

**HYDROMODIFICATION
MANAGEMENT PLAN
(HMP)
FOR:**

GILDRED TPM

San Diego County, California

PREPARED FOR:

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Date: 7/19/2017

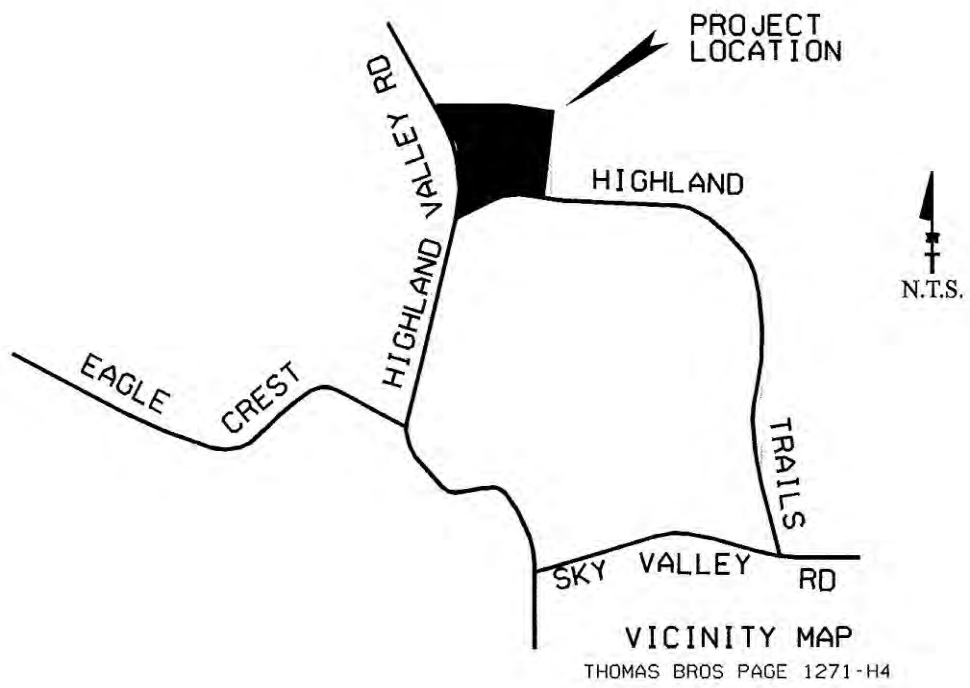


A handwritten signature in black ink, appearing to read "David Yeh", written over a horizontal line.

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

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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 impervious 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 accessory pad for Parcel 1. A drain inlet will collect the runoff from the accessory 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.

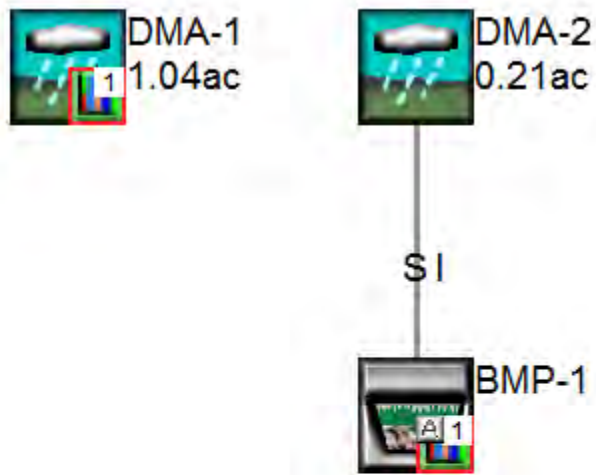
HYDROMODIFICATION ANALYSIS

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

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

<u>Pervious Land Use</u>	<u>acre</u>
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
<u>Impervious Land Use</u>	<u>acre</u>
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

<u>Stage(feet)</u>	<u>Area(ac.)</u>	<u>Volume(ac-ft.)</u>	<u>Discharge(cfs)</u>	<u>To Amended(cfs)</u>	<u>Wetted Surface</u>
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

<u>Pervious Land Use</u>	<u>acre</u>
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

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	0.419082
5 year	0.623026
10 year	0.793186
25 year	0.955448

Flow Frequency Return Periods for Mitigated. POC #1

<u>Return Period</u>	<u>Flow(cfs)</u>
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

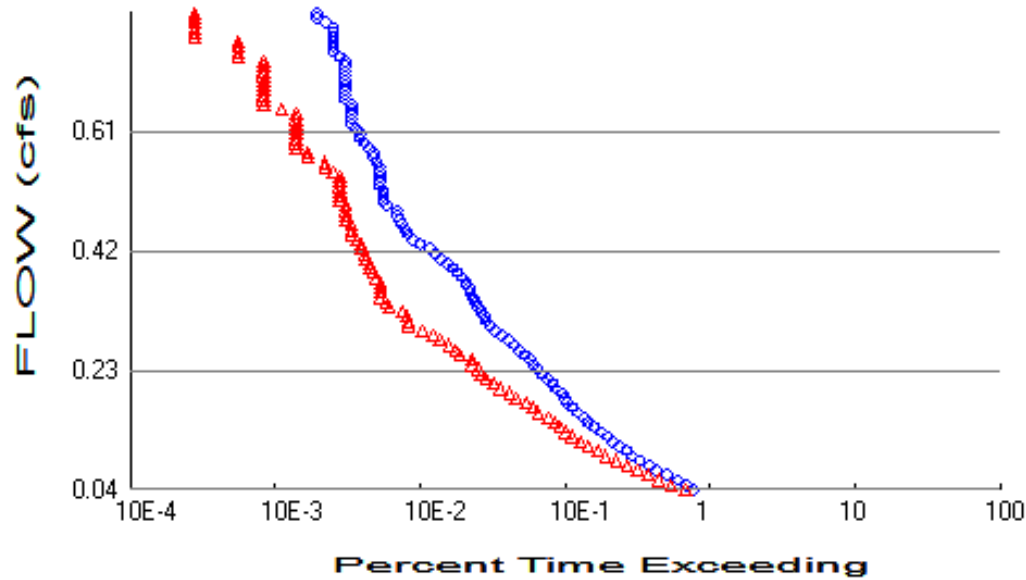
Drawdown Time Results

Perlnd and Implnd Changes

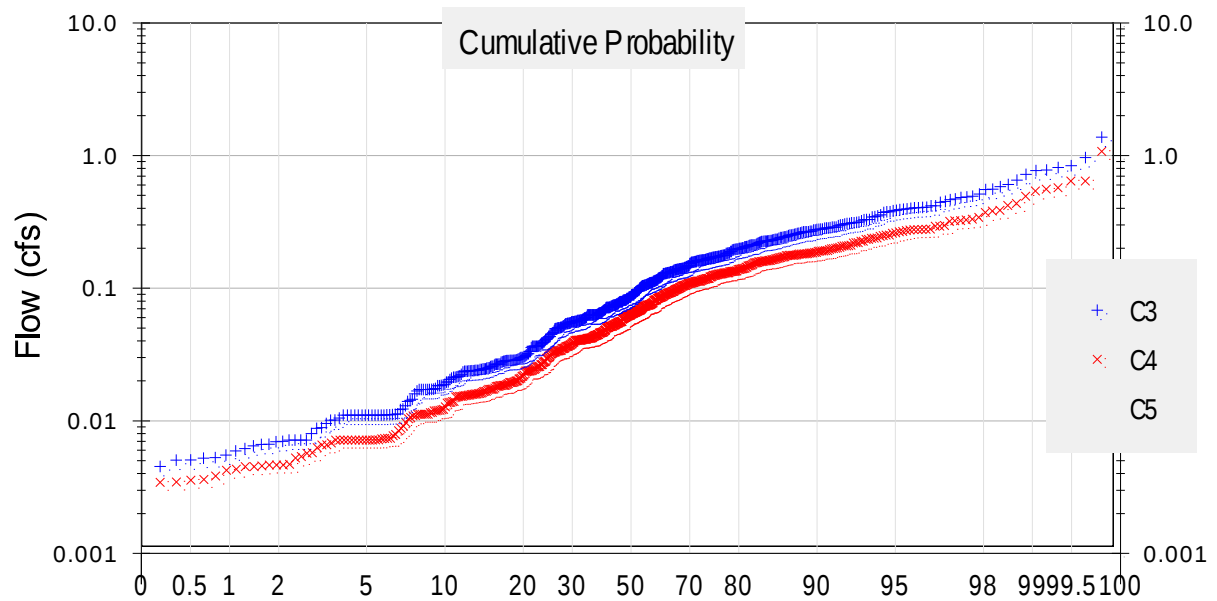
No changes have been made.

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DURATION



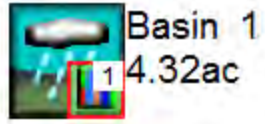
FREQUENCY

DRAWDOWN

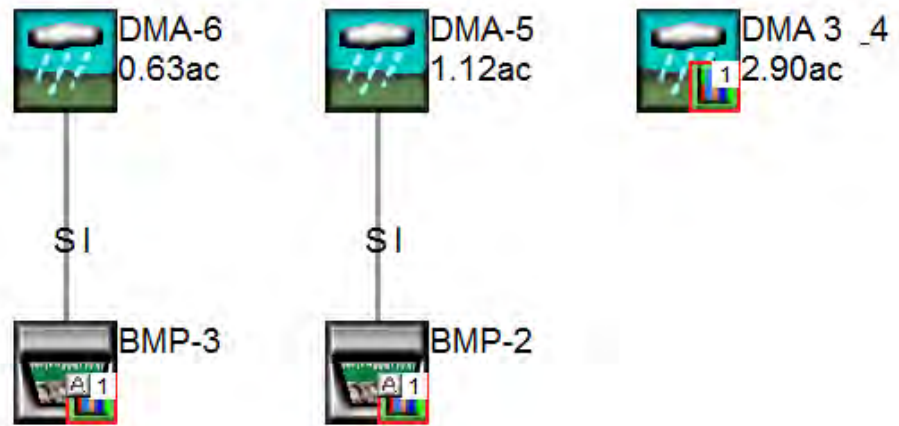
The drawdown time is less than 24 hours so no vector control plan is required.

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

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

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

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

<u>Pervious Land Use</u>	<u>acre</u>
D,Dirt, Flat(0-5%)	.11
D,Dirt, Mod(5-10%)	.21
D,Dirt, StEEP(10-20	.82

Pervious Total	1.14
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<u>Impervious Land Use</u>	<u>acre</u>
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	1.59

Impervious Total	1.76
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Basin Total	2.9
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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

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

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	1.281109
5 year	1.810535
10 year	2.255209
25 year	2.736607

Flow Frequency Return Periods for Mitigated. POC #1

<u>Return Period</u>	<u>Flow(cfs)</u>
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

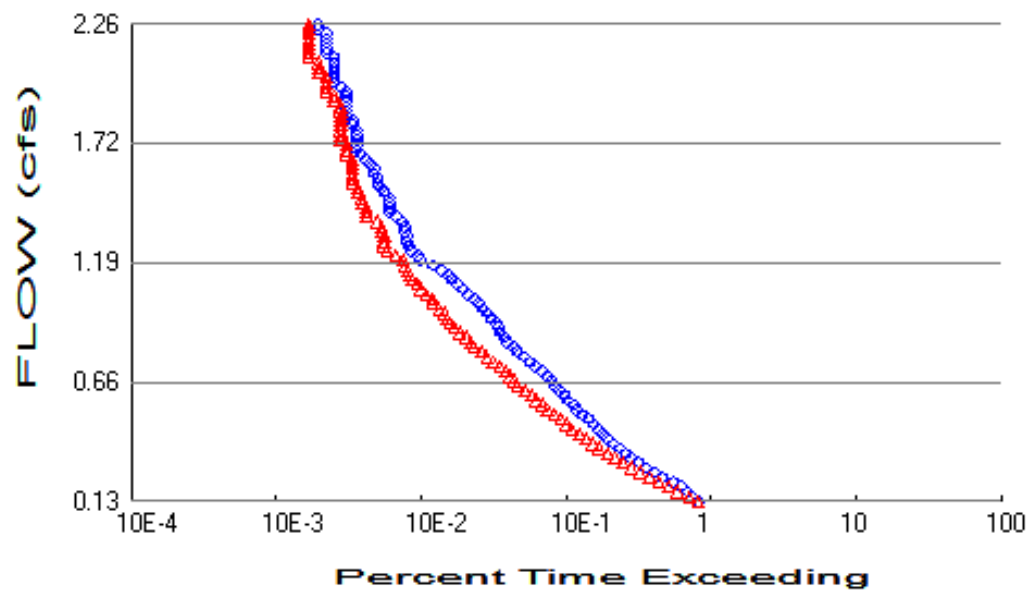
Drawdown Time Results

PerIInd and ImplInd Changes

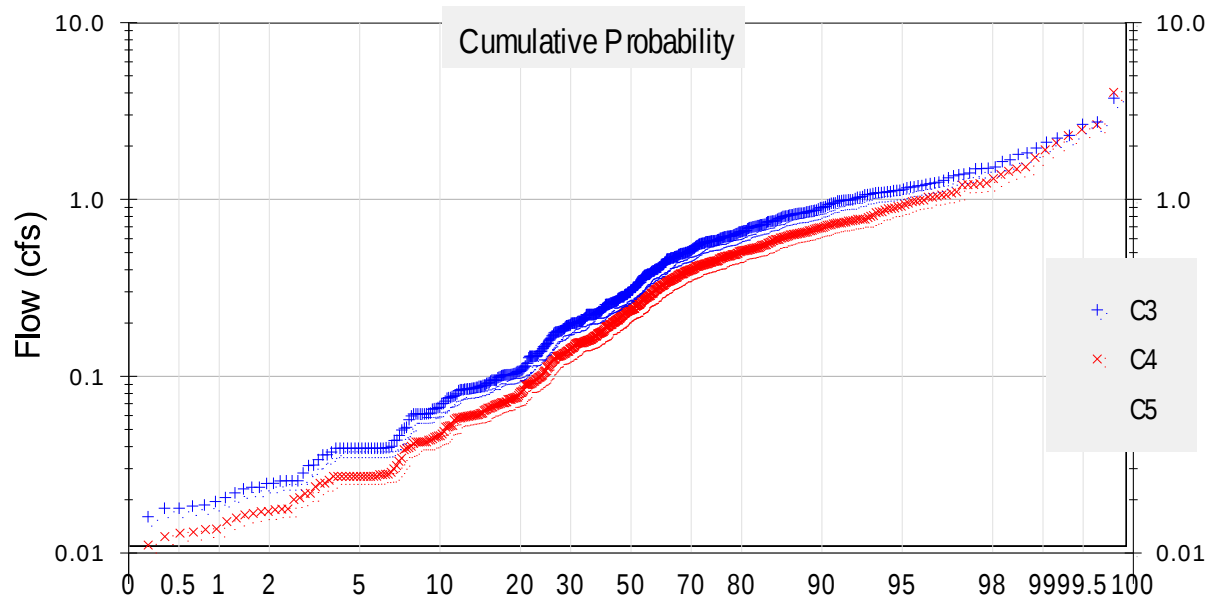
No changes have been made.

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DURATION



FREQUENCY

DRAWDOWN

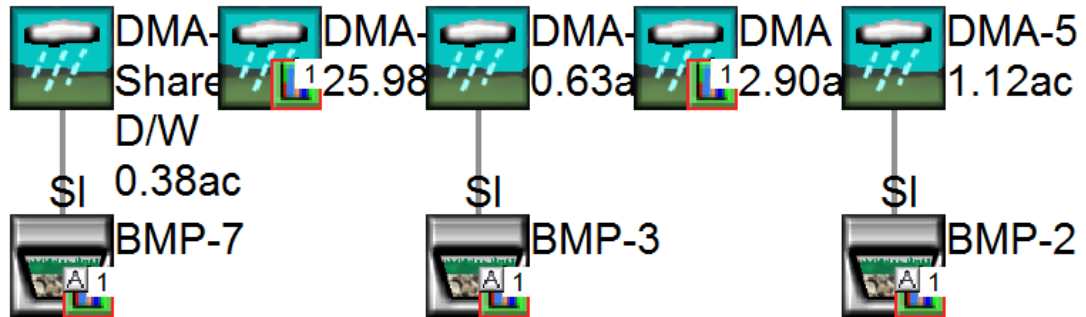
The drawdown time is less than 24 hours so no vector control plan is required.

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

<u>Pervious Land Use</u>	<u>acre</u>
D,Dirt, Flat(0-5%)	.68
D,Dirt, Mod(5-10%)	1.09
D,Dirt, StEEP(10-20)	14.72

Pervious Total	16.49
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<u>Impervious Land Use</u>	<u>acre</u>
IMPERVIOUS-FLAT	0.25
IMPERVIOUS-MOD	9.33

Impervious Total	9.58
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Basin Total	26.07
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Element Flows To:

Surface	Interflow	Groundwater
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Name : From POC-2
Bypass: No

GroundWater: No

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

<u>Pervious Land Use</u>	<u>acre</u>
B,Grass,STEEP(10-20	.2
Pervious Total	0.2
<u>Impervious Land Use</u>	<u>acre</u>
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

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

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

<u>Pervious Land Use</u>	<u>acre</u>
D, Dirt, Flat(0-5%)	.11
D, Dirt, Mod(5-10%)	.21
D, Dirt, STEEP(10-20	.82
Pervious Total	1.14
<u>Impervious Land Use</u>	<u>acre</u>
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	1.59
Impervious Total	1.76
Basin Total	2.9

Element Flows To:

Surface	Interflow	Groundwater
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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

<u>Pervious Land Use</u>	<u>acre</u>
B, Grass, STEEP(10-20)	.26
B, Grass, FLAT(0-5%)	.39

Pervious Total	0.65
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<u>Impervious Land Use</u>	<u>acre</u>
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	0.3

Impervious Total	0.47
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Basin Total	1.12
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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

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	7.609284
5 year	11.386265
10 year	14.722354
25 year	17.846206

Flow Frequency Return Periods for Mitigated. POC #1

<u>Return Period</u>	<u>Flow(cfs)</u>
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

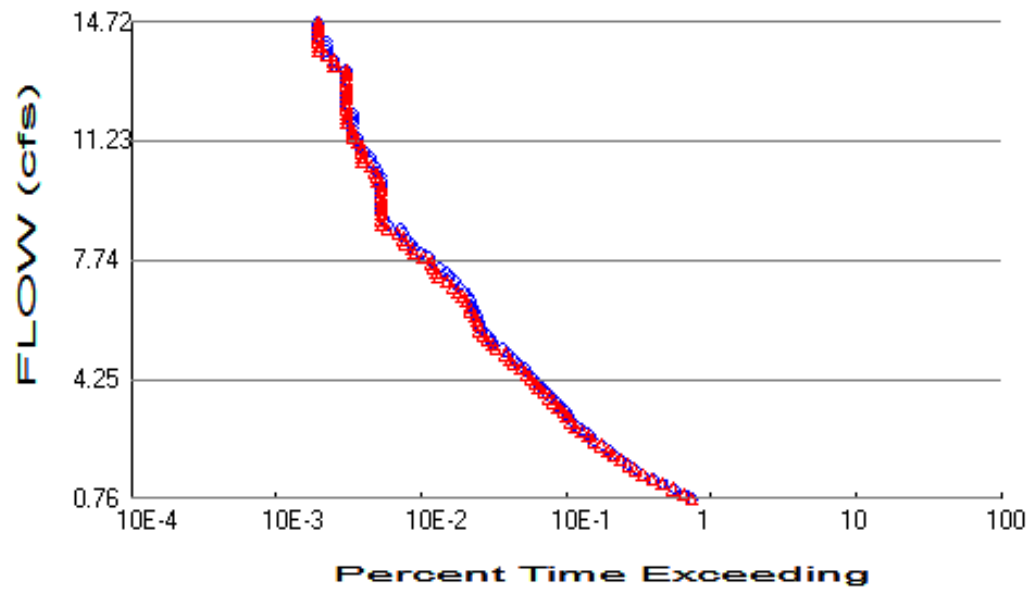
Drawdown Time Results

PerIInd and ImplInd Changes

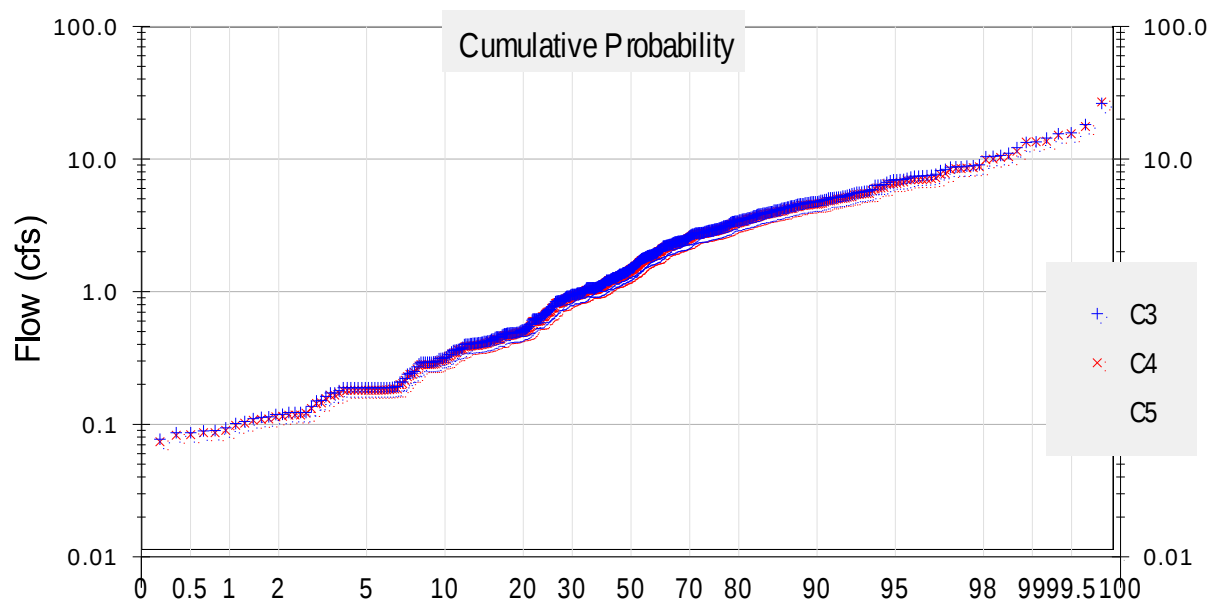
No changes have been made.

