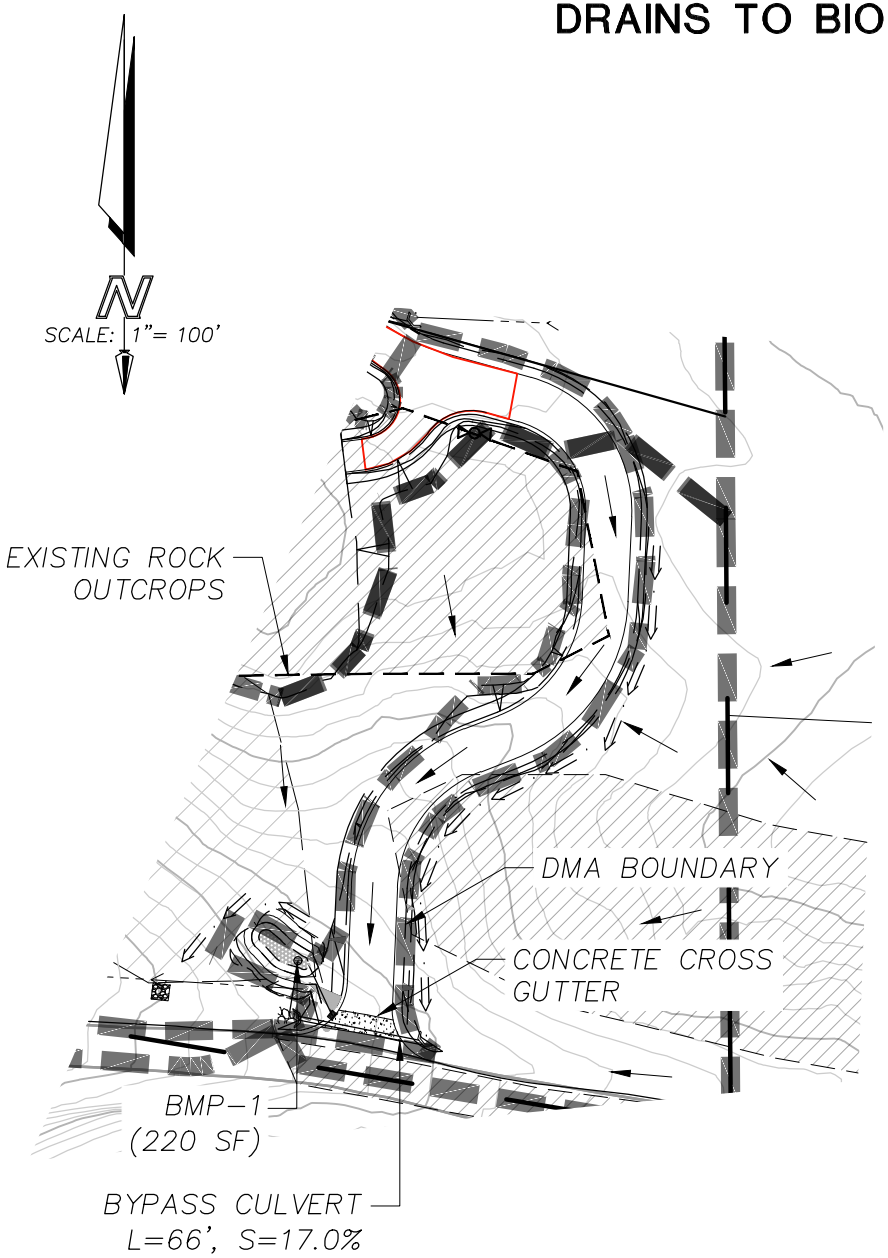
COUNTY OF SAN DIEGO
PLANNING & DEVELOPMENT SERVICES

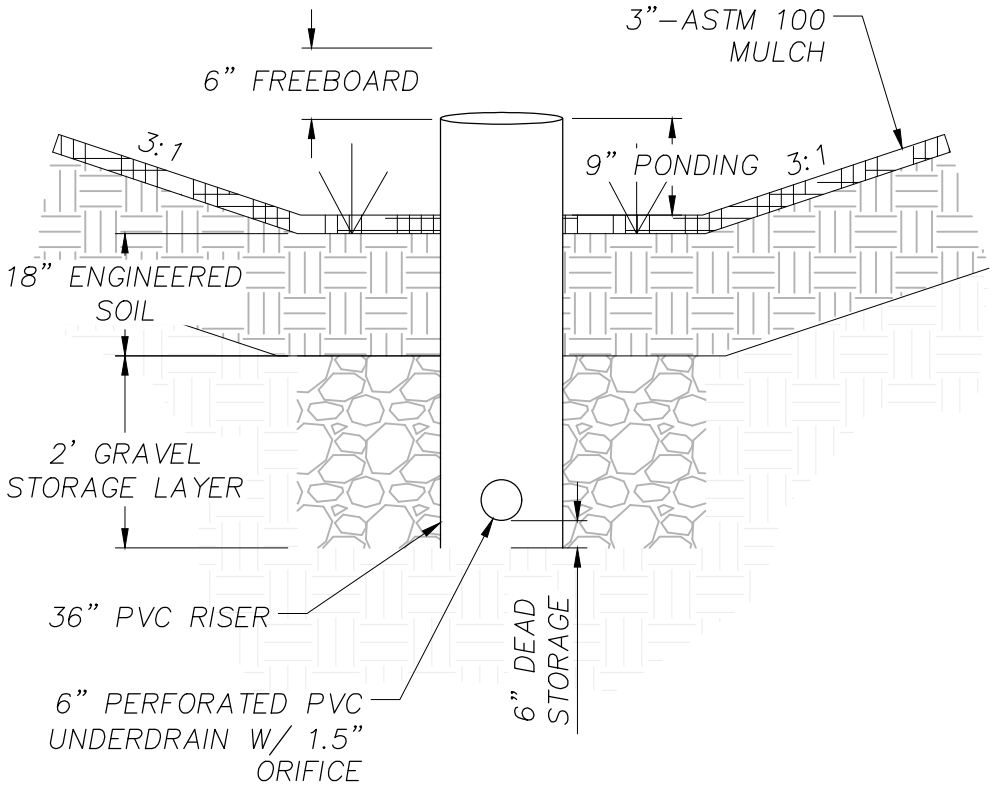
DMA MAP FOR:

GILDRED TPM

DMA-2

DRAINS TO BIOFILTRATION BASIN





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SCALE: NTS

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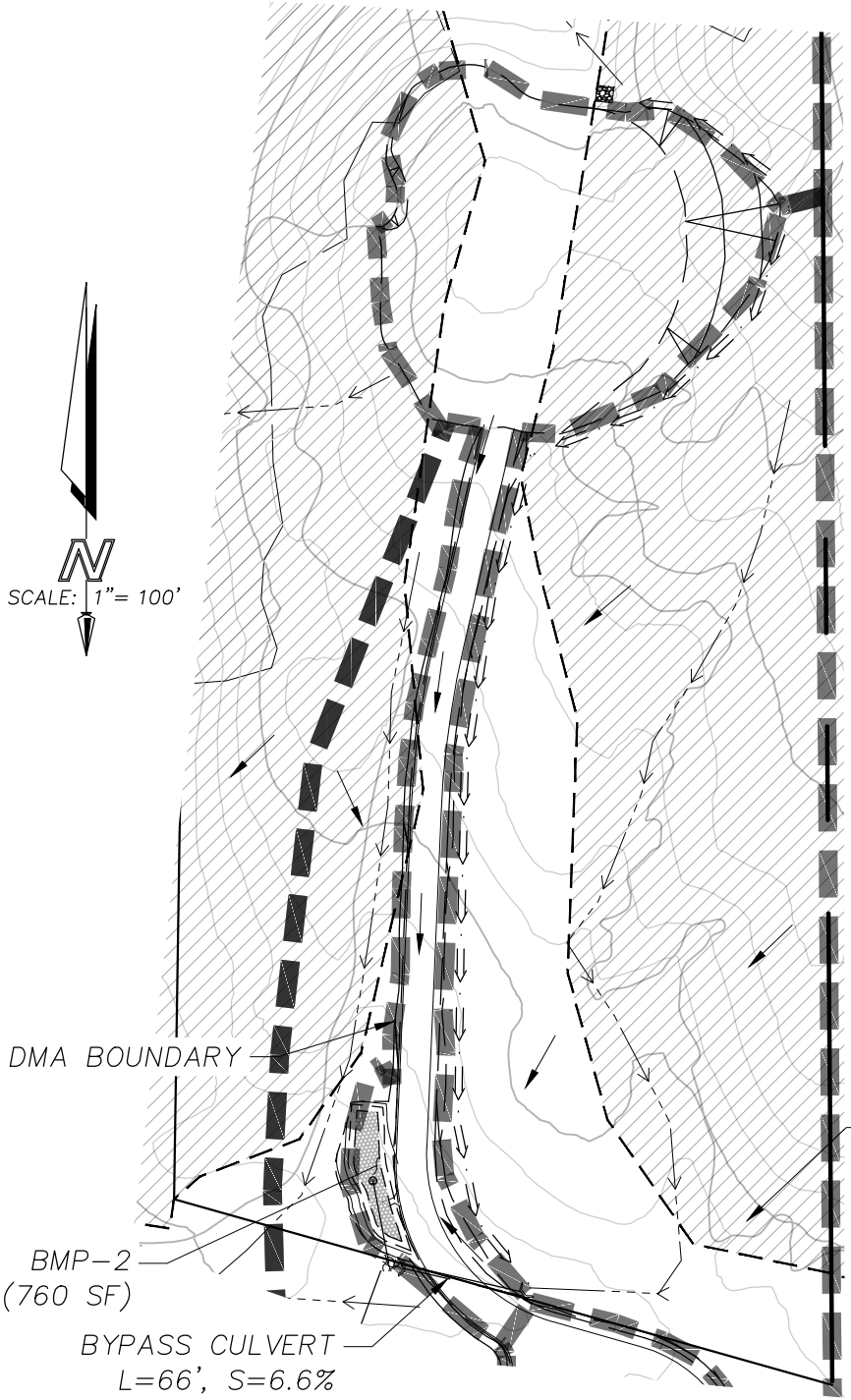
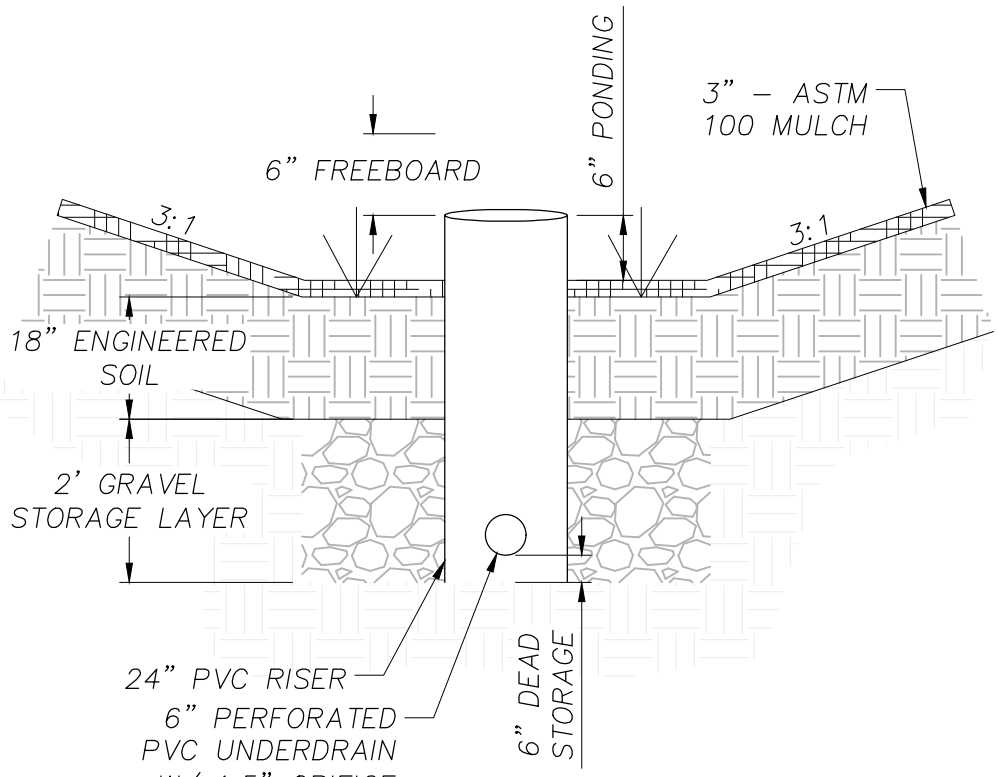
DMA-5

DRAINS TO BIOFILTRATION BASIN





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SCALE: NTS

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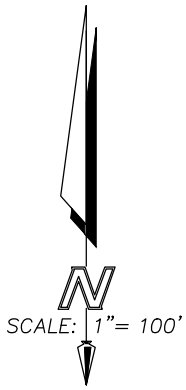
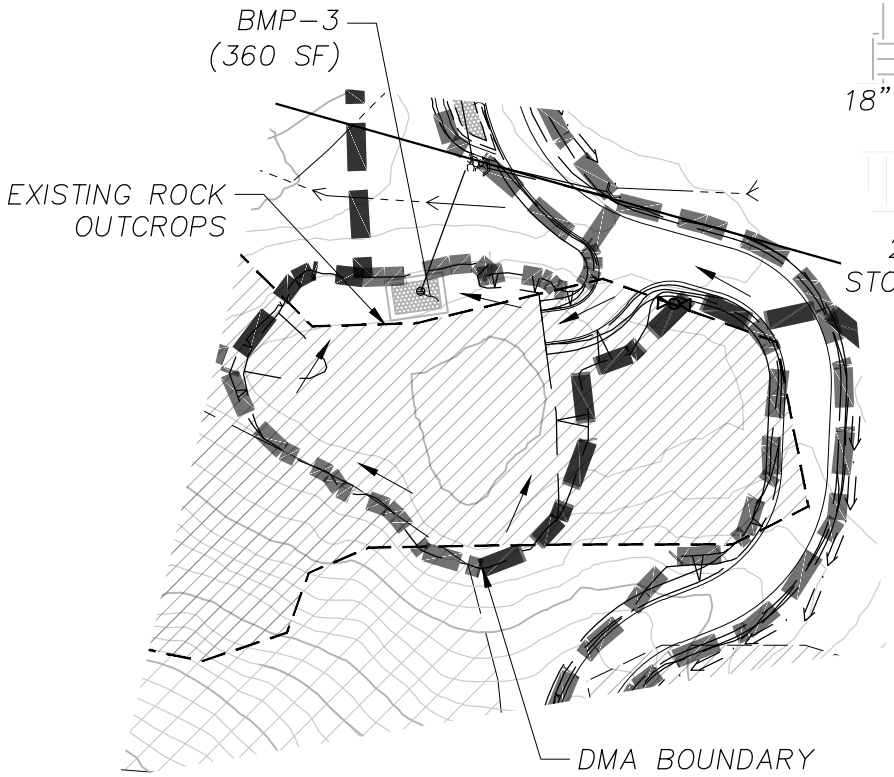
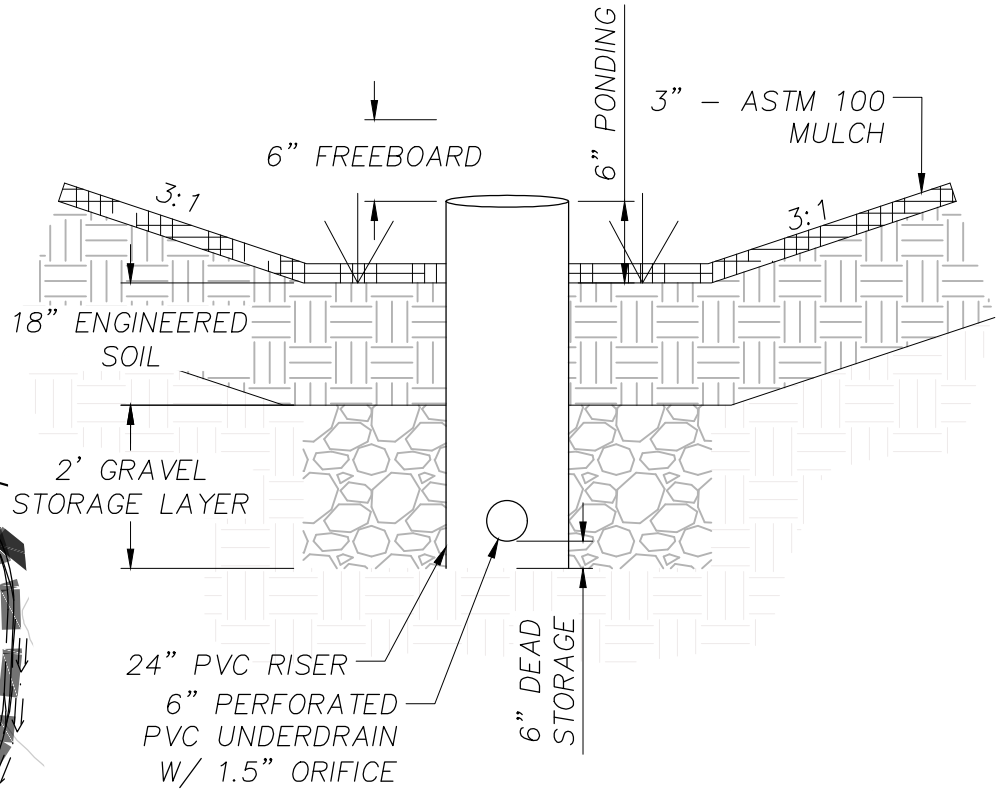
DMA-6

DRAINS TO BIOFILTRATION BASIN







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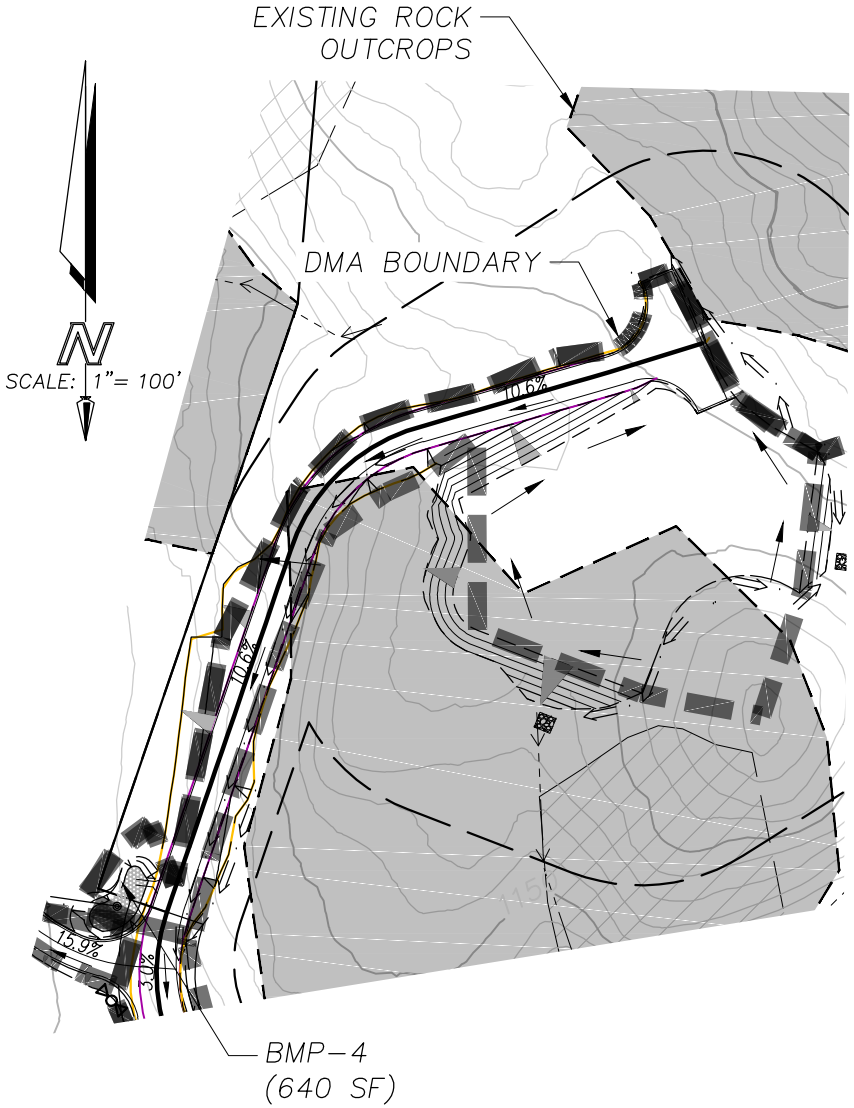
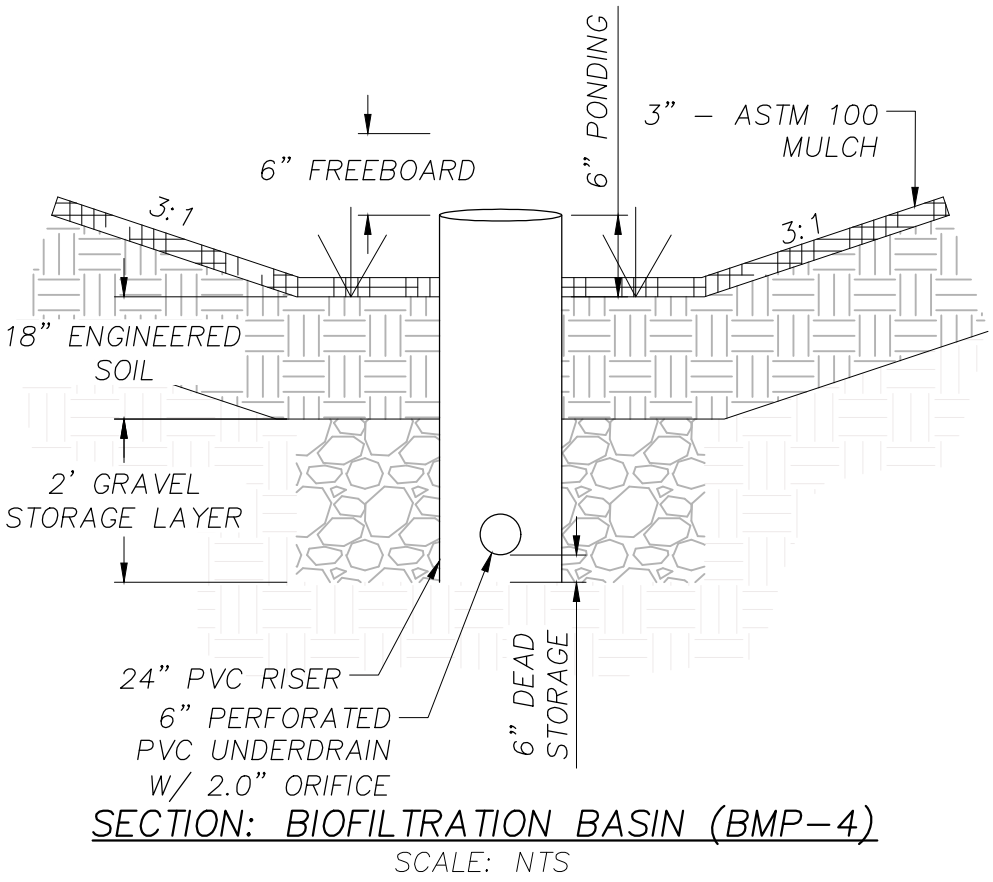
DMA-8

DRAINS TO BIOFILTRATION BASIN





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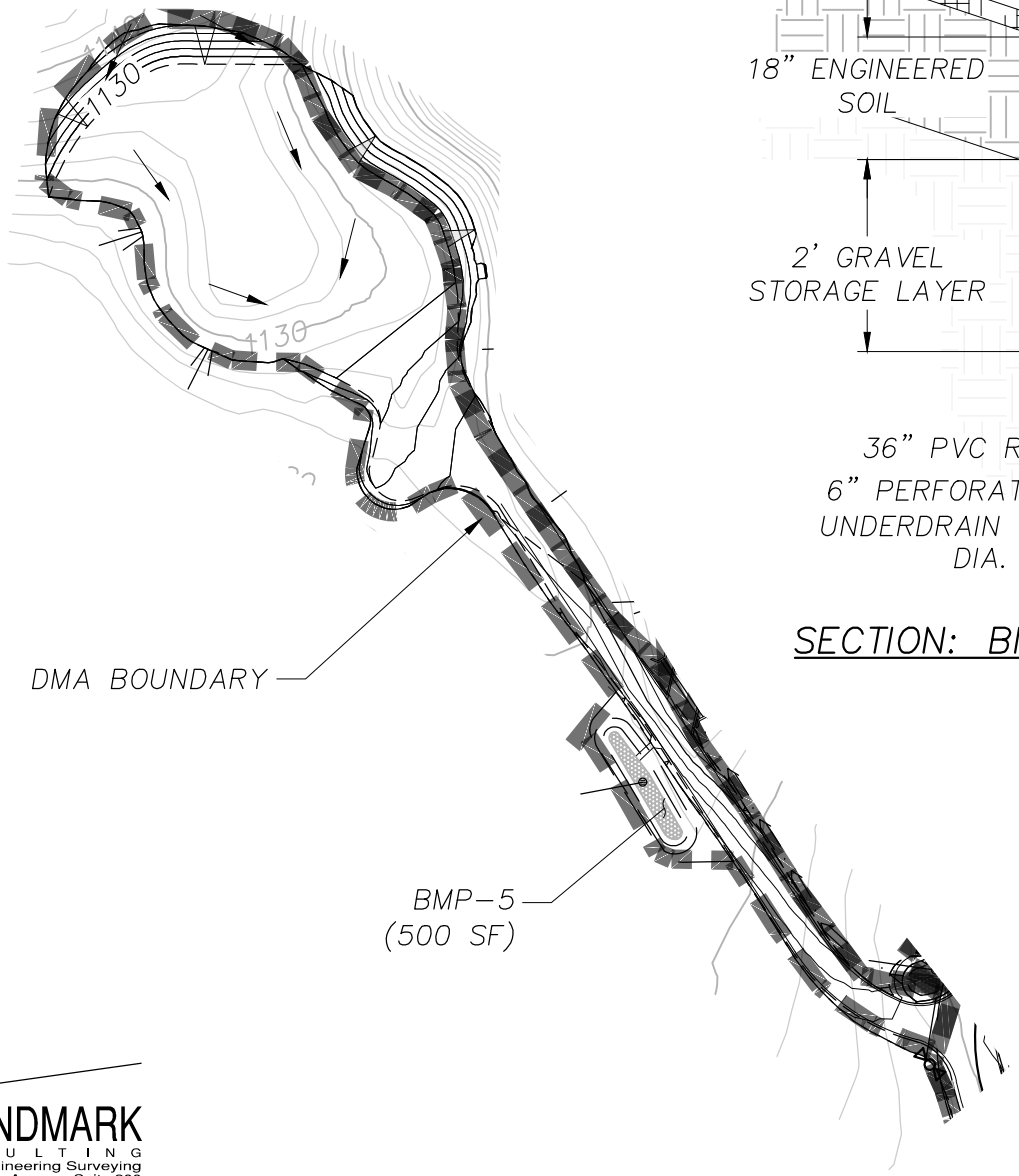
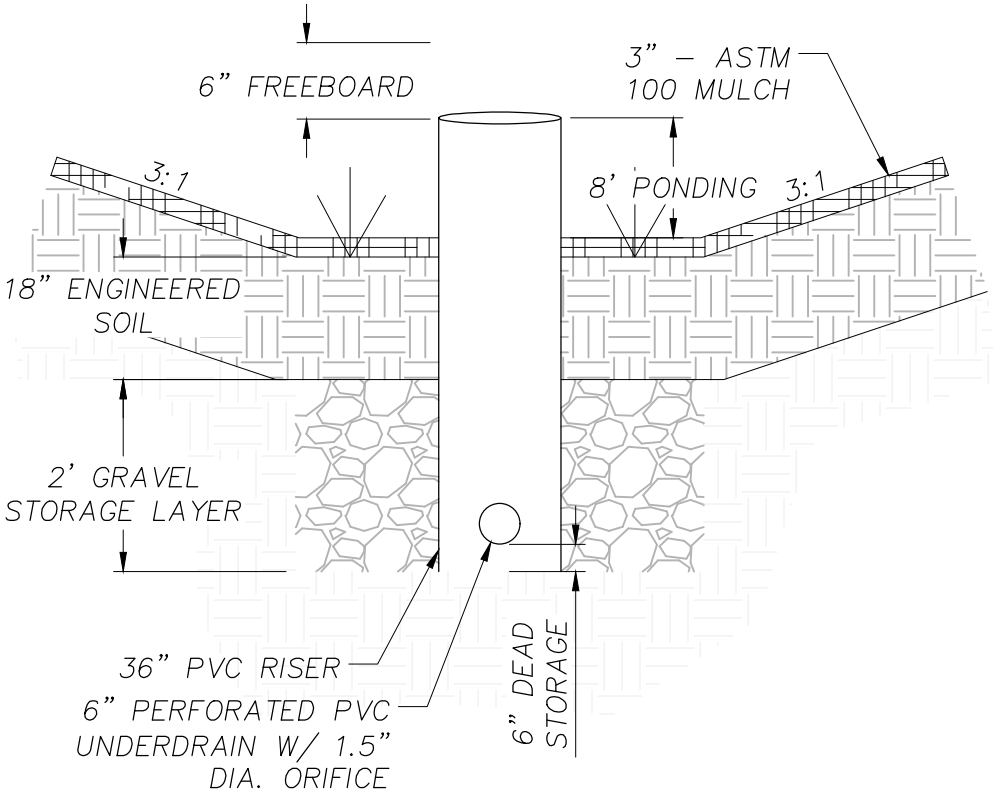
DMA-10

DRAINS TO BIOFILTRATION BASIN





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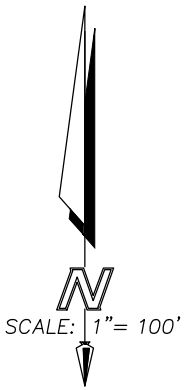

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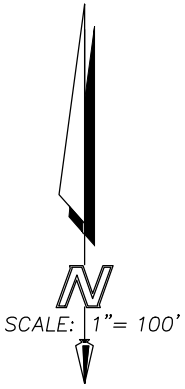
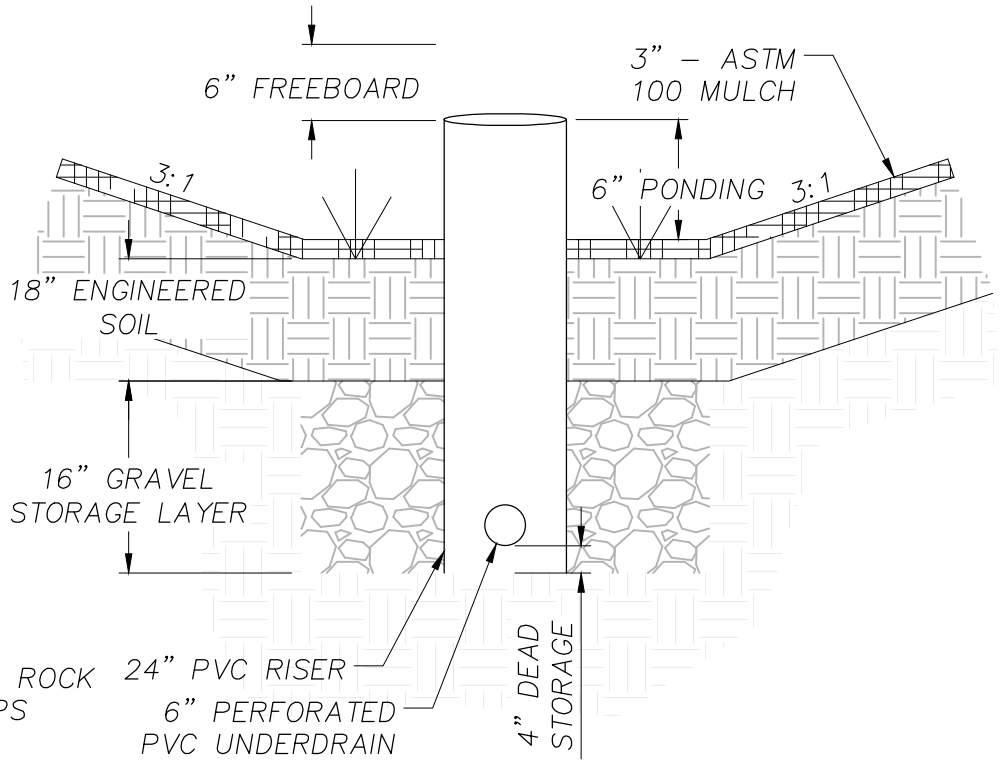
DMA-11

DRAINS TO BIOFILTRATION BASIN





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DMA-12

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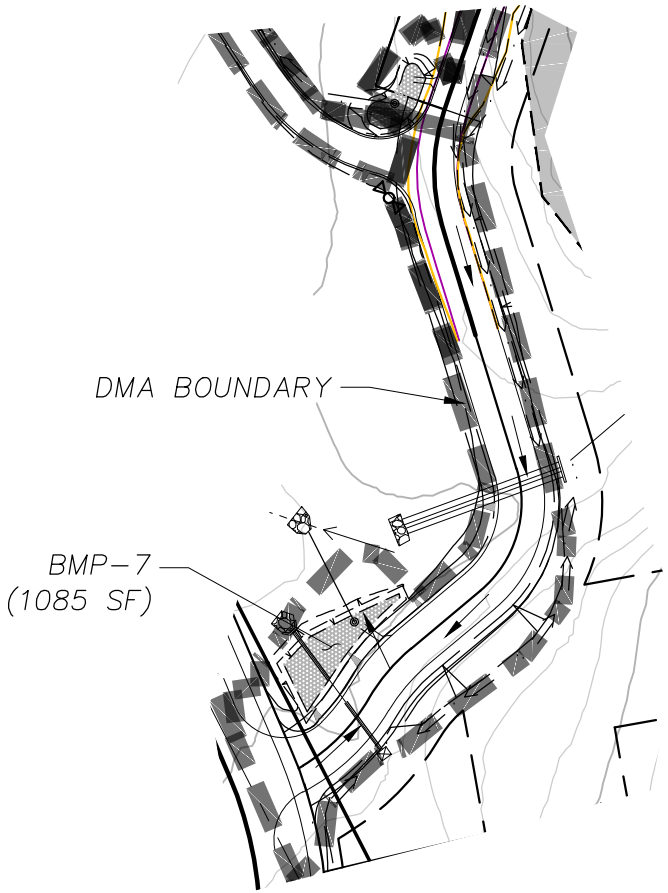
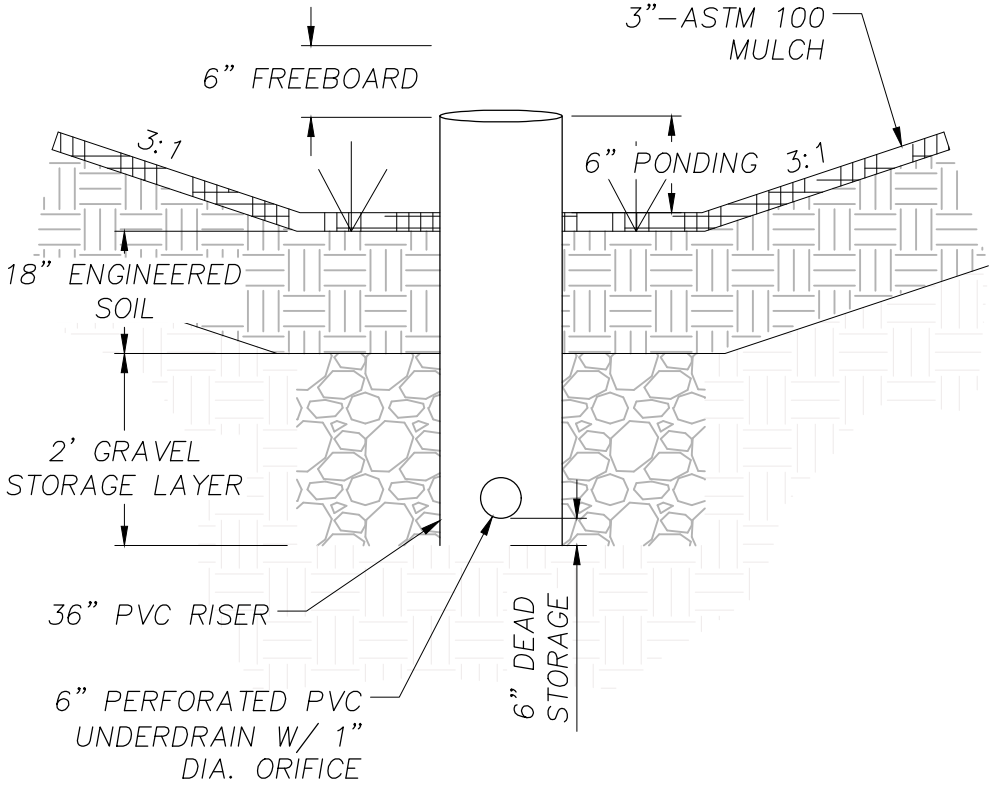


N

SCALE: 1"= 100'



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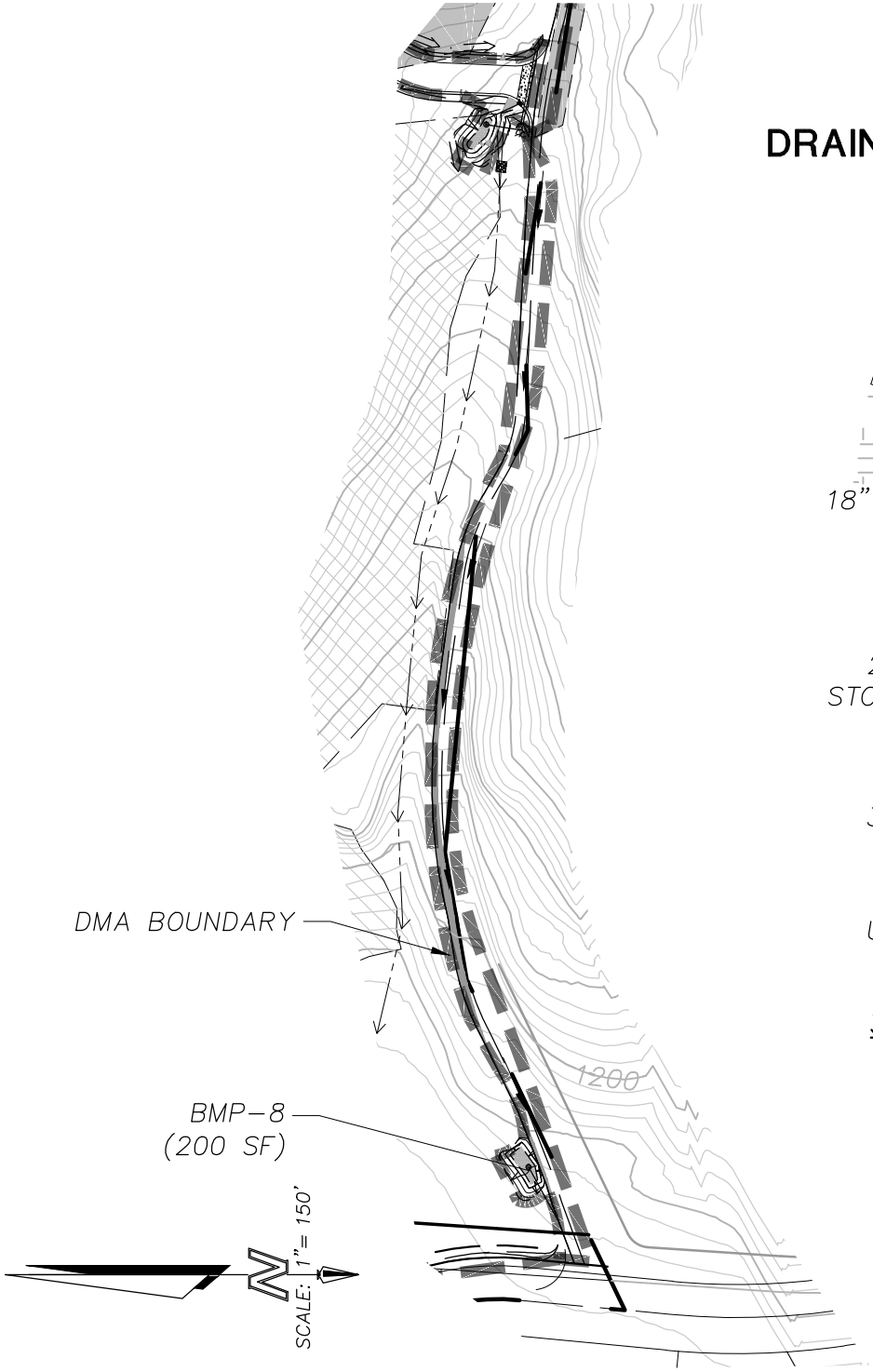
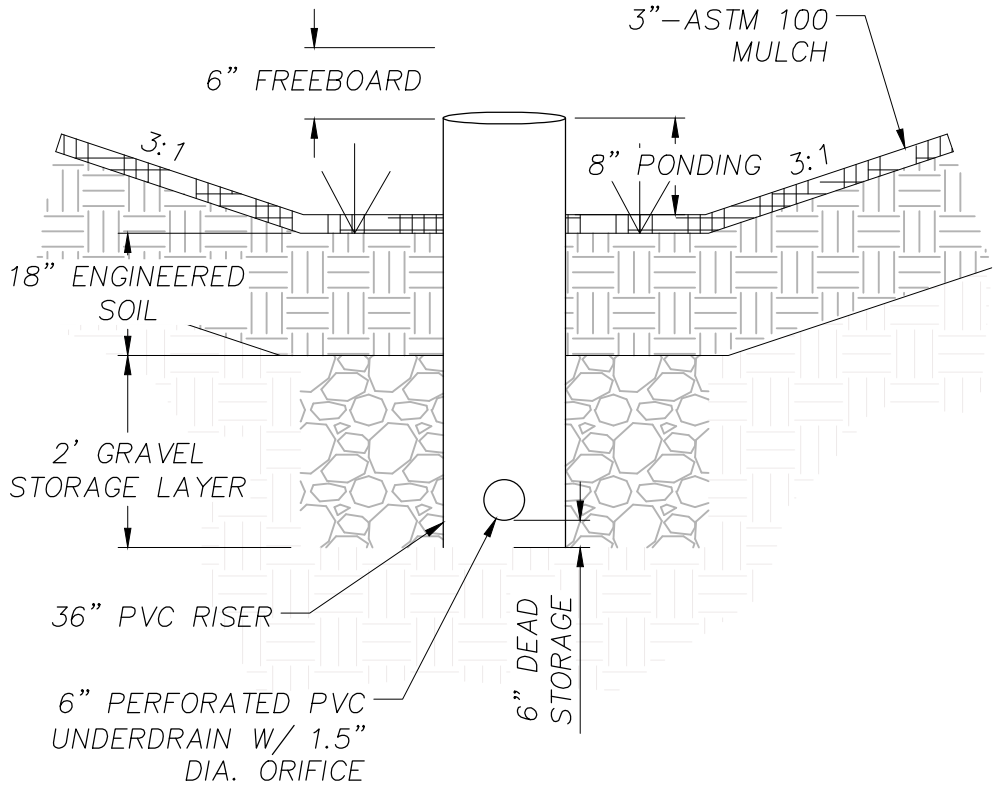
DMA-14

DRAINS TO BIOFILTRATION BASIN





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SCALE: NTS

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ATTACHMENT 2

BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

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

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 2a	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the BMP Design Manual	☑Included ☐Submitted as separate stand-alone document
Attachment 2b	Hydromodification Management Exhibit (Required)	☑Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2c	Management of Critical Coarse Sediment Yield Areas See Section 6.2 and Appendix H of the BMP Design Manual.	☑Exhibit depicting onsite and/or upstream sources of critical coarse sediment as mapped by Regional or Jurisdictional approaches outlined in Appendix H.1 AND, ☑Demonstration that the project effectively avoids and bypasses sources of mapped critical coarse sediment per approaches outlined in Appendix H.2 and H.3. OR, ☐Demonstration that project does not generate a net impact on the receiving water per approaches outlined in Appendix H.4.
Attachment 2d	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	☑Not performed ☐Included ☐Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐Included ☑Not required because BMPs will drain in less than 96 hours

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

The Hydromodification Management Exhibit must identify:

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

Attachment 2a. HMP Report

HYDROMODIFICATION MANAGEMENT PLAN (HMP) FOR:

GILDRED TPM

San Diego County, California

PREPARED FOR:

Greg Haggart
Gildred Building Company
550 W. "C" Street, #1820
619-232-6361
San Diego, Ca 92101

PREPARED BY:

Landmark Consulting
9555 Genesee Ave. Ste. 200
San Diego, Ca 92121
858-587-8070

Date: 7/19/2017

David Yeh, RCE 62717, EXP 6-30-18

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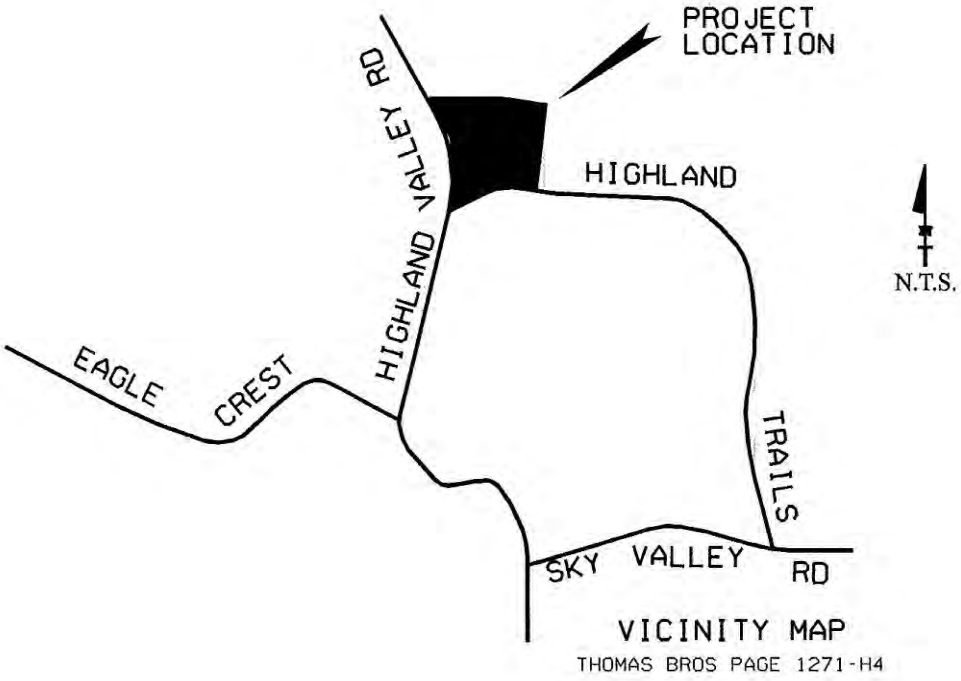
METHOD OF ANALYSIS	**11-12**
HYDROMODIFICATION ANALYSIS	**13-104**
SUMMARY	**105-106**
HMP EXHIBITS	**107**



VICINITY MAP

THOMAS BROS PAGE 1271-H4

INTRODUCTION

Hydromodification is due to the changes in the natural flow pattern of surface and ground water as a result of development such as increases in impervious areas, decreases in natural vegetation, grading and compacting of soil and construction of drainage facilities.

Hydromodification impacts downstream facilities due to less infiltration as a result of increases in impervious areas such as roads, roof areas, driveways and hardscaped areas. This results in increases in peak flow and volume and the likelihood of newly constructed drainage system discharging runoff directly into downstream creeks and water bodies.

The impact to the receiving water can include stream bank erosion due to increased flow velocity and volume, sediment transport and deposition further downstream.

The proposed development of the site consists of the construction of 4 single family home pads on approximately 53.1 acres of vacant land. The proposed improvements include one home pad for each parcel and an additional pad for fill placement on Parcel 4. Each home pad will also have a driveway constructed

It is anticipated that the proposed project will have significant increase in impervious areas that will lead to significant increases in increase of peak flow volume. Hydromodification mitigation measures must be employed in this proposed development to reduce and eliminate additional impact to downstream facilities.

PROJECT DESCRIPTION

The site is located on the northeasterly corner of Highland Valley Road and Highland Trails Drive, in the County of San Diego, State of California.

Under the existing conditions, there are three sub-basins on the project site - the northerly, central and southerly sub-basins. The northerly sub-basin drains the north westerly corner of the site into an existing natural swale that conveys the runoff northerly across the north project boundary. The southerly sub-basin lays parallel to the southerly project boundary. The runoff from this sub-basin is conveyed westerly in an existing natural swale along the southerly boundary. The runoff is eventually conveyed off-site crossing under Highland Valley Road near the southwesterly corner of the site via an existing culvert. This runoff then confluences with the off-site upstream runoff from the overall watershed and flows northerly approximately 500' along the westerly side of Highland Valley Road. The combined runoff then crosses Highland Valley Road via an existing culvert and discharges back onto the project site, in an existing natural channel along the easterly side of Highland Valley Road where it confluences with the runoff from the central sub-basin of the project site.

The central sub-basin, the largest of sub-basins of the project site, flows westerly via several existing natural swales. These existing natural swales confluence into an existing major natural channel along the westerly project boundary, just easterly of the existing Highland Valley Road. This major natural channel conveys the runoff from the central and southerly sub-basin than combines with the runoff from the overall watershed northerly and exits the project boundary at the northwesterly corner.

Under the proposed conditions, the runoff pattern will be preserved where the runoff from the proposed pads and driveways will be designed to flow into the existing receiving sub-basin areas and be conveyed to the eventual discharge point exiting the site.

The runoff from the proposed development will be directed into several biofiltration basins for both water quality treatment and hydromodification mitigations.

METHOD OF ANALYSIS

Per HMP requirements as stated in the County of San Diego Storm Water Standards, hydrograph modification analysis is required for this project. Hydrograph modification is required to mitigate the increases in the runoff discharge rates and duration as a result of watershed development. An increase in runoff is caused by additional imperious areas and more hydraulically efficient drainage facilities in developed watersheds. The increase can cause or accelerate erosion of existing downstream streambeds and/or banks.

San Diego Hydrology Model (SDHM) published by Clear Creek Solutions, Inc. was used in this hydro-modification analysis. The version of the software is V2016/3/3.

The purpose of the hydrograph modification analysis is to certify that the post-construction hydrologic characteristics of the project simulates the pre-development hydrologic characteristics at the identified points of compliance (POCs). For this project, the POCs were established at the discharge points where the runoff from each individual parcel or development foot print enters the downstream natural channel. The POCs were delineated such that the drainage boundary was truncated at the proposed project boundary. It should be noted that for this particular project, large areas of exposed rock and rock outcroppings exist within the proposed limits of disturbance. These areas are anticipated to be blasted during construction, which may result in the decrease, or limited increase of impervious areas in post-development conditions.

POC 1 is established downstream of the biofiltration basin located on the westerly side of the proposed shared driveway accessing Parcels 1 and 2 off Highland Trails Road. The runoff from the upstream undisturbed areas as well as portions of the shared driveway is routed into the biofiltration basin for both water quality and flow control mitigation. The overflow outlet pipe from the biofiltration basin discharges the runoff into the existing natural channel where the POC is established.

POC 2 is established downstream of the biofiltration basins located on the northerly side of the pad for Parcel 1 and on the westerly side of the driveway to Parcel 2, and the culvert crossing under the driveway, respectively. The culvert crossing conveys the runoff from the upstream, undisturbed easterly areas across the proposed driveway and discharge into the existing natural channel, a riprap energy dissipater will be installed at the outlet point to eliminate the potential of erosion. The biofiltration basin on the Parcel 1 pad will treat the runoff from the pad areas before discharging onto the riprap pad of the culvert. The biofiltration basin on the westerly side of the driveway will treat the runoff from the driveway before discharging the overflow onto the same riprap of the culvert.

POC 3 is established at the discharge point of the culvert crossings of the shared driveway of Parcels 3 and 4. A biofiltration basin is located the westerly side of the driveway to treat the runoff from the driveway. The overflow outlet pipe from the biofiltration basin discharges the runoff into the existing channel at the same discharge point as the culverts.

POC 4 is established further downstream to the north of POC-3. Runoff is discharged from the biofiltration basin along the westerly side of the driveway leading to the pad on Parcel 4 into the

existing natural channel. POC-4 is located where the flow from this BMP and runoff from POC-3 confluence within the natural channel.

POC 5 is established at the base of the proposed off-site fill slope of the accessary pad for Parcel 1. A drain inlet will collect the runoff from the accessary pad, an underground storm drain will convey the runoff down the slope and discharge at the base of the slope, before it flow onto the existing terrain.
POC 6 is established within the natural channel that runs from east to west from POC-1 towards Highland Valley Road. The biofiltration BMP along Highland Trails Drive discharges into this channel, and POC 6 is established at this confluence point.

Under the pre-development conditions, slope analysis were performed for each tributary area of each POC. For each tributary area, one slope analysis was performed to delineate the pre-development pervious areas, and another is performed to delineate the pre-development impervious areas such as roadways and rock out crops. The areas of each grade range are then entered into the SDHM model.

Under the post-development conditions, slope analysis were also performed for each tributary area of each POC. For each tributary area, one slope analysis was performed to delineate the pre-development pervious areas outside of the development foot print, and another is performed to delineate the pre-development impervious areas such as roadways and rock out crops outside the development footprint. Within the development footprint, the impervious areas such as driveway, roof tops and incidental hardscapes were based on a project estate type home product that produces a minimum of 7500 sf impervious area for each pad. The driveway approaches was measured based on the length of the approach and the projected width of 20 feet. The areas of each grade range are then entered into the SDHM model.

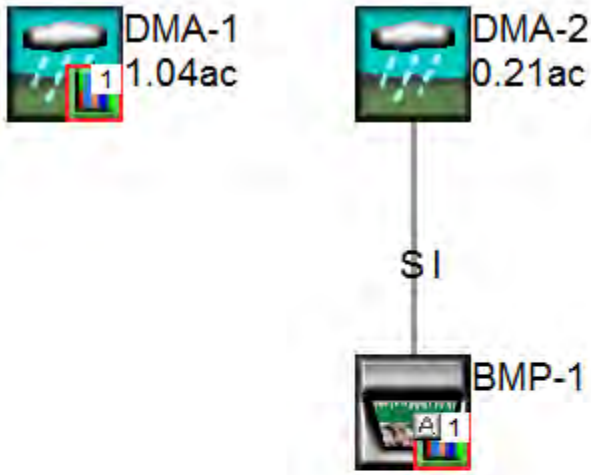
The rainfall data used in the hydrograph modification analysis is based on the annual gauge data at the Ramona Station. The Ramona Station data was used based on the County of San Diego's average annual precipitation Isopluvial Maps in the San Diego County Hydrology Manual. The project site and the Ramona Station are on the same rain curve. The rainfall data was obtained from the www.projectcleanwater.org web site. No scaling factor is considered.

HYDROMODIFICATION ANALYSIS

POC-1

PRE-DEVELOPMENT

POST-DEVELOPMENT



SDHM2015
PROJECT REPORT

Project Name: POC-1
Site Name: Gildred TPM
Site Address:
City :
Report Date: 12/28/2016
Gage : RAMONA
Data Start : 10/01/1963
Data End : 09/30/2004
Precip Scale: 1.00
Version Date: 2016/03/03

Low Flow Threshold for POC 1 : 10 Percent of the 2 Year

High Flow Threshold for POC 1: 10 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.03
D,Dirt, Mod(5-10%)	.02
D,Dirt, StEEP(10-20	.84
Pervious Total	0.89

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.01
IMPERVIOUS-MOD	0.7
Impervious Total	0.71
Basin Total	1.6

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : DMA-1
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
B,Grass,STEEP(10-20	.1
D,Dirt, Flat(0-5%)	.02
D,Dirt, Mod(5-10%)	.04
D,Dirt, StEEP(10-20	.42
Pervious Total	**0.58**

Impervious Land Use	acre
IMPERVIOUS-MOD	0.46
Impervious Total	**0.46**

Basin Total **1.04**

Element Flows To:
Surface **Interflow** **Groundwater**

Name : BMP-1
Bottom Length: 20.00 ft.
Bottom Width: 11.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 6.34
Total Outflow (ac-ft.): 6.433
Percent Through Underdrain: 98.56
Discharge Structure
Riser Height: 0.75 ft.
Riser Diameter: 36 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-1 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0154	0.0000	0.0000	0.0000

0.0549	0.0153	0.0001	0.0000	0.0000
0.1099	0.0152	0.0003	0.0000	0.0000
0.1648	0.0150	0.0004	0.0000	0.0000
0.2198	0.0149	0.0006	0.0000	0.0000
0.2747	0.0147	0.0007	0.0000	0.0000
0.3297	0.0146	0.0009	0.0000	0.0000
0.3846	0.0144	0.0010	0.0000	0.0000
0.4396	0.0143	0.0011	0.0000	0.0000
0.4945	0.0141	0.0013	0.0000	0.0000
0.5495	0.0140	0.0014	0.0000	0.0000
0.6044	0.0138	0.0016	0.0000	0.0000
0.6593	0.0137	0.0018	0.0000	0.0000
0.7143	0.0135	0.0019	0.0000	0.0000
0.7692	0.0134	0.0021	0.0000	0.0000
0.8242	0.0132	0.0022	0.0000	0.0000
0.8791	0.0131	0.0024	0.0000	0.0000
0.9341	0.0129	0.0026	0.0000	0.0000
0.9890	0.0128	0.0028	0.0000	0.0000
1.0440	0.0126	0.0029	0.0000	0.0000
1.0989	0.0125	0.0031	0.0000	0.0000
1.1538	0.0123	0.0033	0.0000	0.0000
1.2088	0.0122	0.0035	0.0000	0.0000
1.2637	0.0120	0.0037	0.0000	0.0000
1.3187	0.0119	0.0039	0.0000	0.0000
1.3736	0.0117	0.0041	0.0000	0.0000
1.4286	0.0116	0.0043	0.0000	0.0000
1.4835	0.0114	0.0045	0.0000	0.0000
1.5385	0.0113	0.0047	0.0000	0.0000
1.5934	0.0111	0.0049	0.0000	0.0000
1.6484	0.0110	0.0052	0.0000	0.0000
1.7033	0.0108	0.0054	0.0000	0.0000
1.7582	0.0107	0.0056	0.0000	0.0000
1.8132	0.0105	0.0058	0.0000	0.0000
1.8681	0.0103	0.0061	0.0000	0.0000
1.9231	0.0102	0.0063	0.0000	0.0000
1.9780	0.0100	0.0065	0.0000	0.0000
2.0330	0.0099	0.0068	0.0018	0.0000
2.0879	0.0097	0.0070	0.0027	0.0000
2.1429	0.0096	0.0073	0.0067	0.0000
2.1978	0.0094	0.0075	0.0088	0.0000
2.2527	0.0093	0.0078	0.0111	0.0000
2.3077	0.0091	0.0080	0.0153	0.0000
2.3626	0.0090	0.0083	0.0198	0.0000
2.4176	0.0088	0.0086	0.0221	0.0000
2.4725	0.0087	0.0088	0.0261	0.0000
2.5275	0.0085	0.0091	0.0261	0.0000
2.5824	0.0084	0.0094	0.0261	0.0000
2.6374	0.0082	0.0097	0.0261	0.0000
2.6923	0.0081	0.0099	0.0261	0.0000
2.7473	0.0079	0.0102	0.0261	0.0000
2.8022	0.0078	0.0105	0.0261	0.0000
2.8571	0.0076	0.0108	0.0261	0.0000
2.9121	0.0075	0.0111	0.0261	0.0000
2.9670	0.0073	0.0114	0.0261	0.0000
3.0220	0.0072	0.0117	0.0261	0.0000
3.0769	0.0070	0.0120	0.0261	0.0000
3.1319	0.0069	0.0123	0.0261	0.0000

3.1868	0.0067	0.0126	0.0261	0.0000
3.2418	0.0066	0.0130	0.0261	0.0000
3.2967	0.0064	0.0133	0.0261	0.0000
3.3516	0.0063	0.0136	0.0261	0.0000
3.4066	0.0061	0.0139	0.0261	0.0000
3.4615	0.0060	0.0143	0.0261	0.0000
3.5165	0.0058	0.0146	0.0261	0.0000
3.5714	0.0057	0.0149	0.0261	0.0000
3.6264	0.0055	0.0153	0.0261	0.0000
3.6813	0.0054	0.0156	0.0261	0.0000
3.7363	0.0052	0.0160	0.0261	0.0000
3.7500	0.0051	0.0161	0.0261	0.0000