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DURATION



FREQUENCY

DRAWDOWN

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

POC-4

PRE-DEVELOPMENT



Basin 1
1.84ac

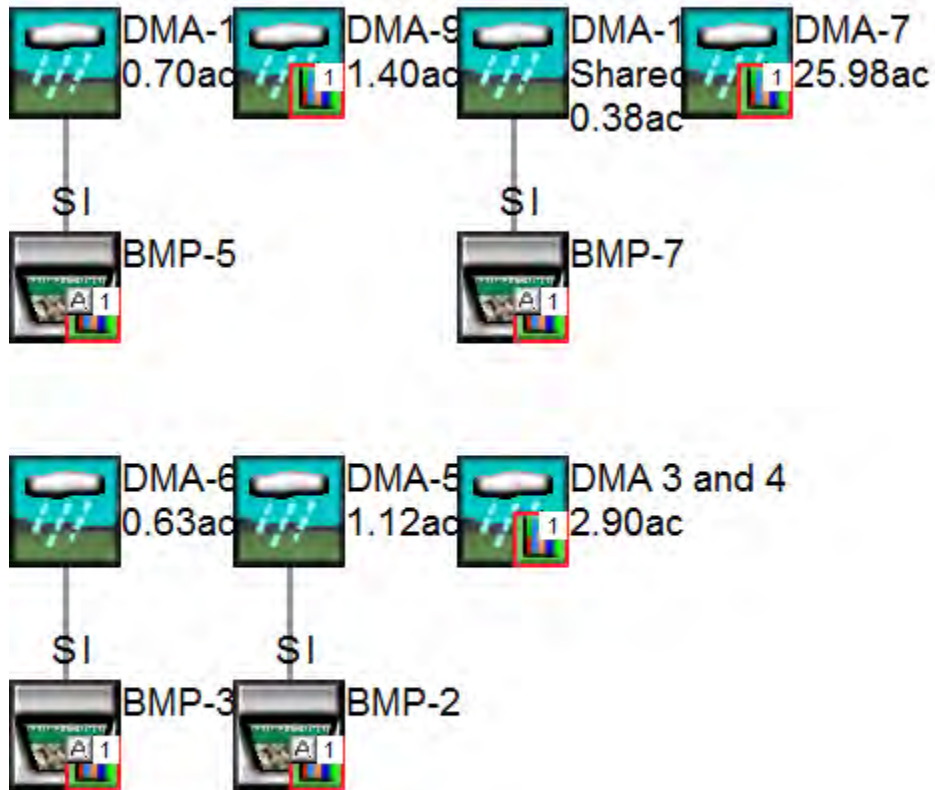


POC-3
26.39ac



POC-2
4.32ac

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

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

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

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

<u>Pervious Land Use</u>	<u>acre</u>
B, Grass, FLAT(0-5%)	.31
B, Grass, STEEP(10-20)	.05
Pervious Total	0.36
<u>Impervious Land Use</u>	<u>acre</u>
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

<u>Pervious Land Use</u>	<u>acre</u>
D, Dirt, Flat(0-5%)	.44
D, Dirt, Mod(5-10%)	.52
D, Dirt, STEEP(10-20)	.44
Pervious Total	1.4
<u>Impervious Land Use</u>	<u>acre</u>
Impervious Total	0
Basin Total	1.4

Element Flows To:

Surface	Interflow	Groundwater
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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

<u>Stage(feet)</u>	<u>Area(ac.)</u>	<u>Volume(ac-ft.)</u>	<u>Discharge(cfs)</u>	<u>To Amended(cfs)</u>	<u>Wetted Surface</u>
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

<u>Pervious Land Use</u>	<u>acre</u>
B, Grass, STEEP(10-20)	.2
Pervious Total	0.2
<u>Impervious Land Use</u>	<u>acre</u>
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

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

<u>Impervious Land Use</u>	<u>acre</u>
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

<u>Pervious Land Use</u>	<u>acre</u>
B, Grass, FLAT(0-5%)	.3
B, Grass, STEEP(10-20)	.12

Pervious Total	0.42
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<u>Impervious Land Use</u>	<u>acre</u>
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	0.04

Impervious Total	0.21
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Basin Total	0.63
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Element Flows To:		
Surface	Interflow	Groundwater
Surface BMP-3	Surface BMP-3	

Name : DMA-5
Bypass: No

GroundWater: No

<u>Pervious Land Use</u>	<u>acre</u>
B, Grass, FLAT(0-5%)	.38
B, Grass, STEEP(10-20)	.26

Pervious Total	0.64
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<u>Impervious Land Use</u>	<u>acre</u>
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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

<u>Pervious Land Use</u>	<u>acre</u>
D,Dirt, Flat(0-5%)	.11
D,Dirt, Mod(5-10%)	.21
D,Dirt, StEEP(10-20	.82

Pervious Total	1.14
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<u>Impervious Land Use</u>	<u>acre</u>
IMPERVIOUS-FLAT	0.17
IMPERVIOUS-MOD	1.59

Impervious Total	1.76
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Basin Total	2.9
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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

<u>Stage(feet)</u>	<u>Area(ac.)</u>	<u>Volume(ac-ft.)</u>	<u>Discharge(cfs)</u>	<u>Infilt(cfs)</u>
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

<u>Stage(feet)</u>	<u>Area(ac.)</u>	<u>Volume(ac-ft.)</u>	<u>Discharge(cfs)</u>	<u>To Amended(cfs)</u>	<u>Wetted Surface</u>
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

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	8.063809
5 year	11.867595
10 year	15.578946
25 year	18.91843

Flow Frequency Return Periods for Mitigated. POC #1

<u>Return Period</u>	<u>Flow(cfs)</u>
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

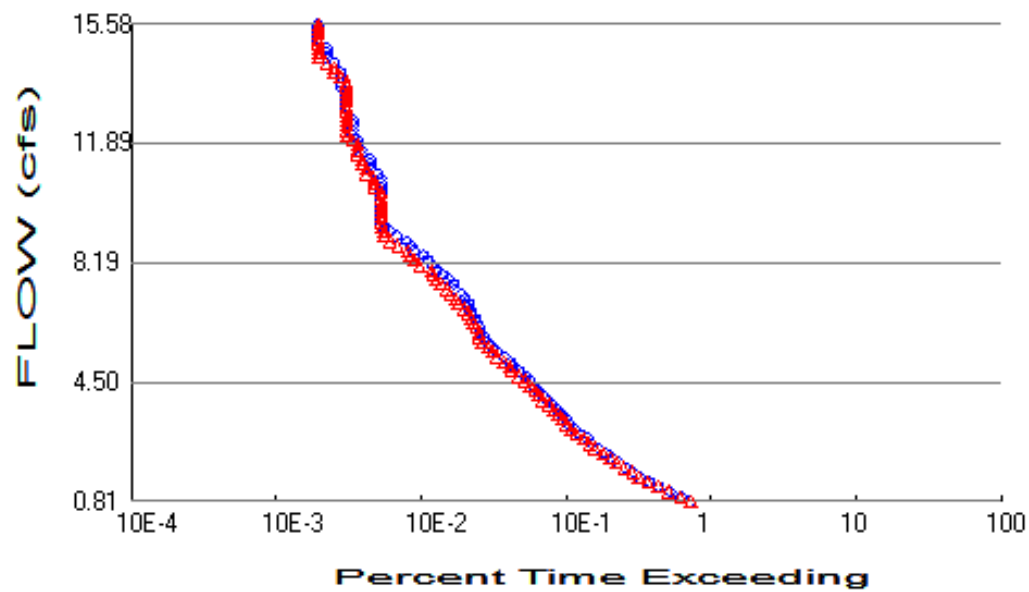
11.1024	16	15	93	Pass
11.2516	16	14	87	Pass
11.4008	16	14	87	Pass
11.5501	14	13	92	Pass
11.6993	14	13	92	Pass
11.8485	13	13	100	Pass
11.9977	13	12	92	Pass
12.1469	12	11	91	Pass
12.2962	12	11	91	Pass
12.4454	12	11	91	Pass
12.5946	12	11	91	Pass
12.7438	11	11	100	Pass
12.8930	11	11	100	Pass
13.0422	11	11	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

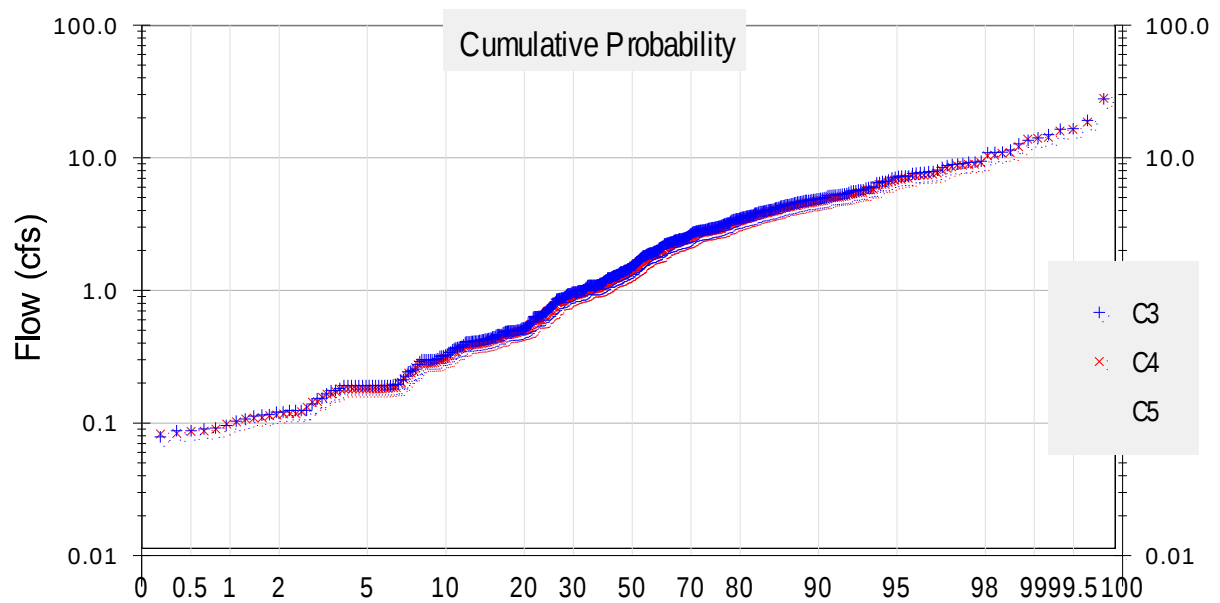
PerInd and Implnd Changes

No changes have been made.

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DURATION



FREQUENCY

DRAWDOWN

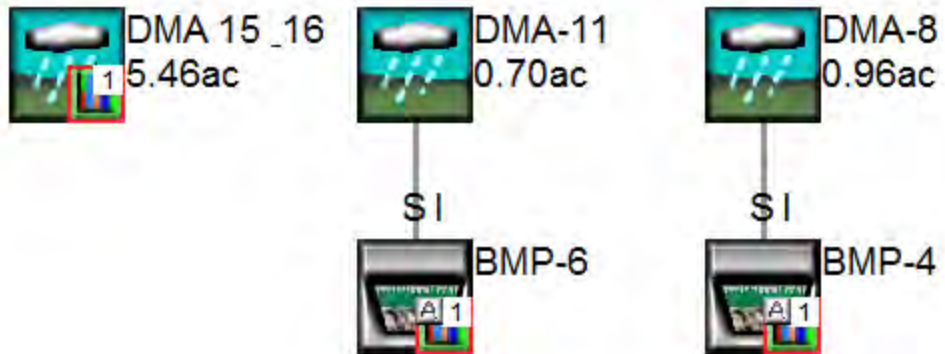
The drawdown time is less than 24 hours so no vector control plan is required.

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

<u>Pervious Land Use</u>	<u>acre</u>
D,Dirt, Flat(0-5%)	.38
D,Dirt, Mod(5-10%)	.6
D,Dirt, StEEP(10-20	4.16

Pervious Total	5.14
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<u>Impervious Land Use</u>	<u>acre</u>
IMPERVIOUS-FLAT	0.06
IMPERVIOUS-MOD	2.65

Impervious Total	2.71
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Basin Total	7.85
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Element Flows To:

Surface

Interflow

Groundwater

MITIGATED LAND USE

Name : DMA-11
Bypass: No

GroundWater: No

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

<u>Pervious Land Use</u>	<u>acre</u>
B, Grass, FLAT (0-5%)	.4
B, Grass, STEEP (10-20)	.15
Pervious Total	0.55
<u>Impervious Land Use</u>	<u>acre</u>
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

<u>Stage(feet)</u>	<u>Area(ac.)</u>	<u>Volume(ac-ft.)</u>	<u>Discharge(cfs)</u>	<u>To Amended(cfs)</u>	<u>Wetted Surface</u>
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
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Impervious Land Use	acre
IMPERVIOUS-FLAT	0.02
IMPERVIOUS-MOD	2.31

Impervious Total	2.33
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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

<u>Return Period</u>	<u>Flow(cfs)</u>
2 year	1.917931
5 year	2.789326
10 year	3.711447
25 year	4.512899

Flow Frequency Return Periods for Mitigated. POC #1

<u>Return Period</u>	<u>Flow(cfs)</u>
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

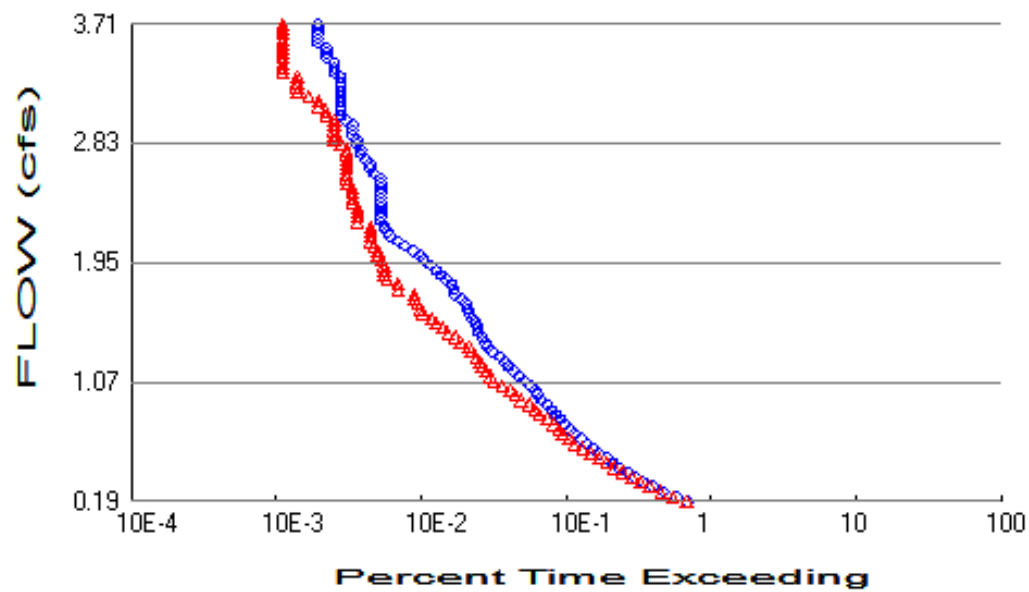
2.4316	19	12	63	Pass
2.4671	19	12	63	Pass
2.5027	19	12	63	Pass
2.5382	19	11	57	Pass
2.5738	19	11	57	Pass
2.6093	17	11	64	Pass
2.6449	16	11	68	Pass
2.6804	16	11	68	Pass
2.7160	15	11	73	Pass
2.7515	14	11	78	Pass
2.7871	14	11	78	Pass
2.8226	13	10	76	Pass
2.8582	13	9	69	Pass
2.8937	12	9	75	Pass
2.9293	12	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

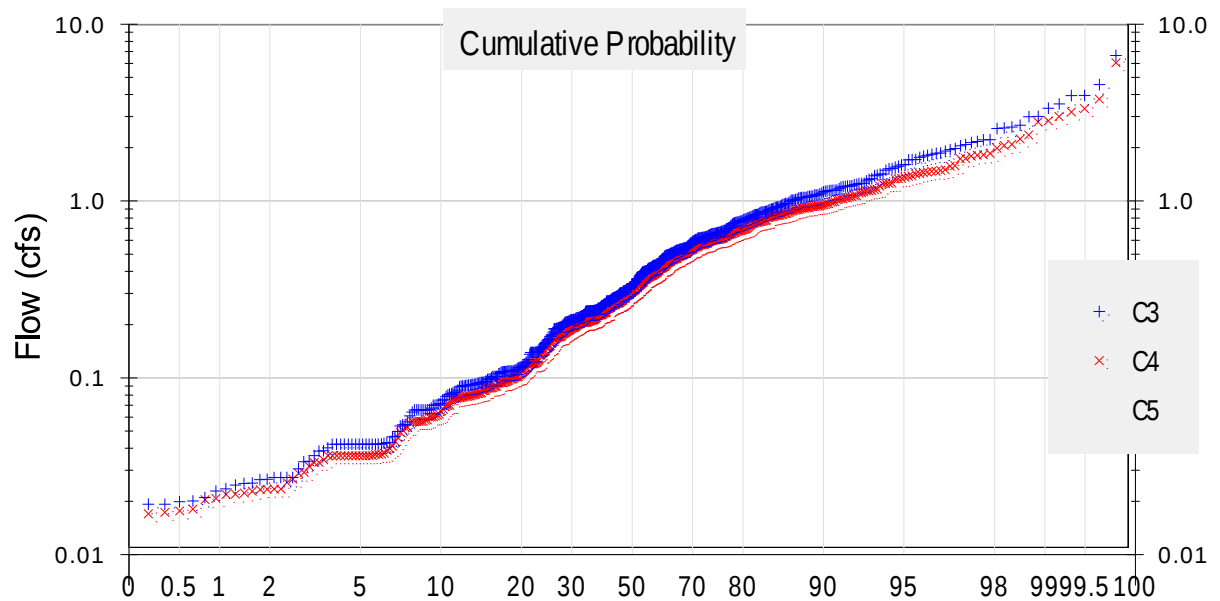
PerIInd and Implnd Changes

No changes have been made.

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DURATION



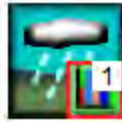
FREQUENCY

DRAWDOWN

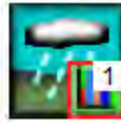
The drawdown time is less than 24 hours so no vector control plan is required.