Surface BMP-1 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0154	0.0161	0.0000	0.0269	0.0000
3.8049	0.0155	0.0169	0.0000	0.0269	0.0000
3.8599	0.0157	0.0178	0.0000	0.0277	0.0000
3.9148	0.0158	0.0186	0.0000	0.0285	0.0000
3.9698	0.0160	0.0195	0.0000	0.0293	0.0000
4.0247	0.0161	0.0204	0.0000	0.0302	0.0000
4.0797	0.0163	0.0213	0.0000	0.0310	0.0000
4.1346	0.0164	0.0222	0.0000	0.0318	0.0000
4.1896	0.0166	0.0231	0.0000	0.0326	0.0000
4.2445	0.0167	0.0240	0.0000	0.0334	0.0000
4.2995	0.0169	0.0249	0.0000	0.0342	0.0000
4.3544	0.0170	0.0259	0.0000	0.0351	0.0000
4.4093	0.0172	0.0268	0.0000	0.0359	0.0000
4.4643	0.0173	0.0278	0.0000	0.0367	0.0000
4.5192	0.0175	0.0287	0.0849	0.0375	0.0000
4.5742	0.0177	0.0297	0.6429	0.0383	0.0000
4.6291	0.0178	0.0306	1.4756	0.0392	0.0000
4.6841	0.0180	0.0316	2.5090	0.0400	0.0000
4.7390	0.0181	0.0326	3.7070	0.0408	0.0000
4.7940	0.0183	0.0336	5.0444	0.0416	0.0000
4.8489	0.0184	0.0346	6.5005	0.0424	0.0000
4.9038	0.0186	0.0356	8.0566	0.0432	0.0000
4.9588	0.0187	0.0367	9.6945	0.0441	0.0000
5.0000	0.0188	0.0374	11.396	0.0447	0.0000

Name : Surface BMP-1

Element Flows To:
Outlet 1 **Outlet 2**
BMP-1

Name : DMA-2
Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,STEEP(10-20	.04

Pervious Total	**0.04**

Impervious Land Use	**acre**
IMPERVIOUS-MOD	**0.17**
Impervious Total	**0.17**

Basin Total	**0.21**

Element Flows To:

Surface	**Interflow**	**Groundwater**
Surface BMP-1	Surface BMP-1	

ANALYSIS RESULTS

Predeveloped Landuse Totals for POC #1
Total Pervious Area:0.89
Total Impervious Area:0.71

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.62
Total Impervious Area:0.63

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	0.419082
5 year	0.623026
10 year	0.793186
25 year	0.955448

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	0.293408
5 year	0.425047
10 year	0.564908
25 year	0.641245

POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs) Predev Mit Percentage Pass/Fail

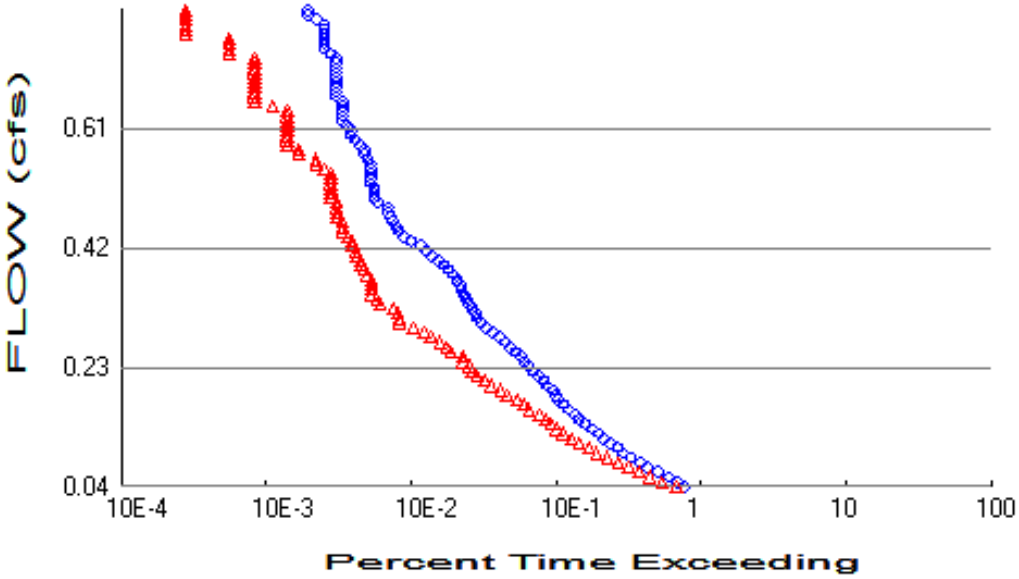
0.0419	2719	2430	89	Pass
0.0495	2489	1935	77	Pass
0.0571	2149	1584	73	Pass
0.0647	1814	1340	73	Pass
0.0723	1533	1131	73	Pass
0.0799	1364	967	70	Pass
0.0874	1171	810	69	Pass
0.0950	1037	688	66	Pass
0.1026	960	606	63	Pass
0.1102	839	521	62	Pass
0.1178	760	460	60	Pass
0.1254	706	404	57	Pass
0.1330	648	364	56	Pass
0.1406	568	331	58	Pass
0.1481	514	303	58	Pass
0.1557	487	277	56	Pass
0.1633	437	235	53	Pass
0.1709	405	214	52	Pass
0.1785	374	192	51	Pass
0.1861	359	165	45	Pass
0.1937	344	150	43	Pass
0.2013	313	127	40	Pass
0.2089	296	115	38	Pass
0.2164	269	103	38	Pass
0.2240	248	95	38	Pass
0.2316	232	91	39	Pass
0.2392	216	82	37	Pass
0.2468	204	81	39	Pass
0.2544	189	68	35	Pass
0.2620	172	63	36	Pass
0.2696	160	57	35	Pass
0.2772	147	49	33	Pass
0.2847	130	44	33	Pass
0.2923	118	37	31	Pass
0.2999	109	30	27	Pass
0.3075	104	30	28	Pass
0.3151	99	29	29	Pass
0.3227	95	27	28	Pass
0.3303	89	22	24	Pass
0.3379	86	21	24	Pass
0.3455	84	19	22	Pass
0.3530	80	19	23	Pass
0.3606	78	19	24	Pass
0.3682	74	19	25	Pass
0.3758	71	18	25	Pass
0.3834	65	17	26	Pass
0.3910	60	16	26	Pass
0.3986	55	16	29	Pass
0.4062	50	15	30	Pass
0.4138	46	15	32	Pass
0.4213	42	14	33	Pass
0.4289	36	14	38	Pass
0.4365	32	13	40	Pass
0.4441	30	12	40	Pass
0.4517	29	12	41	Pass
0.4593	27	12	44	Pass
0.4669	26	11	42	Pass

0.4745	25	11	44	Pass
0.4821	25	11	44	Pass
0.4896	21	11	52	Pass
0.4972	20	10	50	Pass
0.5048	20	10	50	Pass
0.5124	20	10	50	Pass
0.5200	19	10	52	Pass
0.5276	19	10	52	Pass
0.5352	19	10	52	Pass
0.5428	19	9	47	Pass
0.5503	19	8	42	Pass
0.5579	18	8	44	Pass
0.5655	17	6	35	Pass
0.5731	17	6	35	Pass
0.5807	16	5	31	Pass
0.5883	15	5	33	Pass
0.5959	14	5	35	Pass
0.6035	14	5	35	Pass
0.6111	13	5	38	Pass
0.6186	12	5	41	Pass
0.6262	12	5	41	Pass
0.6338	12	5	41	Pass
0.6414	12	4	33	Pass
0.6490	12	3	25	Pass
0.6566	11	3	27	Pass
0.6642	11	3	27	Pass
0.6718	11	3	27	Pass
0.6794	11	3	27	Pass
0.6869	11	3	27	Pass
0.6945	11	3	27	Pass
0.7021	11	3	27	Pass
0.7097	11	3	27	Pass
0.7173	11	3	27	Pass
0.7249	10	2	20	Pass
0.7325	9	2	22	Pass
0.7401	9	2	22	Pass
0.7477	9	2	22	Pass
0.7552	9	1	11	Pass
0.7628	9	1	11	Pass
0.7704	9	1	11	Pass
0.7780	8	1	12	Pass
0.7856	7	1	14	Pass
0.7932	7	1	14	Pass

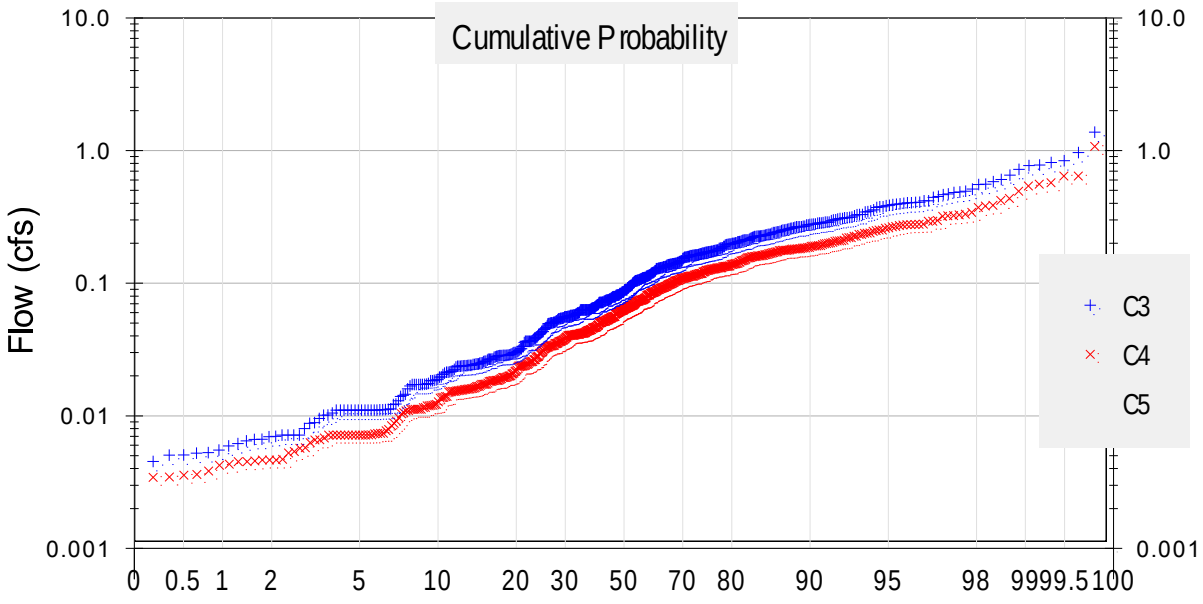
Drawdown Time Results

Perlnd and Implnd Changes

No changes have been made.



DURATION



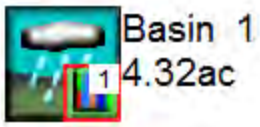
FREQUENCY

DRAWDOWN

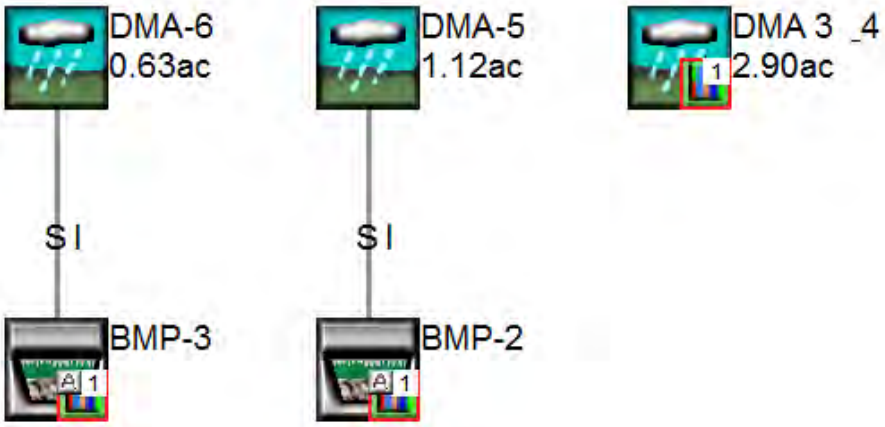
The drawdown time is less than 24 hours so no vector control plan is required.

POC-2

PRE-DEVELOPMENT



POST-DEVELOPMENT



SDHM2015
PROJECT REPORT

Project Name: POC-2
Site Name: Gildred TPM
Site Address:
City :
Report Date: 1/3/2017
Gage : RAMONA
Data Start : 10/01/1963
Data End : 09/30/2004
Precip Scale: 1.00
Version Date: 2016/03/03

Low Flow Threshold for POC 1 : 10 Percent of the 2 Year

High Flow Threshold for POC 1: 10 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.17
D,Dirt, Mod(5-10%)	.31
D,Dirt, StEEP(10-20	1.3
Pervious Total	1.78

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.25
IMPERVIOUS-MOD	2.29
Impervious Total	2.54
Basin Total	4.32

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : DMA-6
Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,FLAT(0-5%)	.3
B,Grass,STEEP(10-20	.12
Pervious Total	**0.42**

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	0.04
Impervious Total	**0.21**

Basin Total **0.63**

Element Flows To:

Surface	Interflow	Groundwater
Surface BMP-3	Surface BMP-3	

Name : DMA-5
Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,FLAT(0-5%)	.38
B,Grass,STEEP(10-20	.26
Pervious Total	**0.64**

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.18
IMPERVIOUS-MOD	0.3
Impervious Total	**0.48**

Basin Total **1.12**

Element Flows To:

Surface	Interflow	Groundwater
Surface BMP-2	Surface BMP-2	

Name : DMA 3 & 4
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.11
D,Dirt, Mod(5-10%)	.21
D,Dirt, StEEP(10-20	.82
Pervious Total	1.14

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	1.59
Impervious Total	1.76
Basin Total	2.9

Element Flows To:
Surface **Interflow** **Groundwater**

Name : BMP-3
Bottom Length: 20.00 ft.
Bottom Width: 18.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 3.0 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 8.561
Total Outflow (ac-ft.): 9.345
Percent Through Underdrain: 91.61
Discharge Structure
Riser Height: 0.5 ft.
Riser Diameter: 24 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-3 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0186	0.0000	0.0000	0.0000
0.0522	0.0185	0.0002	0.0000	0.0000
0.1044	0.0183	0.0004	0.0000	0.0000
0.1566	0.0182	0.0007	0.0000	0.0000
0.2088	0.0180	0.0009	0.0000	0.0000
0.2610	0.0179	0.0011	0.0000	0.0000
0.3132	0.0178	0.0013	0.0000	0.0000
0.3654	0.0176	0.0015	0.0000	0.0000
0.4176	0.0175	0.0017	0.0000	0.0000
0.4698	0.0173	0.0019	0.0000	0.0000
0.5220	0.0172	0.0021	0.0000	0.0000
0.5742	0.0170	0.0023	0.0000	0.0000
0.6264	0.0169	0.0025	0.0000	0.0000
0.6786	0.0167	0.0027	0.0000	0.0000
0.7308	0.0166	0.0029	0.0000	0.0000
0.7830	0.0165	0.0031	0.0000	0.0000
0.8352	0.0163	0.0034	0.0000	0.0000
0.8874	0.0162	0.0036	0.0000	0.0000
0.9396	0.0160	0.0038	0.0000	0.0000
0.9918	0.0159	0.0040	0.0000	0.0000
1.0440	0.0157	0.0043	0.0000	0.0000
1.0962	0.0156	0.0045	0.0000	0.0000
1.1484	0.0155	0.0048	0.0000	0.0000
1.2005	0.0153	0.0050	0.0000	0.0000
1.2527	0.0152	0.0052	0.0000	0.0000
1.3049	0.0150	0.0055	0.0000	0.0000
1.3571	0.0149	0.0057	0.0000	0.0000
1.4093	0.0147	0.0060	0.0000	0.0000
1.4615	0.0146	0.0063	0.0000	0.0000
1.5137	0.0144	0.0065	0.0000	0.0000
1.5659	0.0143	0.0068	0.0000	0.0000
1.6181	0.0142	0.0071	0.0000	0.0000
1.6703	0.0140	0.0073	0.0000	0.0000
1.7225	0.0139	0.0076	0.0000	0.0000
1.7747	0.0137	0.0079	0.0000	0.0000
1.8269	0.0136	0.0082	0.0000	0.0000
1.8791	0.0134	0.0085	0.0000	0.0000
1.9313	0.0133	0.0088	0.0000	0.0000
1.9835	0.0132	0.0090	0.0000	0.0000
2.0357	0.0130	0.0093	0.0000	0.0000
2.0879	0.0129	0.0096	0.0000	0.0000
2.1401	0.0127	0.0100	0.0000	0.0000
2.1923	0.0126	0.0103	0.0000	0.0000
2.2445	0.0124	0.0106	0.0000	0.0000
2.2967	0.0123	0.0109	0.0000	0.0000
2.3489	0.0121	0.0112	0.0000	0.0000
2.4011	0.0120	0.0115	0.0000	0.0000
2.4533	0.0119	0.0118	0.0000	0.0000
2.5055	0.0117	0.0122	0.0000	0.0000
2.5577	0.0116	0.0125	0.0000	0.0000
2.6099	0.0114	0.0128	0.0000	0.0000
2.6621	0.0113	0.0132	0.0000	0.0000
2.7143	0.0111	0.0135	0.0000	0.0000
2.7665	0.0110	0.0139	0.0000	0.0000
2.8187	0.0109	0.0142	0.0000	0.0000
2.8709	0.0107	0.0146	0.0000	0.0000

2.9231	0.0106	0.0149	0.0000	0.0000
2.9753	0.0104	0.0153	0.0000	0.0000
3.0275	0.0103	0.0156	0.0000	0.0000
3.0797	0.0101	0.0160	0.0000	0.0000
3.1319	0.0100	0.0163	0.0000	0.0000
3.1841	0.0098	0.0167	0.0000	0.0000
3.2363	0.0097	0.0171	0.0000	0.0000
3.2885	0.0096	0.0175	0.0000	0.0000
3.3407	0.0094	0.0178	0.0000	0.0000
3.3929	0.0093	0.0182	0.0000	0.0000
3.4451	0.0091	0.0186	0.0000	0.0000
3.4973	0.0090	0.0190	0.0000	0.0000
3.5495	0.0088	0.0194	0.0000	0.0000
3.6016	0.0087	0.0198	0.0000	0.0000
3.6538	0.0086	0.0202	0.0000	0.0000
3.7060	0.0084	0.0206	0.0000	0.0000
3.7500	0.0083	0.0209	0.0000	0.0000

Surface BMP-3 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0186	0.0209	0.0000	0.0257	0.0000
3.8022	0.0187	0.0219	0.0000	0.0257	0.0000
3.8544	0.0189	0.0229	0.0000	0.0265	0.0000
3.9066	0.0190	0.0238	0.0000	0.0272	0.0000
3.9588	0.0192	0.0248	0.0000	0.0280	0.0000
4.0110	0.0193	0.0258	0.0000	0.0287	0.0000
4.0632	0.0195	0.0269	0.0000	0.0295	0.0000
4.1154	0.0196	0.0279	0.0000	0.0302	0.0000
4.1676	0.0197	0.0289	0.0000	0.0310	0.0000
4.2198	0.0199	0.0299	0.0000	0.0317	0.0000
4.2720	0.0200	0.0310	0.0000	0.0325	0.0000
4.3242	0.0202	0.0320	0.0000	0.0332	0.0000
4.3764	0.0203	0.0331	0.0000	0.0339	0.0000
4.4286	0.0205	0.0341	0.0000	0.0347	0.0000
4.4808	0.0206	0.0352	0.0000	0.0354	0.0000
4.5330	0.0208	0.0363	0.0000	0.0362	0.0000
4.5852	0.0209	0.0374	0.0000	0.0369	0.0000
4.6374	0.0210	0.0385	0.0000	0.0377	0.0000
4.6896	0.0212	0.0396	0.0000	0.0384	0.0000
4.7418	0.0213	0.0407	0.0000	0.0392	0.0000
4.7500	0.0213	0.0409	0.0000	0.0393	0.0000

Name : Surface BMP-3

Element Flows To:
Outlet 1 **Outlet 2**
BMP-3

Name : BMP-2
Bottom Length: 30.40 ft.
Bottom Width: 25.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5

Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 18.366
Total Outflow (ac-ft.): 20.262
Percent Through Underdrain: 90.64
Discharge Structure
Riser Height: 0.5 ft.
Riser Diameter: 24 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-2 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0253	0.0000	0.0000	0.0000
0.0522	0.0252	0.0005	0.0000	0.0000
0.1044	0.0251	0.0009	0.0000	0.0000
0.1566	0.0250	0.0014	0.0000	0.0000
0.2088	0.0249	0.0019	0.0000	0.0000
0.2610	0.0248	0.0023	0.0000	0.0000
0.3132	0.0246	0.0026	0.0000	0.0000
0.3654	0.0245	0.0030	0.0000	0.0000
0.4176	0.0244	0.0034	0.0000	0.0000
0.4698	0.0243	0.0038	0.0000	0.0000
0.5220	0.0242	0.0042	0.0000	0.0000
0.5742	0.0240	0.0047	0.0000	0.0000
0.6264	0.0239	0.0051	0.0000	0.0000
0.6786	0.0238	0.0055	0.0000	0.0000
0.7308	0.0237	0.0059	0.0000	0.0000
0.7830	0.0236	0.0063	0.0000	0.0000
0.8352	0.0235	0.0067	0.0000	0.0000
0.8874	0.0233	0.0071	0.0000	0.0000
0.9396	0.0232	0.0076	0.0000	0.0000
0.9918	0.0231	0.0080	0.0000	0.0000
1.0440	0.0230	0.0084	0.0000	0.0000
1.0962	0.0229	0.0088	0.0000	0.0000
1.1484	0.0228	0.0093	0.0000	0.0000
1.2005	0.0227	0.0097	0.0000	0.0000
1.2527	0.0226	0.0101	0.0000	0.0000
1.3049	0.0224	0.0106	0.0000	0.0000
1.3571	0.0223	0.0110	0.0000	0.0000
1.4093	0.0222	0.0115	0.0000	0.0000
1.4615	0.0221	0.0119	0.0000	0.0000
1.5137	0.0220	0.0123	0.0000	0.0000
1.5659	0.0219	0.0128	0.0000	0.0000
1.6181	0.0218	0.0133	0.0000	0.0000
1.6703	0.0217	0.0137	0.0000	0.0000
1.7225	0.0215	0.0142	0.0000	0.0000

1.7747	0.0214	0.0146	0.0000	0.0000
1.8269	0.0213	0.0151	0.0000	0.0000
1.8791	0.0212	0.0155	0.0000	0.0000
1.9313	0.0211	0.0160	0.0000	0.0000
1.9835	0.0210	0.0165	0.0000	0.0000
2.0357	0.0209	0.0169	0.0000	0.0000
2.0879	0.0208	0.0174	0.0000	0.0000
2.1401	0.0207	0.0179	0.0000	0.0000
2.1923	0.0206	0.0183	0.0000	0.0000
2.2445	0.0205	0.0188	0.0000	0.0000
2.2967	0.0203	0.0193	0.0000	0.0000
2.3489	0.0202	0.0198	0.0000	0.0000
2.4011	0.0201	0.0202	0.0000	0.0000
2.4533	0.0200	0.0207	0.0000	0.0000
2.5055	0.0199	0.0212	0.0000	0.0000
2.5577	0.0198	0.0217	0.0000	0.0000
2.6099	0.0197	0.0222	0.0000	0.0000
2.6621	0.0196	0.0227	0.0000	0.0000
2.7143	0.0195	0.0232	0.0000	0.0000
2.7665	0.0194	0.0237	0.0000	0.0000
2.8187	0.0193	0.0242	0.0000	0.0000
2.8709	0.0192	0.0247	0.0000	0.0000
2.9231	0.0191	0.0252	0.0000	0.0000
2.9753	0.0190	0.0257	0.0000	0.0000
3.0275	0.0189	0.0262	0.0000	0.0000
3.0797	0.0188	0.0267	0.0000	0.0000
3.1319	0.0187	0.0273	0.0000	0.0000
3.1841	0.0186	0.0278	0.0000	0.0000
3.2363	0.0185	0.0283	0.0000	0.0000
3.2885	0.0184	0.0288	0.0000	0.0000
3.3407	0.0183	0.0294	0.0000	0.0000
3.3929	0.0182	0.0299	0.0000	0.0000
3.4451	0.0180	0.0304	0.0000	0.0000
3.4973	0.0179	0.0309	0.0000	0.0000
3.5495	0.0178	0.0315	0.0000	0.0000
3.6016	0.0177	0.0320	0.0000	0.0000
3.6538	0.0176	0.0326	0.0000	0.0000
3.7060	0.0175	0.0331	0.0000	0.0000
3.7500	0.0174	0.0336	0.0000	0.0000

Surface BMP-2 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0253	0.0336	0.0000	0.0927	0.0000
3.8022	0.0254	0.0349	0.0000	0.0927	0.0000
3.8544	0.0256	0.0362	0.0000	0.0954	0.0000
3.9066	0.0257	0.0376	0.0000	0.0981	0.0000
3.9588	0.0258	0.0389	0.0000	0.1008	0.0000
4.0110	0.0259	0.0403	0.0000	0.1035	0.0000
4.0632	0.0261	0.0416	0.0000	0.1062	0.0000
4.1154	0.0262	0.0430	0.0000	0.1088	0.0000
4.1676	0.0263	0.0444	0.0000	0.1115	0.0000
4.2198	0.0264	0.0457	0.0000	0.1142	0.0000
4.2720	0.0265	0.0471	0.0000	0.1169	0.0000
4.3242	0.0267	0.0485	0.0000	0.1196	0.0000
4.3764	0.0268	0.0499	0.0000	0.1223	0.0000
4.4286	0.0269	0.0513	0.0000	0.1250	0.0000
4.4808	0.0270	0.0527	0.0000	0.1276	0.0000

4.5330	0.0272	0.0541	0.0000	0.1303	0.0000
4.5852	0.0273	0.0555	0.0000	0.1330	0.0000
4.6374	0.0274	0.0570	0.0000	0.1357	0.0000
4.6896	0.0275	0.0584	0.0000	0.1384	0.0000
4.7418	0.0277	0.0598	0.0000	0.1411	0.0000
4.7500	0.0277	0.0601	0.0000	0.1415	0.0000

Name : Surface BMP-2

Element Flows To:

Outlet 1	**Outlet 2**
BMP-2	

ANALYSIS RESULTS

Predeveloped Landuse Totals for POC #1
Total Pervious Area:1.78
Total Impervious Area:2.54

Mitigated Landuse Totals for POC #1
Total Pervious Area:2.2
Total Impervious Area:2.45

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	1.281109
5 year	1.810535
10 year	2.255209
25 year	2.736607

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	1.052673
5 year	1.491503
10 year	2.160142
25 year	2.634432

POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	**Predev**	**Mit**	**Percentage**	**Pass/Fail**
0.1281	2916	2908	99	Pass
0.1496	2650	2540	95	Pass

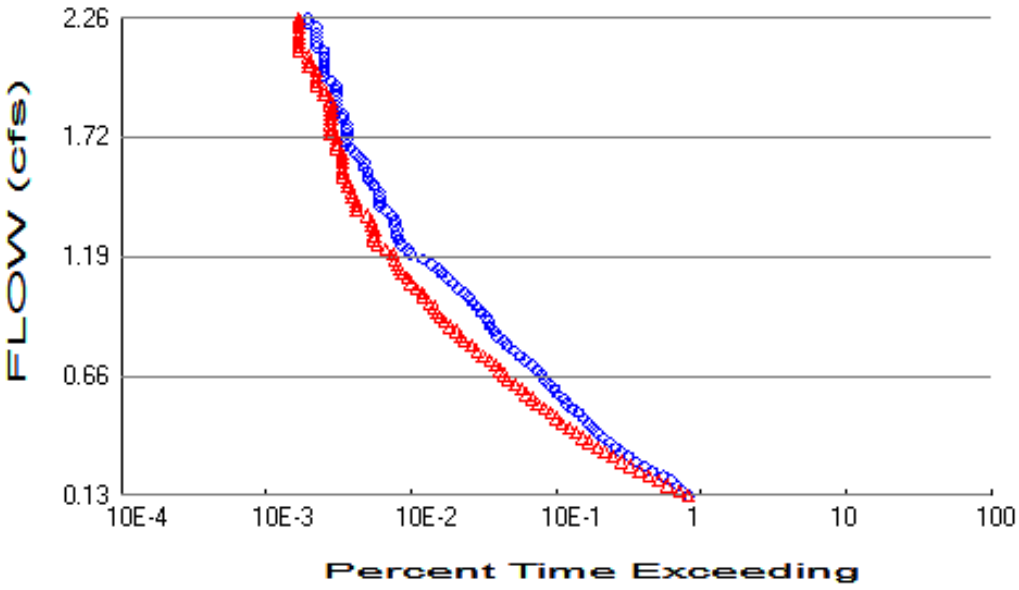
0.1711	2490	2110	84	Pass
0.1926	2254	1826	81	Pass
0.2141	1966	1578	80	Pass
0.2355	1666	1346	80	Pass
0.2570	1463	1169	79	Pass
0.2785	1289	1013	78	Pass
0.3000	1138	884	77	Pass
0.3215	1004	781	77	Pass
0.3430	927	687	74	Pass
0.3645	851	602	70	Pass
0.3859	772	549	71	Pass
0.4074	694	489	70	Pass
0.4289	642	441	68	Pass
0.4504	605	390	64	Pass
0.4719	560	358	63	Pass
0.4934	512	330	64	Pass
0.5149	462	299	64	Pass
0.5363	427	267	62	Pass
0.5578	410	244	59	Pass
0.5793	374	224	59	Pass
0.6008	351	204	58	Pass
0.6223	323	187	57	Pass
0.6438	304	166	54	Pass
0.6653	285	158	55	Pass
0.6867	265	147	55	Pass
0.7082	242	136	56	Pass
0.7297	220	125	56	Pass
0.7512	202	110	54	Pass
0.7727	184	101	54	Pass
0.7942	165	93	56	Pass
0.8157	155	82	52	Pass
0.8371	142	79	55	Pass
0.8586	135	71	52	Pass
0.8801	128	66	51	Pass
0.9016	122	61	50	Pass
0.9231	117	57	48	Pass
0.9446	109	53	48	Pass
0.9661	104	49	47	Pass
0.9875	97	46	47	Pass
1.0090	90	43	47	Pass
1.0305	84	41	48	Pass
1.0520	76	38	50	Pass
1.0735	70	36	51	Pass
1.0950	64	33	51	Pass
1.1165	58	30	51	Pass
1.1379	55	30	54	Pass
1.1594	50	28	56	Pass
1.1809	43	27	62	Pass
1.2024	35	26	74	Pass
1.2239	34	23	67	Pass
1.2454	31	21	67	Pass
1.2669	30	20	66	Pass
1.2883	29	20	68	Pass
1.3098	29	19	65	Pass
1.3313	28	19	67	Pass
1.3528	28	18	64	Pass
1.3743	27	17	62	Pass

1.3958	24	15	62	Pass
1.4173	22	15	68	Pass
1.4387	22	15	68	Pass
1.4602	22	14	63	Pass
1.4817	22	13	59	Pass
1.5032	20	13	65	Pass
1.5247	19	12	63	Pass
1.5462	18	12	66	Pass
1.5677	18	12	66	Pass
1.5891	17	12	70	Pass
1.6106	17	12	70	Pass
1.6321	16	12	75	Pass
1.6536	15	11	73	Pass
1.6751	14	11	78	Pass
1.6966	13	11	84	Pass
1.7181	13	10	76	Pass
1.7395	13	10	76	Pass
1.7610	13	10	76	Pass
1.7825	13	10	76	Pass
1.8040	12	10	83	Pass
1.8255	12	10	83	Pass
1.8470	11	10	90	Pass
1.8685	11	10	90	Pass
1.8899	11	10	90	Pass
1.9114	11	9	81	Pass
1.9329	11	9	81	Pass
1.9544	11	8	72	Pass
1.9759	10	8	80	Pass
1.9974	9	8	88	Pass
2.0189	9	7	77	Pass
2.0404	9	7	77	Pass
2.0618	9	7	77	Pass
2.0833	9	6	66	Pass
2.1048	9	6	66	Pass
2.1263	8	6	75	Pass
2.1478	8	6	75	Pass
2.1693	8	6	75	Pass
2.1908	8	6	75	Pass
2.2122	8	6	75	Pass
2.2337	7	6	85	Pass
2.2552	7	6	85	Pass

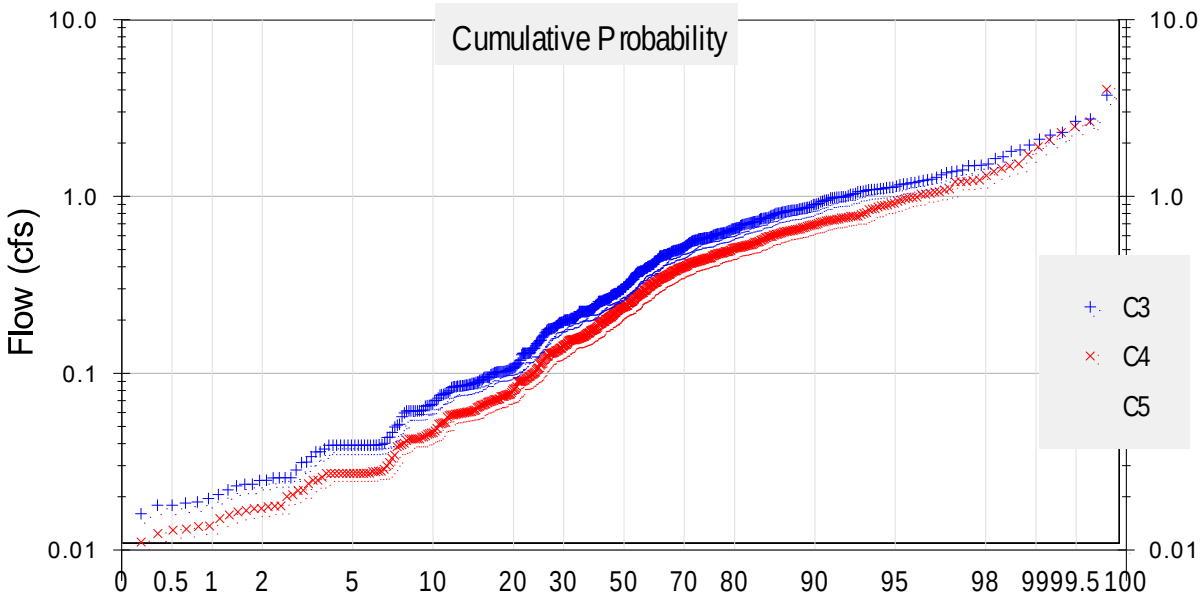
Drawdown Time Results

Perlnd and Implnd Changes

No changes have been made.



DURATION



FREQUENCY

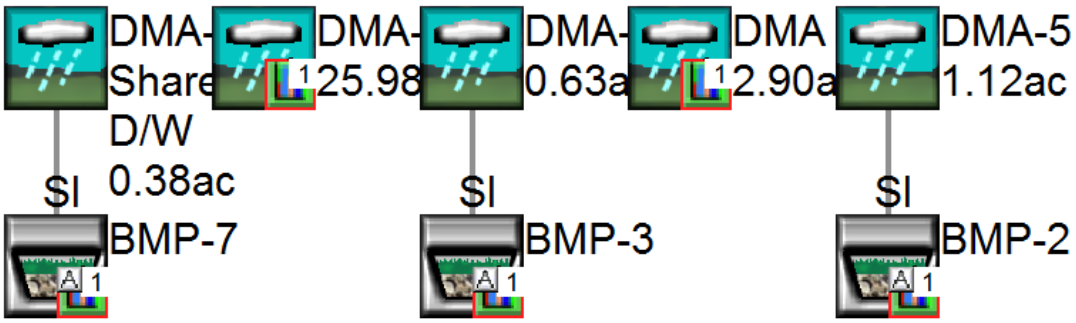
DRAWDOWN

The drawdown time is less than 24 hours so no vector control plan is required.

POC-3

PRE-DEVELOPMENT

POST-DEVELOPMENT



PROJECT REPORT

Project Name: POC-3
Site Name: Gildred TPM
Site Address:
City :
Report Date: 7/18/2017
Gage : RAMONA
Data Start : 10/01/1963
Data End : 09/30/2004
Precip Scale: 1.00
Version Date: 2016/03/03

Low Flow Threshold for POC 1 : 10 Percent of the 2 Year

High Flow Threshold for POC 1: 10 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.68
D,Dirt, Mod(5-10%)	1.09
D,Dirt, StEEP(10-20	14.72
Pervious Total	16.49

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.25
IMPERVIOUS-MOD	9.33
Impervious Total	9.58
Basin Total	26.07

Element Flows To:
Surface **Interflow** **Groundwater**

Name : From POC-2
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, StEEP(10-20	1.3
D,Dirt, Mod(5-10%)	.31
D,Dirt, Flat(0-5%)	.17
Pervious Total	1.78

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.25
IMPERVIOUS-MOD	2.29
Impervious Total	2.54
Basin Total	4.32

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : DMA-12 Shared D/W
Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,STEEP(10-20	.2
Pervious Total	0.2

Impervious Land Use	acre
IMPERVIOUS-MOD	0.18
Impervious Total	0.18
Basin Total	0.38

Element Flows To:

Surface	Interflow	Groundwater
Surface BMP-7	Surface BMP-7	

Name : DMA-7
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
D,Dirt, Mod(5-10%)	1.04
D,Dirt, StEEP(10-20	14.49
D,Dirt, Flat(0-5%)	.6
Pervious Total	16.13

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.25
IMPERVIOUS-MOD	9.6
Impervious Total	9.85
Basin Total	25.98

Element Flows To:
Surface **Interflow** **Groundwater**

Name : BMP-7
Bottom Length: 31.00 ft.
Bottom Width: 35.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Infiltration On
Infiltration rate: 0.43
Infiltration safety factor: 1
Total Volume Infiltrated (ac-ft.): 7.293
Total Volume Through Riser (ac-ft.): 0.064
Total Volume Through Facility (ac-ft.): 7.889
Percent Infiltrated: 92.45
Total Precip Applied to Facility: 0.994
Total Evap From Facility: 1.117
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 0.532
Total Outflow (ac-ft.): 7.889
Percent Through Underdrain: 6.74
Discharge Structure
Riser Height: 0.5 ft.
Riser Diameter: 36 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-7 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0409	0.0000	0.0000	0.0000
0.0522	0.0407	0.0007	0.0000	0.0000
0.1044	0.0405	0.0013	0.0000	0.0000
0.1566	0.0403	0.0020	0.0000	0.0000
0.2088	0.0401	0.0027	0.0000	0.0000
0.2610	0.0398	0.0032	0.0000	0.0002
0.3132	0.0396	0.0038	0.0000	0.0005
0.3654	0.0394	0.0044	0.0000	0.0008
0.4176	0.0392	0.0050	0.0000	0.0014
0.4698	0.0389	0.0056	0.0000	0.0017
0.5220	0.0387	0.0062	0.0000	0.0027
0.5742	0.0385	0.0068	0.0000	0.0033
0.6264	0.0383	0.0074	0.0000	0.0046
0.6786	0.0381	0.0080	0.0000	0.0054
0.7308	0.0378	0.0086	0.0000	0.0072
0.7830	0.0376	0.0092	0.0000	0.0083
0.8352	0.0374	0.0098	0.0000	0.0106
0.8874	0.0372	0.0104	0.0000	0.0108
0.9396	0.0369	0.0111	0.0000	0.0108
0.9918	0.0367	0.0117	0.0000	0.0108
1.0440	0.0365	0.0123	0.0000	0.0108
1.0962	0.0363	0.0130	0.0000	0.0108
1.1484	0.0361	0.0136	0.0000	0.0108
1.2005	0.0358	0.0143	0.0000	0.0108
1.2527	0.0356	0.0150	0.0000	0.0108
1.3049	0.0354	0.0156	0.0000	0.0108
1.3571	0.0352	0.0163	0.0000	0.0108
1.4093	0.0349	0.0170	0.0000	0.0108
1.4615	0.0347	0.0177	0.0000	0.0108
1.5137	0.0345	0.0183	0.0000	0.0108
1.5659	0.0343	0.0190	0.0000	0.0108
1.6181	0.0340	0.0197	0.0000	0.0108
1.6703	0.0338	0.0204	0.0000	0.0108
1.7225	0.0336	0.0211	0.0000	0.0108
1.7747	0.0334	0.0218	0.0000	0.0108
1.8269	0.0332	0.0225	0.0000	0.0108
1.8791	0.0329	0.0232	0.0000	0.0108
1.9313	0.0327	0.0240	0.0000	0.0108
1.9835	0.0325	0.0247	0.0000	0.0108
2.0357	0.0323	0.0254	0.0006	0.0108
2.0879	0.0320	0.0261	0.0009	0.0108
2.1401	0.0318	0.0269	0.0027	0.0108
2.1923	0.0316	0.0276	0.0037	0.0108
2.2445	0.0314	0.0284	0.0046	0.0108
2.2967	0.0311	0.0291	0.0064	0.0108
2.3489	0.0309	0.0299	0.0084	0.0108
2.4011	0.0307	0.0306	0.0094	0.0108
2.4533	0.0305	0.0314	0.0108	0.0108
2.5055	0.0303	0.0322	0.0122	0.0108
2.5577	0.0300	0.0329	0.0136	0.0108
2.6099	0.0298	0.0337	0.0149	0.0108

2.6621	0.0296	0.0345	0.0157	0.0108
2.7143	0.0294	0.0353	0.0167	0.0108
2.7665	0.0291	0.0361	0.0177	0.0108
2.8187	0.0289	0.0369	0.0187	0.0108
2.8709	0.0287	0.0377	0.0197	0.0108
2.9231	0.0285	0.0385	0.0206	0.0108
2.9753	0.0283	0.0393	0.0216	0.0108
3.0275	0.0280	0.0401	0.0224	0.0108
3.0797	0.0278	0.0409	0.0233	0.0108
3.1319	0.0276	0.0418	0.0241	0.0108
3.1841	0.0274	0.0426	0.0249	0.0108
3.2363	0.0271	0.0434	0.0257	0.0108
3.2885	0.0269	0.0443	0.0264	0.0108
3.3407	0.0267	0.0451	0.0271	0.0108
3.3929	0.0265	0.0460	0.0278	0.0108
3.4451	0.0262	0.0468	0.0285	0.0108
3.4973	0.0260	0.0477	0.0292	0.0108
3.5495	0.0258	0.0485	0.0299	0.0108
3.6016	0.0256	0.0494	0.0305	0.0108
3.6538	0.0254	0.0503	0.0312	0.0108
3.7060	0.0251	0.0512	0.0318	0.0108
3.7500	0.0249	0.0519	0.0489	0.0108

Surface BMP-7 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0409	0.0519	0.0000	0.1324	0.0000
3.8022	0.0411	0.0541	0.0000	0.1324	0.0000
3.8544	0.0414	0.0562	0.0000	0.1362	0.0000
3.9066	0.0416	0.0584	0.0000	0.1400	0.0000
3.9588	0.0418	0.0606	0.0000	0.1439	0.0000
4.0110	0.0420	0.0627	0.0000	0.1477	0.0000
4.0632	0.0423	0.0649	0.0000	0.1516	0.0000
4.1154	0.0425	0.0672	0.0000	0.1554	0.0000
4.1676	0.0427	0.0694	0.0000	0.1592	0.0000
4.2198	0.0429	0.0716	0.0000	0.1631	0.0000
4.2720	0.0431	0.0739	0.1038	0.1669	0.0000
4.3242	0.0434	0.0761	0.6429	0.1707	0.0000
4.3764	0.0436	0.0784	1.4288	0.1746	0.0000
4.4286	0.0438	0.0807	2.3978	0.1784	0.0000
4.4808	0.0440	0.0830	3.5179	0.1822	0.0000
4.5330	0.0443	0.0853	4.7668	0.1861	0.0000
4.5852	0.0445	0.0876	6.1264	0.1899	0.0000
4.6374	0.0447	0.0899	7.5804	0.1937	0.0000
4.6896	0.0449	0.0923	9.1131	0.1976	0.0000
4.7418	0.0452	0.0946	10.709	0.2014	0.0000
4.7500	0.0452	0.0950	12.352	0.2020	0.0000

Name : Surface BMP-7

Element Flows To:

Outlet 1	Outlet 2
BMP-7	

Name : DMA-6

Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,FLAT(0-5%)	.3
B,Grass,STEEP(10-20	.12
Pervious Total	**0.42**

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	0.04
Impervious Total	**0.21**
Basin Total	**0.63**

Element Flows To:

Surface	Interflow	Groundwater
Surface BMP-3	Surface BMP-3	

Name : DMA 3 & 4
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.11
D,Dirt, Mod(5-10%)	.21
D,Dirt, StEEP(10-20	.82
Pervious Total	**1.14**

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	1.59
Impervious Total	**1.76**
Basin Total	**2.9**

Element Flows To:

Surface	Interflow	Groundwater

Name : BMP-3

Bottom Length: 20.00 ft.
Bottom Width: 18.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 8.841
Total Outflow (ac-ft.): 9.269
Percent Through Underdrain: 95.38
Discharge Structure
Riser Height: 0.5 ft.
Riser Diameter: 24 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-3 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0186	0.0000	0.0000	0.0000
0.0522	0.0185	0.0002	0.0000	0.0000
0.1044	0.0183	0.0004	0.0000	0.0000
0.1566	0.0182	0.0007	0.0000	0.0000
0.2088	0.0180	0.0009	0.0000	0.0000
0.2610	0.0179	0.0011	0.0000	0.0000
0.3132	0.0178	0.0013	0.0000	0.0000
0.3654	0.0176	0.0015	0.0000	0.0000
0.4176	0.0175	0.0017	0.0000	0.0000
0.4698	0.0173	0.0019	0.0000	0.0000
0.5220	0.0172	0.0021	0.0000	0.0000
0.5742	0.0170	0.0023	0.0000	0.0000
0.6264	0.0169	0.0026	0.0000	0.0000
0.6786	0.0167	0.0028	0.0000	0.0000
0.7308	0.0166	0.0030	0.0000	0.0000
0.7830	0.0165	0.0032	0.0000	0.0000
0.8352	0.0163	0.0035	0.0000	0.0000
0.8874	0.0162	0.0037	0.0000	0.0000
0.9396	0.0160	0.0039	0.0000	0.0000
0.9918	0.0159	0.0042	0.0000	0.0000
1.0440	0.0157	0.0044	0.0000	0.0000
1.0962	0.0156	0.0047	0.0000	0.0000
1.1484	0.0155	0.0049	0.0000	0.0000
1.2005	0.0153	0.0052	0.0000	0.0000
1.2527	0.0152	0.0054	0.0000	0.0000
1.3049	0.0150	0.0057	0.0000	0.0000
1.3571	0.0149	0.0059	0.0000	0.0000
1.4093	0.0147	0.0062	0.0000	0.0000
1.4615	0.0146	0.0065	0.0000	0.0000

1.5137	0.0144	0.0067	0.0000	0.0000
1.5659	0.0143	0.0070	0.0000	0.0000
1.6181	0.0142	0.0073	0.0000	0.0000
1.6703	0.0140	0.0076	0.0000	0.0000
1.7225	0.0139	0.0078	0.0000	0.0000
1.7747	0.0137	0.0081	0.0000	0.0000
1.8269	0.0136	0.0084	0.0000	0.0000
1.8791	0.0134	0.0087	0.0000	0.0000
1.9313	0.0133	0.0090	0.0000	0.0000
1.9835	0.0132	0.0093	0.0000	0.0000
2.0357	0.0130	0.0096	0.0000	0.0000
2.0879	0.0129	0.0099	0.0000	0.0000
2.1401	0.0127	0.0102	0.0000	0.0000
2.1923	0.0126	0.0105	0.0000	0.0000
2.2445	0.0124	0.0108	0.0000	0.0000
2.2967	0.0123	0.0111	0.0000	0.0000
2.3489	0.0121	0.0115	0.0000	0.0000
2.4011	0.0120	0.0118	0.0000	0.0000
2.4533	0.0119	0.0121	0.0000	0.0000
2.5055	0.0117	0.0124	0.0000	0.0000
2.5577	0.0116	0.0128	0.0000	0.0000
2.6099	0.0114	0.0131	0.0000	0.0000
2.6621	0.0113	0.0134	0.0000	0.0000
2.7143	0.0111	0.0138	0.0000	0.0000
2.7665	0.0110	0.0141	0.0000	0.0000
2.8187	0.0109	0.0145	0.0000	0.0000
2.8709	0.0107	0.0148	0.0000	0.0000
2.9231	0.0106	0.0152	0.0000	0.0000
2.9753	0.0104	0.0155	0.0000	0.0000
3.0275	0.0103	0.0159	0.0000	0.0000
3.0797	0.0101	0.0162	0.0000	0.0000
3.1319	0.0100	0.0166	0.0000	0.0000
3.1841	0.0098	0.0170	0.0000	0.0000
3.2363	0.0097	0.0173	0.0000	0.0000
3.2885	0.0096	0.0177	0.0000	0.0000
3.3407	0.0094	0.0181	0.0000	0.0000
3.3929	0.0093	0.0185	0.0000	0.0000
3.4451	0.0091	0.0188	0.0000	0.0000
3.4973	0.0090	0.0192	0.0000	0.0000
3.5495	0.0088	0.0196	0.0000	0.0000
3.6016	0.0087	0.0200	0.0000	0.0000
3.6538	0.0086	0.0204	0.0000	0.0000
3.7060	0.0084	0.0208	0.0000	0.0000
3.7500	0.0083	0.0211	0.0000	0.0000

Surface BMP-3 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0186	0.0211	0.0000	0.0439	0.0000
3.8022	0.0187	0.0221	0.0000	0.0439	0.0000
3.8544	0.0189	0.0231	0.0000	0.0452	0.0000
3.9066	0.0190	0.0241	0.0000	0.0465	0.0000
3.9588	0.0192	0.0251	0.0000	0.0477	0.0000
4.0110	0.0193	0.0261	0.0000	0.0490	0.0000
4.0632	0.0195	0.0271	0.0000	0.0503	0.0000
4.1154	0.0196	0.0281	0.0000	0.0516	0.0000
4.1676	0.0197	0.0291	0.0000	0.0528	0.0000
4.2198	0.0199	0.0302	0.0000	0.0541	0.0000

4.2720	0.0200	0.0312	0.0000	0.0554	0.0000
4.3242	0.0202	0.0323	0.0000	0.0566	0.0000
4.3764	0.0203	0.0333	0.0000	0.0579	0.0000
4.4286	0.0205	0.0344	0.0000	0.0592	0.0000
4.4808	0.0206	0.0355	0.0000	0.0605	0.0000
4.5330	0.0208	0.0365	0.0000	0.0617	0.0000
4.5852	0.0209	0.0376	0.0000	0.0630	0.0000
4.6374	0.0210	0.0387	0.0000	0.0643	0.0000
4.6896	0.0212	0.0398	0.0000	0.0655	0.0000
4.7418	0.0213	0.0409	0.0000	0.0668	0.0000
4.7500	0.0213	0.0411	0.0000	0.0670	0.0000

Name : Surface BMP-3

Element Flows To:
Outlet 1 **Outlet 2**
BMP-3

Name : DMA-5
Bypass: No

GroundWater: No

Pervious Land Use	**acre**
B,Grass,STEEP(10-20	**.26**
B,Grass,FLAT(0-5%)	**.39**
Pervious Total	**0.65**

Impervious Land Use	**acre**
IMPERVIOUS-FLAT	**0.17**
IMPERVIOUS-MOD	**0.3**
Impervious Total	**0.47**
Basin Total	**1.12**

Element Flows To:
Surface **Interflow** **Groundwater**
Surface BMP-2 Surface BMP-2

Name : BMP-2
Bottom Length: 30.40 ft.
Bottom Width: 25.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2

Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 18.463
Total Outflow (ac-ft.): 19.921
Percent Through Underdrain: 92.68
Discharge Structure
Riser Height: 0.75 ft.
Riser Diameter: 24 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-2 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0240	0.0000	0.0000	0.0000
0.0549	0.0240	0.0005	0.0000	0.0000
0.1099	0.0239	0.0010	0.0000	0.0000
0.1648	0.0238	0.0015	0.0000	0.0000
0.2198	0.0237	0.0020	0.0000	0.0000
0.2747	0.0236	0.0024	0.0000	0.0000
0.3297	0.0235	0.0028	0.0000	0.0000
0.3846	0.0234	0.0032	0.0000	0.0000
0.4396	0.0233	0.0036	0.0000	0.0000
0.4945	0.0232	0.0040	0.0000	0.0000
0.5495	0.0231	0.0045	0.0000	0.0000
0.6044	0.0230	0.0049	0.0000	0.0000
0.6593	0.0229	0.0053	0.0000	0.0000
0.7143	0.0228	0.0057	0.0000	0.0000
0.7692	0.0227	0.0062	0.0000	0.0000
0.8242	0.0226	0.0066	0.0000	0.0000
0.8791	0.0225	0.0070	0.0000	0.0000
0.9341	0.0224	0.0075	0.0000	0.0000
0.9890	0.0223	0.0079	0.0000	0.0000
1.0440	0.0222	0.0084	0.0000	0.0000
1.0989	0.0221	0.0088	0.0000	0.0000
1.1538	0.0220	0.0092	0.0000	0.0000
1.2088	0.0219	0.0097	0.0000	0.0000
1.2637	0.0218	0.0101	0.0000	0.0000
1.3187	0.0217	0.0106	0.0000	0.0000
1.3736	0.0216	0.0110	0.0000	0.0000
1.4286	0.0215	0.0115	0.0000	0.0000
1.4835	0.0214	0.0120	0.0000	0.0000
1.5385	0.0213	0.0124	0.0000	0.0000
1.5934	0.0212	0.0129	0.0000	0.0000
1.6484	0.0211	0.0134	0.0000	0.0000
1.7033	0.0210	0.0138	0.0000	0.0000
1.7582	0.0209	0.0143	0.0000	0.0000
1.8132	0.0208	0.0148	0.0000	0.0000
1.8681	0.0207	0.0152	0.0000	0.0000
1.9231	0.0206	0.0157	0.0000	0.0000

1.9780	0.0205	0.0162	0.0000	0.0000
2.0330	0.0204	0.0166	0.0000	0.0000
2.0879	0.0203	0.0171	0.0000	0.0000
2.1429	0.0202	0.0176	0.0000	0.0000
2.1978	0.0201	0.0181	0.0000	0.0000
2.2527	0.0200	0.0186	0.0000	0.0000
2.3077	0.0199	0.0190	0.0000	0.0000
2.3626	0.0198	0.0195	0.0000	0.0000
2.4176	0.0197	0.0200	0.0000	0.0000
2.4725	0.0196	0.0205	0.0000	0.0000
2.5275	0.0196	0.0210	0.0000	0.0000
2.5824	0.0195	0.0215	0.0000	0.0000
2.6374	0.0194	0.0220	0.0000	0.0000
2.6923	0.0193	0.0225	0.0000	0.0000
2.7473	0.0192	0.0230	0.0000	0.0000
2.8022	0.0191	0.0235	0.0000	0.0000
2.8571	0.0190	0.0240	0.0000	0.0000
2.9121	0.0189	0.0245	0.0000	0.0000
2.9670	0.0188	0.0251	0.0000	0.0000
3.0220	0.0187	0.0256	0.0000	0.0000
3.0769	0.0186	0.0261	0.0000	0.0000
3.1319	0.0185	0.0266	0.0000	0.0000
3.1868	0.0184	0.0271	0.0000	0.0000
3.2418	0.0183	0.0277	0.0000	0.0000
3.2967	0.0183	0.0282	0.0000	0.0000
3.3516	0.0182	0.0287	0.0000	0.0000
3.4066	0.0181	0.0292	0.0000	0.0000
3.4615	0.0180	0.0298	0.0000	0.0000
3.5165	0.0179	0.0303	0.0000	0.0000
3.5714	0.0178	0.0309	0.0000	0.0000
3.6264	0.0177	0.0314	0.0000	0.0000
3.6813	0.0176	0.0319	0.0000	0.0000
3.7363	0.0175	0.0325	0.0000	0.0000
3.7500	0.0174	0.0326	0.0000	0.0000

Surface BMP-2 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0240	0.0326	0.0000	0.0929	0.0000
3.8049	0.0241	0.0339	0.0000	0.0929	0.0000
3.8599	0.0242	0.0353	0.0000	0.0957	0.0000
3.9148	0.0243	0.0366	0.0000	0.0985	0.0000
3.9698	0.0244	0.0379	0.0000	0.1013	0.0000
4.0247	0.0245	0.0393	0.0000	0.1042	0.0000
4.0797	0.0246	0.0406	0.0000	0.1070	0.0000
4.1346	0.0247	0.0420	0.0000	0.1098	0.0000
4.1896	0.0248	0.0434	0.0000	0.1127	0.0000
4.2445	0.0249	0.0447	0.0000	0.1155	0.0000
4.2995	0.0251	0.0461	0.0000	0.1183	0.0000
4.3544	0.0252	0.0475	0.0000	0.1211	0.0000
4.4093	0.0253	0.0489	0.0000	0.1240	0.0000
4.4643	0.0254	0.0503	0.0000	0.1268	0.0000
4.5192	0.0255	0.0517	0.0000	0.1296	0.0000
4.5742	0.0256	0.0531	0.0000	0.1324	0.0000
4.6291	0.0257	0.0545	0.0000	0.1353	0.0000
4.6841	0.0258	0.0559	0.0000	0.1381	0.0000
4.7390	0.0259	0.0573	0.0000	0.1409	0.0000
4.7940	0.0260	0.0587	0.0000	0.1438	0.0000

4.8489	0.0261	0.0602	0.0000	0.1466	0.0000
4.9038	0.0262	0.0616	0.0000	0.1494	0.0000
4.9588	0.0263	0.0630	0.0000	0.1522	0.0000
5.0000	0.0264	0.0641	0.0000	0.1544	0.0000

Name : Surface BMP-2

Element Flows To:

Outlet 1	**Outlet 2**
BMP-2	

ANALYSIS RESULTS

Predeveloped Landuse Totals for POC #1
Total Pervious Area:18.27
Total Impervious Area:12.12

Mitigated Landuse Totals for POC #1
Total Pervious Area:18.54
Total Impervious Area:12.47

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	7.609284
5 year	11.386265
10 year	14.722354
25 year	17.846206

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	7.333112
5 year	10.942384
10 year	14.174837
25 year	17.247778

POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	**Predev**	**Mit**	**Percentage**	**Pass/Fail**
0.7609	2625	2625	100	Pass
0.9020	2355	2330	98	Pass
1.0430	2005	1928	96	Pass
1.1840	1659	1627	98	Pass

1.3250	1416	1395	98	Pass
1.4661	1210	1199	99	Pass
1.6071	1080	1068	98	Pass
1.7481	976	952	97	Pass
1.8891	852	834	97	Pass
2.0301	764	749	98	Pass
2.1712	712	689	96	Pass
2.3122	642	616	95	Pass
2.4532	565	542	95	Pass
2.5942	517	507	98	Pass
2.7353	480	453	94	Pass
2.8763	430	408	94	Pass
3.0173	392	381	97	Pass
3.1583	368	361	98	Pass
3.2994	356	338	94	Pass
3.4404	329	313	95	Pass
3.5814	308	289	93	Pass
3.7224	285	270	94	Pass
3.8635	261	247	94	Pass
4.0045	243	232	95	Pass
4.1455	226	215	95	Pass
4.2865	214	200	93	Pass
4.4276	200	189	94	Pass
4.5686	187	168	89	Pass
4.7096	168	155	92	Pass
4.8506	155	144	92	Pass
4.9917	144	131	90	Pass
5.1327	130	114	87	Pass
5.2737	113	109	96	Pass
5.4147	109	102	93	Pass
5.5558	102	93	91	Pass
5.6968	95	91	95	Pass
5.8378	91	87	95	Pass
5.9788	87	86	98	Pass
6.1199	87	83	95	Pass
6.2609	84	79	94	Pass
6.4019	81	77	95	Pass
6.5429	78	73	93	Pass
6.6840	75	68	90	Pass
6.8250	72	62	86	Pass
6.9660	66	57	86	Pass
7.1070	62	54	87	Pass
7.2481	56	48	85	Pass
7.3891	53	44	83	Pass
7.5301	48	43	89	Pass
7.6711	43	39	90	Pass
7.8122	41	32	78	Pass
7.9532	36	31	86	Pass
8.0942	32	29	90	Pass
8.2352	31	27	87	Pass
8.3763	29	26	89	Pass
8.5173	27	22	81	Pass
8.6583	26	19	73	Pass
8.7993	21	19	90	Pass
8.9403	20	19	95	Pass
9.0814	19	19	100	Pass
9.2224	19	19	100	Pass

9.3634	19	19	100	Pass
9.5044	19	19	100	Pass
9.6455	19	19	100	Pass
9.7865	19	19	100	Pass
9.9275	19	19	100	Pass
10.0685	19	18	94	Pass
10.2096	19	16	84	Pass
10.3506	18	16	88	Pass
10.4916	17	15	88	Pass
10.6326	16	14	87	Pass
10.7737	16	14	87	Pass
10.9147	15	13	86	Pass
11.0557	14	12	85	Pass
11.1967	13	12	92	Pass
11.3378	13	12	92	Pass
11.4788	12	12	100	Pass
11.6198	12	12	100	Pass
11.7608	12	11	91	Pass
11.9019	12	11	91	Pass
12.0429	12	11	91	Pass
12.1839	11	11	100	Pass
12.3249	11	11	100	Pass
12.4660	11	11	100	Pass
12.6070	11	11	100	Pass
12.7480	11	11	100	Pass
12.8890	11	11	100	Pass
13.0301	11	10	90	Pass
13.1711	11	9	81	Pass
13.3121	11	9	81	Pass
13.4531	9	8	88	Pass
13.5942	9	8	88	Pass
13.7352	8	7	87	Pass
13.8762	8	7	87	Pass
14.0172	8	7	87	Pass
14.1583	8	7	87	Pass
14.2993	7	7	100	Pass
14.4403	7	7	100	Pass
14.5813	7	7	100	Pass
14.7224	7	7	100	Pass

Drawdown Time Results

Perlnd and Implnd Changes

No changes have been made.