POC-6

PRE-DEVELOPMENT

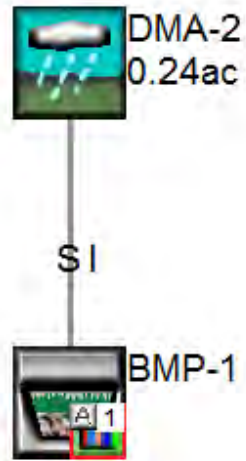
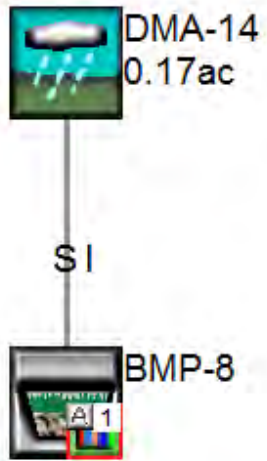


Basin 6
5.24ac



From POC-1
1.60ac

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

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

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

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

<u>Pervious Land Use</u>	<u>acre</u>
B, Grass, MOD(5-10%)	.07
Pervious Total	0.07
<u>Impervious Land Use</u>	<u>acre</u>
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

<u>Pervious Land Use</u>	<u>acre</u>
D, Dirt, StEEP(10-20	.02
Pervious Total	0.02

<u>Impervious Land Use</u>	<u>acre</u>
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

<u>Return Period</u>	<u>Flow(cfs)</u>
----------------------	------------------

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

Flow Frequency Return Periods for Mitigated. POC #1

<u>Return Period</u>	<u>Flow(cfs)</u>
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

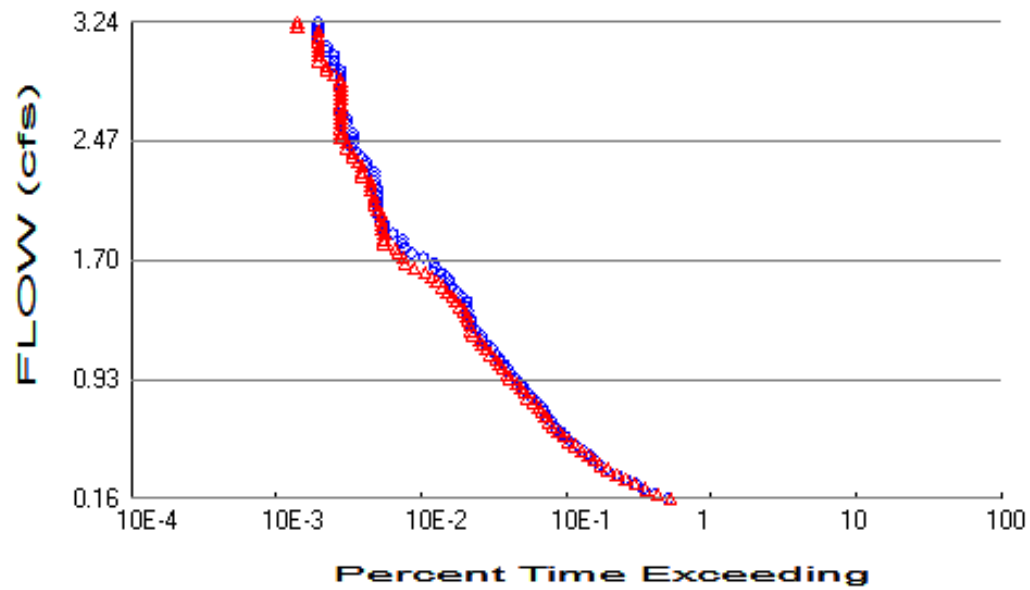
3.0509	8	7	87	Pass
3.0820	8	7	87	Pass
3.1130	7	7	100	Pass
3.1441	7	7	100	Pass
3.1751	7	7	100	Pass
3.2062	7	5	71	Pass
3.2372	7	5	71	Pass

Drawdown Time Results

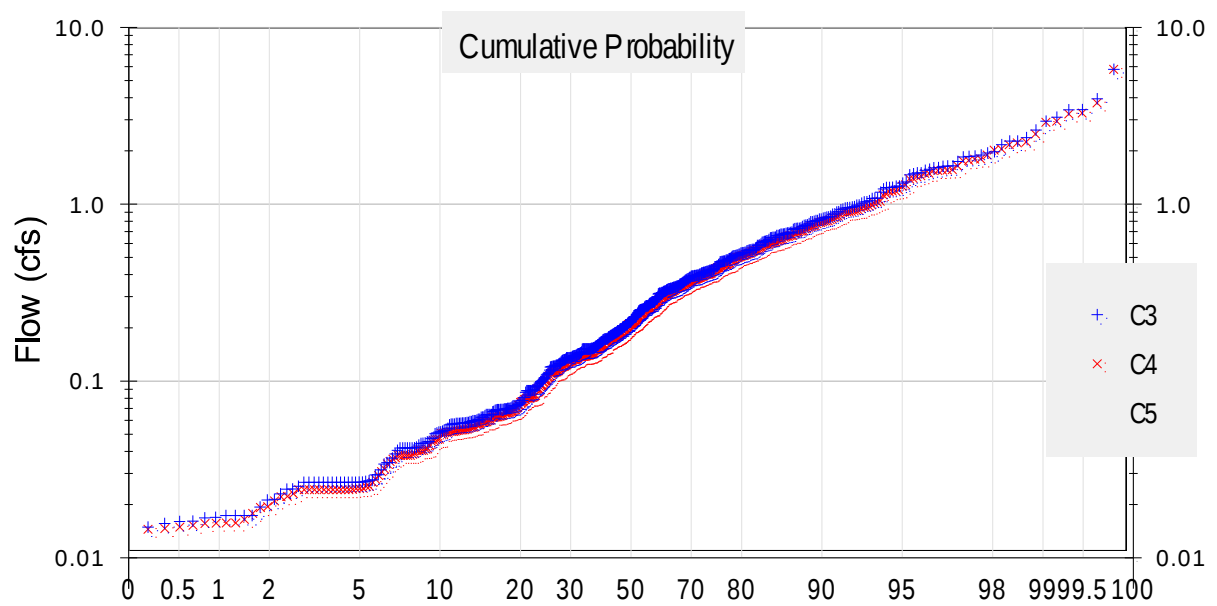
Perlnd and Implnd Changes

No changes have been made.

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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

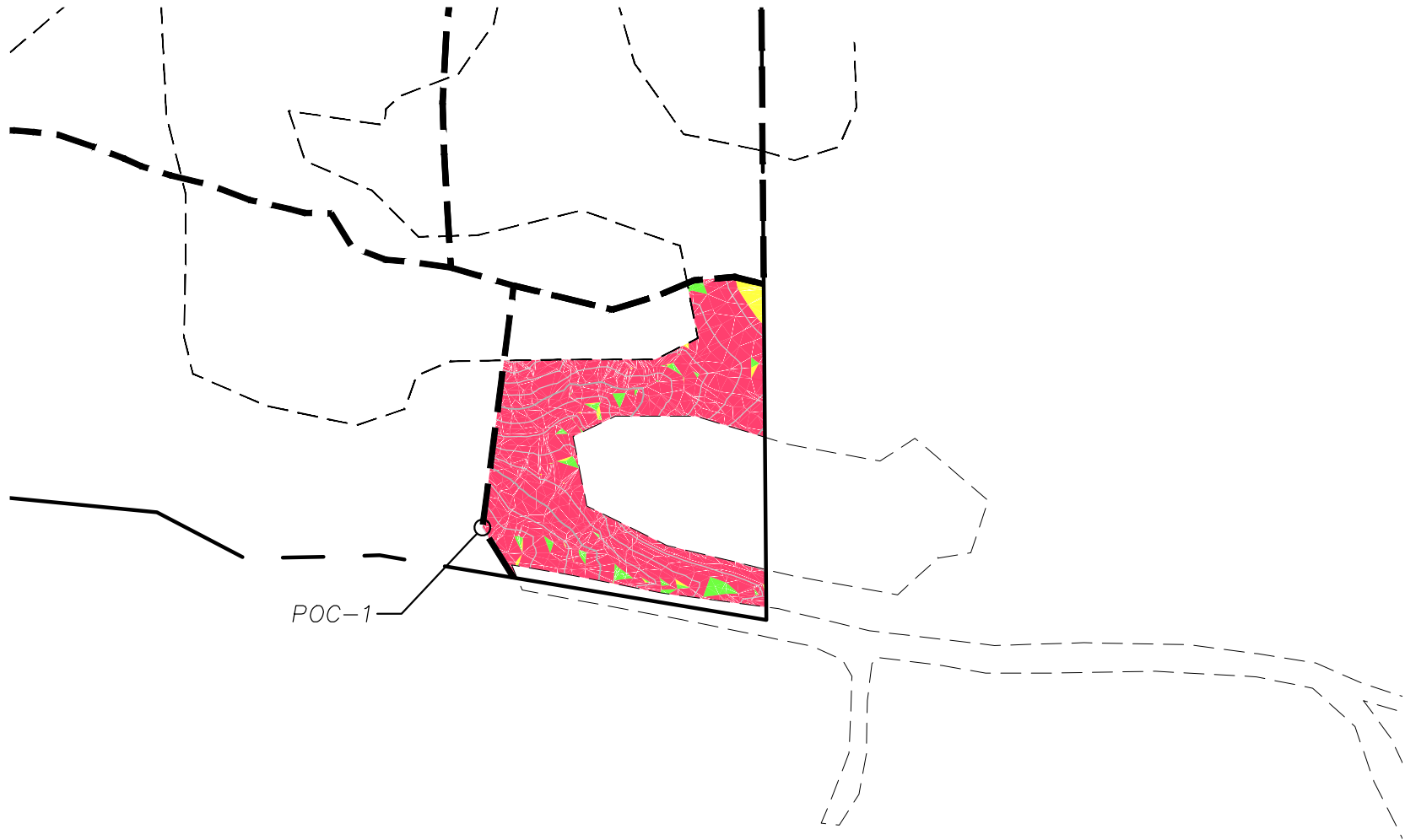
	.1*Q2 (CFS)	Q2 (CFS)	Q5 (CFS)	Q10 (CFS)
PRE-DEV	0.2	1.6	2.3	3.2
POST-DEV	0.2	1.5	2.2	3.0

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.

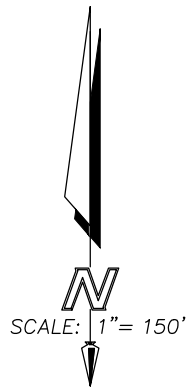
HMP EXHIBITS

SLOPE ANALYSIS: GILDRED TPM PRE-DEVELOPMENT PERVIOUS AREAS

POC-1

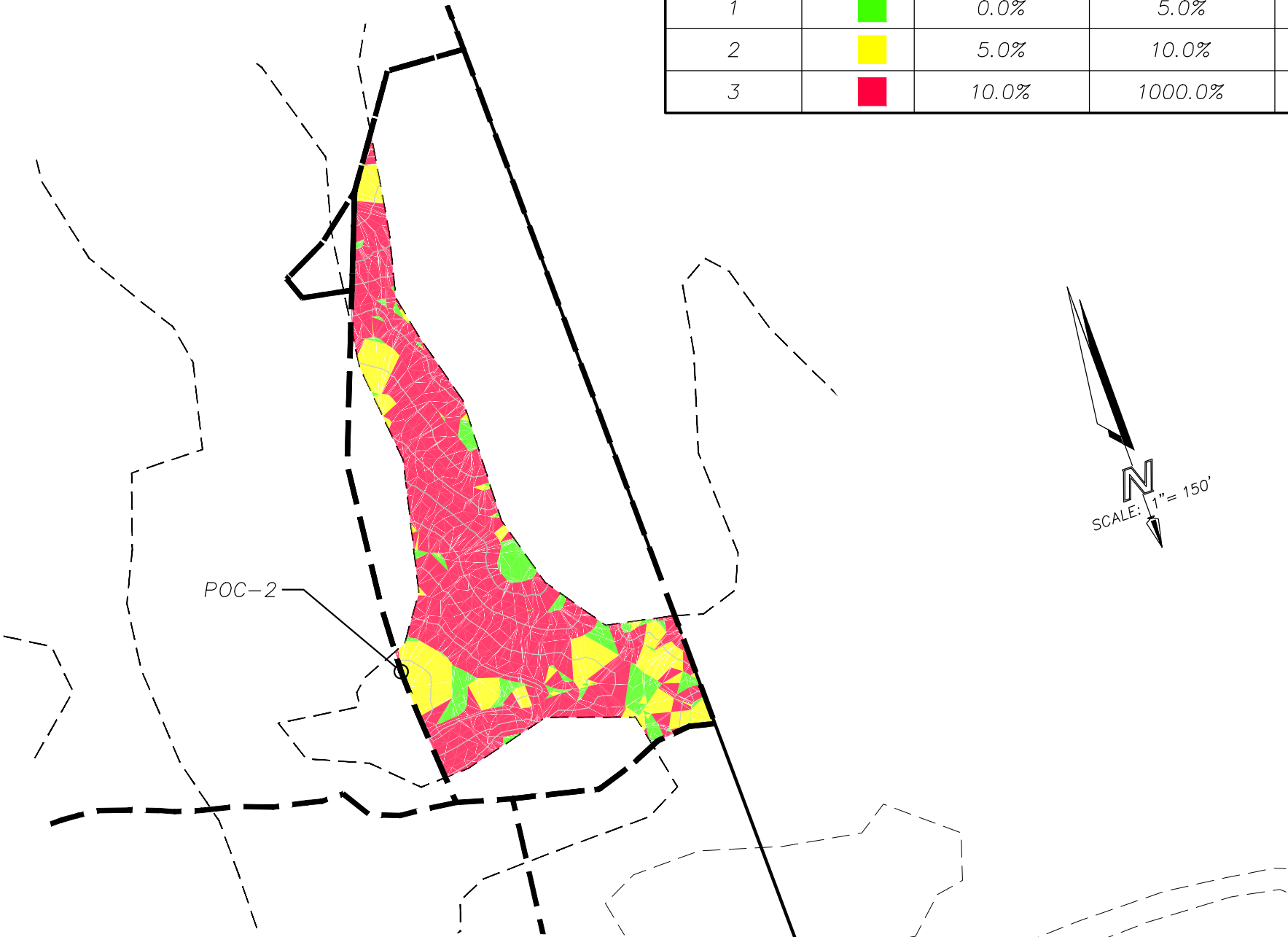


SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.03
2	■	5.0%	10.0%	0.02
3	■	10.0%	1000.0%	0.84

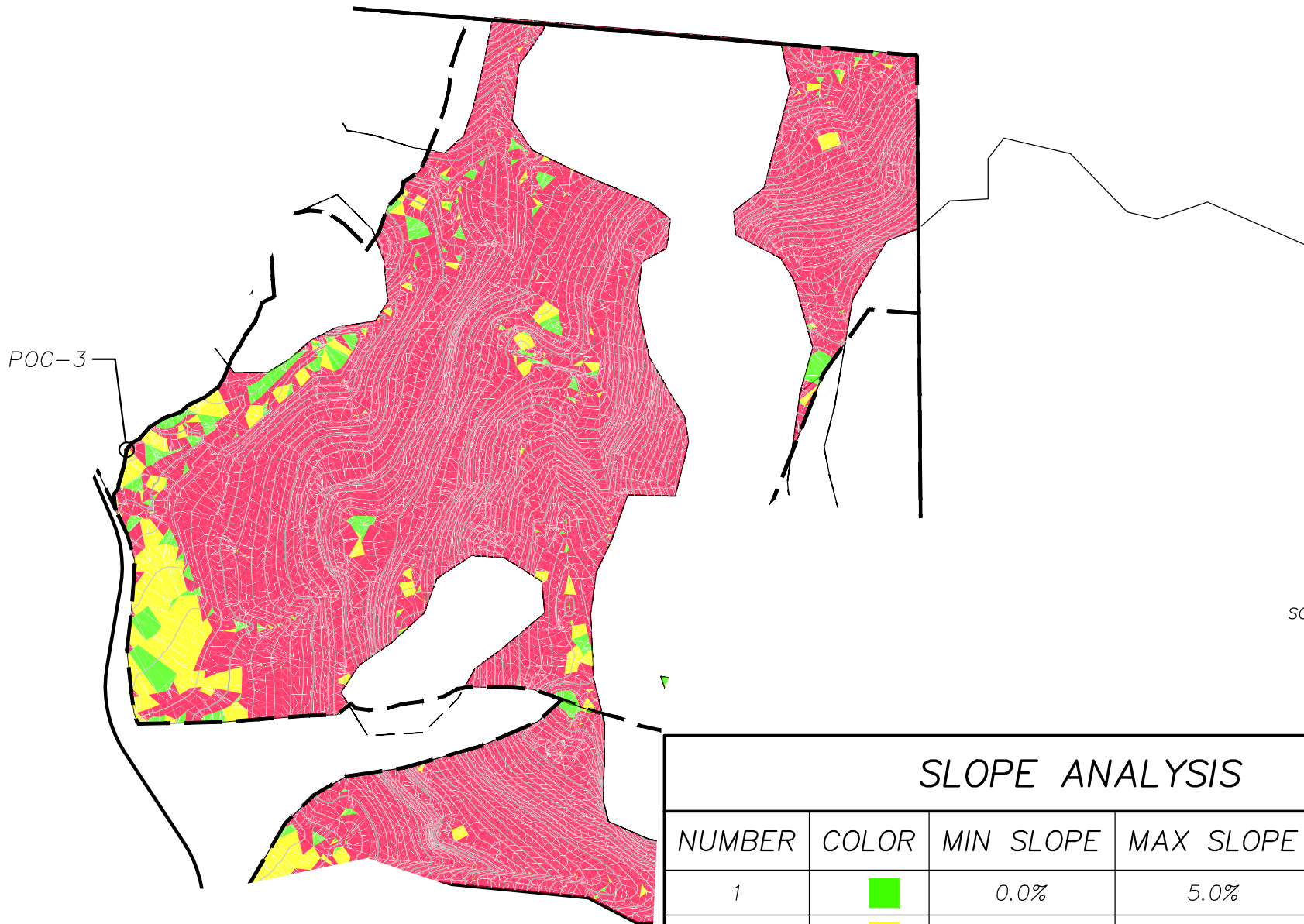


SLOPE ANALYSIS- GILDRED TPM
PRE-DEVELOPMENT PERVIOUS AREAS
POC-2

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

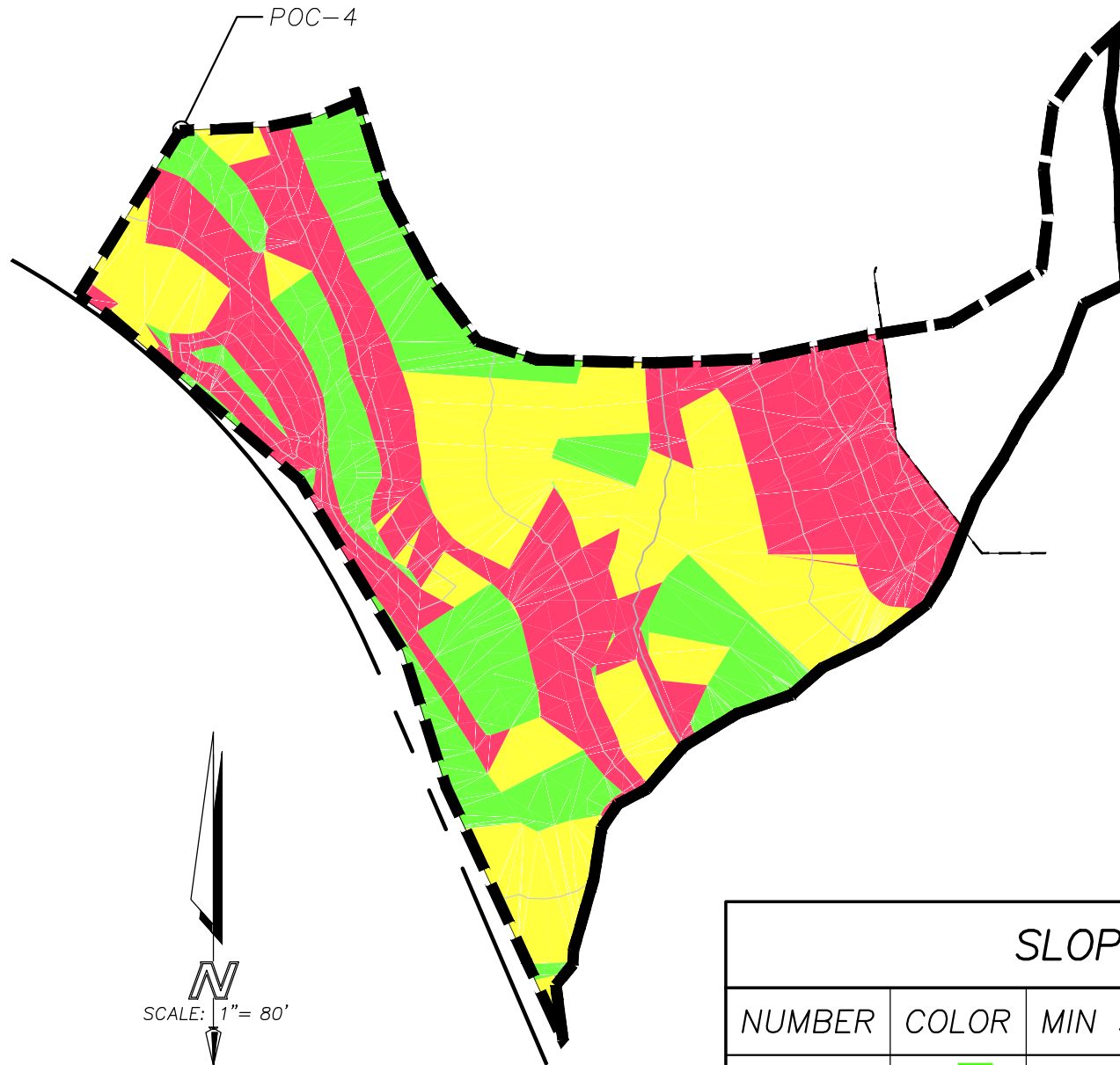


SLOPE ANALYSIS: GILDRED TPM PRE-DEVELOPMENT PERVIOUS AREAS POC-3



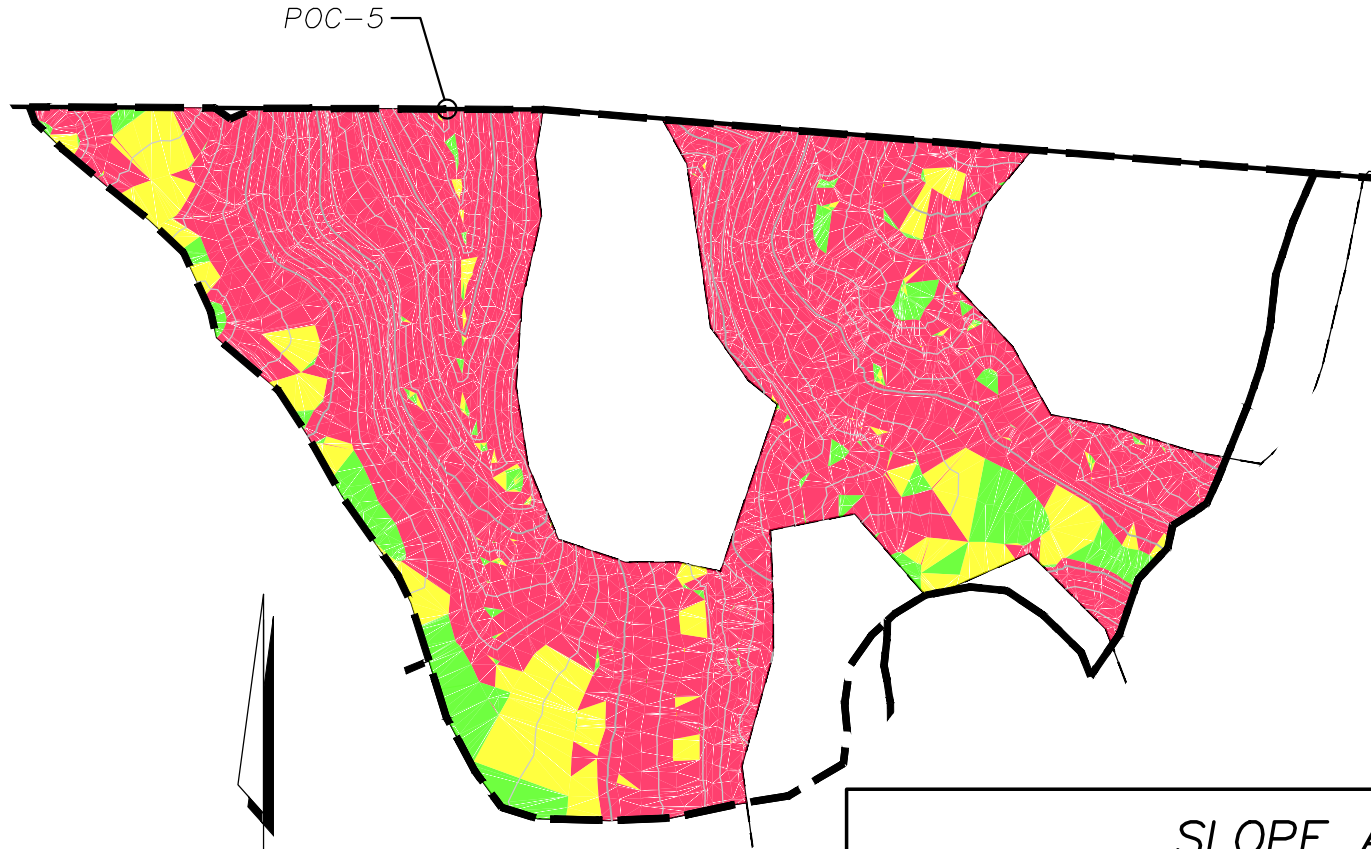
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.68
2	■	5.0%	10.0%	1.09
3	■	10.0%	1000.0%	14.72