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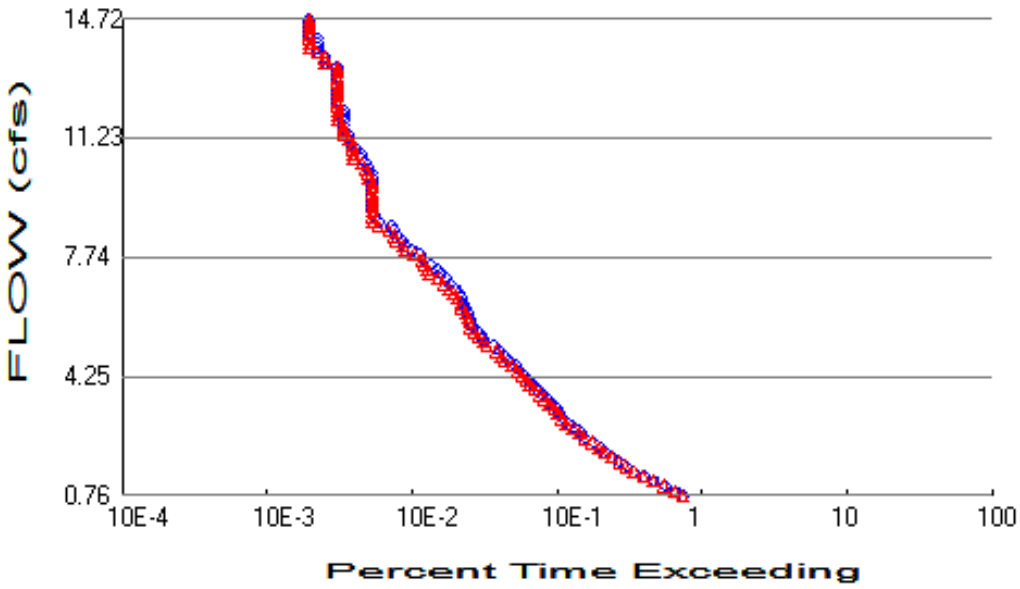
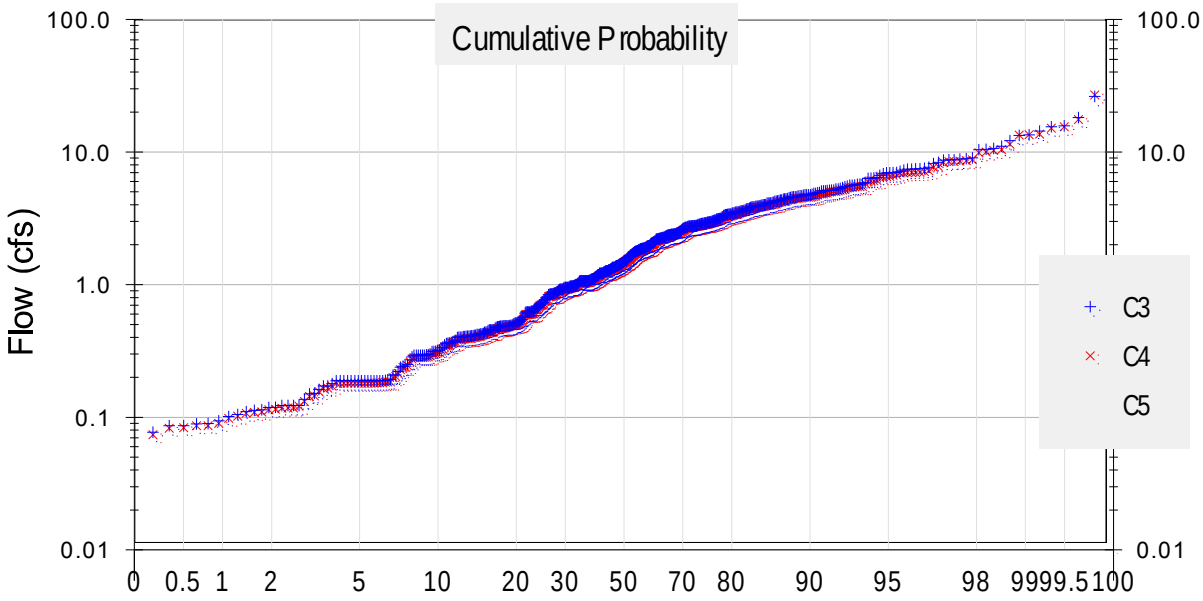
representatives have been advised of the possibility of such damages. Software Copyright © by : Clear Creek Solutions, Inc. 2005-2017; All Rights Reserved.



DURATION



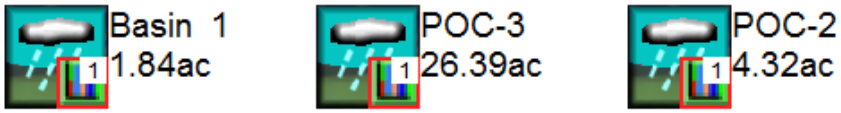
FREQUENCY

DRAWDOWN

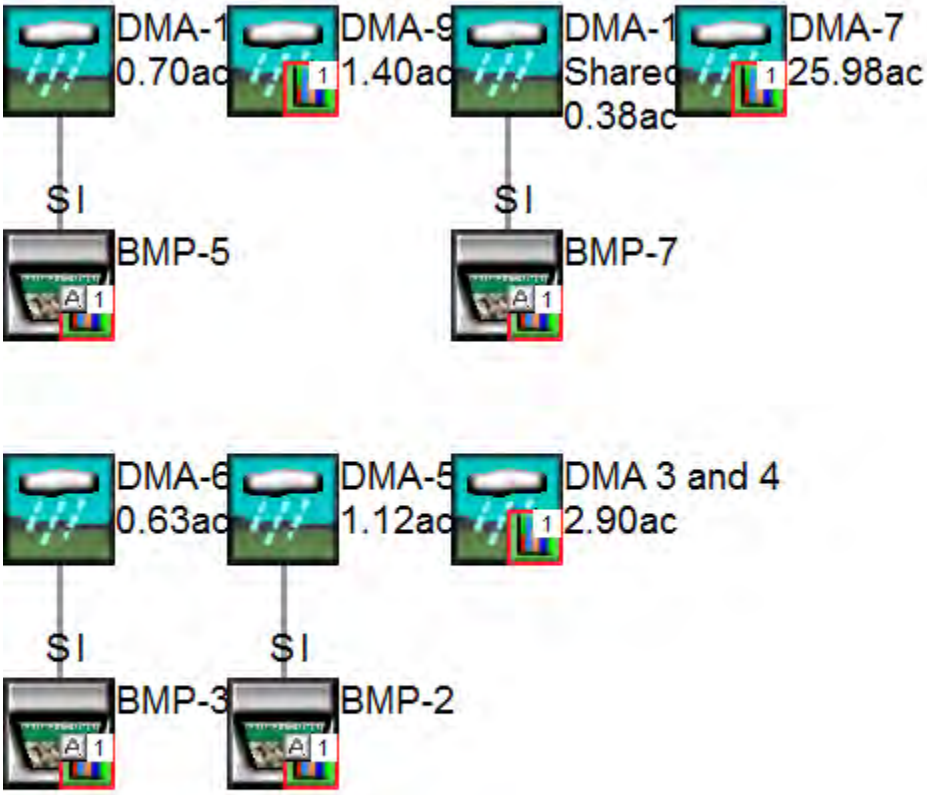
The drawdown time is less than 24 hours so no vector control plan is required.

POC-4

PRE-DEVELOPMENT



POST-DEVELOPMENT



PROJECT REPORT

Project Name: POC-4
Site Name: Gildred TPM
Site Address:
City :
Report Date: 1/3/2017
Gage : RAMONA
Data Start : 10/01/1963
Data End : 09/30/2004
Precip Scale: 1.00
Version Date: 2016/03/03

Low Flow Threshold for POC 1 : 10 Percent of the 2 Year

High Flow Threshold for POC 1: 10 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.42
D,Dirt, Mod(5-10%)	.55
D,Dirt, StEEP(10-20	.65
Pervious Total	1.62

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.01
IMPERVIOUS-MOD	0.21
Impervious Total	0.22
Basin Total	1.84

Element Flows To:
Surface **Interflow** **Groundwater**

Name : POC-3
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.68
D,Dirt, Mod(5-10%)	1.41
D,Dirt, StEEP(10-20	14.72
Pervious Total	16.81

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.25
IMPERVIOUS-MOD	9.33
Impervious Total	9.58
Basin Total	26.39

Element Flows To:
Surface **Interflow** **Groundwater**

Name : POC-2
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, StEEP(10-20	1.3
D,Dirt, Mod(5-10%)	.31
D,Dirt, Flat(0-5%)	.17
Pervious Total	1.78

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.25
IMPERVIOUS-MOD	2.29
Impervious Total	2.54
Basin Total	4.32

Element Flows To:
Surface **Interflow** **Groundwater**

MITIGATED LAND USE

Name : DMA-10

Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,FLAT(0-5%)	.31
B,Grass,STEEP(10-20	.05
Pervious Total	**0.36**

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	0.17
Impervious Total	**0.34**
Basin Total	**0.7**

Element Flows To:

Surface	Interflow	Groundwater
Surface BMP-5	Surface BMP-5	

Name : DMA-9
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.44
D,Dirt, Mod(5-10%)	.52
D,Dirt, StEEP(10-20	.44
Pervious Total	**1.4**

Impervious Land Use	acre
Impervious Total	**0**
Basin Total	**1.4**

Element Flows To:

Surface	Interflow	Groundwater

Name : BMP-5
Bottom Length: 25.00 ft.
Bottom Width: 20.00 ft.

Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 13.249
Total Outflow (ac-ft.): 13.707
Percent Through Underdrain: 96.66
Discharge Structure
Riser Height: 0.67 ft.
Riser Diameter: 36 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-5 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0244	0.0000	0.0000	0.0000
0.0541	0.0243	0.0003	0.0000	0.0000
0.1081	0.0241	0.0006	0.0000	0.0000
0.1622	0.0240	0.0010	0.0000	0.0000
0.2163	0.0238	0.0013	0.0000	0.0000
0.2703	0.0236	0.0016	0.0000	0.0000
0.3244	0.0234	0.0019	0.0000	0.0000
0.3785	0.0232	0.0021	0.0000	0.0000
0.4325	0.0230	0.0024	0.0000	0.0000
0.4866	0.0228	0.0027	0.0000	0.0000
0.5407	0.0226	0.0030	0.0000	0.0000
0.5947	0.0225	0.0033	0.0000	0.0000
0.6488	0.0223	0.0037	0.0000	0.0000
0.7029	0.0221	0.0040	0.0000	0.0000
0.7569	0.0219	0.0043	0.0000	0.0000
0.8110	0.0217	0.0046	0.0000	0.0000
0.8651	0.0215	0.0049	0.0000	0.0000
0.9191	0.0213	0.0053	0.0000	0.0000
0.9732	0.0212	0.0056	0.0000	0.0000
1.0273	0.0210	0.0059	0.0000	0.0000
1.0813	0.0208	0.0063	0.0000	0.0000
1.1354	0.0206	0.0066	0.0000	0.0000
1.1895	0.0204	0.0070	0.0000	0.0000
1.2435	0.0202	0.0073	0.0000	0.0000
1.2976	0.0200	0.0077	0.0000	0.0000
1.3516	0.0199	0.0081	0.0000	0.0000
1.4057	0.0197	0.0084	0.0000	0.0000
1.4598	0.0195	0.0088	0.0000	0.0000
1.5138	0.0193	0.0092	0.0000	0.0000
1.5679	0.0191	0.0096	0.0000	0.0000
1.6220	0.0189	0.0099	0.0000	0.0000

1.6760	0.0187	0.0103	0.0000	0.0000
1.7301	0.0186	0.0107	0.0000	0.0000
1.7842	0.0184	0.0111	0.0000	0.0000
1.8382	0.0182	0.0115	0.0000	0.0000
1.8923	0.0180	0.0119	0.0000	0.0000
1.9464	0.0178	0.0123	0.0000	0.0000
2.0004	0.0176	0.0127	0.0000	0.0000
2.0545	0.0174	0.0131	0.0000	0.0000
2.1086	0.0172	0.0136	0.0000	0.0000
2.1626	0.0171	0.0140	0.0000	0.0000
2.2167	0.0169	0.0144	0.0000	0.0000
2.2708	0.0167	0.0148	0.0000	0.0000
2.3248	0.0165	0.0153	0.0000	0.0000
2.3789	0.0163	0.0157	0.0000	0.0000
2.4330	0.0161	0.0162	0.0000	0.0000
2.4870	0.0159	0.0166	0.0000	0.0000
2.5411	0.0158	0.0171	0.0000	0.0000
2.5952	0.0156	0.0175	0.0000	0.0000
2.6492	0.0154	0.0180	0.0000	0.0000
2.7033	0.0152	0.0184	0.0000	0.0000
2.7574	0.0150	0.0189	0.0000	0.0000
2.8114	0.0148	0.0194	0.0000	0.0000
2.8655	0.0146	0.0199	0.0000	0.0000
2.9196	0.0145	0.0203	0.0000	0.0000
2.9736	0.0143	0.0208	0.0000	0.0000
3.0277	0.0141	0.0213	0.0000	0.0000
3.0818	0.0139	0.0218	0.0000	0.0000
3.1358	0.0137	0.0223	0.0000	0.0000
3.1899	0.0135	0.0228	0.0000	0.0000
3.2440	0.0133	0.0233	0.0000	0.0000
3.2980	0.0132	0.0238	0.0000	0.0000
3.3521	0.0130	0.0243	0.0000	0.0000
3.4062	0.0128	0.0249	0.0000	0.0000
3.4602	0.0126	0.0254	0.0000	0.0000
3.5143	0.0124	0.0259	0.0000	0.0000
3.5684	0.0122	0.0264	0.0000	0.0000
3.6224	0.0120	0.0270	0.0000	0.0000
3.6765	0.0119	0.0275	0.0000	0.0000
3.7305	0.0117	0.0281	0.0000	0.0000
3.7500	0.0115	0.0283	0.0000	0.0000

Surface BMP-5 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0244	0.0283	0.0000	0.0611	0.0000
3.8041	0.0246	0.0296	0.0000	0.0611	0.0000
3.8581	0.0248	0.0309	0.0000	0.0629	0.0000
3.9122	0.0250	0.0323	0.0000	0.0647	0.0000
3.9663	0.0251	0.0336	0.0000	0.0666	0.0000
4.0203	0.0253	0.0350	0.0000	0.0684	0.0000
4.0744	0.0255	0.0363	0.0000	0.0702	0.0000
4.1285	0.0257	0.0377	0.0000	0.0720	0.0000
4.1825	0.0259	0.0391	0.0000	0.0739	0.0000
4.2366	0.0261	0.0405	0.0000	0.0757	0.0000
4.2907	0.0263	0.0419	0.0000	0.0775	0.0000
4.3447	0.0264	0.0434	0.0000	0.0794	0.0000
4.3988	0.0266	0.0448	0.0000	0.0812	0.0000
4.4529	0.0268	0.0462	0.0000	0.0830	0.0000

4.5069	0.0270	0.0477	0.0000	0.0849	0.0000
4.5610	0.0272	0.0492	0.0000	0.0867	0.0000
4.6151	0.0274	0.0506	0.0000	0.0885	0.0000
4.6691	0.0276	0.0521	0.0000	0.0903	0.0000
4.7232	0.0277	0.0536	0.0000	0.0922	0.0000
4.7773	0.0279	0.0551	0.0000	0.0940	0.0000
4.8313	0.0281	0.0566	0.0000	0.0958	0.0000
4.8854	0.0283	0.0582	0.0000	0.0977	0.0000
4.9200	0.0284	0.0591	0.0000	0.0988	0.0000

Name : Surface BMP-5

Element Flows To:

Outlet 1	**Outlet 2**
BMP-5	

Name : DMA-12 - Shared DWY
Bypass: No

GroundWater: No

Pervious Land Use	**acre**
B,Grass,STEEP(10-20	**.2**
Pervious Total	**0.2**

Impervious Land Use	**acre**
IMPERVIOUS-MOD	**0.18**
Impervious Total	**0.18**
Basin Total	**0.38**

Element Flows To:

Surface	**Interflow**	**Groundwater**
Surface BMP-7	Surface BMP-7	

Name : DMA-7
Bypass: Yes

GroundWater: No

Pervious Land Use	**acre**
D,Dirt, Flat(0-5%)	**.6**
D,Dirt, Mod(5-10%)	**1.04**
D,Dirt, StEEP(10-20	**14.49**
Pervious Total	**16.13**

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.25
IMPERVIOUS-MOD	9.6
Impervious Total	9.85
Basin Total	25.98

Element Flows To:

Surface	Interflow	Groundwater

Name : DMA-6
Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,FLAT(0-5%)	.3
B,Grass,STEEP(10-20	.12
Pervious Total	0.42

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	0.04
Impervious Total	0.21
Basin Total	0.63

Element Flows To:

Surface	Interflow	Groundwater
Surface BMP-3	Surface BMP-3	

Name : DMA-5
Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,FLAT(0-5%)	.38
B,Grass,STEEP(10-20	.26
Pervious Total	0.64

Impervious Land Use	acre

IMPERVIOUS-FLAT	**0.18**
IMPERVIOUS-MOD	**0.3**
Impervious Total	**0.48**
Basin Total	**1.12**

Element Flows To:

Surface	**Interflow**	**Groundwater**
Surface BMP-2	Surface BMP-2	

Name : DMA 3 and 4
Bypass: Yes

GroundWater: No

Pervious Land Use	**acre**
D,Dirt, Flat(0-5%)	**.11**
D,Dirt, Mod(5-10%)	**.21**
D,Dirt, StEEP(10-20	**.82**
Pervious Total	**1.14**

Impervious Land Use	**acre**
IMPERVIOUS-FLAT	**0.17**
IMPERVIOUS-MOD	**1.59**
Impervious Total	**1.76**
Basin Total	**2.9**

Element Flows To:

Surface	**Interflow**	**Groundwater**

Name : BMP-7
Bottom Length: 35.00 ft.
Bottom Width: 31.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Infiltration On
Infiltration rate: 0.43
Infiltration safety factor: 1

Total Volume Infiltrated (ac-ft.): 7.298
Total Volume Through Riser (ac-ft.): 0.059
Total Volume Through Facility (ac-ft.): 7.884
Percent Infiltrated: 92.57
Total Precip Applied to Facility: 1.013
Total Evap From Facility: 1.142
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 0.527
Total Outflow (ac-ft.): 7.884
Percent Through Underdrain: 6.68
Discharge Structure
Riser Height: 0.5 ft.
Riser Diameter: 36 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-7 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0430	0.0000	0.0000	0.0000
0.0522	0.0428	0.0007	0.0000	0.0000
0.1044	0.0425	0.0013	0.0000	0.0000
0.1566	0.0423	0.0020	0.0000	0.0000
0.2088	0.0420	0.0027	0.0000	0.0000
0.2610	0.0418	0.0033	0.0000	0.0002
0.3132	0.0415	0.0038	0.0000	0.0005
0.3654	0.0413	0.0044	0.0000	0.0008
0.4176	0.0410	0.0050	0.0000	0.0014
0.4698	0.0408	0.0056	0.0000	0.0017
0.5220	0.0405	0.0062	0.0000	0.0027
0.5742	0.0403	0.0068	0.0000	0.0033
0.6264	0.0400	0.0074	0.0000	0.0046
0.6786	0.0398	0.0080	0.0000	0.0054
0.7308	0.0395	0.0086	0.0000	0.0072
0.7830	0.0393	0.0093	0.0000	0.0083
0.8352	0.0390	0.0099	0.0000	0.0106
0.8874	0.0387	0.0105	0.0000	0.0108
0.9396	0.0385	0.0112	0.0000	0.0108
0.9918	0.0382	0.0118	0.0000	0.0108
1.0440	0.0380	0.0125	0.0000	0.0108
1.0962	0.0377	0.0131	0.0000	0.0108
1.1484	0.0375	0.0138	0.0000	0.0108
1.2005	0.0372	0.0145	0.0000	0.0108
1.2527	0.0370	0.0151	0.0000	0.0108
1.3049	0.0367	0.0158	0.0000	0.0108
1.3571	0.0365	0.0165	0.0000	0.0108
1.4093	0.0362	0.0172	0.0000	0.0108
1.4615	0.0360	0.0179	0.0000	0.0108
1.5137	0.0357	0.0186	0.0000	0.0108
1.5659	0.0355	0.0193	0.0000	0.0108

1.6181	0.0352	0.0200	0.0000	0.0108
1.6703	0.0350	0.0207	0.0000	0.0108
1.7225	0.0347	0.0215	0.0000	0.0108
1.7747	0.0345	0.0222	0.0000	0.0108
1.8269	0.0342	0.0229	0.0000	0.0108
1.8791	0.0340	0.0237	0.0000	0.0108
1.9313	0.0337	0.0244	0.0000	0.0108
1.9835	0.0335	0.0251	0.0000	0.0108
2.0357	0.0332	0.0259	0.0006	0.0108
2.0879	0.0330	0.0266	0.0009	0.0108
2.1401	0.0327	0.0274	0.0027	0.0108
2.1923	0.0325	0.0282	0.0037	0.0108
2.2445	0.0322	0.0289	0.0046	0.0108
2.2967	0.0320	0.0297	0.0064	0.0108
2.3489	0.0317	0.0305	0.0084	0.0108
2.4011	0.0315	0.0313	0.0094	0.0108
2.4533	0.0312	0.0321	0.0108	0.0108
2.5055	0.0309	0.0329	0.0122	0.0108
2.5577	0.0307	0.0337	0.0136	0.0108
2.6099	0.0304	0.0345	0.0149	0.0108
2.6621	0.0302	0.0353	0.0157	0.0108
2.7143	0.0299	0.0361	0.0167	0.0108
2.7665	0.0297	0.0370	0.0177	0.0108
2.8187	0.0294	0.0378	0.0187	0.0108
2.8709	0.0292	0.0386	0.0197	0.0108
2.9231	0.0289	0.0395	0.0206	0.0108
2.9753	0.0287	0.0403	0.0216	0.0108
3.0275	0.0284	0.0412	0.0224	0.0108
3.0797	0.0282	0.0420	0.0233	0.0108
3.1319	0.0279	0.0429	0.0241	0.0108
3.1841	0.0277	0.0438	0.0249	0.0108
3.2363	0.0274	0.0446	0.0257	0.0108
3.2885	0.0272	0.0455	0.0264	0.0108
3.3407	0.0269	0.0464	0.0271	0.0108
3.3929	0.0267	0.0473	0.0278	0.0108
3.4451	0.0264	0.0482	0.0285	0.0108
3.4973	0.0262	0.0491	0.0292	0.0108
3.5495	0.0259	0.0500	0.0299	0.0108
3.6016	0.0257	0.0509	0.0305	0.0108
3.6538	0.0254	0.0518	0.0312	0.0108
3.7060	0.0252	0.0527	0.0318	0.0108
3.7500	0.0249	0.0535	0.0489	0.0108

Surface BMP-7 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0430	0.0535	0.0000	0.1324	0.0000
3.8022	0.0432	0.0558	0.0000	0.1324	0.0000
3.8544	0.0435	0.0580	0.0000	0.1362	0.0000
3.9066	0.0437	0.0603	0.0000	0.1400	0.0000
3.9588	0.0440	0.0626	0.0000	0.1439	0.0000
4.0110	0.0442	0.0649	0.0000	0.1477	0.0000
4.0632	0.0445	0.0672	0.0000	0.1516	0.0000
4.1154	0.0447	0.0696	0.0000	0.1554	0.0000
4.1676	0.0450	0.0719	0.0000	0.1592	0.0000
4.2198	0.0453	0.0743	0.0000	0.1631	0.0000
4.2720	0.0455	0.0766	0.1038	0.1669	0.0000
4.3242	0.0458	0.0790	0.6429	0.1707	0.0000

4.3764	0.0460	0.0814	1.4288	0.1746	0.0000
4.4286	0.0463	0.0838	2.3978	0.1784	0.0000
4.4808	0.0465	0.0862	3.5179	0.1822	0.0000
4.5330	0.0468	0.0887	4.7668	0.1861	0.0000
4.5852	0.0470	0.0911	6.1264	0.1899	0.0000
4.6374	0.0473	0.0936	7.5804	0.1937	0.0000
4.6896	0.0475	0.0960	9.1131	0.1976	0.0000
4.7418	0.0478	0.0985	10.709	0.2014	0.0000
4.7500	0.0478	0.0989	12.352	0.2020	0.0000

Name : Surface BMP-7

Element Flows To:
Outlet 1 **Outlet 2**
BMP-7

Name : BMP-3
Bottom Length: 20.00 ft.
Bottom Width: 18.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 8.841
Total Outflow (ac-ft.): 9.269
Percent Through Underdrain: 95.38
Discharge Structure
Riser Height: 0.5 ft.
Riser Diameter: 24 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-3 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0186	0.0000	0.0000	0.0000
0.0522	0.0185	0.0002	0.0000	0.0000
0.1044	0.0183	0.0004	0.0000	0.0000
0.1566	0.0182	0.0007	0.0000	0.0000
0.2088	0.0180	0.0009	0.0000	0.0000
0.2610	0.0179	0.0011	0.0000	0.0000
0.3132	0.0178	0.0013	0.0000	0.0000
0.3654	0.0176	0.0015	0.0000	0.0000
0.4176	0.0175	0.0017	0.0000	0.0000

0.4698	0.0173	0.0019	0.0000	0.0000
0.5220	0.0172	0.0021	0.0000	0.0000
0.5742	0.0170	0.0023	0.0000	0.0000
0.6264	0.0169	0.0026	0.0000	0.0000
0.6786	0.0167	0.0028	0.0000	0.0000
0.7308	0.0166	0.0030	0.0000	0.0000
0.7830	0.0165	0.0032	0.0000	0.0000
0.8352	0.0163	0.0035	0.0000	0.0000
0.8874	0.0162	0.0037	0.0000	0.0000
0.9396	0.0160	0.0039	0.0000	0.0000
0.9918	0.0159	0.0042	0.0000	0.0000
1.0440	0.0157	0.0044	0.0000	0.0000
1.0962	0.0156	0.0047	0.0000	0.0000
1.1484	0.0155	0.0049	0.0000	0.0000
1.2005	0.0153	0.0052	0.0000	0.0000
1.2527	0.0152	0.0054	0.0000	0.0000
1.3049	0.0150	0.0057	0.0000	0.0000
1.3571	0.0149	0.0059	0.0000	0.0000
1.4093	0.0147	0.0062	0.0000	0.0000
1.4615	0.0146	0.0065	0.0000	0.0000
1.5137	0.0144	0.0067	0.0000	0.0000
1.5659	0.0143	0.0070	0.0000	0.0000
1.6181	0.0142	0.0073	0.0000	0.0000
1.6703	0.0140	0.0076	0.0000	0.0000
1.7225	0.0139	0.0078	0.0000	0.0000
1.7747	0.0137	0.0081	0.0000	0.0000
1.8269	0.0136	0.0084	0.0000	0.0000
1.8791	0.0134	0.0087	0.0000	0.0000
1.9313	0.0133	0.0090	0.0000	0.0000
1.9835	0.0132	0.0093	0.0000	0.0000
2.0357	0.0130	0.0096	0.0014	0.0000
2.0879	0.0129	0.0099	0.0020	0.0000
2.1401	0.0127	0.0102	0.0062	0.0000
2.1923	0.0126	0.0105	0.0082	0.0000
2.2445	0.0124	0.0108	0.0103	0.0000
2.2967	0.0123	0.0111	0.0145	0.0000
2.3489	0.0121	0.0115	0.0189	0.0000
2.4011	0.0120	0.0118	0.0211	0.0000
2.4533	0.0119	0.0121	0.0242	0.0000
2.5055	0.0117	0.0124	0.0274	0.0000
2.5577	0.0116	0.0128	0.0306	0.0000
2.6099	0.0114	0.0131	0.0335	0.0000
2.6621	0.0113	0.0134	0.0353	0.0000
2.7143	0.0111	0.0138	0.0375	0.0000
2.7665	0.0110	0.0141	0.0398	0.0000
2.8187	0.0109	0.0145	0.0427	0.0000
2.8709	0.0107	0.0148	0.0427	0.0000
2.9231	0.0106	0.0152	0.0427	0.0000
2.9753	0.0104	0.0155	0.0427	0.0000
3.0275	0.0103	0.0159	0.0427	0.0000
3.0797	0.0101	0.0162	0.0427	0.0000
3.1319	0.0100	0.0166	0.0427	0.0000
3.1841	0.0098	0.0170	0.0427	0.0000
3.2363	0.0097	0.0173	0.0427	0.0000
3.2885	0.0096	0.0177	0.0427	0.0000
3.3407	0.0094	0.0181	0.0427	0.0000
3.3929	0.0093	0.0185	0.0427	0.0000

3.4451	0.0091	0.0188	0.0427	0.0000
3.4973	0.0090	0.0192	0.0427	0.0000
3.5495	0.0088	0.0196	0.0427	0.0000
3.6016	0.0087	0.0200	0.0427	0.0000
3.6538	0.0086	0.0204	0.0427	0.0000
3.7060	0.0084	0.0208	0.0427	0.0000
3.7500	0.0083	0.0211	0.0427	0.0000

Surface BMP-3 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0186	0.0211	0.0000	0.0439	0.0000
3.8022	0.0187	0.0221	0.0000	0.0439	0.0000
3.8544	0.0189	0.0231	0.0000	0.0452	0.0000
3.9066	0.0190	0.0241	0.0000	0.0465	0.0000
3.9588	0.0192	0.0251	0.0000	0.0477	0.0000
4.0110	0.0193	0.0261	0.0000	0.0490	0.0000
4.0632	0.0195	0.0271	0.0000	0.0503	0.0000
4.1154	0.0196	0.0281	0.0000	0.0516	0.0000
4.1676	0.0197	0.0291	0.0000	0.0528	0.0000
4.2198	0.0199	0.0302	0.0000	0.0541	0.0000
4.2720	0.0200	0.0312	0.0692	0.0554	0.0000
4.3242	0.0202	0.0323	0.4284	0.0566	0.0000
4.3764	0.0203	0.0333	0.9515	0.0579	0.0000
4.4286	0.0205	0.0344	1.5942	0.0592	0.0000
4.4808	0.0206	0.0355	2.3316	0.0605	0.0000
4.5330	0.0208	0.0365	3.1434	0.0617	0.0000
4.5852	0.0209	0.0376	4.0103	0.0630	0.0000
4.6374	0.0210	0.0387	4.9129	0.0643	0.0000
4.6896	0.0212	0.0398	5.8312	0.0655	0.0000
4.7418	0.0213	0.0409	6.7450	0.0668	0.0000
4.7500	0.0213	0.0411	7.6342	0.0670	0.0000

Name : Surface BMP-3

Element Flows To:

Outlet 1	Outlet 2
BMP-3	

Name : BMP-2
Bottom Length: 30.40 ft.
Bottom Width: 25.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 18.765
Total Outflow (ac-ft.): 20.201
Percent Through Underdrain: 92.89

Discharge Structure
Riser Height: 0.5 ft.
Riser Diameter: 24 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-2 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0331	0.0000	0.0000	0.0000
0.0522	0.0330	0.0005	0.0000	0.0000
0.1044	0.0327	0.0009	0.0000	0.0000
0.1566	0.0325	0.0014	0.0000	0.0000
0.2088	0.0323	0.0019	0.0000	0.0000
0.2610	0.0321	0.0023	0.0000	0.0000
0.3132	0.0319	0.0027	0.0000	0.0000
0.3654	0.0317	0.0031	0.0000	0.0000
0.4176	0.0314	0.0035	0.0000	0.0000
0.4698	0.0312	0.0040	0.0000	0.0000
0.5220	0.0310	0.0044	0.0000	0.0000
0.5742	0.0308	0.0048	0.0000	0.0000
0.6264	0.0306	0.0053	0.0000	0.0000
0.6786	0.0303	0.0057	0.0000	0.0000
0.7308	0.0301	0.0061	0.0000	0.0000
0.7830	0.0299	0.0066	0.0000	0.0000
0.8352	0.0297	0.0071	0.0000	0.0000
0.8874	0.0295	0.0075	0.0000	0.0000
0.9396	0.0292	0.0080	0.0000	0.0000
0.9918	0.0290	0.0084	0.0000	0.0000
1.0440	0.0288	0.0089	0.0000	0.0000
1.0962	0.0286	0.0094	0.0000	0.0000
1.1484	0.0284	0.0099	0.0000	0.0000
1.2005	0.0282	0.0104	0.0000	0.0000
1.2527	0.0279	0.0109	0.0000	0.0000
1.3049	0.0277	0.0114	0.0000	0.0000
1.3571	0.0275	0.0119	0.0000	0.0000
1.4093	0.0273	0.0124	0.0000	0.0000
1.4615	0.0271	0.0129	0.0000	0.0000
1.5137	0.0268	0.0134	0.0000	0.0000
1.5659	0.0266	0.0139	0.0000	0.0000
1.6181	0.0264	0.0145	0.0000	0.0000
1.6703	0.0262	0.0150	0.0000	0.0000
1.7225	0.0260	0.0155	0.0000	0.0000
1.7747	0.0258	0.0161	0.0000	0.0000
1.8269	0.0255	0.0166	0.0000	0.0000
1.8791	0.0253	0.0172	0.0000	0.0000
1.9313	0.0251	0.0177	0.0000	0.0000
1.9835	0.0249	0.0183	0.0000	0.0000
2.0357	0.0247	0.0188	0.0014	0.0000
2.0879	0.0244	0.0194	0.0020	0.0000
2.1401	0.0242	0.0200	0.0062	0.0000
2.1923	0.0240	0.0205	0.0082	0.0000
2.2445	0.0238	0.0211	0.0103	0.0000

2.2967	0.0236	0.0217	0.0145	0.0000
2.3489	0.0233	0.0223	0.0189	0.0000
2.4011	0.0231	0.0229	0.0211	0.0000
2.4533	0.0229	0.0235	0.0242	0.0000
2.5055	0.0227	0.0241	0.0274	0.0000
2.5577	0.0225	0.0247	0.0306	0.0000
2.6099	0.0223	0.0253	0.0335	0.0000
2.6621	0.0220	0.0259	0.0353	0.0000
2.7143	0.0218	0.0266	0.0375	0.0000
2.7665	0.0216	0.0272	0.0398	0.0000
2.8187	0.0214	0.0278	0.0421	0.0000
2.8709	0.0212	0.0284	0.0443	0.0000
2.9231	0.0209	0.0291	0.0464	0.0000
2.9753	0.0207	0.0297	0.0485	0.0000
3.0275	0.0205	0.0304	0.0505	0.0000
3.0797	0.0203	0.0310	0.0524	0.0000
3.1319	0.0201	0.0317	0.0542	0.0000
3.1841	0.0199	0.0324	0.0560	0.0000
3.2363	0.0196	0.0330	0.0577	0.0000
3.2885	0.0194	0.0337	0.0594	0.0000
3.3407	0.0192	0.0344	0.0611	0.0000
3.3929	0.0190	0.0351	0.0627	0.0000
3.4451	0.0188	0.0358	0.0642	0.0000
3.4973	0.0185	0.0364	0.0657	0.0000
3.5495	0.0183	0.0371	0.0672	0.0000
3.6016	0.0181	0.0378	0.0687	0.0000
3.6538	0.0179	0.0386	0.0701	0.0000
3.7060	0.0177	0.0393	0.0715	0.0000
3.7500	0.0174	0.0399	0.0900	0.0000

Surface BMP-2 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0331	0.0399	0.0000	0.0927	0.0000
3.8022	0.0334	0.0416	0.0000	0.0927	0.0000
3.8544	0.0336	0.0434	0.0000	0.0954	0.0000
3.9066	0.0338	0.0451	0.0000	0.0981	0.0000
3.9588	0.0340	0.0469	0.0000	0.1008	0.0000
4.0110	0.0342	0.0487	0.0000	0.1035	0.0000
4.0632	0.0345	0.0505	0.0000	0.1062	0.0000
4.1154	0.0347	0.0523	0.0000	0.1088	0.0000
4.1676	0.0349	0.0541	0.0000	0.1115	0.0000
4.2198	0.0351	0.0559	0.0000	0.1142	0.0000
4.2720	0.0353	0.0577	0.0692	0.1169	0.0000
4.3242	0.0356	0.0596	0.4284	0.1196	0.0000
4.3764	0.0358	0.0615	0.9515	0.1223	0.0000
4.4286	0.0360	0.0633	1.5942	0.1250	0.0000
4.4808	0.0362	0.0652	2.3316	0.1276	0.0000
4.5330	0.0364	0.0671	3.1434	0.1303	0.0000
4.5852	0.0366	0.0690	4.0103	0.1330	0.0000
4.6374	0.0369	0.0709	4.9129	0.1357	0.0000
4.6896	0.0371	0.0729	5.8312	0.1384	0.0000
4.7418	0.0373	0.0748	6.7450	0.1411	0.0000
4.7500	0.0373	0.0751	7.6342	0.1415	0.0000

Name : Surface BMP-2

Element Flows To:
Outlet 1 **Outlet 2**
BMP-2

ANALYSIS RESULTS

Predeveloped Landuse Totals for POC #1
Total Pervious Area:20.21
Total Impervious Area:12.34

Mitigated Landuse Totals for POC #1
Total Pervious Area:20.29
Total Impervious Area:12.82

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	8.063809
5 year	11.867595
10 year	15.578946
25 year	18.91843

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	7.677661
5 year	11.331913
10 year	14.955928
25 year	18.398661

POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.8064	2574	2590	100	Pass
0.9556	2254	2225	98	Pass
1.1048	1864	1815	97	Pass
1.2540	1553	1553	100	Pass
1.4033	1350	1316	97	Pass
1.5525	1151	1143	99	Pass
1.7017	1039	1033	99	Pass
1.8509	928	899	96	Pass
2.0001	811	796	98	Pass
2.1493	737	722	97	Pass
2.2986	678	648	95	Pass
2.4478	599	572	95	Pass

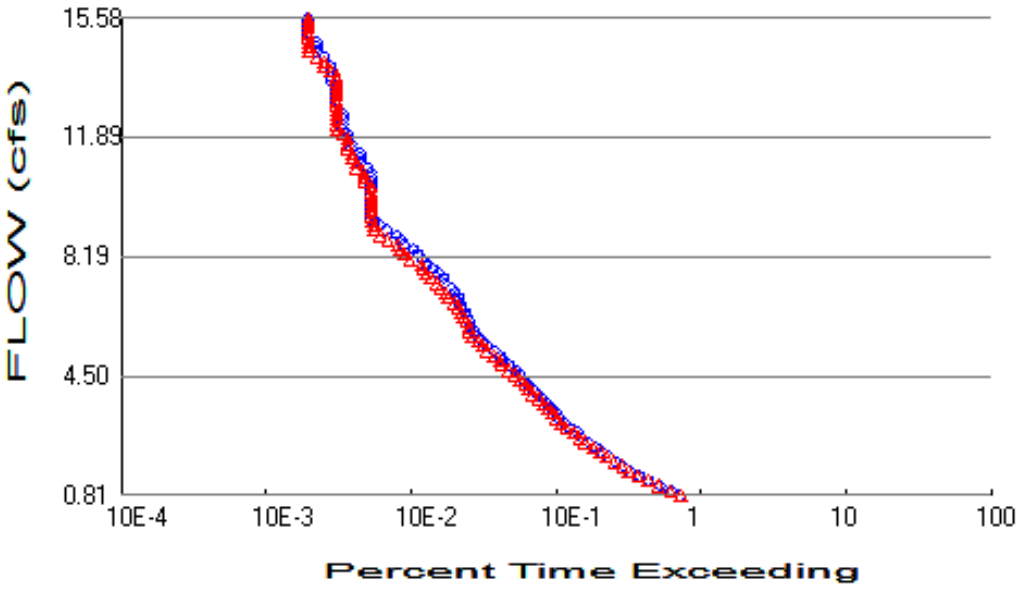
2.5970	535	522	97	Pass
2.7462	503	476	94	Pass
2.8954	448	422	94	Pass
3.0446	407	387	95	Pass
3.1939	378	362	95	Pass
3.3431	360	340	94	Pass
3.4923	336	317	94	Pass
3.6415	313	292	93	Pass
3.7907	288	272	94	Pass
3.9400	268	247	92	Pass
4.0892	245	233	95	Pass
4.2384	228	218	95	Pass
4.3876	217	202	93	Pass
4.5368	202	186	92	Pass
4.6860	188	171	90	Pass
4.8353	171	150	87	Pass
4.9845	153	146	95	Pass
5.1337	148	134	90	Pass
5.2829	136	120	88	Pass
5.4321	118	111	94	Pass
5.5814	110	104	94	Pass
5.7306	103	95	92	Pass
5.8798	98	90	91	Pass
6.0290	91	90	98	Pass
6.1782	90	86	95	Pass
6.3274	87	82	94	Pass
6.4767	85	80	94	Pass
6.6259	80	76	95	Pass
6.7751	79	72	91	Pass
6.9243	77	65	84	Pass
7.0735	72	62	86	Pass
7.2227	68	57	83	Pass
7.3720	61	54	88	Pass
7.5212	60	49	81	Pass
7.6704	55	45	81	Pass
7.8196	51	43	84	Pass
7.9688	46	42	91	Pass
8.1181	43	35	81	Pass
8.2673	40	32	80	Pass
8.4165	37	30	81	Pass
8.5657	32	29	90	Pass
8.7149	31	25	80	Pass
8.8641	29	22	75	Pass
9.0134	24	20	83	Pass
9.1626	22	20	90	Pass
9.3118	20	19	95	Pass
9.4610	19	19	100	Pass
9.6102	19	19	100	Pass
9.7595	19	19	100	Pass
9.9087	19	19	100	Pass
10.0579	19	19	100	Pass
10.2071	19	19	100	Pass
10.3563	19	19	100	Pass
10.5055	19	17	89	Pass
10.6548	19	17	89	Pass
10.8040	19	17	89	Pass
10.9532	18	15	83	Pass

11.1024	16	15	93	Pass
11.2516	16	14	87	Pass
11.4008	16	14	87	Pass
11.5501	14	13	92	Pass
11.6993	14	13	92	Pass
11.8485	13	13	100	Pass
11.9977	13	12	92	Pass
12.1469	12	11	91	Pass
12.2962	12	11	91	Pass
12.4454	12	11	91	Pass
12.5946	12	11	91	Pass
12.7438	11	11	100	Pass
12.8930	11	11	100	Pass
13.0422	11	11	100	Pass
13.1915	11	11	100	Pass
13.3407	11	11	100	Pass
13.4899	11	11	100	Pass
13.6391	10	11	110	Pass
13.7883	10	11	110	Pass
13.9375	10	10	100	Pass
14.0868	10	9	90	Pass
14.2360	9	9	100	Pass
14.3852	9	8	88	Pass
14.5344	8	7	87	Pass
14.6836	8	7	87	Pass
14.8329	8	7	87	Pass
14.9821	7	7	100	Pass
15.1313	7	7	100	Pass
15.2805	7	7	100	Pass
15.4297	7	7	100	Pass
15.5789	7	7	100	Pass

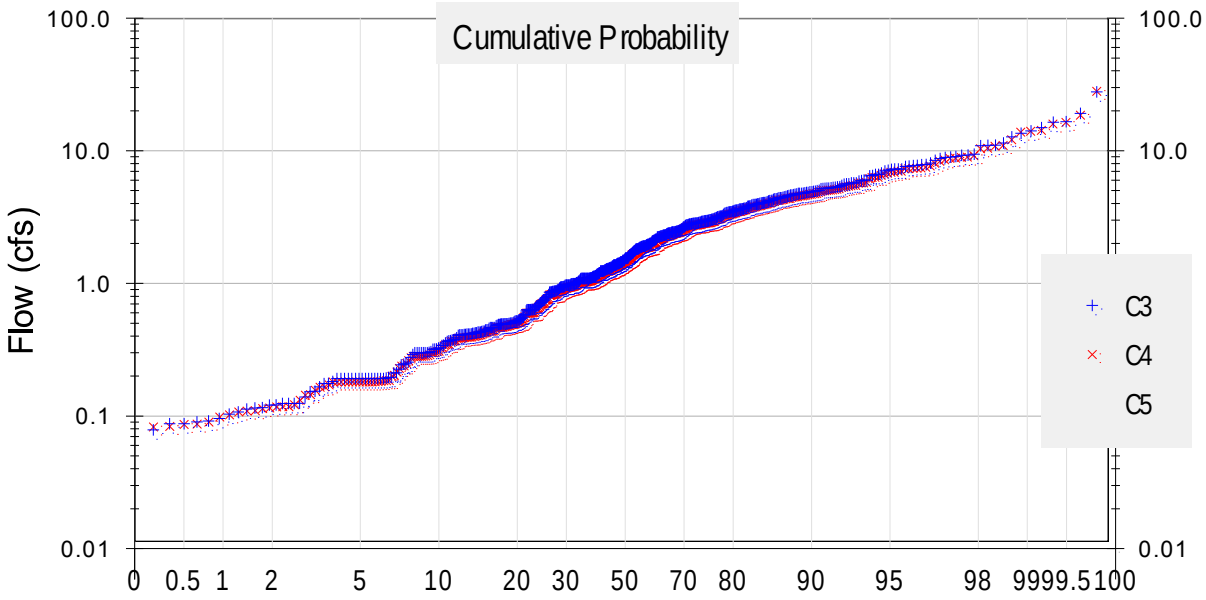
Drawdown Time Results

Perlnd and Implnd Changes

No changes have been made.



DURATION



FREQUENCY

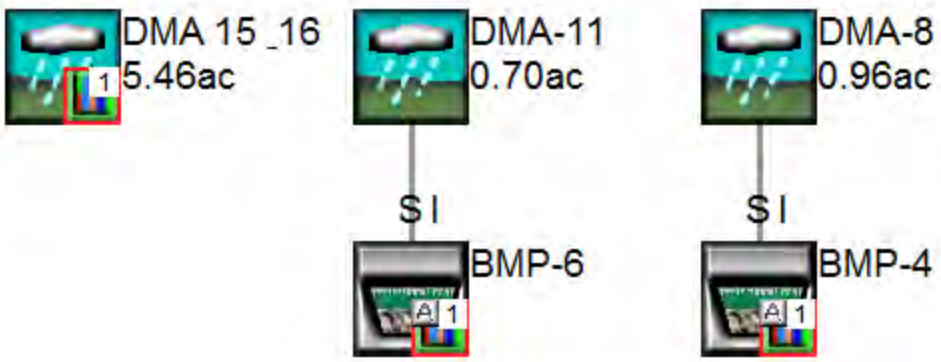
DRAWDOWN

The drawdown time is less than 24 hours so no vector control plan is required.

POC-5

PRE-DEVELOPMENT

POST-DEVELOPMENT



PROJECT REPORT

Project Name: POC-5
Site Name: Gildred TPM
Site Address:
City :
Report Date: 1/3/2017
Gage : RAMONA
Data Start : 10/01/1963
Data End : 09/30/2004
Precip Scale: 1.00
Version Date: 2016/03/03

Low Flow Threshold for POC 1 : 10 Percent of the 2 Year

High Flow Threshold for POC 1: 10 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.38
D,Dirt, Mod(5-10%)	.6
D,Dirt, StEEP(10-20	4.16
Pervious Total	5.14

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.06
IMPERVIOUS-MOD	2.65
Impervious Total	2.71
Basin Total	7.85

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : DMA-11
Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,FLAT(0-5%)	.38
B,Grass,STEEP(10-20	.26
Pervious Total	**0.64**

Impervious Land Use	acre
IMPERVIOUS-MOD	0.06
Impervious Total	**0.06**
Basin Total	**0.7**

Element Flows To:

Surface	Interflow	Groundwater
Surface BMP-6	Surface BMP-6	

Name : DMA-8
Bypass: No

GroundWater: No

Pervious Land Use	acre
B,Grass,FLAT(0-5%)	.4
B,Grass,STEEP(10-20	.15
Pervious Total	**0.55**

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	0.24
Impervious Total	**0.41**
Basin Total	**0.96**

Element Flows To:

Surface	Interflow	Groundwater
Surface BMP-4	Surface BMP-4	

Name : BMP-4
Bottom Length: 25.60 ft.
Bottom Width: 25.00 ft.
Material thickness of first layer: 0.25

Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 2
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 16.311
Total Outflow (ac-ft.): 17.107
Percent Through Underdrain: 95.35
Discharge Structure
Riser Height: 0.5 ft.
Riser Diameter: 36 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-4 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0279	0.0000	0.0000	0.0000
0.0522	0.0278	0.0004	0.0000	0.0000
0.1044	0.0276	0.0008	0.0000	0.0000
0.1566	0.0274	0.0012	0.0000	0.0000
0.2088	0.0272	0.0016	0.0000	0.0000
0.2610	0.0270	0.0019	0.0000	0.0000
0.3132	0.0268	0.0023	0.0000	0.0000
0.3654	0.0267	0.0026	0.0000	0.0000
0.4176	0.0265	0.0030	0.0000	0.0000
0.4698	0.0263	0.0033	0.0000	0.0000
0.5220	0.0261	0.0037	0.0000	0.0000
0.5742	0.0259	0.0041	0.0000	0.0000
0.6264	0.0257	0.0044	0.0000	0.0000
0.6786	0.0256	0.0048	0.0000	0.0000
0.7308	0.0254	0.0052	0.0000	0.0000
0.7830	0.0252	0.0056	0.0000	0.0000
0.8352	0.0250	0.0059	0.0000	0.0000
0.8874	0.0248	0.0063	0.0000	0.0000
0.9396	0.0246	0.0067	0.0000	0.0000
0.9918	0.0244	0.0071	0.0000	0.0000
1.0440	0.0243	0.0075	0.0000	0.0000
1.0962	0.0241	0.0079	0.0000	0.0000
1.1484	0.0239	0.0083	0.0000	0.0000
1.2005	0.0237	0.0087	0.0000	0.0000
1.2527	0.0235	0.0092	0.0000	0.0000
1.3049	0.0233	0.0096	0.0000	0.0000
1.3571	0.0232	0.0100	0.0000	0.0000
1.4093	0.0230	0.0104	0.0000	0.0000
1.4615	0.0228	0.0109	0.0000	0.0000
1.5137	0.0226	0.0113	0.0000	0.0000
1.5659	0.0224	0.0117	0.0000	0.0000
1.6181	0.0222	0.0122	0.0000	0.0000

1.6703	0.0221	0.0126	0.0000	0.0000
1.7225	0.0219	0.0131	0.0000	0.0000
1.7747	0.0217	0.0135	0.0000	0.0000
1.8269	0.0215	0.0140	0.0000	0.0000
1.8791	0.0213	0.0145	0.0000	0.0000
1.9313	0.0211	0.0149	0.0000	0.0000
1.9835	0.0210	0.0154	0.0000	0.0000
2.0357	0.0208	0.0159	0.0000	0.0000
2.0879	0.0206	0.0163	0.0000	0.0000
2.1401	0.0204	0.0168	0.0000	0.0000
2.1923	0.0202	0.0173	0.0000	0.0000
2.2445	0.0200	0.0178	0.0000	0.0000
2.2967	0.0198	0.0183	0.0000	0.0000
2.3489	0.0197	0.0188	0.0000	0.0000
2.4011	0.0195	0.0193	0.0000	0.0000
2.4533	0.0193	0.0198	0.0000	0.0000
2.5055	0.0191	0.0203	0.0000	0.0000
2.5577	0.0189	0.0208	0.0000	0.0000
2.6099	0.0187	0.0213	0.0000	0.0000
2.6621	0.0186	0.0218	0.0000	0.0000
2.7143	0.0184	0.0224	0.0000	0.0000
2.7665	0.0182	0.0229	0.0000	0.0000
2.8187	0.0180	0.0234	0.0000	0.0000
2.8709	0.0178	0.0240	0.0000	0.0000
2.9231	0.0176	0.0245	0.0000	0.0000
2.9753	0.0175	0.0250	0.0000	0.0000
3.0275	0.0173	0.0256	0.0000	0.0000
3.0797	0.0171	0.0261	0.0000	0.0000
3.1319	0.0169	0.0267	0.0000	0.0000
3.1841	0.0167	0.0273	0.0000	0.0000
3.2363	0.0165	0.0278	0.0000	0.0000
3.2885	0.0163	0.0284	0.0000	0.0000
3.3407	0.0162	0.0290	0.0000	0.0000
3.3929	0.0160	0.0295	0.0000	0.0000
3.4451	0.0158	0.0301	0.0000	0.0000
3.4973	0.0156	0.0307	0.0000	0.0000
3.5495	0.0154	0.0313	0.0000	0.0000
3.6016	0.0152	0.0319	0.0000	0.0000
3.6538	0.0151	0.0325	0.0000	0.0000
3.7060	0.0149	0.0331	0.0000	0.0000
3.7500	0.0147	0.0336	0.0000	0.0000

Surface BMP-4 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0279	0.0336	0.0000	0.0781	0.0000
3.8022	0.0281	0.0350	0.0000	0.0781	0.0000
3.8544	0.0283	0.0365	0.0000	0.0803	0.0000
3.9066	0.0285	0.0380	0.0000	0.0826	0.0000
3.9588	0.0287	0.0395	0.0000	0.0849	0.0000
4.0110	0.0288	0.0410	0.0000	0.0871	0.0000
4.0632	0.0290	0.0425	0.0000	0.0894	0.0000
4.1154	0.0292	0.0440	0.0000	0.0917	0.0000
4.1676	0.0294	0.0455	0.0000	0.0939	0.0000
4.2198	0.0296	0.0471	0.0000	0.0962	0.0000
4.2720	0.0298	0.0486	0.0000	0.0984	0.0000
4.3242	0.0299	0.0502	0.0000	0.1007	0.0000
4.3764	0.0301	0.0518	0.0000	0.1030	0.0000

4.4286	0.0303	0.0533	0.0000	0.1052	0.0000
4.4808	0.0305	0.0549	0.0000	0.1075	0.0000
4.5330	0.0307	0.0565	0.0000	0.1097	0.0000
4.5852	0.0309	0.0581	0.0000	0.1120	0.0000
4.6374	0.0310	0.0597	0.0000	0.1143	0.0000
4.6896	0.0312	0.0614	0.0000	0.1165	0.0000
4.7418	0.0314	0.0630	0.0000	0.1188	0.0000
4.7500	0.0314	0.0633	0.0000	0.1192	0.0000

Name : Surface BMP-4

Element Flows To:
Outlet 1 **Outlet 2**
BMP-4

Name : BMP-6
Bottom Length: 22.25 ft.
Bottom Width: 20.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 1.33
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 6
Offset (in.): 4
Flow Through Underdrain (ac-ft.): 4.444
Total Outflow (ac-ft.): 4.695
Percent Through Underdrain: 94.65
Discharge Structure
Riser Height: 0.5 ft.
Riser Diameter: 24 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-6 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0197	0.0000	0.0000	0.0000
0.0448	0.0196	0.0002	0.0000	0.0000
0.0897	0.0194	0.0005	0.0000	0.0000
0.1345	0.0193	0.0007	0.0000	0.0000
0.1793	0.0191	0.0010	0.0000	0.0000
0.2242	0.0190	0.0012	0.0000	0.0000
0.2690	0.0189	0.0014	0.0000	0.0000
0.3138	0.0187	0.0016	0.0000	0.0000
0.3587	0.0186	0.0018	0.0000	0.0000
0.4035	0.0185	0.0020	0.0000	0.0000

0.4484	0.0183	0.0023	0.0000	0.0000
0.4932	0.0182	0.0025	0.0000	0.0000
0.5380	0.0180	0.0027	0.0000	0.0000
0.5829	0.0179	0.0029	0.0000	0.0000
0.6277	0.0178	0.0031	0.0000	0.0000
0.6725	0.0176	0.0034	0.0000	0.0000
0.7174	0.0175	0.0036	0.0000	0.0000
0.7622	0.0174	0.0038	0.0000	0.0000
0.8070	0.0172	0.0041	0.0000	0.0000
0.8519	0.0171	0.0043	0.0000	0.0000
0.8967	0.0169	0.0046	0.0000	0.0000
0.9415	0.0168	0.0048	0.0000	0.0000
0.9864	0.0167	0.0051	0.0000	0.0000
1.0312	0.0165	0.0053	0.0000	0.0000
1.0760	0.0164	0.0056	0.0000	0.0000
1.1209	0.0163	0.0058	0.0000	0.0000
1.1657	0.0161	0.0061	0.0000	0.0000
1.2105	0.0160	0.0063	0.0000	0.0000
1.2554	0.0158	0.0066	0.0000	0.0000
1.3002	0.0157	0.0069	0.0000	0.0000
1.3451	0.0156	0.0071	0.0000	0.0000
1.3899	0.0154	0.0074	0.0000	0.0000
1.4347	0.0153	0.0077	0.0000	0.0000
1.4796	0.0152	0.0080	0.0000	0.0000
1.5244	0.0150	0.0082	0.0000	0.0000
1.5692	0.0149	0.0085	0.0000	0.0000
1.6141	0.0148	0.0088	0.0000	0.0000
1.6589	0.0146	0.0091	0.0000	0.0000
1.7037	0.0145	0.0094	0.0000	0.0000
1.7486	0.0143	0.0097	0.0000	0.0000
1.7934	0.0142	0.0100	0.0000	0.0000
1.8382	0.0141	0.0103	0.0000	0.0000
1.8831	0.0139	0.0106	0.0000	0.0000
1.9279	0.0138	0.0109	0.0000	0.0000
1.9727	0.0137	0.0112	0.0000	0.0000
2.0176	0.0135	0.0115	0.0000	0.0000
2.0624	0.0134	0.0118	0.0000	0.0000
2.1073	0.0132	0.0121	0.0000	0.0000
2.1521	0.0131	0.0124	0.0000	0.0000
2.1969	0.0130	0.0127	0.0000	0.0000
2.2418	0.0128	0.0130	0.0000	0.0000
2.2866	0.0127	0.0133	0.0000	0.0000
2.3314	0.0126	0.0137	0.0000	0.0000
2.3763	0.0124	0.0140	0.0000	0.0000
2.4211	0.0123	0.0143	0.0000	0.0000
2.4659	0.0121	0.0146	0.0000	0.0000
2.5108	0.0120	0.0150	0.0000	0.0000
2.5556	0.0119	0.0153	0.0000	0.0000
2.6004	0.0117	0.0156	0.0000	0.0000
2.6453	0.0116	0.0160	0.0000	0.0000
2.6901	0.0115	0.0163	0.0000	0.0000
2.7349	0.0113	0.0167	0.0000	0.0000
2.7798	0.0112	0.0170	0.0000	0.0000
2.8246	0.0110	0.0174	0.0000	0.0000
2.8695	0.0109	0.0177	0.0000	0.0000
2.9143	0.0108	0.0181	0.0000	0.0000
2.9591	0.0106	0.0184	0.0000	0.0000

3.0040	0.0105	0.0188	0.0000	0.0000
3.0488	0.0104	0.0192	0.0000	0.0000
3.0800	0.0102	0.0194	0.0000	0.0000

Surface BMP-6 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.0800	0.0197	0.0194	0.0000	0.0541	0.0000
3.1248	0.0198	0.0203	0.0000	0.0541	0.0000
3.1697	0.0199	0.0212	0.0000	0.0554	0.0000
3.2145	0.0201	0.0221	0.0000	0.0568	0.0000
3.2593	0.0202	0.0230	0.0000	0.0581	0.0000
3.3042	0.0203	0.0239	0.0000	0.0595	0.0000
3.3490	0.0205	0.0248	0.0000	0.0608	0.0000
3.3938	0.0206	0.0257	0.0000	0.0622	0.0000
3.4387	0.0208	0.0267	0.0000	0.0635	0.0000
3.4835	0.0209	0.0276	0.0000	0.0649	0.0000
3.5284	0.0210	0.0285	0.0000	0.0662	0.0000
3.5732	0.0212	0.0295	0.0000	0.0676	0.0000
3.6180	0.0213	0.0304	0.0000	0.0689	0.0000
3.6629	0.0214	0.0314	0.0000	0.0703	0.0000
3.7077	0.0216	0.0323	0.0000	0.0716	0.0000
3.7525	0.0217	0.0333	0.0000	0.0730	0.0000
3.7974	0.0219	0.0343	0.0000	0.0743	0.0000
3.8422	0.0220	0.0353	0.0000	0.0757	0.0000
3.8870	0.0221	0.0363	0.0000	0.0770	0.0000
3.9319	0.0223	0.0373	0.0000	0.0784	0.0000
3.9767	0.0224	0.0383	0.0000	0.0797	0.0000
4.0215	0.0225	0.0393	0.0000	0.0811	0.0000
4.0664	0.0227	0.0403	0.0000	0.0824	0.0000
4.0800	0.0227	0.0406	0.0000	0.0828	0.0000