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

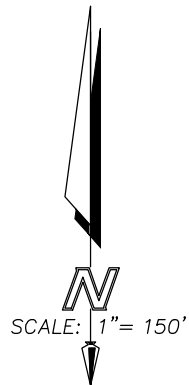
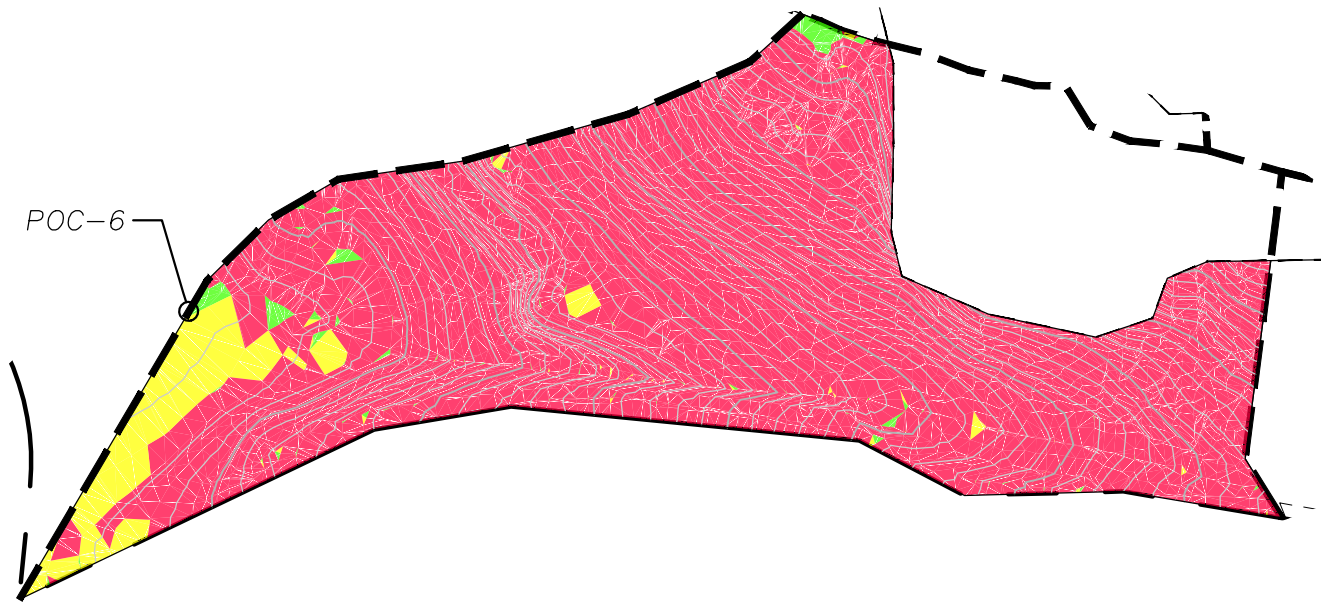
SLOPE ANALYSIS: GILDRED TPM
PRE-DEVELOPMENT PERVIOUS AREAS
POC-5



SLOPE ANALYSIS

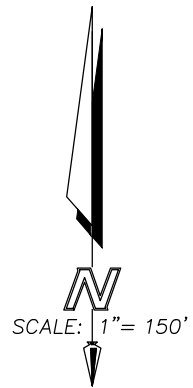
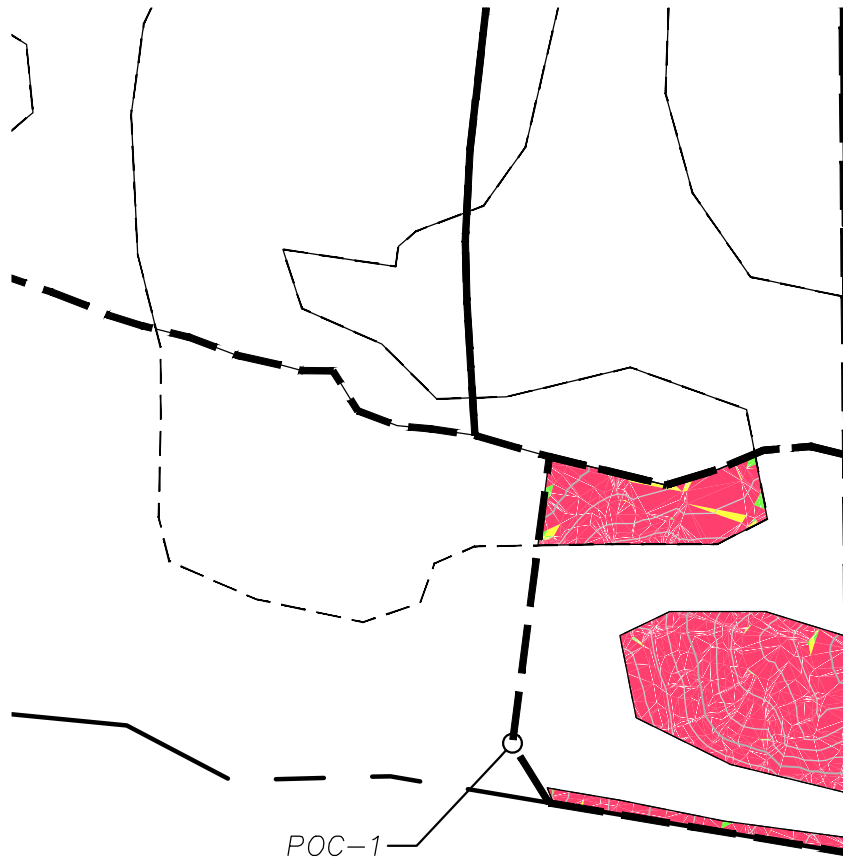
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.38
2		5.0%	10.0%	0.60
3		10.0%	1000.0%	4.16

**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

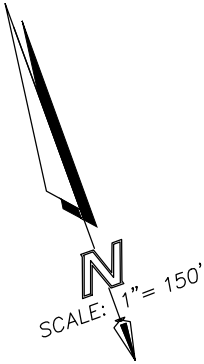
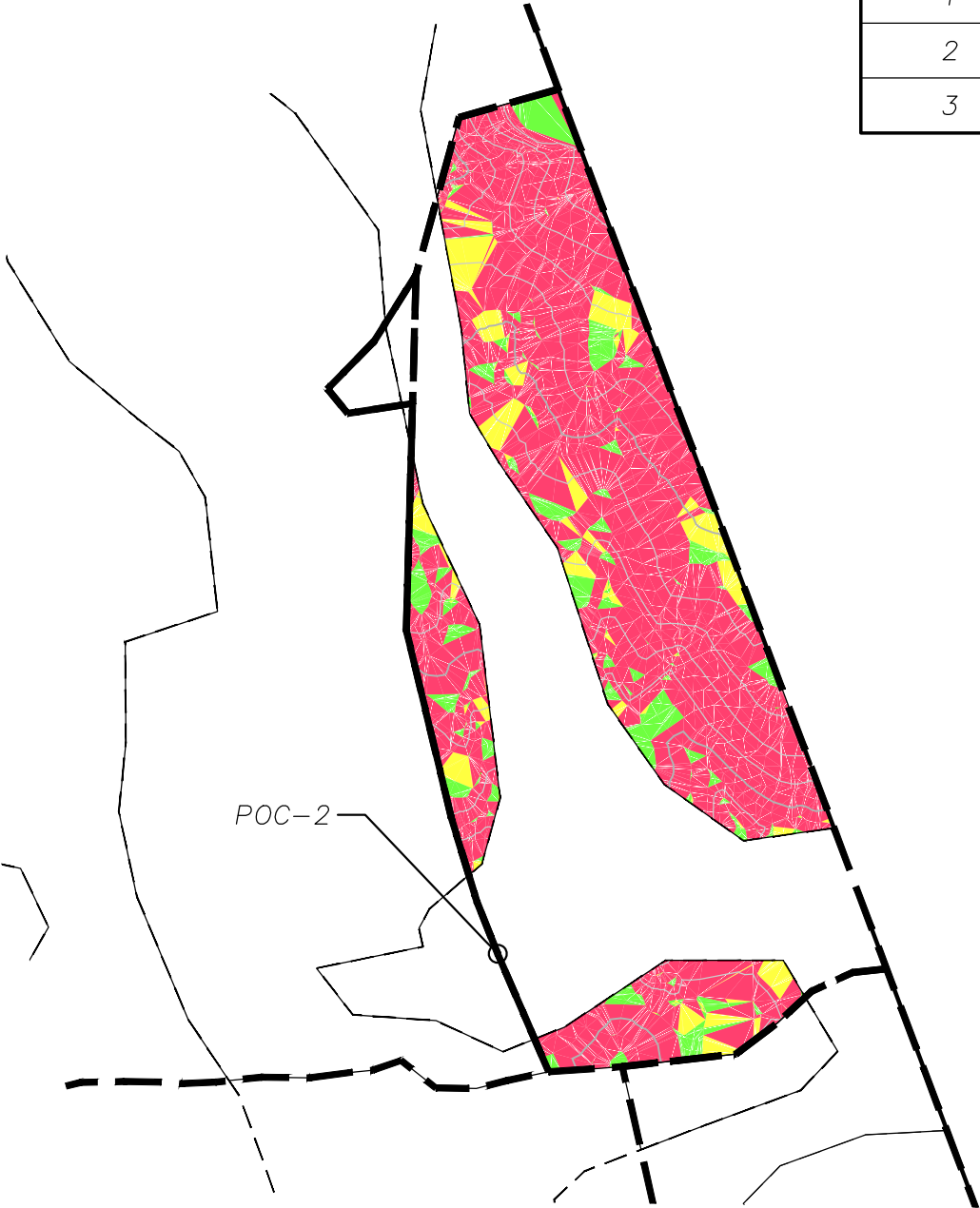
SLOPE ANALYSIS: GILDRED TPM PRE-DEVELOPMENT IMPERVIOUS AREAS POC-1



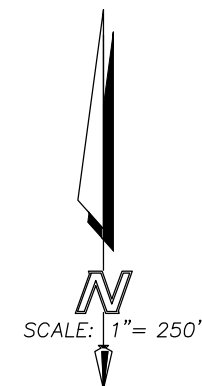
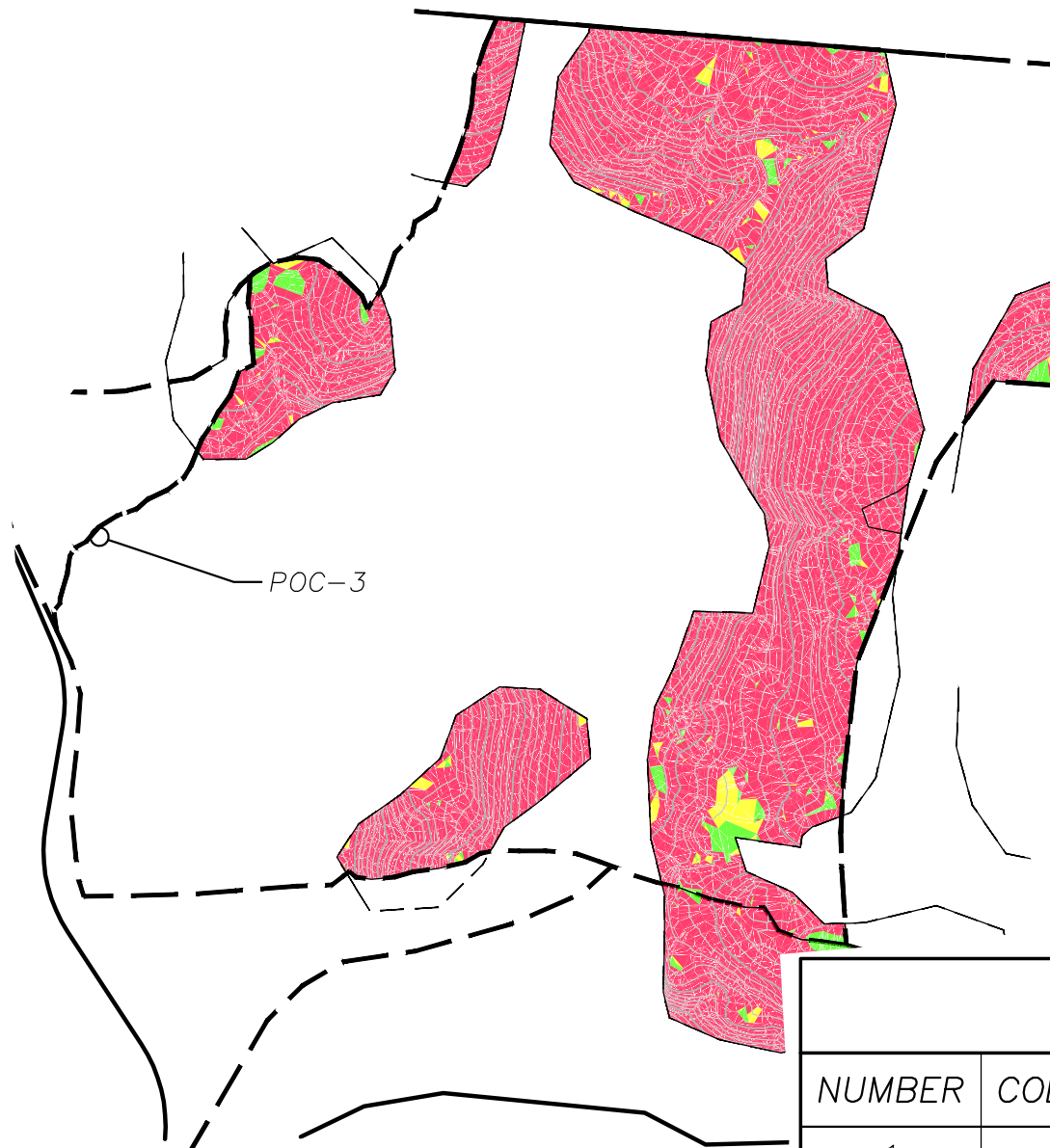
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.01
2	■	5.0%	10.0%	0.01
3	■	10.0%	1000.0%	0.69

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

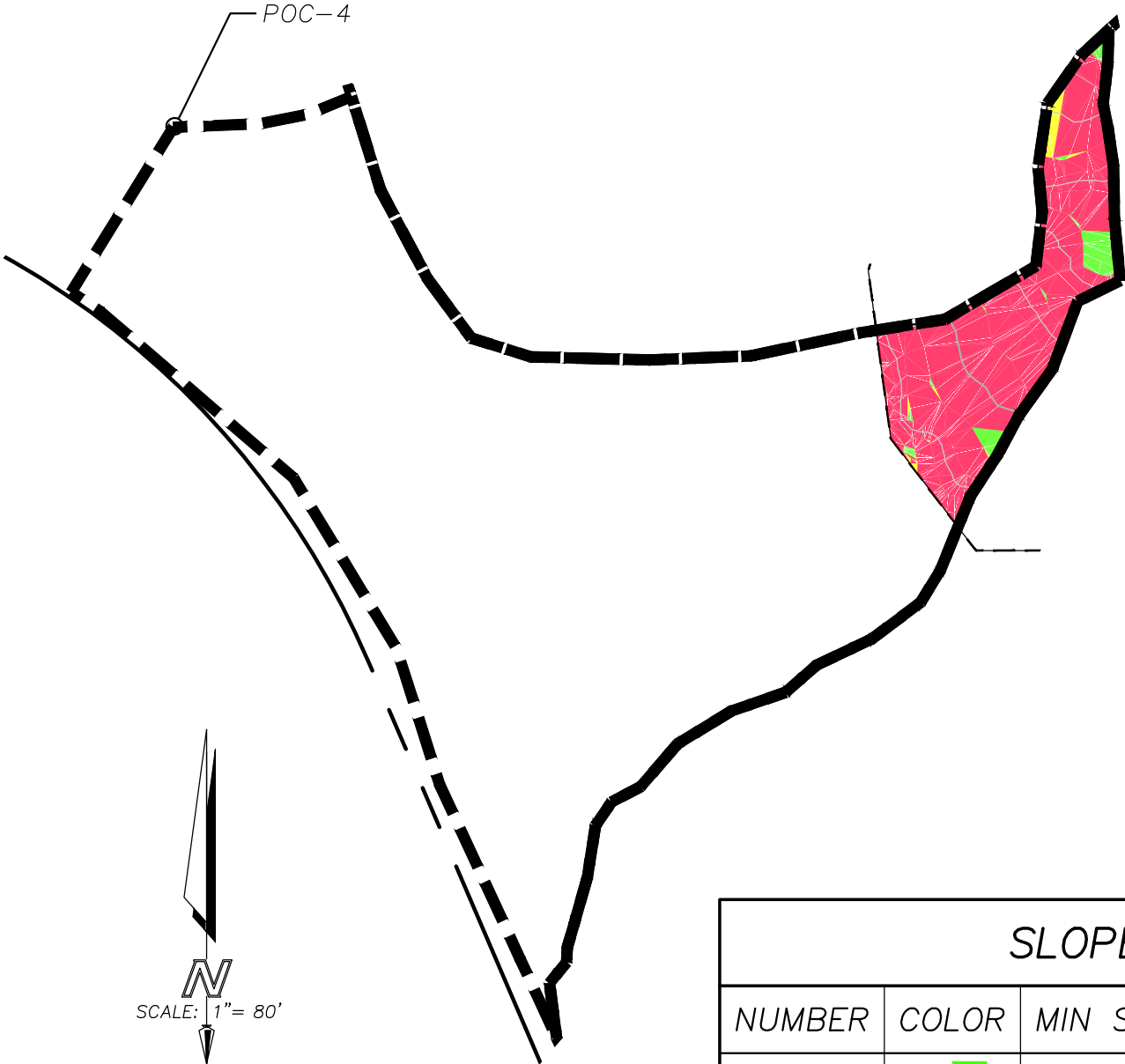


SLOPE ANALYSIS: GILDRED TPM PRE-DEVELOPMENT IMPERVIOUS AREAS POC-3



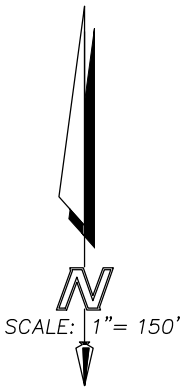
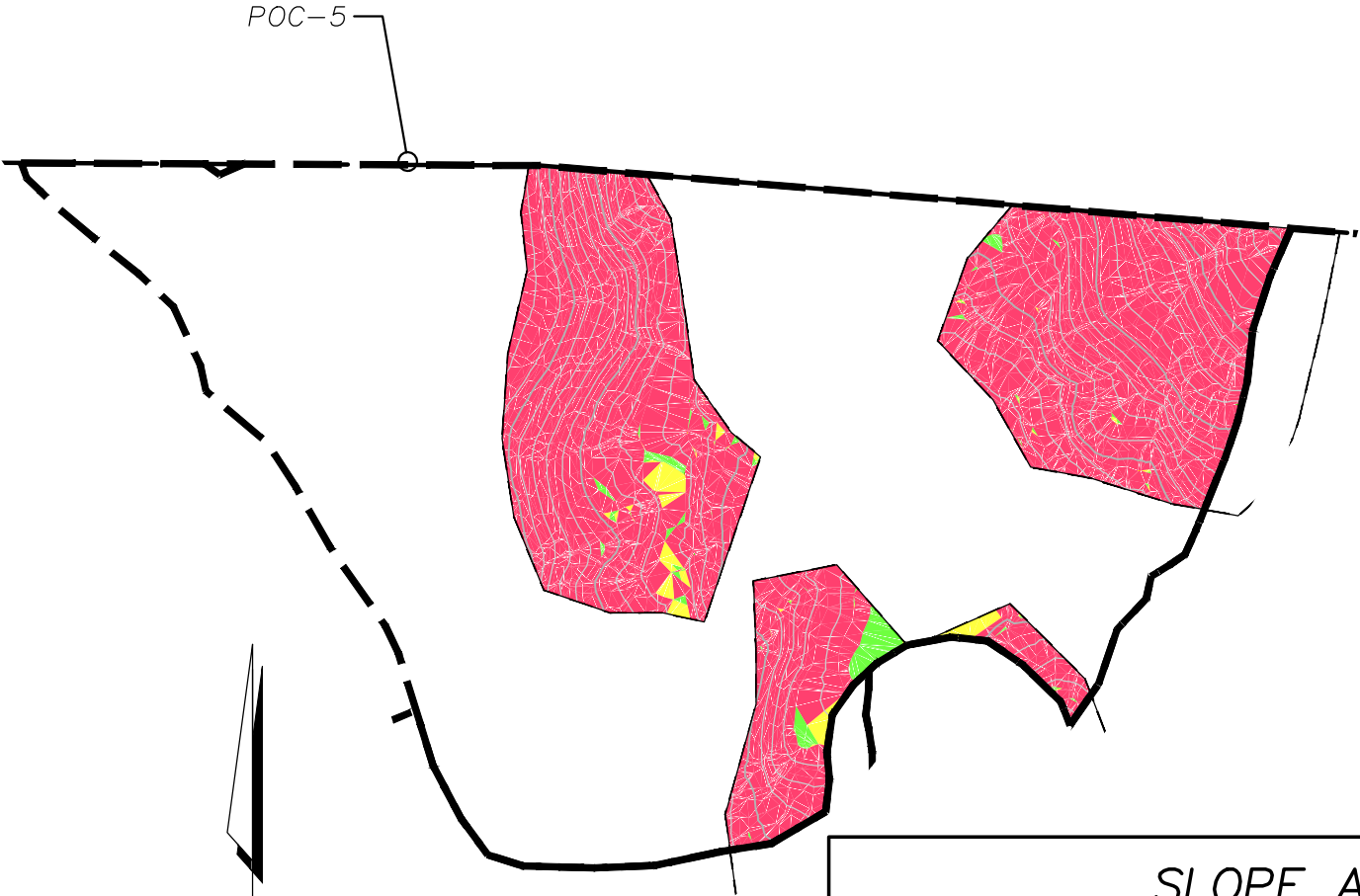
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.25
2	■	5.0%	10.0%	0.19
3	■	10.0%	1000.0%	9.14