Name : Surface BMP-6

Element Flows To:
Outlet 1 **Outlet 2**
BMP-6

Name : DMA 15 & 16
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
D,Dirt, StEEP(10-20	2.87
D,Dirt, Mod(5-10%)	.19
D,Dirt, Flat(0-5%)	.07
Pervious Total	3.13

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.02
IMPERVIOUS-MOD	2.31
Impervious Total	2.33

Basin Total **5.46**

Element Flows To:

Surface	Interflow	Groundwater

ANALYSIS RESULTS

Predeveloped Landuse Totals for POC #1
Total Pervious Area:5.14
Total Impervious Area:2.71

Mitigated Landuse Totals for POC #1
Total Pervious Area:4.32
Total Impervious Area:2.8

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	1.917931
5 year	2.789326
10 year	3.711447
25 year	4.512899

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	1.507498
5 year	2.282723
10 year	3.086417
25 year	3.746291

POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1918	2474	2431	98	Pass
0.2273	2061	1959	95	Pass
0.2629	1704	1626	95	Pass
0.2984	1435	1357	94	Pass
0.3340	1221	1164	95	Pass
0.3696	1083	1019	94	Pass

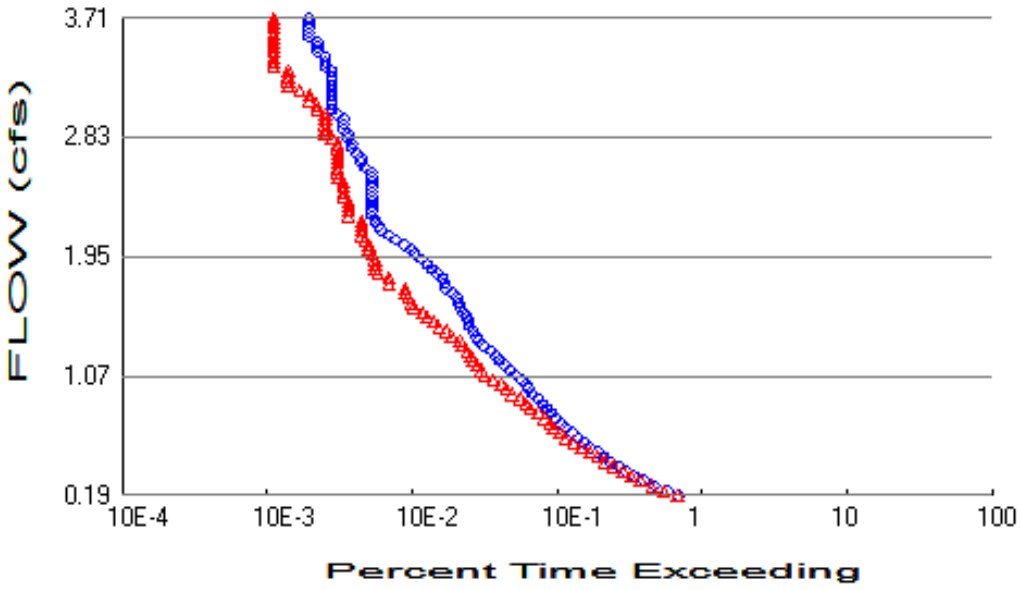
0.4051	961	880	91	Pass
0.4407	835	772	92	Pass
0.4762	748	681	91	Pass
0.5118	685	605	88	Pass
0.5473	599	531	88	Pass
0.5829	551	466	84	Pass
0.6184	500	410	82	Pass
0.6540	454	375	82	Pass
0.6895	409	340	83	Pass
0.7251	381	318	83	Pass
0.7606	353	294	83	Pass
0.7962	329	265	80	Pass
0.8317	307	236	76	Pass
0.8673	285	218	76	Pass
0.9028	266	200	75	Pass
0.9384	245	175	71	Pass
0.9739	230	161	70	Pass
1.0095	220	148	67	Pass
1.0450	204	131	64	Pass
1.0806	184	114	61	Pass
1.1161	170	108	63	Pass
1.1517	156	100	64	Pass
1.1873	143	94	65	Pass
1.2228	136	91	66	Pass
1.2584	128	86	67	Pass
1.2939	110	80	72	Pass
1.3295	104	77	74	Pass
1.3650	99	67	67	Pass
1.4006	94	61	64	Pass
1.4361	89	55	61	Pass
1.4717	88	49	55	Pass
1.5072	85	45	52	Pass
1.5428	81	42	51	Pass
1.5783	77	37	48	Pass
1.6139	76	35	46	Pass
1.6494	73	34	46	Pass
1.6850	68	32	47	Pass
1.7205	62	31	50	Pass
1.7561	60	25	41	Pass
1.7916	58	25	43	Pass
1.8272	54	21	38	Pass
1.8627	49	20	40	Pass
1.8983	46	20	43	Pass
1.9338	42	19	45	Pass
1.9694	37	19	51	Pass
2.0049	35	18	51	Pass
2.0405	32	18	56	Pass
2.0761	28	17	60	Pass
2.1116	25	16	64	Pass
2.1472	22	16	72	Pass
2.1827	21	16	76	Pass
2.2183	20	16	80	Pass
2.2538	19	13	68	Pass
2.2894	19	13	68	Pass
2.3249	19	13	68	Pass
2.3605	19	13	68	Pass
2.3960	19	12	63	Pass

2.4316	19	12	63	Pass
2.4671	19	12	63	Pass
2.5027	19	12	63	Pass
2.5382	19	11	57	Pass
2.5738	19	11	57	Pass
2.6093	17	11	64	Pass
2.6449	16	11	68	Pass
2.6804	16	11	68	Pass
2.7160	15	11	73	Pass
2.7515	14	11	78	Pass
2.7871	14	11	78	Pass
2.8226	13	10	76	Pass
2.8582	13	9	69	Pass
2.8937	12	9	75	Pass
2.9293	12	9	75	Pass
2.9649	12	9	75	Pass
3.0004	11	9	81	Pass
3.0360	10	8	80	Pass
3.0715	10	8	80	Pass
3.1071	10	7	70	Pass
3.1426	10	7	70	Pass
3.1782	10	6	60	Pass
3.2137	10	5	50	Pass
3.2493	10	5	50	Pass
3.2848	10	5	50	Pass
3.3204	10	5	50	Pass
3.3559	9	4	44	Pass
3.3915	9	4	44	Pass
3.4270	9	4	44	Pass
3.4626	8	4	50	Pass
3.4981	8	4	50	Pass
3.5337	8	4	50	Pass
3.5692	7	4	57	Pass
3.6048	7	4	57	Pass
3.6403	7	4	57	Pass
3.6759	7	4	57	Pass
3.7114	7	4	57	Pass

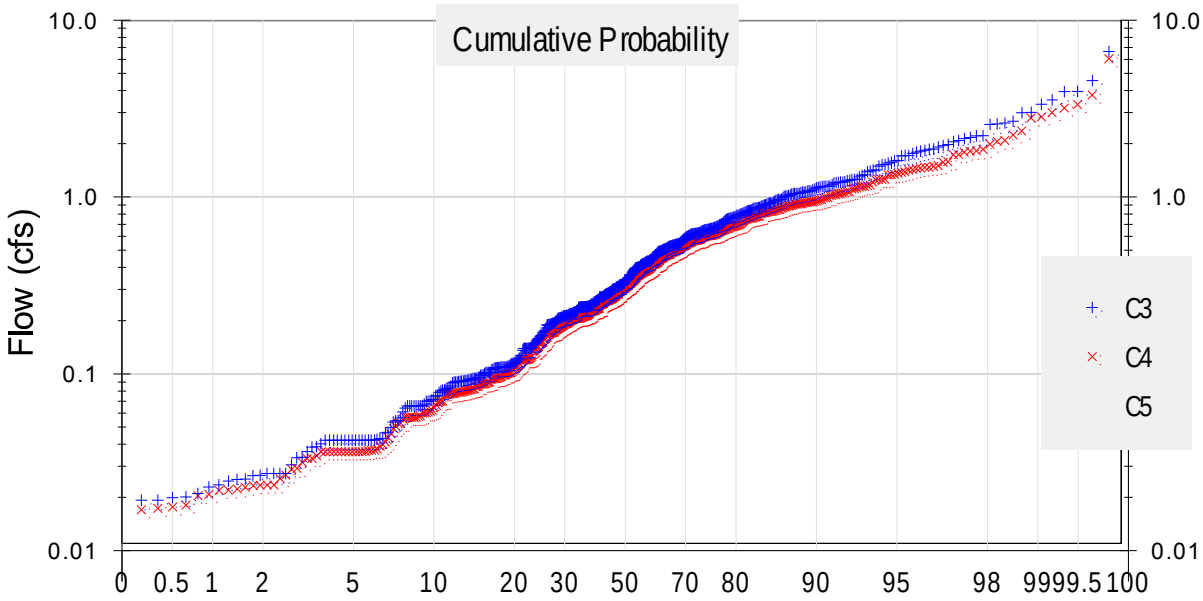
Drawdown Time Results

Perlnd and Implnd Changes

No changes have been made.



DURATION



FREQUENCY

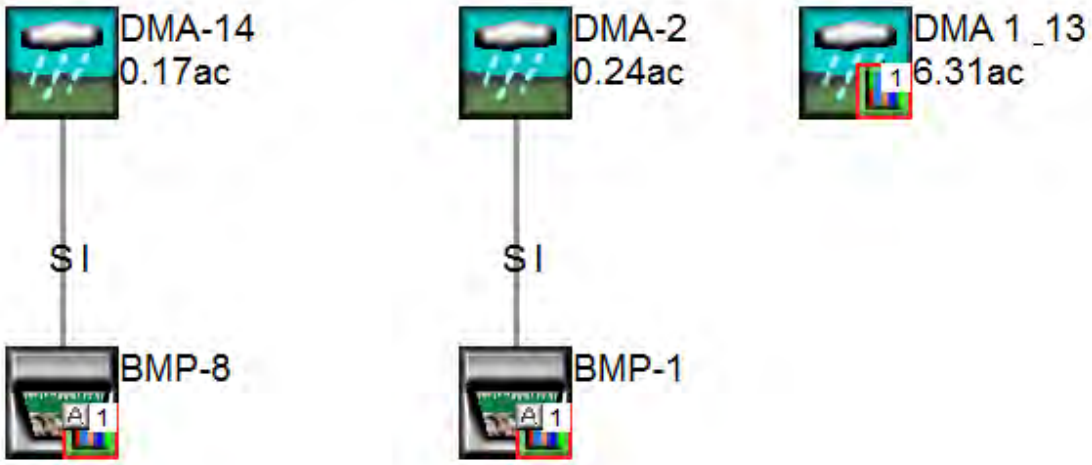
DRAWDOWN

The drawdown time is less than 24 hours so no vector control plan is required.

POC-6

PRE-DEVELOPMENT

POST-DEVELOPMENT



SDHM2015

PROJECT REPORT

Project Name: POC-6
Site Name: Gildred TPM
Site Address:
City :
Report Date: 1/3/2017
Gage : RAMONA
Data Start : 10/01/1963
Data End : 09/30/2004
Precip Scale: 1.00
Version Date: 2016/03/03

Low Flow Threshold for POC 1 : 10 Percent of the 2 Year

High Flow Threshold for POC 1: 10 year

PREDEVELOPED LAND USE

Name : From POC-1
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.03
D,Dirt, Mod(5-10%)	.02
D,Dirt, StEEP(10-20	.84
Pervious Total	0.89

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.01
IMPERVIOUS-MOD	0.7
Impervious Total	0.71
Basin Total	1.6

Element Flows To:

Surface	Interflow	Groundwater

Name : Basin 6
Bypass: No

GroundWater: No

Pervious Land Use	acre
D,Dirt, Flat(0-5%)	.05
D,Dirt, Mod(5-10%)	.28
D,Dirt, StEEP(10-20	3.9
Pervious Total	4.23

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.04
IMPERVIOUS-MOD	0.97
Impervious Total	1.01
Basin Total	5.24

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : DMA 1 & 13
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
D,Dirt, StEEP(10-20	4.51
D,Dirt, Flat(0-5%)	.07
D,Dirt, Mod(5-10%)	.17
Pervious Total	4.75

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.03
IMPERVIOUS-MOD	1.53
Impervious Total	1.56
Basin Total	6.31

Element Flows To:

Surface	Interflow	Groundwater

Name : BMP-1
Bottom Length: 20.00 ft.
Bottom Width: 11.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 6.409
Total Outflow (ac-ft.): 6.513
Percent Through Underdrain: 98.4
Discharge Structure
Riser Height: 0.75 ft.
Riser Diameter: 36 in.

Element Flows To:
Outlet 1 **Outlet 2**

BMP-1 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0154	0.0000	0.0000	0.0000
0.0549	0.0153	0.0001	0.0000	0.0000
0.1099	0.0152	0.0003	0.0000	0.0000
0.1648	0.0150	0.0004	0.0000	0.0000
0.2198	0.0149	0.0006	0.0000	0.0000
0.2747	0.0147	0.0007	0.0000	0.0000
0.3297	0.0146	0.0009	0.0000	0.0000
0.3846	0.0144	0.0010	0.0000	0.0000
0.4396	0.0143	0.0011	0.0000	0.0000
0.4945	0.0141	0.0013	0.0000	0.0000
0.5495	0.0140	0.0014	0.0000	0.0000
0.6044	0.0138	0.0016	0.0000	0.0000
0.6593	0.0137	0.0018	0.0000	0.0000
0.7143	0.0135	0.0019	0.0000	0.0000
0.7692	0.0134	0.0021	0.0000	0.0000
0.8242	0.0132	0.0022	0.0000	0.0000
0.8791	0.0131	0.0024	0.0000	0.0000
0.9341	0.0129	0.0026	0.0000	0.0000
0.9890	0.0128	0.0028	0.0000	0.0000
1.0440	0.0126	0.0029	0.0000	0.0000
1.0989	0.0125	0.0031	0.0000	0.0000
1.1538	0.0123	0.0033	0.0000	0.0000
1.2088	0.0122	0.0035	0.0000	0.0000
1.2637	0.0120	0.0037	0.0000	0.0000
1.3187	0.0119	0.0039	0.0000	0.0000
1.3736	0.0117	0.0041	0.0000	0.0000
1.4286	0.0116	0.0043	0.0000	0.0000
1.4835	0.0114	0.0045	0.0000	0.0000

1.5385	0.0113	0.0047	0.0000	0.0000
1.5934	0.0111	0.0049	0.0000	0.0000
1.6484	0.0110	0.0052	0.0000	0.0000
1.7033	0.0108	0.0054	0.0000	0.0000
1.7582	0.0107	0.0056	0.0000	0.0000
1.8132	0.0105	0.0058	0.0000	0.0000
1.8681	0.0103	0.0061	0.0000	0.0000
1.9231	0.0102	0.0063	0.0000	0.0000
1.9780	0.0100	0.0065	0.0000	0.0000
2.0330	0.0099	0.0068	0.0000	0.0000
2.0879	0.0097	0.0070	0.0000	0.0000
2.1429	0.0096	0.0073	0.0000	0.0000
2.1978	0.0094	0.0075	0.0000	0.0000
2.2527	0.0093	0.0078	0.0000	0.0000
2.3077	0.0091	0.0080	0.0000	0.0000
2.3626	0.0090	0.0083	0.0000	0.0000
2.4176	0.0088	0.0086	0.0000	0.0000
2.4725	0.0087	0.0088	0.0000	0.0000
2.5275	0.0085	0.0091	0.0000	0.0000
2.5824	0.0084	0.0094	0.0000	0.0000
2.6374	0.0082	0.0097	0.0000	0.0000
2.6923	0.0081	0.0099	0.0000	0.0000
2.7473	0.0079	0.0102	0.0000	0.0000
2.8022	0.0078	0.0105	0.0000	0.0000
2.8571	0.0076	0.0108	0.0000	0.0000
2.9121	0.0075	0.0111	0.0000	0.0000
2.9670	0.0073	0.0114	0.0000	0.0000
3.0220	0.0072	0.0117	0.0000	0.0000
3.0769	0.0070	0.0120	0.0000	0.0000
3.1319	0.0069	0.0123	0.0000	0.0000
3.1868	0.0067	0.0126	0.0000	0.0000
3.2418	0.0066	0.0130	0.0000	0.0000
3.2967	0.0064	0.0133	0.0000	0.0000
3.3516	0.0063	0.0136	0.0000	0.0000
3.4066	0.0061	0.0139	0.0000	0.0000
3.4615	0.0060	0.0143	0.0000	0.0000
3.5165	0.0058	0.0146	0.0000	0.0000
3.5714	0.0057	0.0149	0.0000	0.0000
3.6264	0.0055	0.0153	0.0000	0.0000
3.6813	0.0054	0.0156	0.0000	0.0000
3.7363	0.0052	0.0160	0.0000	0.0000
3.7500	0.0051	0.0161	0.0000	0.0000

Surface BMP-1 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0154	0.0161	0.0000	0.0269	0.0000
3.8049	0.0155	0.0169	0.0000	0.0269	0.0000
3.8599	0.0157	0.0178	0.0000	0.0277	0.0000
3.9148	0.0158	0.0186	0.0000	0.0285	0.0000
3.9698	0.0160	0.0195	0.0000	0.0293	0.0000
4.0247	0.0161	0.0204	0.0000	0.0302	0.0000
4.0797	0.0163	0.0213	0.0000	0.0310	0.0000
4.1346	0.0164	0.0222	0.0000	0.0318	0.0000
4.1896	0.0166	0.0231	0.0000	0.0326	0.0000
4.2445	0.0167	0.0240	0.0000	0.0334	0.0000
4.2995	0.0169	0.0249	0.0000	0.0342	0.0000
4.3544	0.0170	0.0259	0.0000	0.0351	0.0000

4.4093	0.0172	0.0268	0.0000	0.0359	0.0000
4.4643	0.0173	0.0278	0.0000	0.0367	0.0000
4.5192	0.0175	0.0287	0.0000	0.0375	0.0000
4.5742	0.0177	0.0297	0.0000	0.0383	0.0000
4.6291	0.0178	0.0306	0.0000	0.0392	0.0000
4.6841	0.0180	0.0316	0.0000	0.0400	0.0000
4.7390	0.0181	0.0326	0.0000	0.0408	0.0000
4.7940	0.0183	0.0336	0.0000	0.0416	0.0000
4.8489	0.0184	0.0346	0.0000	0.0424	0.0000
4.9038	0.0186	0.0356	0.0000	0.0432	0.0000
4.9588	0.0187	0.0367	0.0000	0.0441	0.0000
5.0000	0.0188	0.0374	0.0000	0.0447	0.0000

Name : Surface BMP-1

Element Flows To:

Outlet 1	**Outlet 2**
BMP-1	

Name : DMA-2
Bypass: No

GroundWater: No

Pervious Land Use	**acre**
B,Grass,MOD(5-10%)	**.07**
Pervious Total	**0.07**

Impervious Land Use	**acre**
IMPERVIOUS-MOD	**0.17**
Impervious Total	**0.17**
Basin Total	**0.24**

Element Flows To:

Surface	**Interflow**	**Groundwater**
Surface BMP-1	Surface BMP-1	

Name : DMA-14
Bypass: No

GroundWater: No

Pervious Land Use	**acre**
D,Dirt, StEEP(10-20	**.02**
Pervious Total	**0.02**

Impervious Land Use	acre
IMPERVIOUS-MOD	0.15
Impervious Total	**0.15**
Basin Total	**0.17**

Element Flows To:

Surface	Interflow	Groundwater
Surface BMP-8	Surface BMP-8	

Name : BMP-8
Bottom Length: 20.00 ft.
Bottom Width: 10.00 ft.
Material thickness of first layer: 0.25
Material type for first layer: ASTM 100
Material thickness of second layer: 1.5
Material type for second layer: Amended 5 in/hr
Material thickness of third layer: 2
Material type for third layer: GRAVEL
Underdrain used
Underdrain Diameter (feet): 0.5
Orifice Diameter (in.): 1.5
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 5.536
Total Outflow (ac-ft.): 5.601
Percent Through Underdrain: 98.84
Discharge Structure
Riser Height: 0.75 ft.
Riser Diameter: 36 in.

Element Flows To:

Outlet 1	Outlet 2

BMP-8 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0149	0.0000	0.0000	0.0000
0.0549	0.0149	0.0001	0.0000	0.0000
0.1099	0.0147	0.0003	0.0000	0.0000
0.1648	0.0146	0.0004	0.0000	0.0000
0.2198	0.0144	0.0005	0.0000	0.0000
0.2747	0.0143	0.0007	0.0000	0.0000
0.3297	0.0141	0.0008	0.0000	0.0000
0.3846	0.0140	0.0009	0.0000	0.0000
0.4396	0.0138	0.0011	0.0000	0.0000
0.4945	0.0137	0.0012	0.0000	0.0000
0.5495	0.0135	0.0013	0.0000	0.0000

0.6044	0.0134	0.0015	0.0000	0.0000
0.6593	0.0132	0.0016	0.0000	0.0000
0.7143	0.0131	0.0018	0.0000	0.0000
0.7692	0.0129	0.0019	0.0000	0.0000
0.8242	0.0128	0.0021	0.0000	0.0000
0.8791	0.0126	0.0022	0.0000	0.0000
0.9341	0.0125	0.0024	0.0000	0.0000
0.9890	0.0123	0.0026	0.0000	0.0000
1.0440	0.0122	0.0027	0.0000	0.0000
1.0989	0.0120	0.0029	0.0000	0.0000
1.1538	0.0119	0.0031	0.0000	0.0000
1.2088	0.0117	0.0033	0.0000	0.0000
1.2637	0.0116	0.0035	0.0000	0.0000
1.3187	0.0114	0.0036	0.0000	0.0000
1.3736	0.0113	0.0038	0.0000	0.0000
1.4286	0.0111	0.0040	0.0000	0.0000
1.4835	0.0109	0.0042	0.0000	0.0000
1.5385	0.0108	0.0044	0.0000	0.0000
1.5934	0.0106	0.0046	0.0000	0.0000
1.6484	0.0105	0.0048	0.0000	0.0000
1.7033	0.0103	0.0051	0.0000	0.0000
1.7582	0.0102	0.0053	0.0000	0.0000
1.8132	0.0100	0.0055	0.0000	0.0000
1.8681	0.0099	0.0057	0.0000	0.0000
1.9231	0.0097	0.0059	0.0000	0.0000
1.9780	0.0096	0.0062	0.0000	0.0000
2.0330	0.0094	0.0064	0.0000	0.0000
2.0879	0.0093	0.0066	0.0000	0.0000
2.1429	0.0091	0.0069	0.0000	0.0000
2.1978	0.0090	0.0071	0.0000	0.0000
2.2527	0.0088	0.0073	0.0000	0.0000
2.3077	0.0087	0.0076	0.0000	0.0000
2.3626	0.0085	0.0078	0.0000	0.0000
2.4176	0.0084	0.0081	0.0000	0.0000
2.4725	0.0082	0.0084	0.0000	0.0000
2.5275	0.0081	0.0086	0.0000	0.0000
2.5824	0.0079	0.0089	0.0000	0.0000
2.6374	0.0078	0.0092	0.0000	0.0000
2.6923	0.0076	0.0094	0.0000	0.0000
2.7473	0.0075	0.0097	0.0000	0.0000
2.8022	0.0073	0.0100	0.0000	0.0000
2.8571	0.0072	0.0103	0.0000	0.0000
2.9121	0.0070	0.0105	0.0000	0.0000
2.9670	0.0069	0.0108	0.0000	0.0000
3.0220	0.0067	0.0111	0.0000	0.0000
3.0769	0.0066	0.0114	0.0000	0.0000
3.1319	0.0064	0.0117	0.0000	0.0000
3.1868	0.0063	0.0120	0.0000	0.0000
3.2418	0.0061	0.0123	0.0000	0.0000
3.2967	0.0060	0.0126	0.0000	0.0000
3.3516	0.0058	0.0130	0.0000	0.0000
3.4066	0.0057	0.0133	0.0000	0.0000
3.4615	0.0055	0.0136	0.0000	0.0000
3.5165	0.0053	0.0139	0.0000	0.0000
3.5714	0.0052	0.0142	0.0000	0.0000
3.6264	0.0050	0.0146	0.0000	0.0000
3.6813	0.0049	0.0149	0.0000	0.0000

3.7363	0.0047	0.0152	0.0000	0.0000
3.7500	0.0046	0.0153	0.0000	0.0000

Surface BMP-8 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
3.7500	0.0149	0.0153	0.0000	0.0244	0.0000
3.8049	0.0151	0.0162	0.0000	0.0244	0.0000
3.8599	0.0152	0.0170	0.0000	0.0252	0.0000
3.9148	0.0154	0.0178	0.0000	0.0259	0.0000
3.9698	0.0155	0.0187	0.0000	0.0267	0.0000
4.0247	0.0157	0.0195	0.0000	0.0274	0.0000
4.0797	0.0158	0.0204	0.0000	0.0282	0.0000
4.1346	0.0160	0.0213	0.0000	0.0289	0.0000
4.1896	0.0161	0.0222	0.0000	0.0296	0.0000
4.2445	0.0163	0.0231	0.0000	0.0304	0.0000
4.2995	0.0164	0.0239	0.0000	0.0311	0.0000
4.3544	0.0166	0.0249	0.0000	0.0319	0.0000
4.4093	0.0167	0.0258	0.0000	0.0326	0.0000
4.4643	0.0169	0.0267	0.0000	0.0334	0.0000
4.5192	0.0170	0.0276	0.0000	0.0341	0.0000
4.5742	0.0172	0.0286	0.0000	0.0349	0.0000
4.6291	0.0173	0.0295	0.0000	0.0356	0.0000
4.6841	0.0175	0.0305	0.0000	0.0363	0.0000
4.7390	0.0176	0.0314	0.0000	0.0371	0.0000
4.7940	0.0178	0.0324	0.0000	0.0378	0.0000
4.8489	0.0179	0.0334	0.0000	0.0386	0.0000
4.9038	0.0181	0.0344	0.0000	0.0393	0.0000
4.9588	0.0183	0.0354	0.0000	0.0401	0.0000
5.0000	0.0184	0.0361	0.0000	0.0406	0.0000

Name : Surface BMP-8

Element Flows To:

Outlet 1	Outlet 2
BMP-8	

ANALYSIS RESULTS

Predeveloped Landuse Totals for POC #1
Total Pervious Area:5.12
Total Impervious Area:1.72

Mitigated Landuse Totals for POC #1
Total Pervious Area:4.84
Total Impervious Area:1.88

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)

2 year	1.639184
5 year	2.31578
10 year	3.237195
25 year	3.902026

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	1.546057
5 year	2.229697
10 year	3.034582
25 year	3.656759

POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	**Predev**	**Mit**	**Percentage**	**Pass/Fail**
0.1639	1811	1892	104	Pass
0.1950	1484	1525	102	Pass
0.2260	1233	1272	103	Pass
0.2570	1074	1078	100	Pass
0.2881	921	921	100	Pass
0.3191	804	807	100	Pass
0.3502	681	697	102	Pass
0.3812	624	616	98	Pass
0.4123	565	554	98	Pass
0.4433	519	511	98	Pass
0.4744	476	460	96	Pass
0.5054	428	417	97	Pass
0.5364	385	375	97	Pass
0.5675	353	343	97	Pass
0.5985	329	317	96	Pass
0.6296	301	290	96	Pass
0.6606	285	274	96	Pass
0.6917	263	256	97	Pass
0.7227	253	243	96	Pass
0.7537	242	231	95	Pass
0.7848	228	214	93	Pass
0.8158	210	196	93	Pass
0.8469	193	185	95	Pass
0.8779	183	175	95	Pass
0.9090	173	163	94	Pass
0.9400	159	148	93	Pass
0.9710	151	140	92	Pass
1.0021	141	130	92	Pass
1.0331	133	124	93	Pass
1.0642	124	117	94	Pass
1.0952	117	109	93	Pass
1.1263	111	100	90	Pass
1.1573	101	94	93	Pass
1.1883	95	90	94	Pass
1.2194	93	82	88	Pass
1.2504	86	80	93	Pass