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



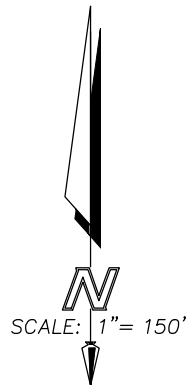
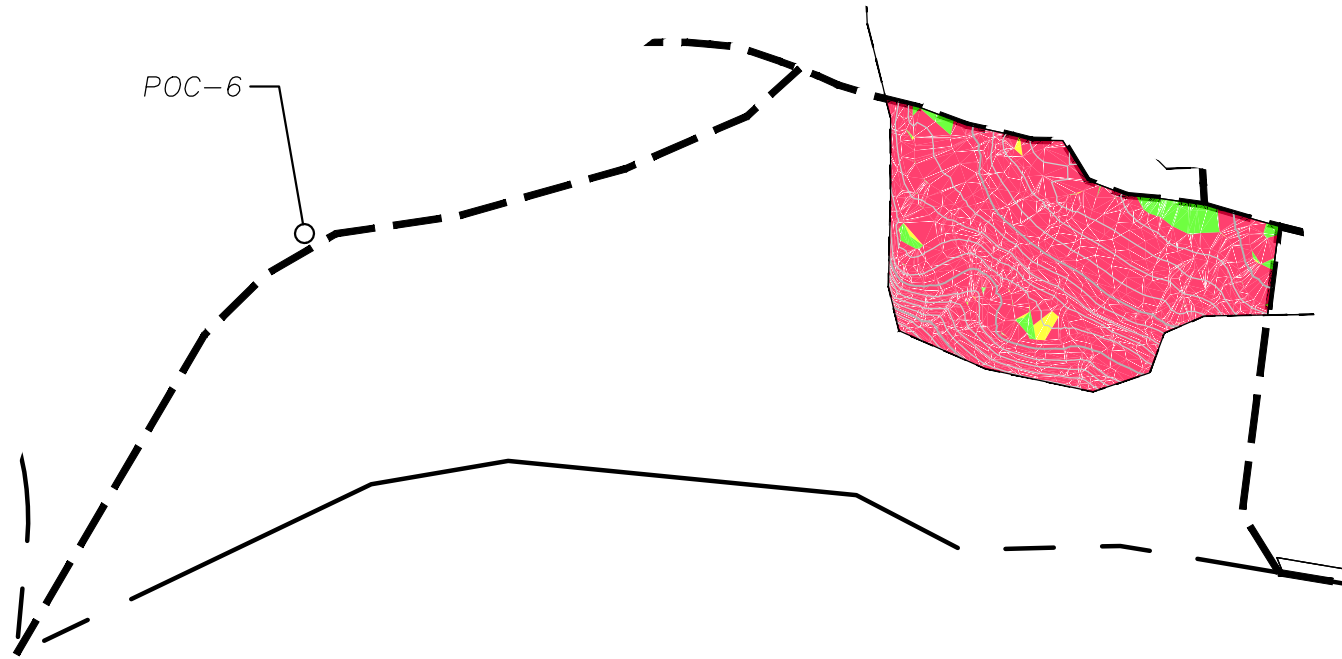
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.01
2		5.0%	10.0%	0.01
3		10.0%	1000.0%	0.20

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



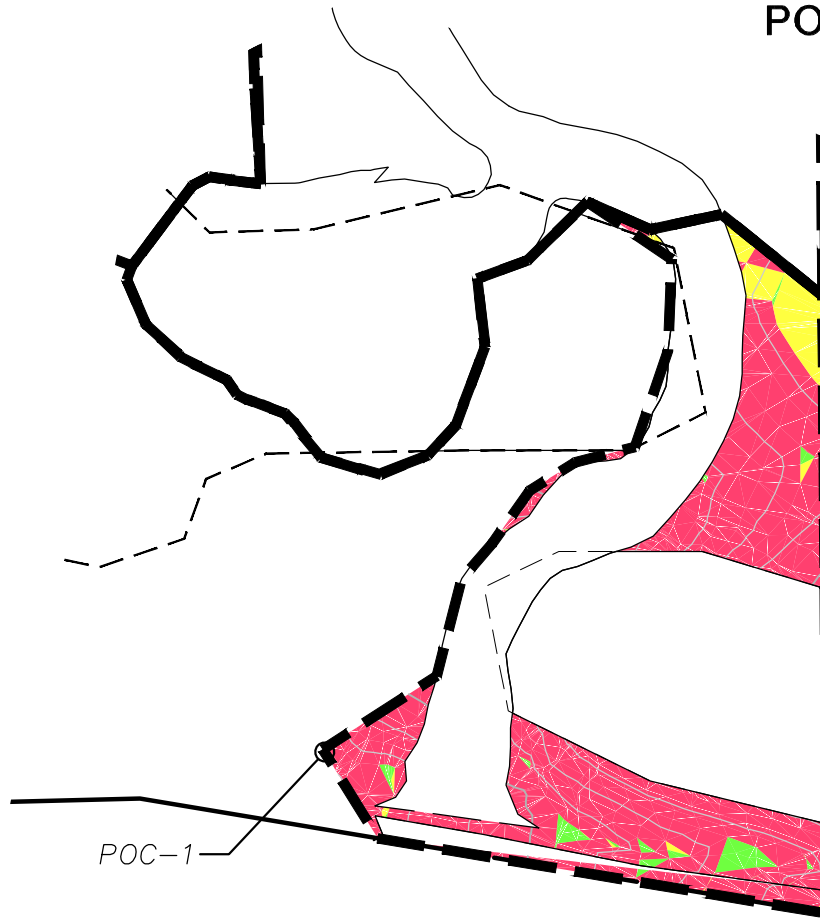
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.06
2		5.0%	10.0%	0.06
3		10.0%	1000.0%	2.59

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

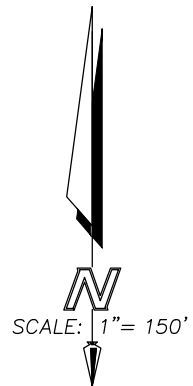


SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.04
2	■	5.0%	10.0%	0.01
3	■	10.0%	1000.0%	0.96

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

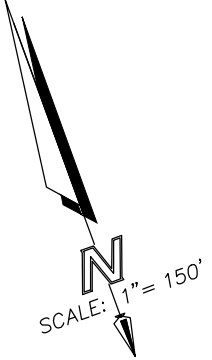
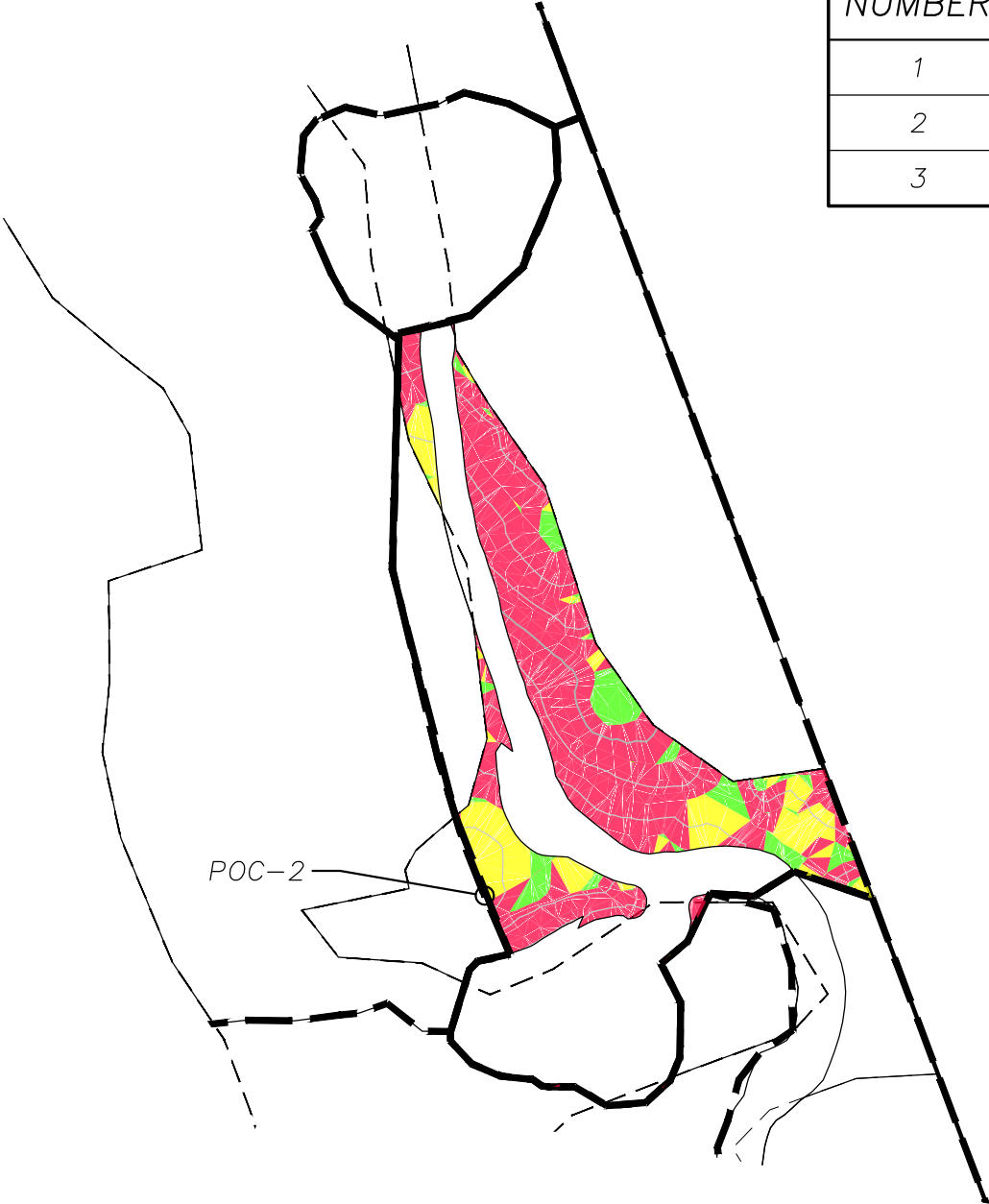


SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.02
2	■	5.0%	10.0%	0.04
3	■	10.0%	1000.0%	0.42

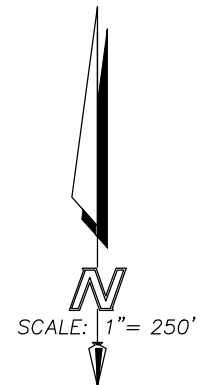
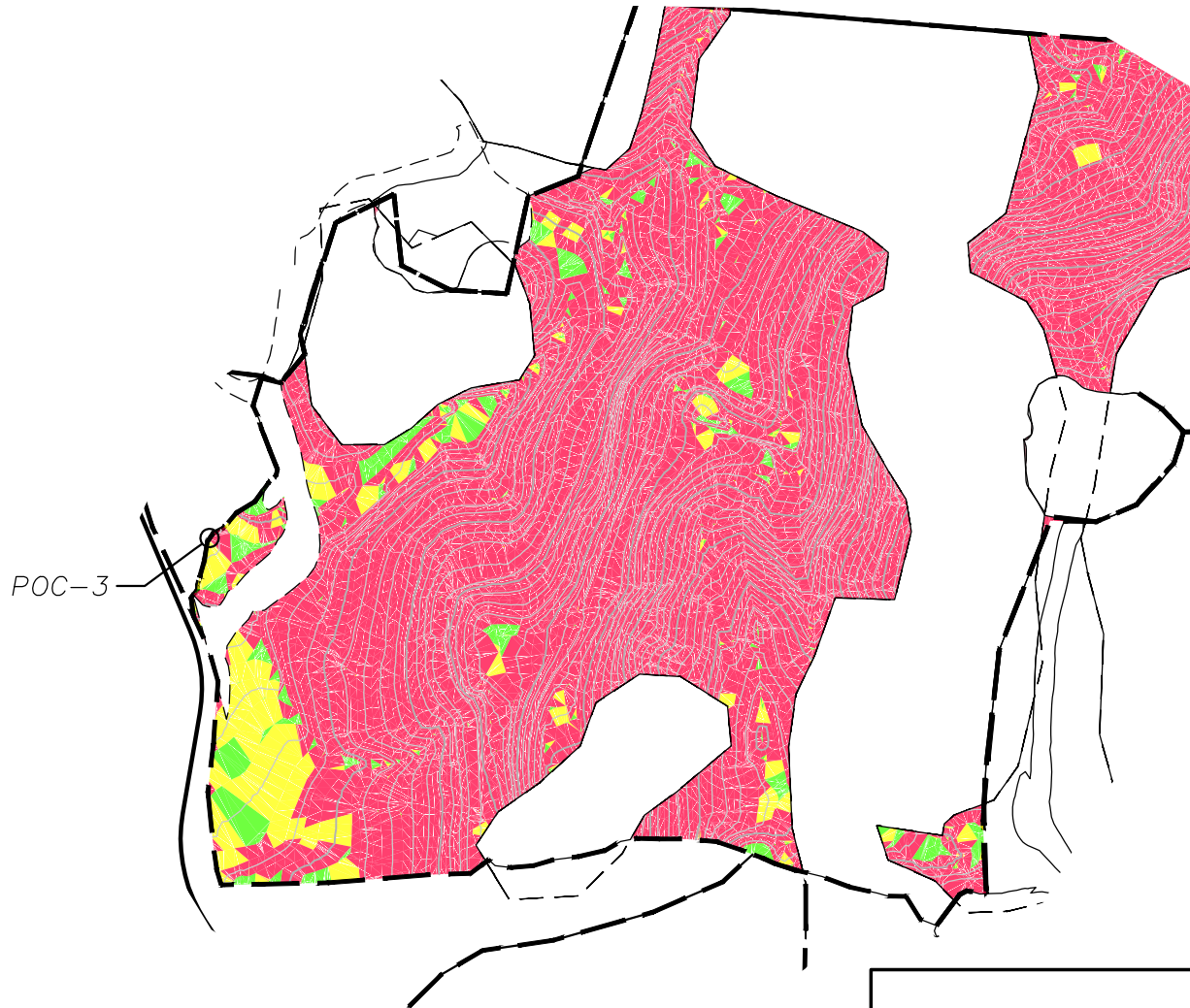


**SLOPE ANALYSIS: GILDRED TPM
POST-DEVELOPMENT PERVIOUS AREAS
POC-2**

SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.11
2		5.0%	10.0%	0.21
3		10.0%	1000.0%	0.82

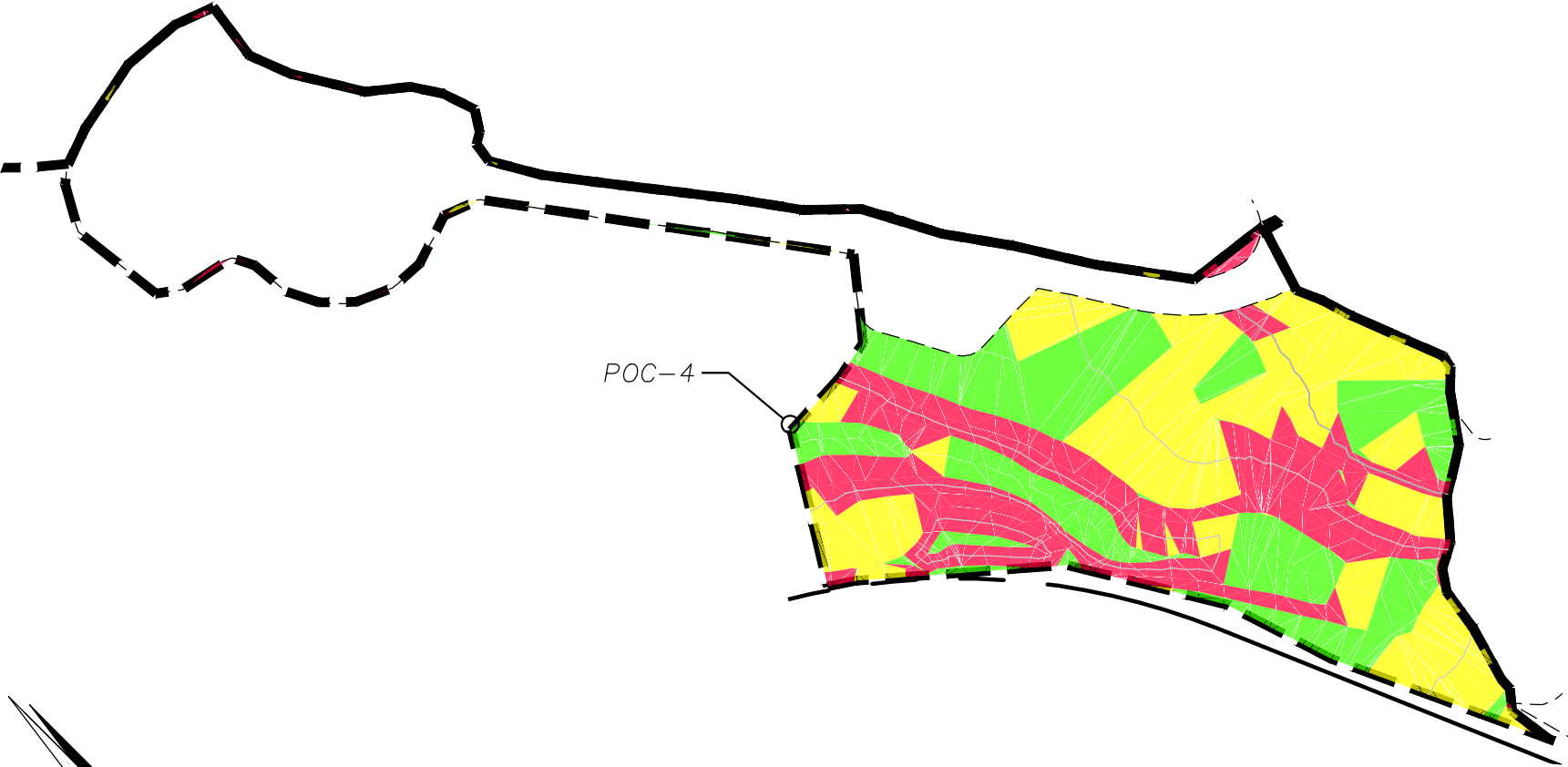


SLOPE ANALYSIS: GILDRED TPM POST-DEVELOPMENT PERVIOUS AREAS POC-3



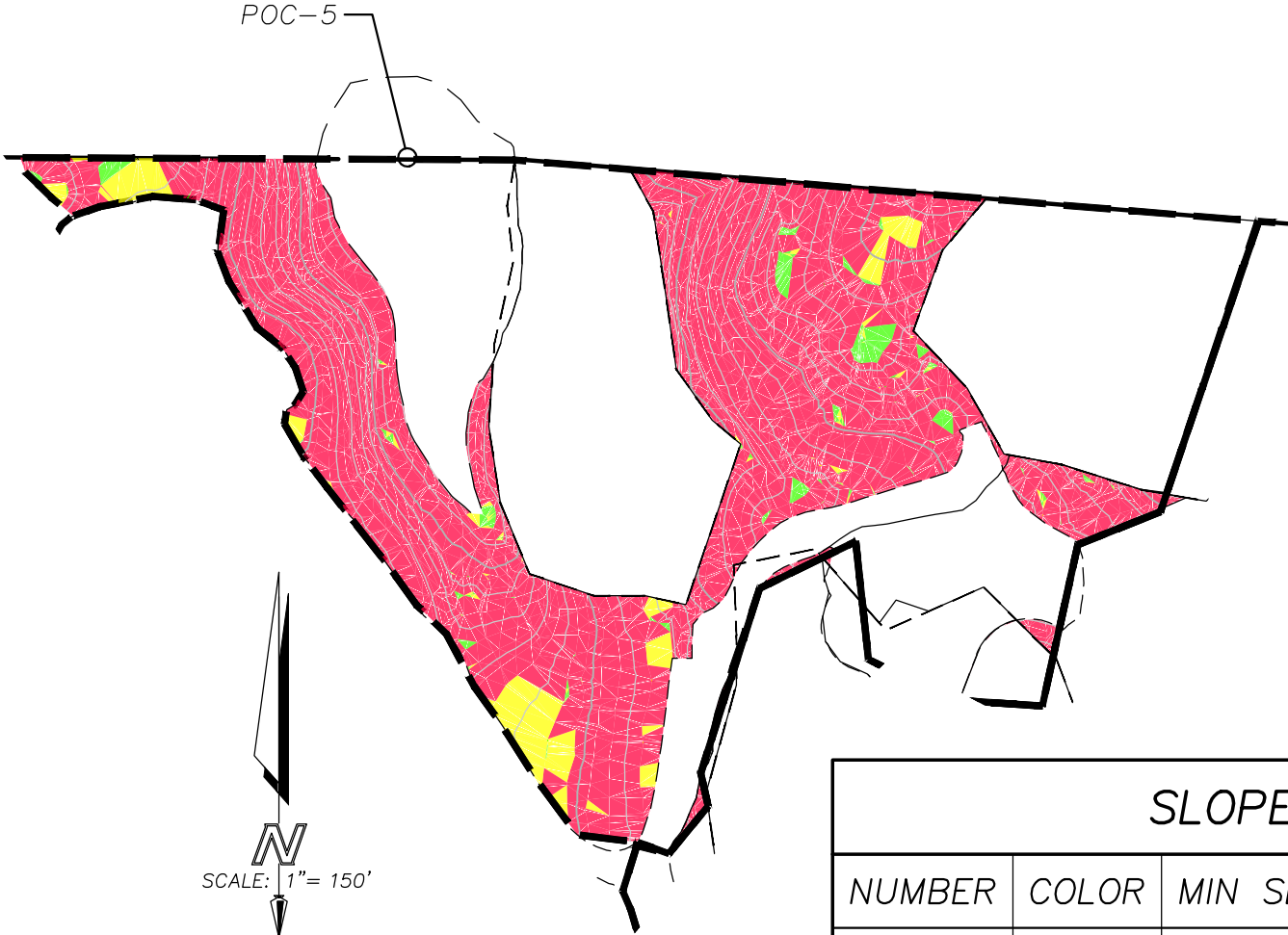
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.60
2	■	5.0%	10.0%	1.04
3	■	10.0%	1000.0%	14.49

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



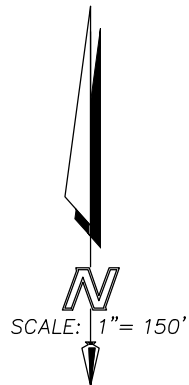
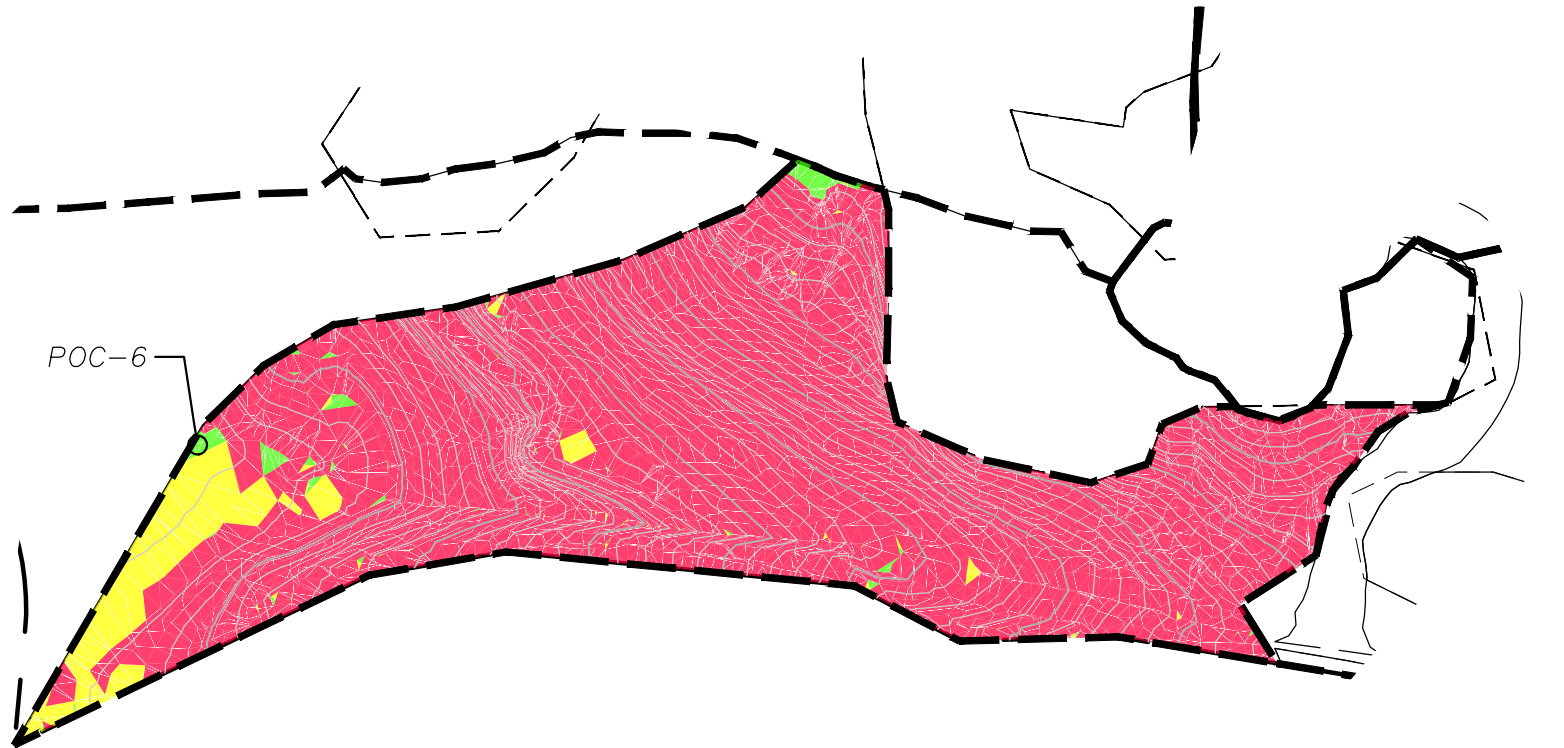
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.44
2		5.0%	10.0%	0.52
3		10.0%	1000.0%	0.44

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



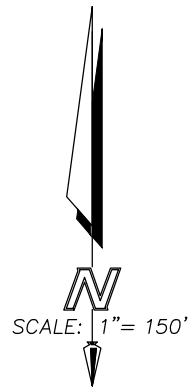
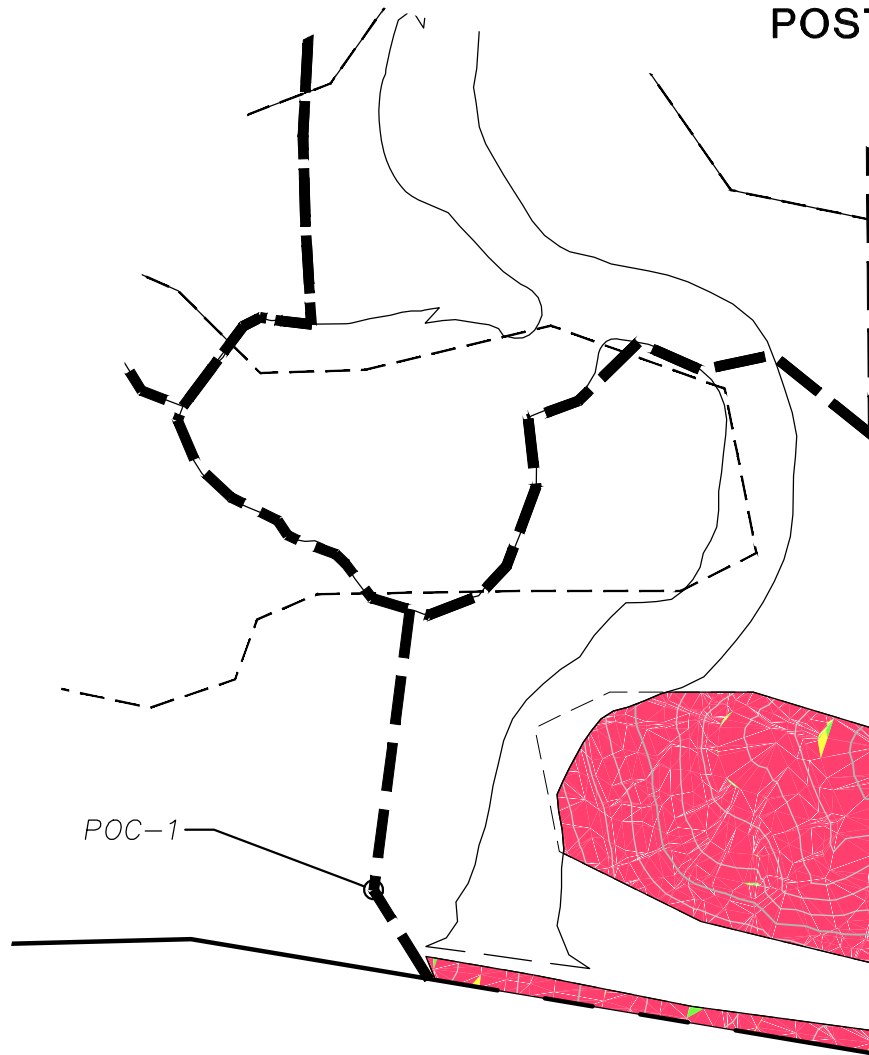
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.07
2		5.0%	10.0%	0.19
3		10.0%	1000.0%	2.87

SLOPE ANALYSIS: GILDRED TPM
POST-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%	4.11

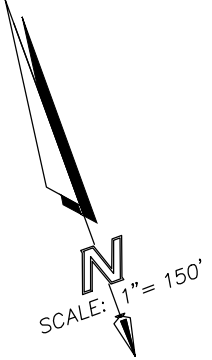
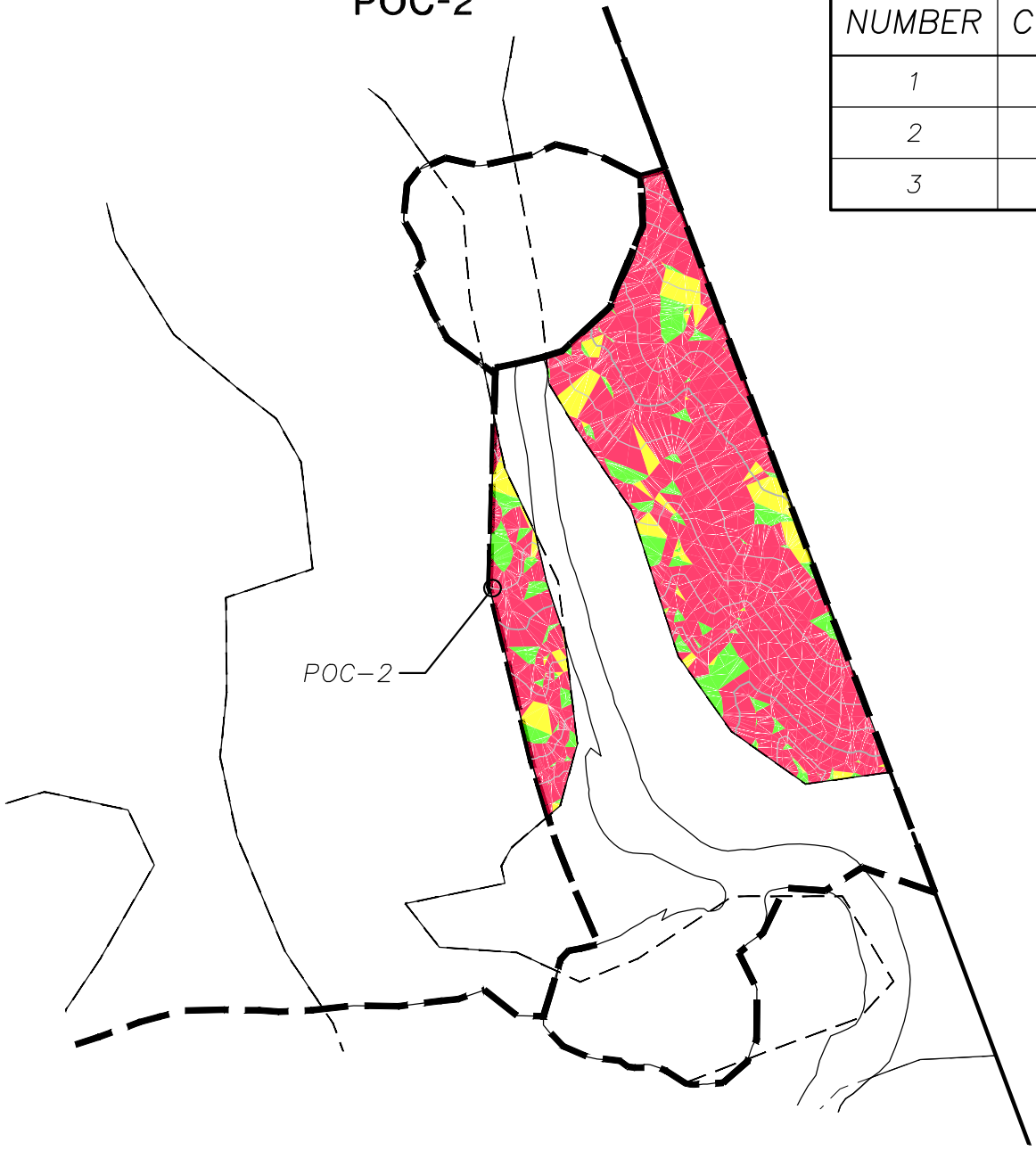
SLOPE ANALYSIS: GILDRED TPM POST-DEVELOPMENT IMPERVIOUS AREAS POC-1



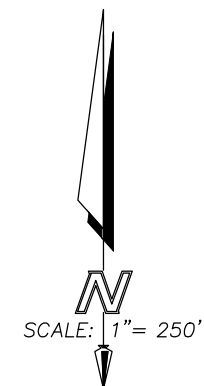
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.00
2	■	5.0%	10.0%	0.00
3	■	10.0%	1000.0%	0.46

SLOPE ANALYSIS- GILDRED TPM
POST-DEVELOPMENT IMPERVIOUS 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%	0.14
3		10.0%	1000.0%	1.45

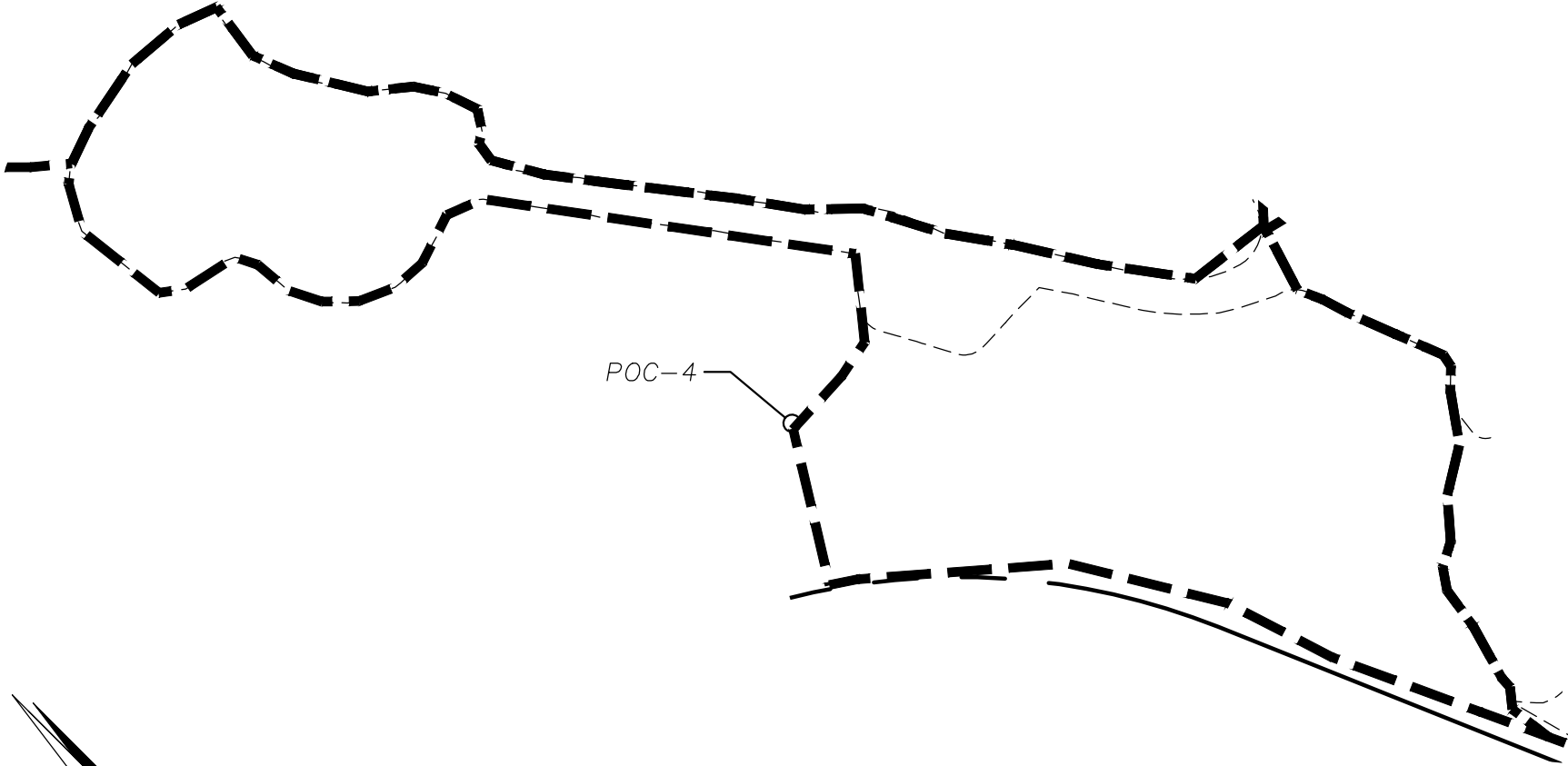


SLOPE ANALYSIS: GILDRED TPM POST-DEVELOPMENT IMPERVIOUS AREAS POC-3



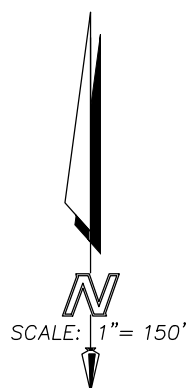
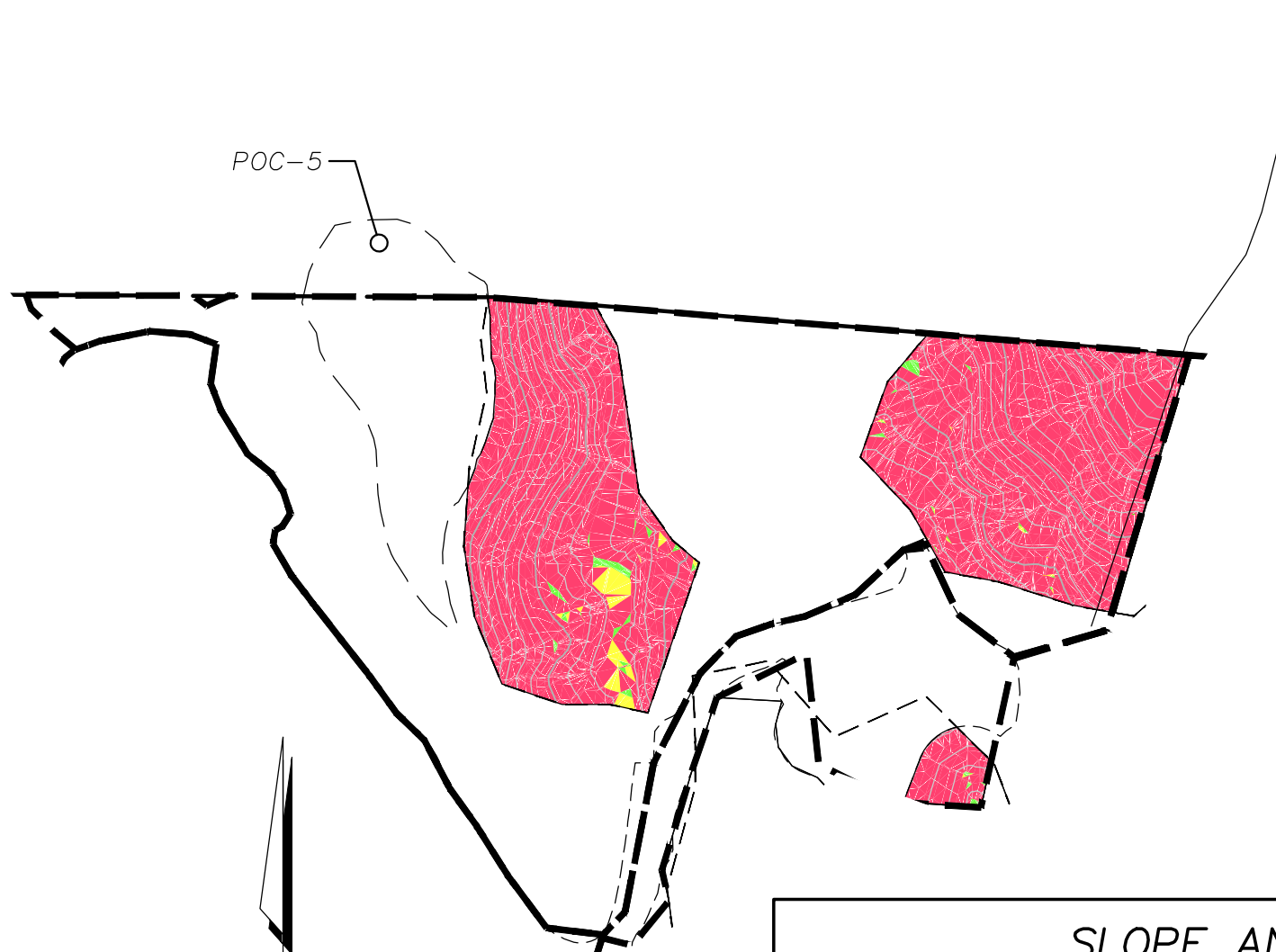
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.25
2		5.0%	10.0%	0.20
3		10.0%	1000.0%	9.40