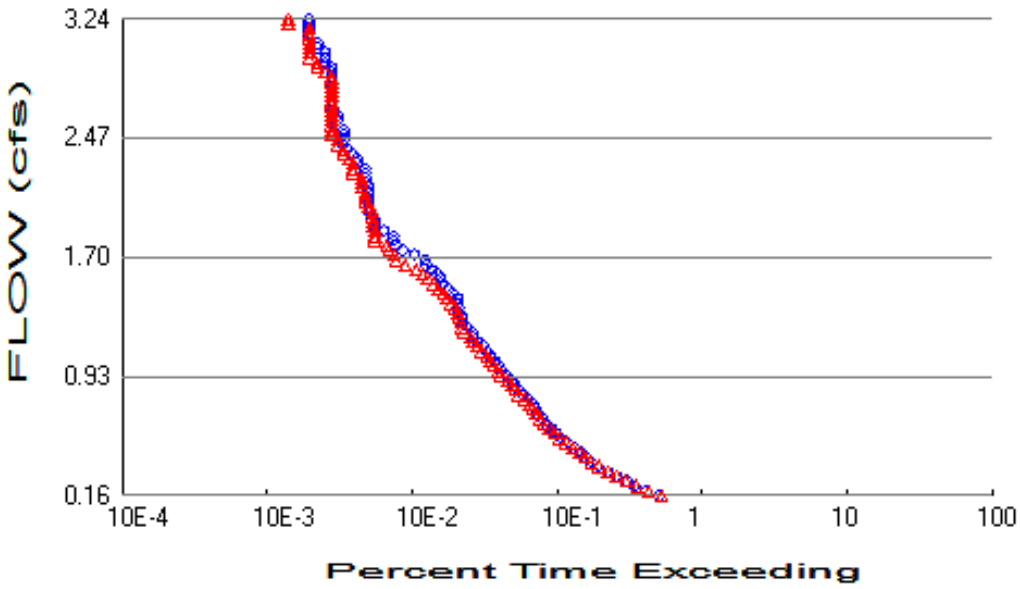
1.2815	80	78	97	Pass
1.3125	80	75	93	Pass
1.3436	76	74	97	Pass
1.3746	75	72	96	Pass
1.4056	74	67	90	Pass
1.4367	74	62	83	Pass
1.4677	68	59	86	Pass
1.4988	64	54	84	Pass
1.5298	59	51	86	Pass
1.5609	56	46	82	Pass
1.5919	54	42	77	Pass
1.6229	49	38	77	Pass
1.6540	45	32	71	Pass
1.6850	44	28	63	Pass
1.7161	37	27	72	Pass
1.7471	31	25	80	Pass
1.7782	28	24	85	Pass
1.8092	27	20	74	Pass
1.8403	27	20	74	Pass
1.8713	23	20	86	Pass
1.9023	20	19	95	Pass
1.9334	20	19	95	Pass
1.9644	19	19	100	Pass
1.9955	18	19	105	Pass
2.0265	18	18	100	Pass
2.0576	18	17	94	Pass
2.0886	18	17	94	Pass
2.1196	18	17	94	Pass
2.1507	18	16	88	Pass
2.1817	17	16	94	Pass
2.2128	17	16	94	Pass
2.2438	17	14	82	Pass
2.2749	17	14	82	Pass
2.3059	15	14	93	Pass
2.3369	15	13	86	Pass
2.3680	14	12	85	Pass
2.3990	13	12	92	Pass
2.4301	12	11	91	Pass
2.4611	12	11	91	Pass
2.4922	12	10	83	Pass
2.5232	12	10	83	Pass
2.5542	11	10	90	Pass
2.5853	11	10	90	Pass
2.6163	11	10	90	Pass
2.6474	10	10	100	Pass
2.6784	10	10	100	Pass
2.7095	10	10	100	Pass
2.7405	10	10	100	Pass
2.7715	10	10	100	Pass
2.8026	10	10	100	Pass
2.8336	10	10	100	Pass
2.8647	10	10	100	Pass
2.8957	10	9	90	Pass
2.9268	10	8	80	Pass
2.9578	9	8	88	Pass
2.9888	9	7	77	Pass
3.0199	9	7	77	Pass

3.0509	8	7	87	Pass
3.0820	8	7	87	Pass
3.1130	7	7	100	Pass
3.1441	7	7	100	Pass
3.1751	7	7	100	Pass
3.2062	7	5	71	Pass
3.2372	7	5	71	Pass

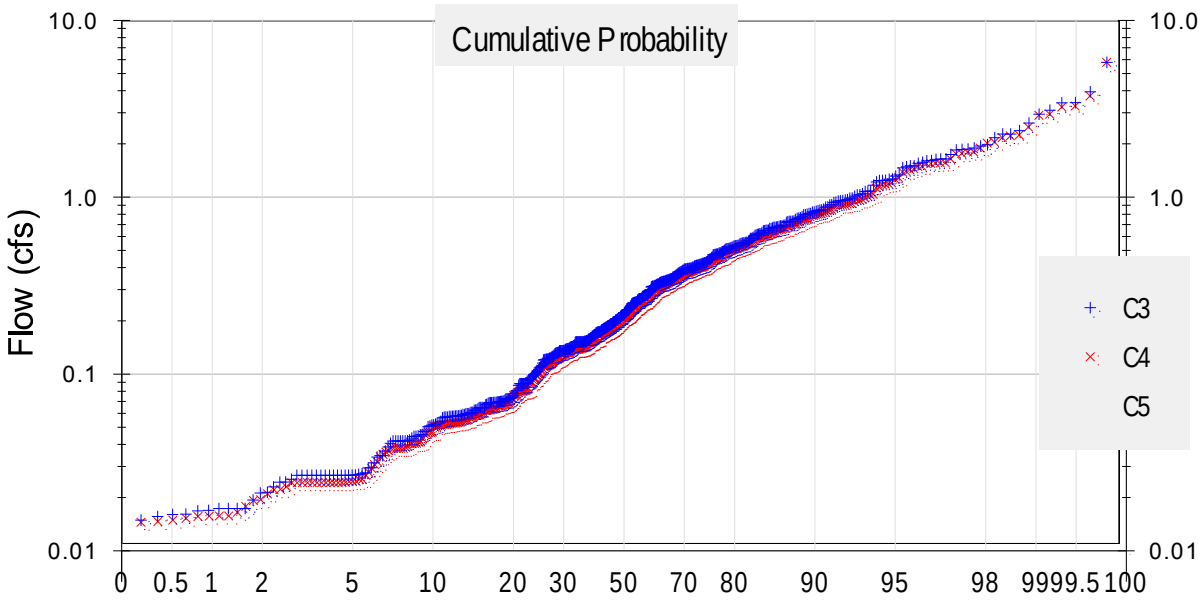
Drawdown Time Results

Perlnd and Implnd Changes

No changes have been made.



DURATION



FREQUENCY

SUMMARY
POC-1

	.1*Q2 (CFS)	Q2 (CFS)	Q5 (CFS)	Q10 (CFS)
PRE-DEV	0.04	0.4	0.6	0.8
POST-DEV	0.03	0.3	0.4	0.6

POC-2

	.1*Q2 (CFS)	Q2 (CFS)	Q5 (CFS)	Q10 (CFS)
PRE-DEV	0.1	1.3	1.8	2.2
POST-DEV	0.1	1.0	1.5	2.2

POC-3

	.1*Q2 (CFS)	Q2 (CFS)	Q5 (CFS)	Q10 (CFS)
PRE-DEV	0.8	7.6	11.4	14.7
POST-DEV	0.7	7.4	10.9	14.2

POC-4

	.1*Q2 (CFS)	Q2 (CFS)	Q5 (CFS)	Q10 (CFS)
PRE-DEV	0.8	8.1	11.9	15.6
POST-DEV	0.8	7.7	11.3	15.0

POC-5

	.1*Q2 (CFS)	Q2 (CFS)	Q5 (CFS)	Q10 (CFS)
PRE-DEV	0.2	1.9	2.8	3.7
POST-DEV	0.2	1.5	2.3	3.1

POC-6

	.1*Q2 (CFS)	Q2 (CFS)	Q5 (CFS)	Q10 (CFS)
PRE-DEV	0.2	1.6	2.3	3.2
POST-DEV	0.2	1.5	2.2	3.0

BMP Identifier	Type	Size
BMP-1 **(POC-1)**	Biofiltration basin.	A 5.0' effective depth biofiltration basin with a bottom area of 220 sf. A 36" riser and a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer will regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 0.75' of ponding and 6" of freeboard. No infiltration condition.
BMP-2 **(POC-2)**	biofiltration basin adjacent to driveway serving parcel 2	A 4.75' effective depth biofiltration basin with a bottom area of 760 sf. A 24" riser and a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer will regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 0.50' of ponding and 6" of freeboard. No infiltration condition.
BMP-3 **(POC-2)**	Biofiltration basin on Parcel 1 pad	A 4.75' effective depth infiltration basin with a bottom area of 360sf. A 24" riser with a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 6" of ponding and 6" of freeboard. No infiltration condition.
BMP-4 **(POC-5)**	Biofiltration basin on westerly side of driveway serving parcel 3	A 4.75' effective depth infiltration basin with a bottom area of 360sf. A 24" riser with a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 6" of ponding and 6" of freeboard. No infiltration condition.
BMP-5 **(POC-4)**	Biofiltration basin on westerly side of driveway to parcel 4	A 4.92' effective depth infiltration basin with a bottom area of 640 sf. A 36" riser with a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 8" of ponding and 6" of freeboard. No infiltration condition.
BMP-6 **(POC-5)**	Biofiltration basin on fill pad of parcel 4.	A 4.08' effective depth infiltration basin with a bottom area of 445 sf. A 24" riser with a 6" underdrain with no orifice at 4" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 1.33' of clean, washed gravel, with 6" of ponding and 6" of freeboard. No infiltration condition
BMP 7 **(POC-3)**	Biofiltration basin w/ partial retention	A 4.75' effective depth infiltration basin with a bottom area of 1085 sf. A 36" riser with a 6" underdrain with a 1" orifice at 6" from the bottom of the gravel layer will regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 6" of ponding and 6" of freeboard. 0.43 in/hr assumed per previous infiltration testing with appropriate factor of safety.
BMP-8 **(POC-6)**	Biofiltration basin on northerly side of Highland Trails Drive	A 5' effective depth infiltration basin with a bottom area of 200 sf. A 36" riser with a 6" underdrain with a 1.5" orifice at 6" from the bottom of the gravel layer regulate flow. The basin proposes 3" of ASTM 100 mulch over 18" of engineered soil over 2' of clean, washed gravel, with 9" of ponding and 6" of freeboard. No infiltration condition.

HMP EXHIBITS

SLOPE ANALYSIS: GILDRED TPM
PRE-DEVELOPMENT PERVIOUS AREAS
POC-1

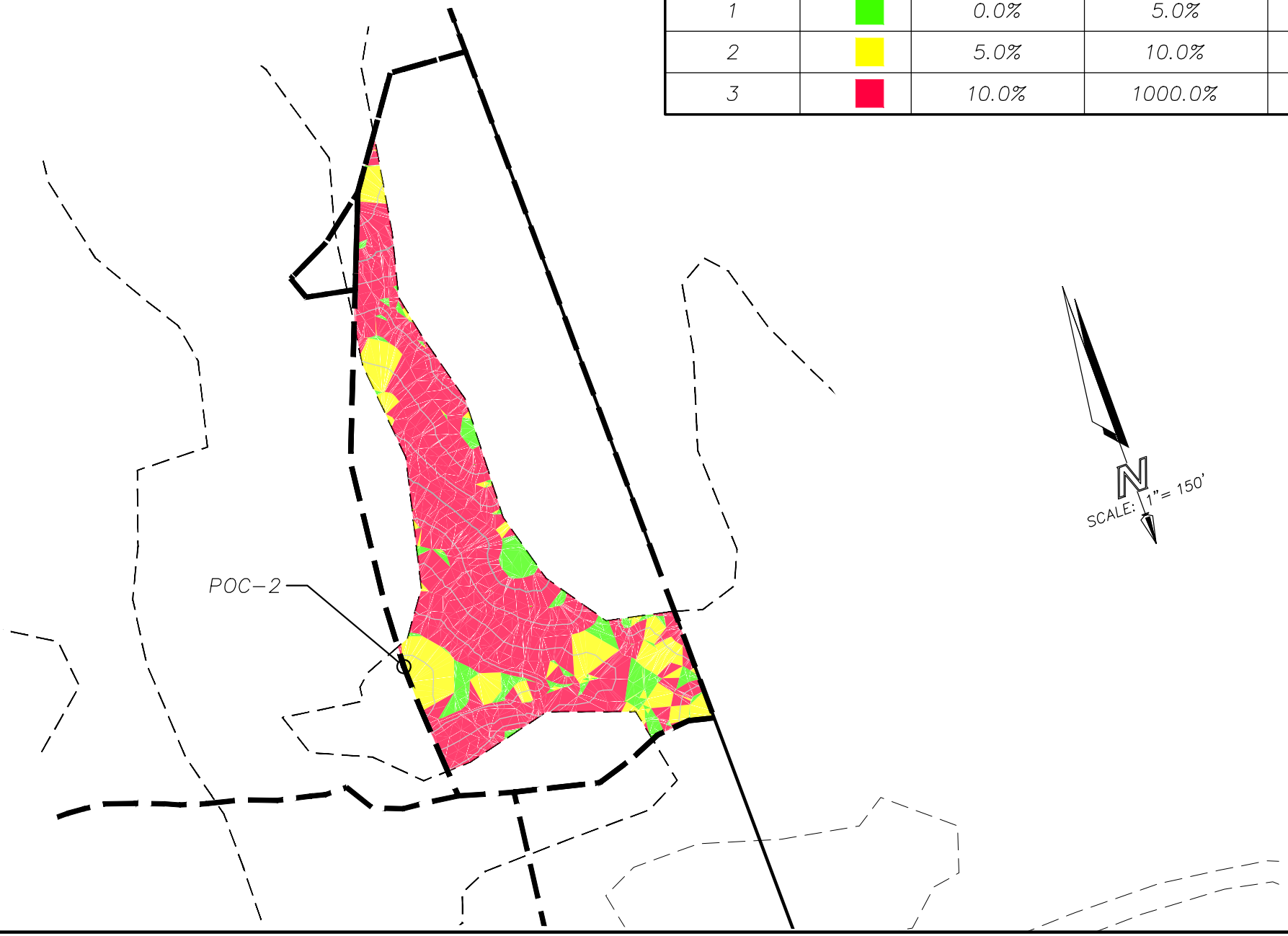
SCALE: 1"= 150'

SLOPE ANALYSIS

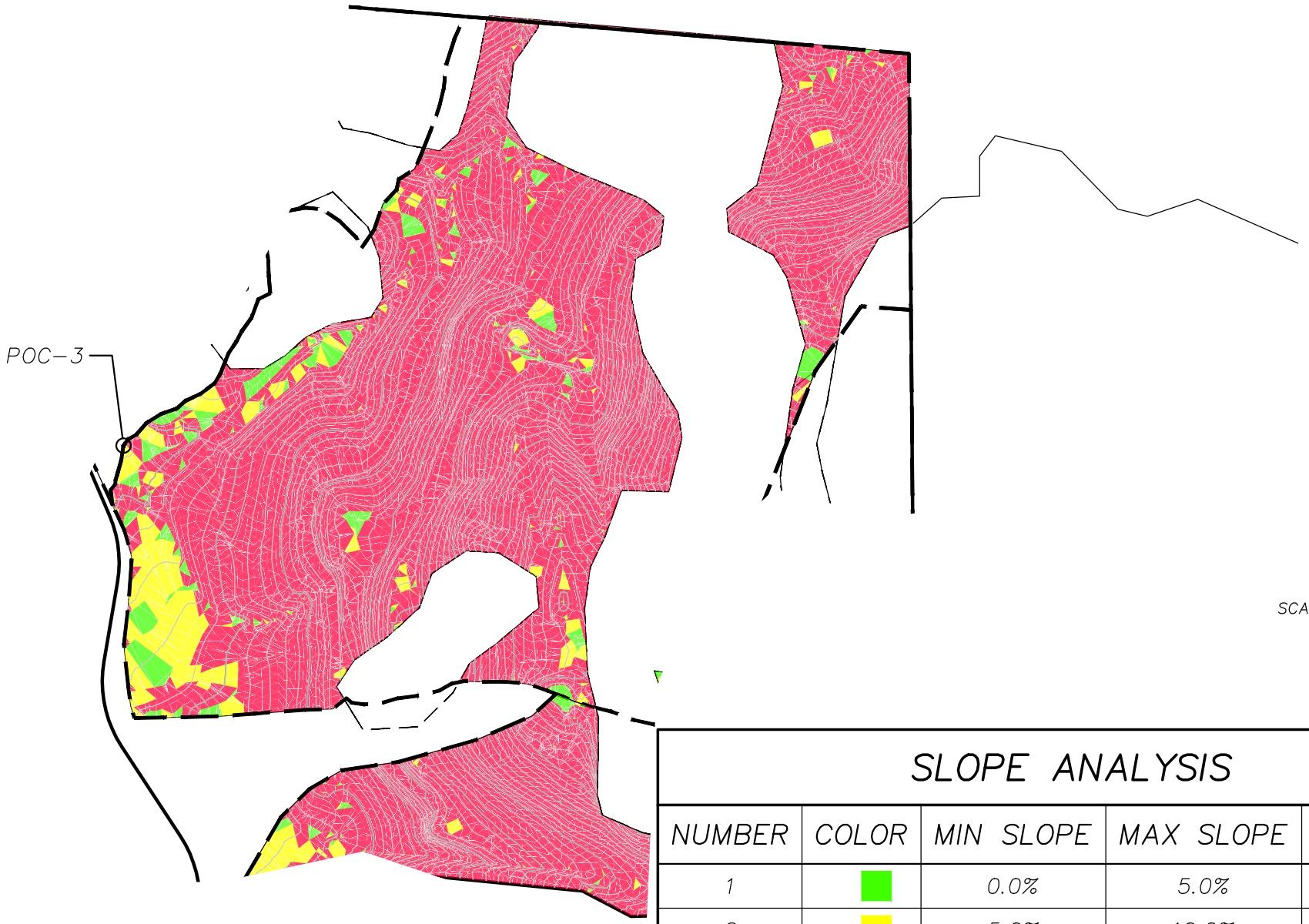
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.03
2		5.0%	10.0%	0.02
3		10.0%	1000.0%	0.84

SLOPE ANALYSIS: GILDRED TPM
PRE-DEVELOPMENT PERVIOUS AREAS
POC-2

SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.17
2		5.0%	10.0%	0.31
3		10.0%	1000.0%	1.30

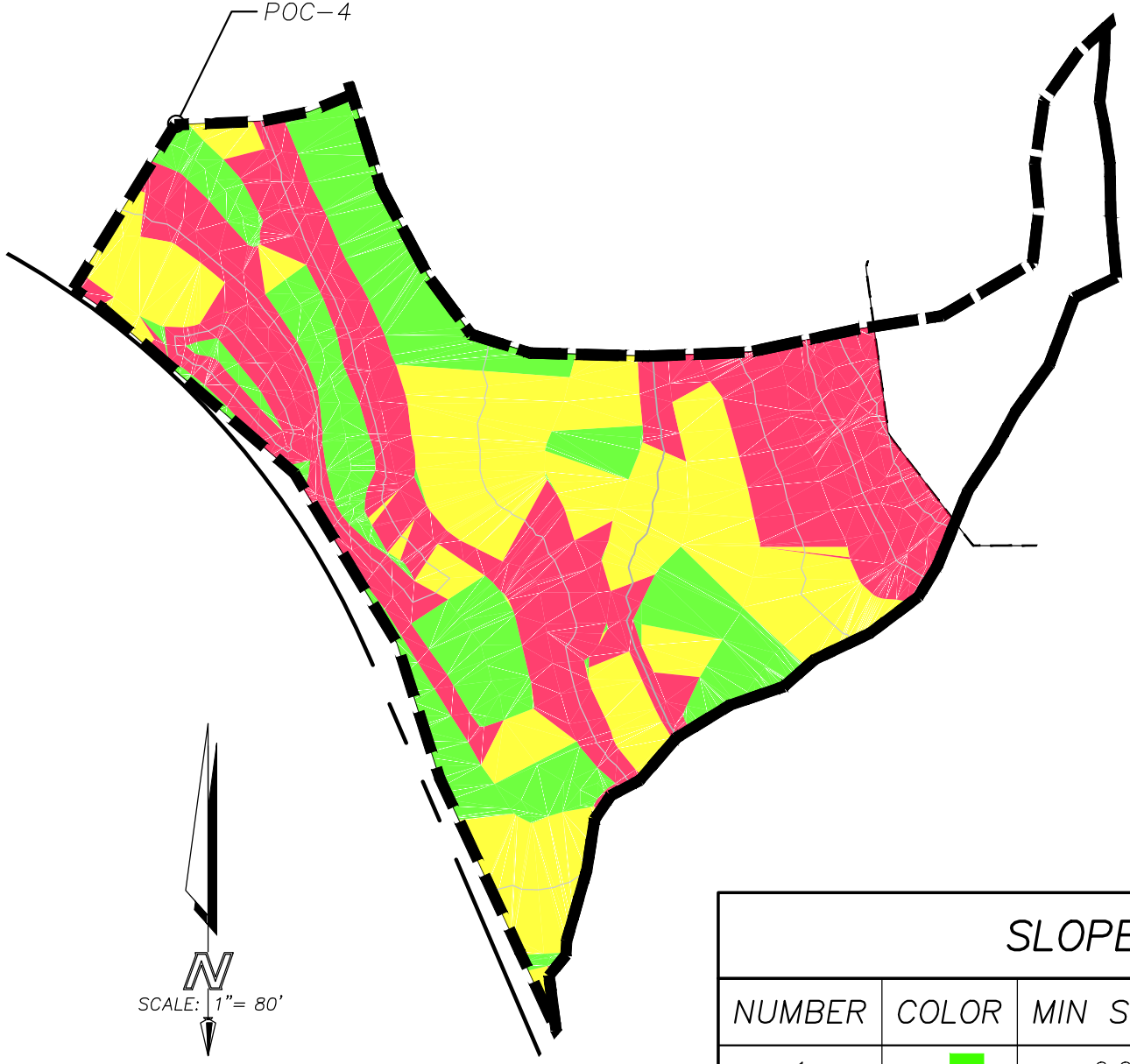


SLOPE ANALYSIS: GILDRED TPM
PRE-DEVELOPMENT PERVIOUS AREAS
POC-3



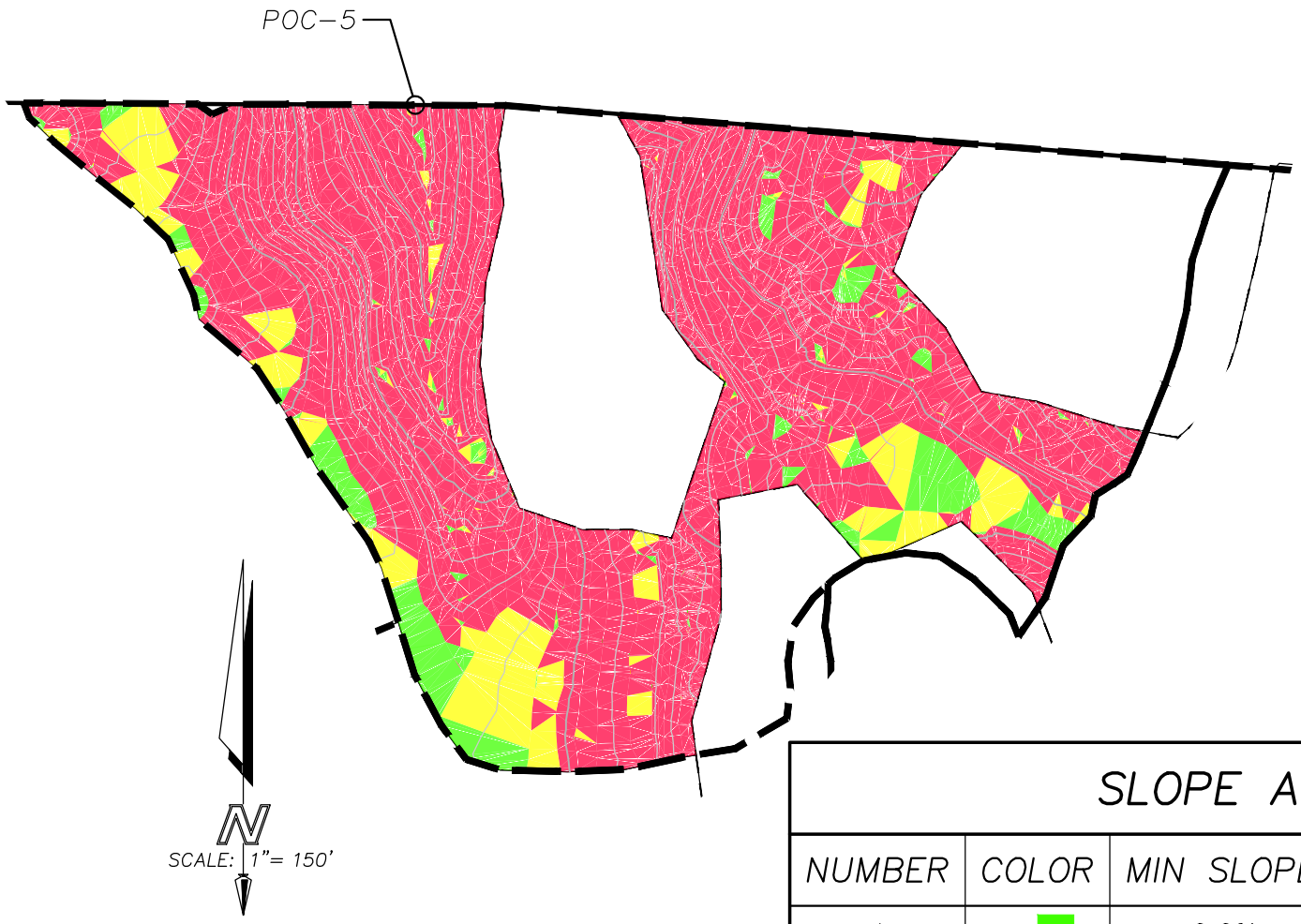
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.68
2		5.0%	10.0%	1.09
3		10.0%	1000.0%	14.72

SLOPE ANALYSIS: GILDRED TPM
PRE-DEVELOPMENT PERVIOUS AREAS
POC-4



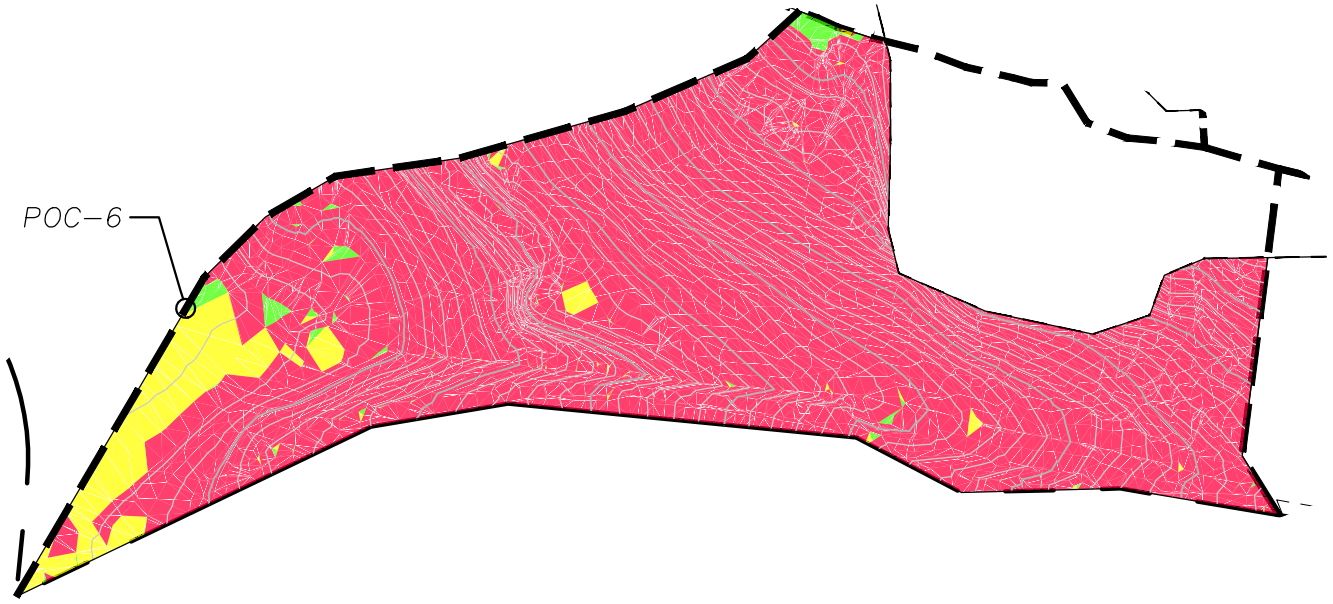
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.42
2		5.0%	10.0%	0.55
3		10.0%	1000.0%	0.65

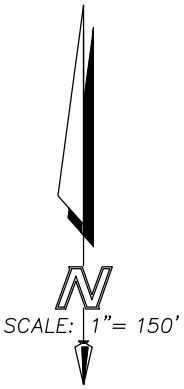
SLOPE ANALYSIS: GILDRED TPM
PRE-DEVELOPMENT PERVIOUS AREAS
POC-5



SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.38
2		5.0%	10.0%	0.60
3		10.0%	1000.0%	4.16

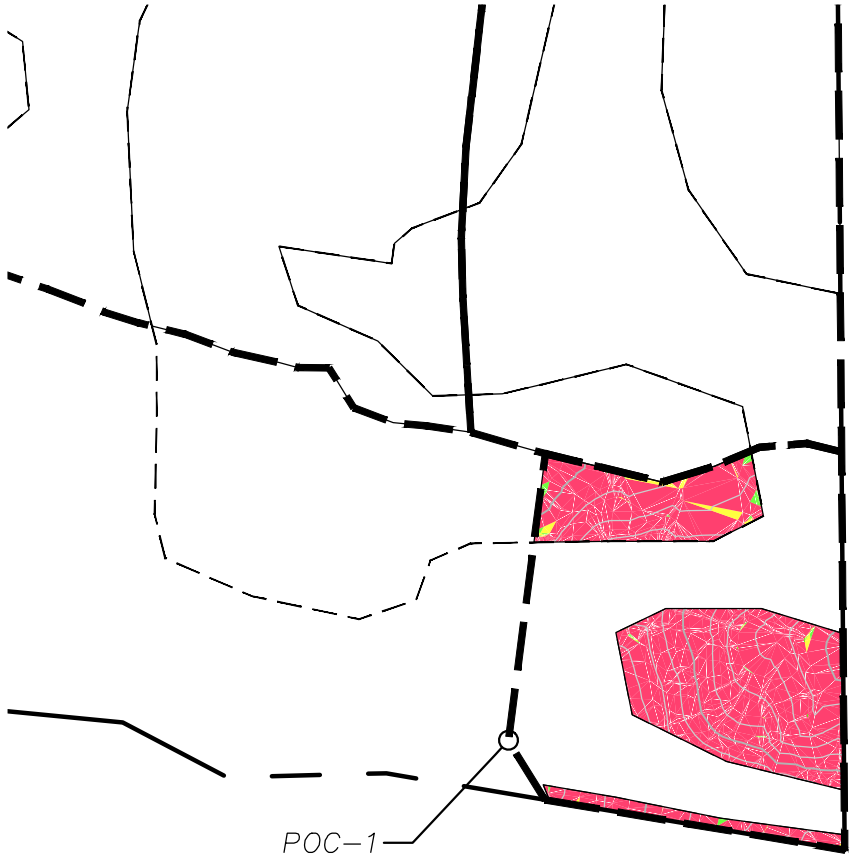
SLOPE ANALYSIS: GILDRED TPM
PRE-DEVELOPMENT PERVIOUS AREAS
POC-6





SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.05
2		5.0%	10.0%	0.28
3		10.0%	1000.0%	3.90

SLOPE ANALYSIS: GILDRED TPM
PRE-DEVELOPMENT IMPERVIOUS AREAS
POC-1



SCALE: 1"= 150'

SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.01
2		5.0%	10.0%	0.01
3		10.0%	1000.0%	0.69

SLOPE ANALYSIS: GILDRED TPM
PRE-DEVELOPMENT IMPERVIOUS AREAS
POC-2

SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.25
2		5.0%	10.0%	0.23
3		10.0%	1000.0%	2.06