SLOPE ANALYSIS: GILDRED TPM
POST-DEVELOPMENT IMPERVIOUS AREAS
POC-4



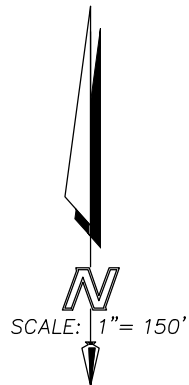
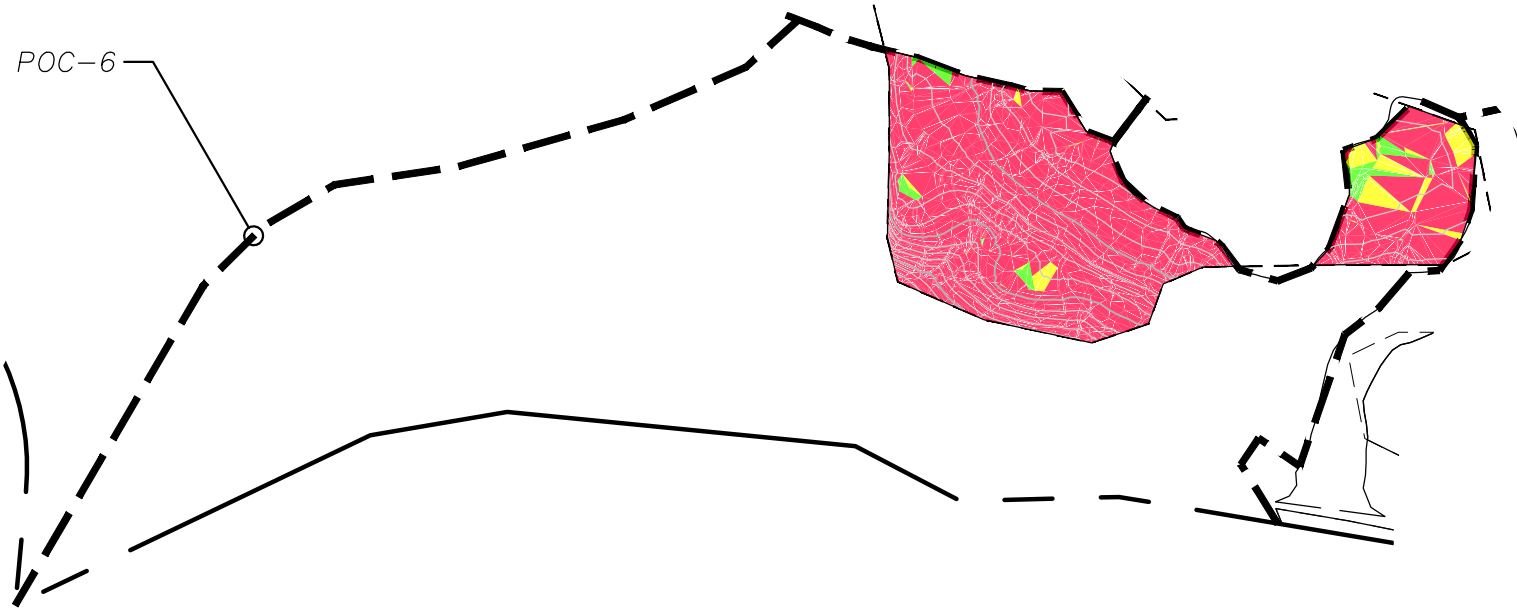
SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.00
2		5.0%	10.0%	0.00
3		10.0%	1000.0%	0.00

SLOPE ANALYSIS: GILDRED TPM POST-DEVELOPMENT IMPERVIOUS AREAS POC-5



SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.02
2	■	5.0%	10.0%	0.03
3	■	10.0%	1000.0%	2.28

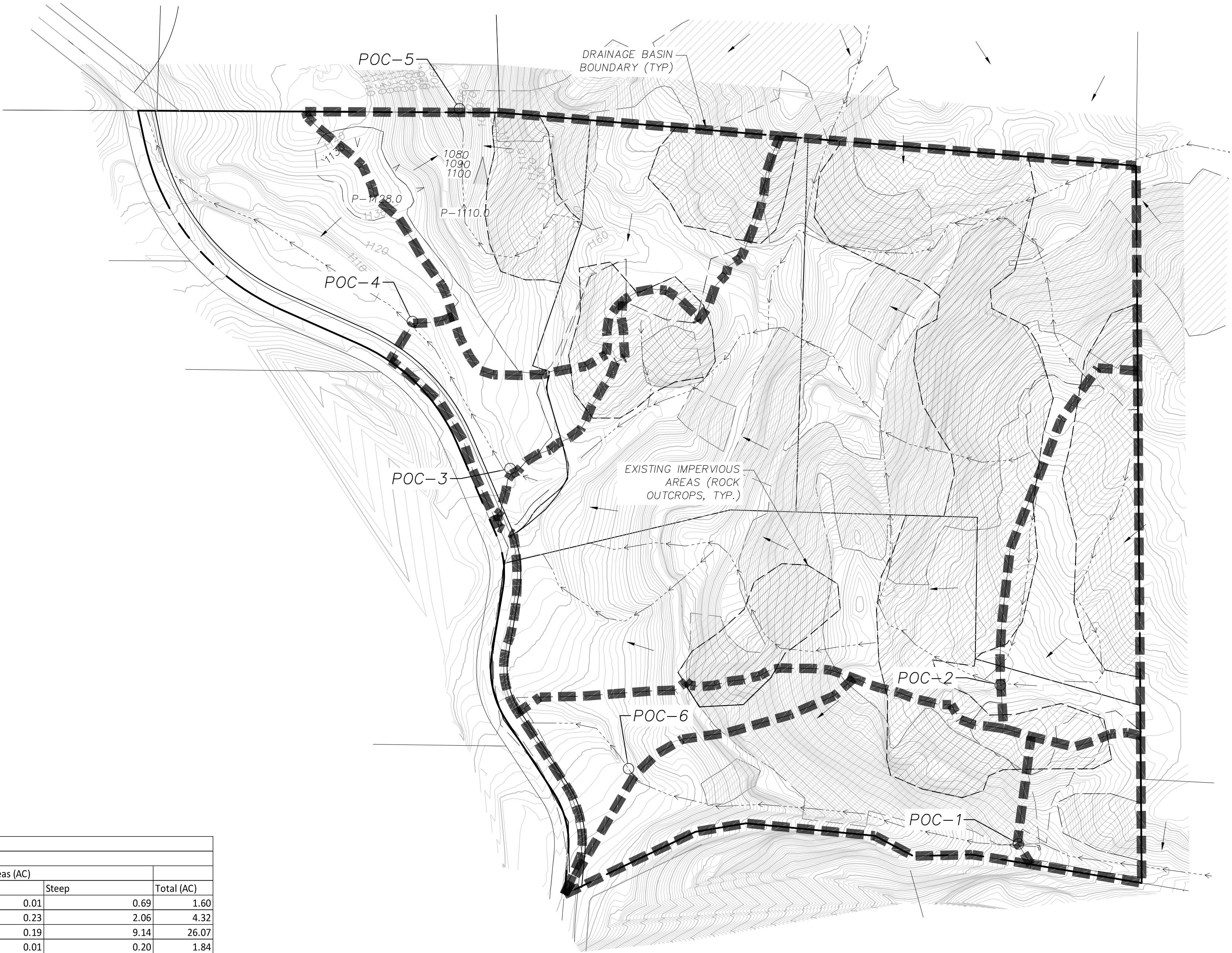
SLOPE ANALYSIS: GILDRED TPM POST-DEVELOPMENT IMPERVIOUS AREAS POC-6



SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1	■	0.0%	5.0%	0.03
2	■	5.0%	10.0%	0.05
3	■	10.0%	1000.0%	1.02

HMP ANALYSIS EXHIBIT
PRE-DEVELOPMENT CONDITIONS

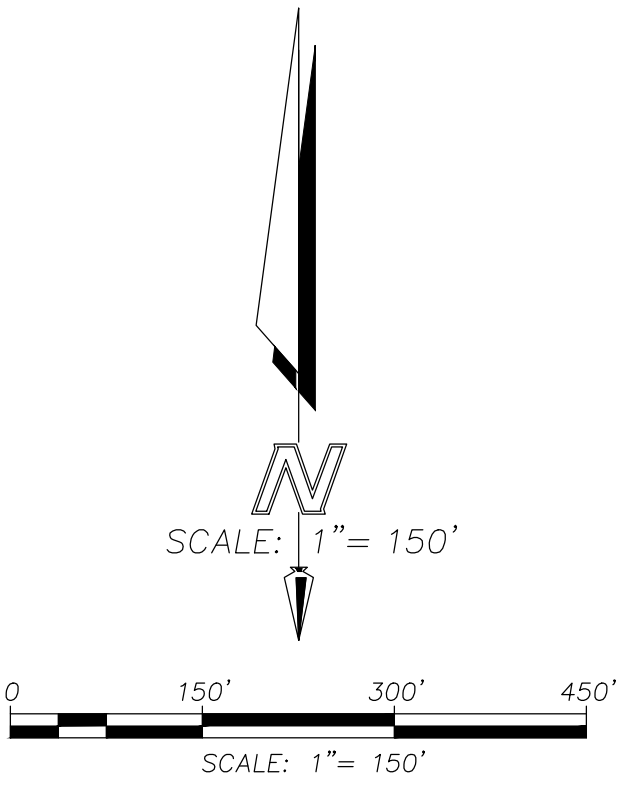
GILDRED TPM



LEGEND

- PROJECT BOUNDARY
POC DRAINAGE BOUNDARY
NATURAL FLOW PATH
IMPERVIOUS ROCK
OUTCROPS
POTENTIAL CRITICAL
COARSE SEDIMENT YIELD
AREAS (RPO)
DIRECTION OF FLOW

Hydromodification Area Summary									
Pre-Development									
POC	Pervious Areas (AC)			Impervious Areas (AC)					
	Flat	Moderate	Steep	Flat	Moderate	Steep	Total (AC)		
1	0.03	0.02	0.84	0.01	0.01	0.69	1.60		
2	0.17	0.31	1.30	0.25	0.23	2.06	4.32		
3	0.68	1.09	14.72	0.25	0.19	9.14	26.07		
4	0.42	0.55	0.65	0.01	0.01	0.20	1.84		
5	0.38	0.60	4.16	0.06	0.06	2.59	7.85		
6	0.05	0.28	3.90	0.04	0.01	0.96	5.24		
Total (AC)							46.92		



HMP ANALYSIS EXHIBIT
POST-DEVELOPMENT
CONDITIONS

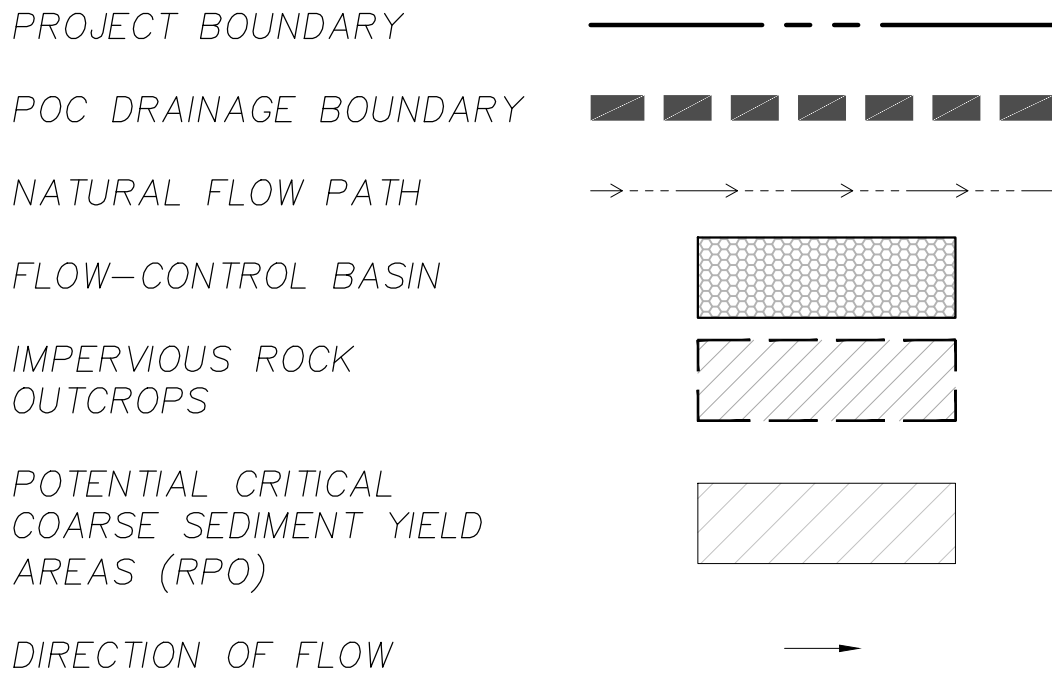
GILDRED TPM



NOTES

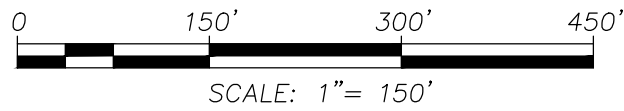
1. UNDERLYING SOIL GROUP: 'D'
2. APPROXIMATE DEPTH TO GROUNDWATER: >20'
3. EXISTING ROCK OUTCROPS AND THE EXISTING ROADWAYS ALONG THE WESTERLY AND SOUTHERLY PROJECT BOUNDARY ARE THE ONLY EXISTING IMPERVIOUS FEATURES.
4. POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS SHOWN ON THIS PLAN ARE BASED ON THE 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

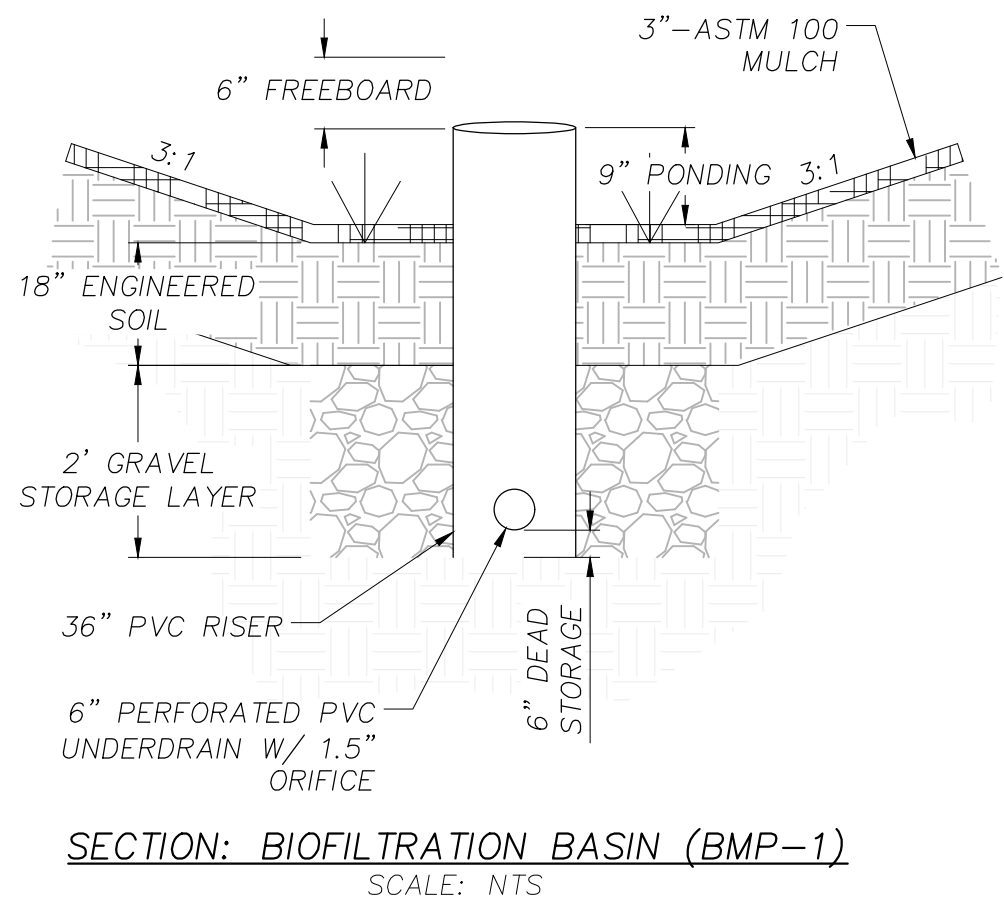


Post Development (Outside Development Footprint)								
POC	Pervious Areas (AC)			Impervious Areas (AC)			Total (AC)	
	Flat	Moderate	Steep	Flat	Moderate	Steep		
1	0.02		0.04	0.52	0.00	0.00	0.46	1.04
2	0.11	0.21		0.82	0.17	0.14	1.45	2.90
3	0.60	1.04		14.49	0.25	0.20	9.40	25.98
4	0.44	0.52		0.44	0.00	0.00	0.00	1.40
5	0.07	0.19		2.87	0.02	0.03	2.28	5.46
6	0.05	0.13		3.99	0.03	0.05	1.02	5.27
							Subtotal (AC)	42.05

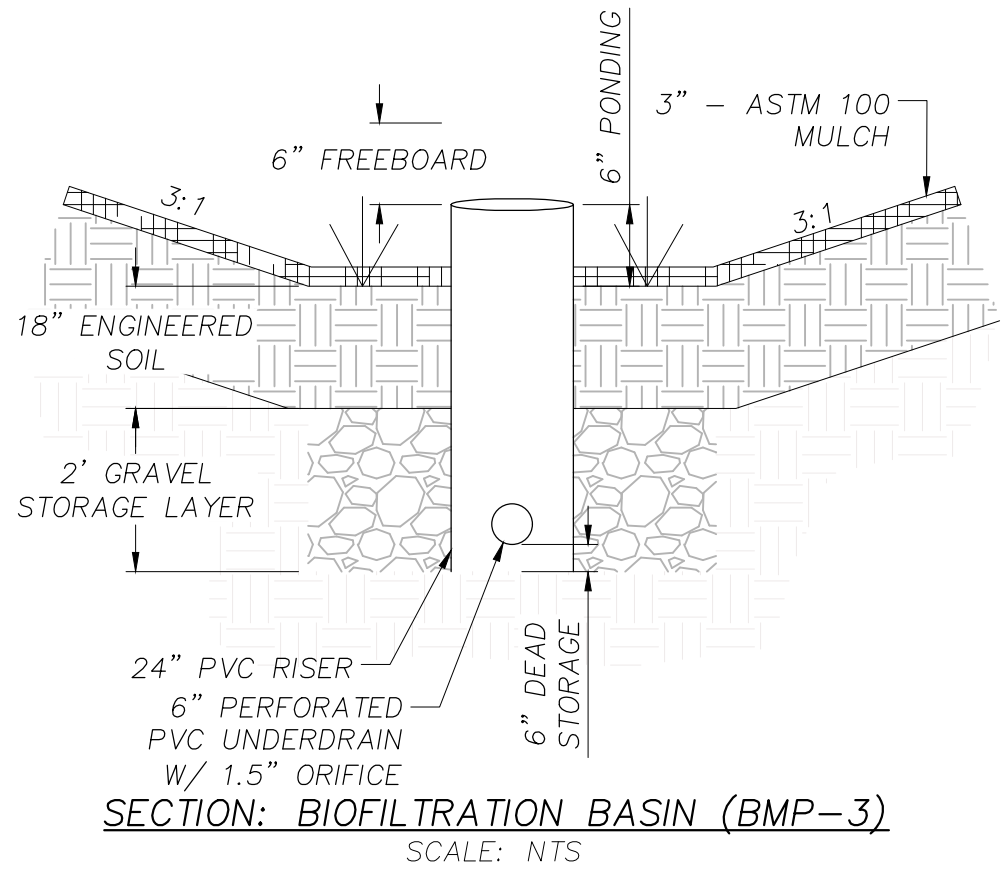
Post Development (Within Development Footprint)								
POC	Pervious Areas (AC)			Impervious Areas (AC)			Total (AC)	
	Flat	Moderate	Steep	Flat	Moderate	Steep		
1	0.00		0.00	0.04	0.00	0.00	0.17	0.21
2	0.68		0.00	0.38	0.35	0.00	0.34	1.75
3	0.00	0.00		0.20	0.00	0.00	0.18	0.38
4	0.31		0.00	0.05	0.17	0.00	0.17	0.70
5	0.80		0.00	0.39	0.17	0.00	0.30	1.66
6	0.00		0.00	0.02	0.00	0.00	0.15	0.17
							Subtotal (AC)	4.87



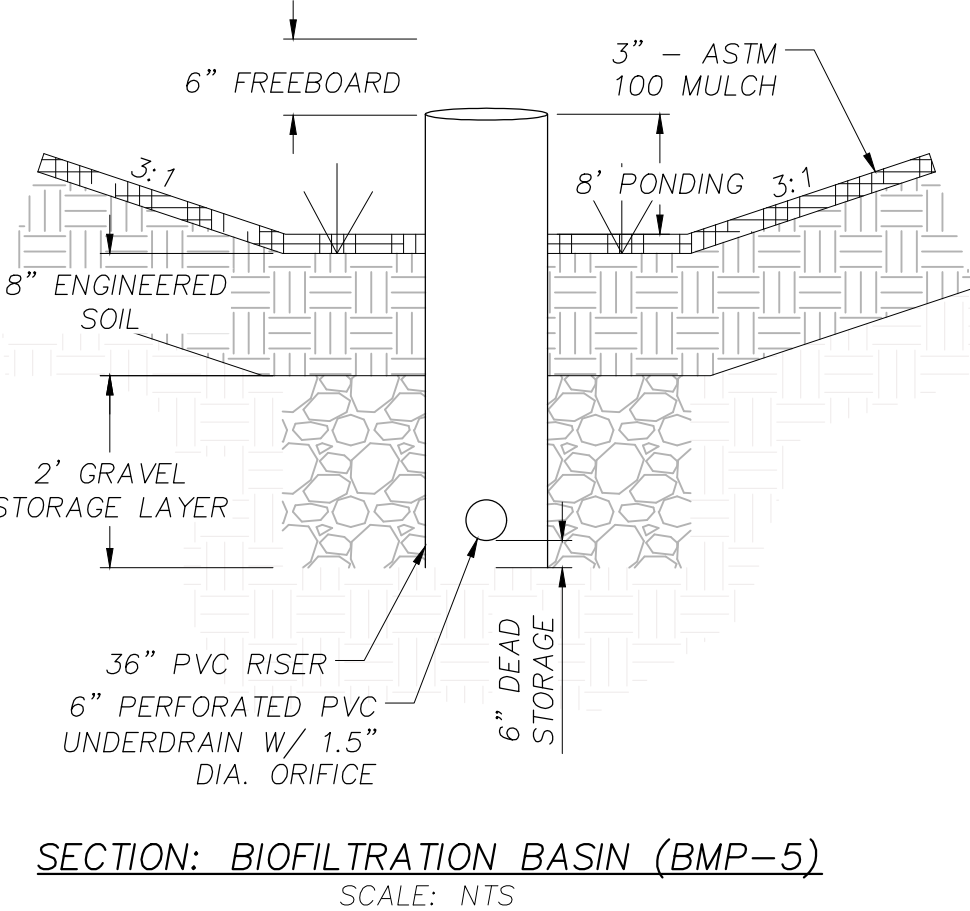
SCALE: 1" = 150'



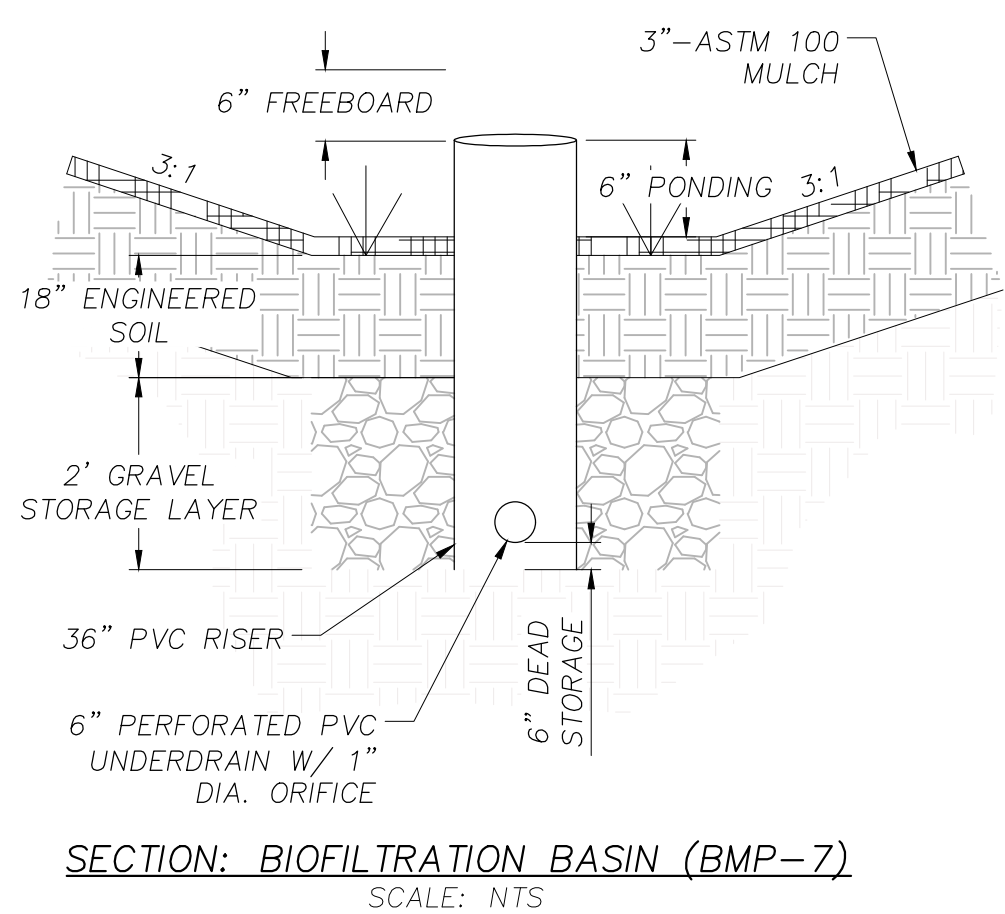
SECTION: BIOFILTRATION BASIN (BMP-1)
SCALE: NTS



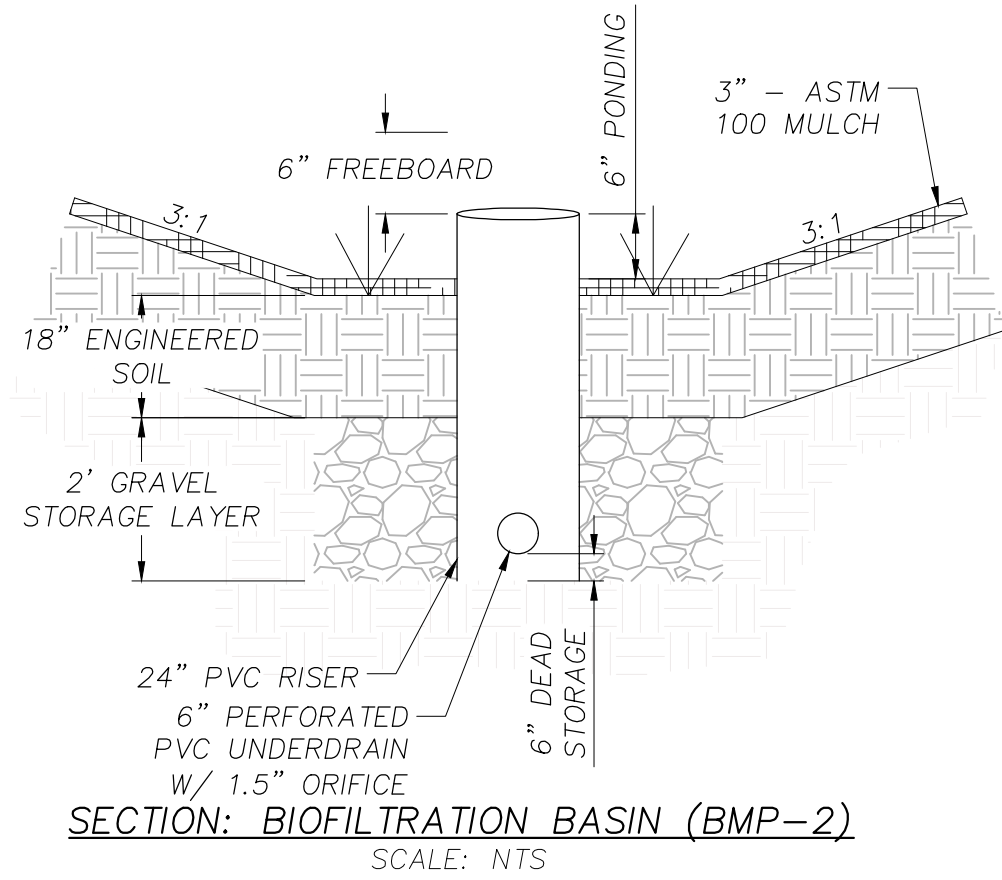
SECTION: BIOFILTRATION BASIN (BMP-3)
SCALE: NTS



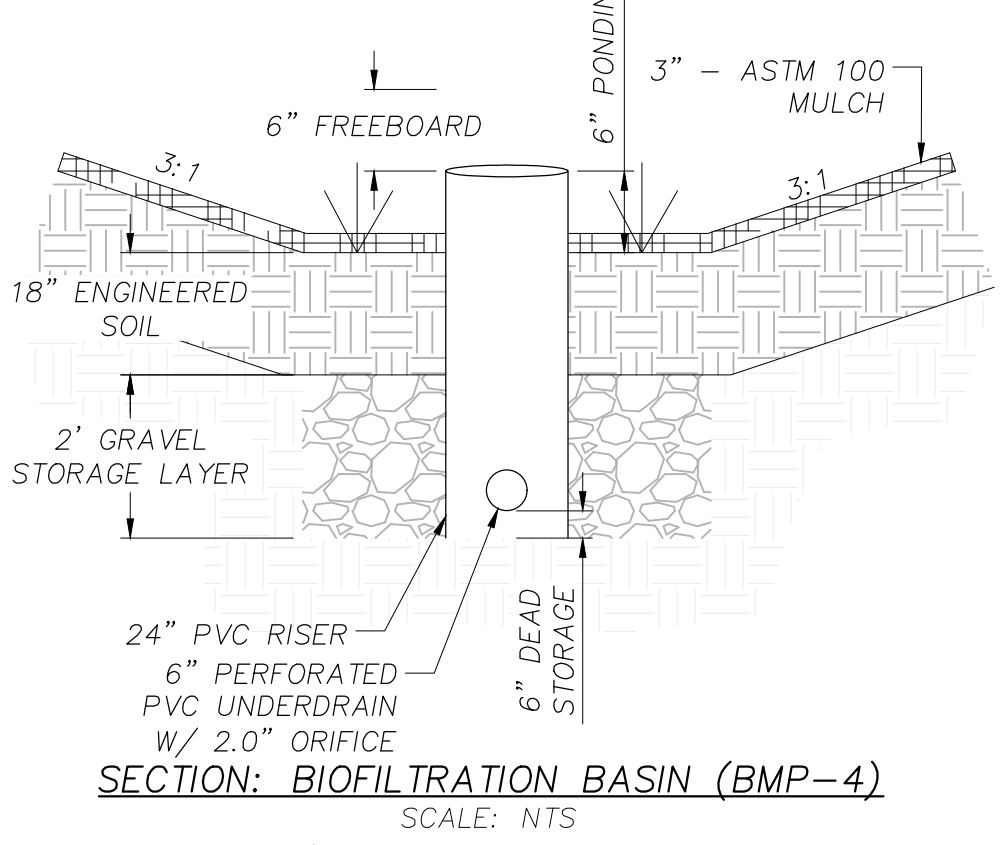
SECTION: BIOFILTRATION BASIN (BMP-5)
SCALE: NTS



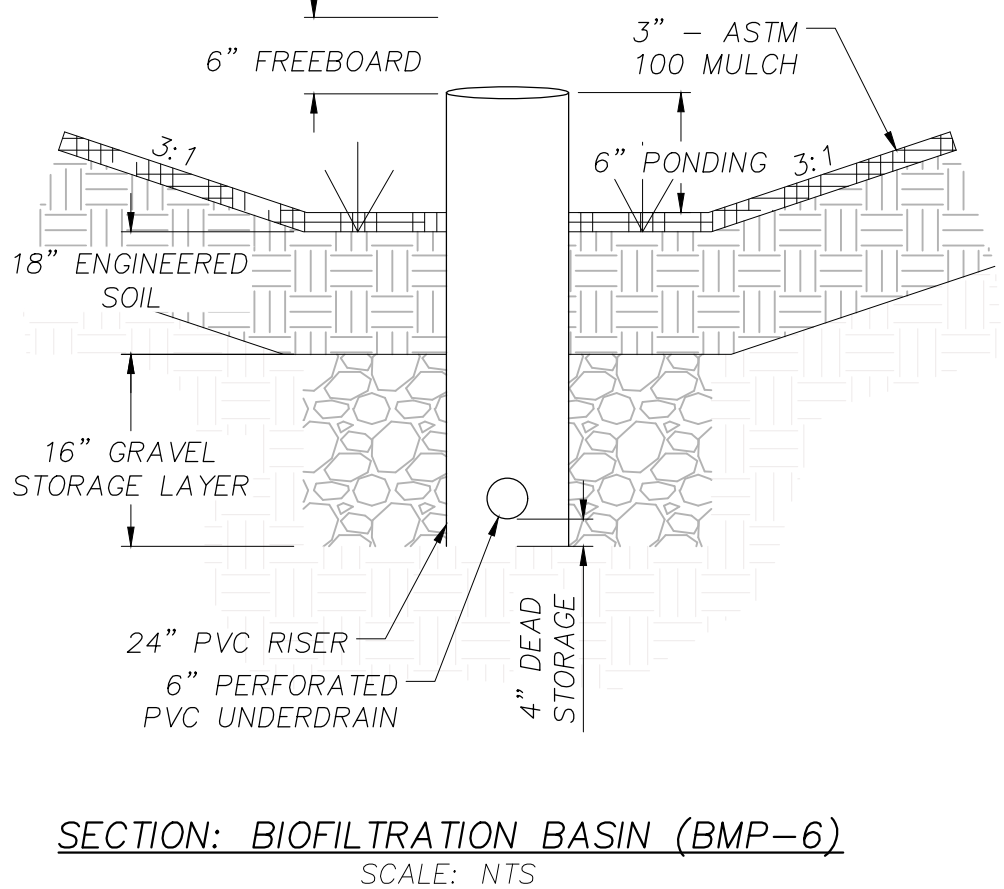
SECTION: BIOFILTRATION BASIN (BMP-7)
SCALE: NTS



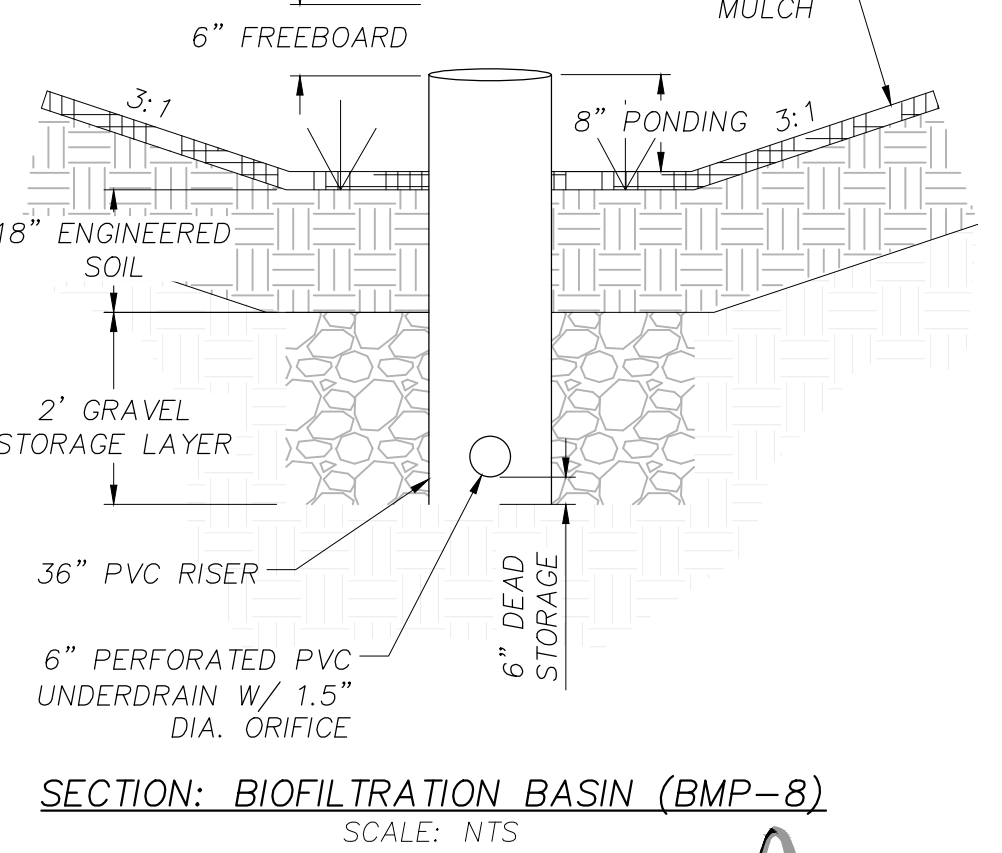
SECTION: BIOFILTRATION BASIN (BMP-2)
SCALE: NTS



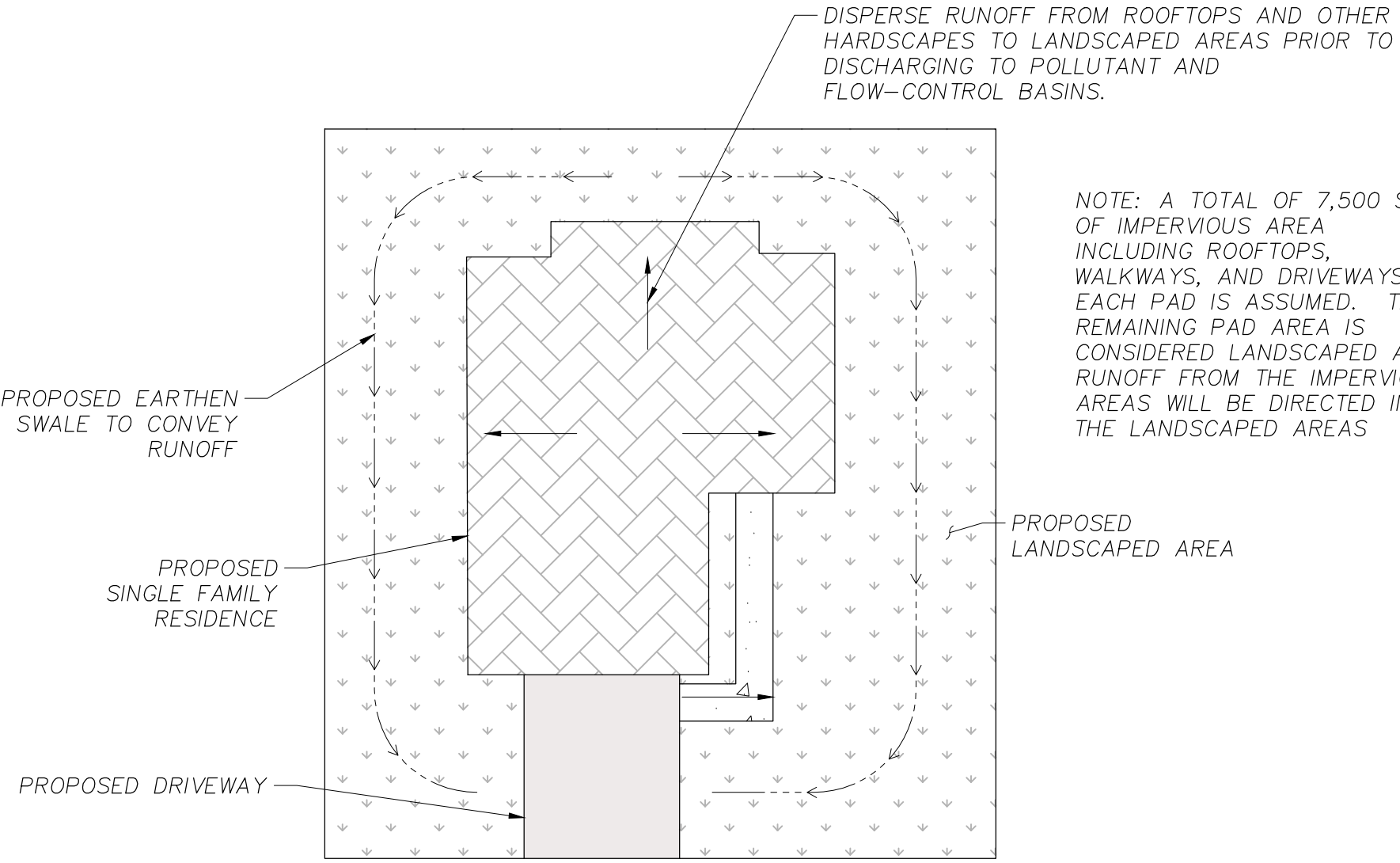
SECTION: BIOFILTRATION BASIN (BMP-4)
SCALE: NTS



SECTION: BIOFILTRATION BASIN (BMP-6)
SCALE: NTS



SECTION: BIOFILTRATION BASIN (BMP-8)
SCALE: NTS



DETAIL: TYPICAL LOT DRAINAGE
SCALE: NTS

Attachment 2b. HMP Exhibit

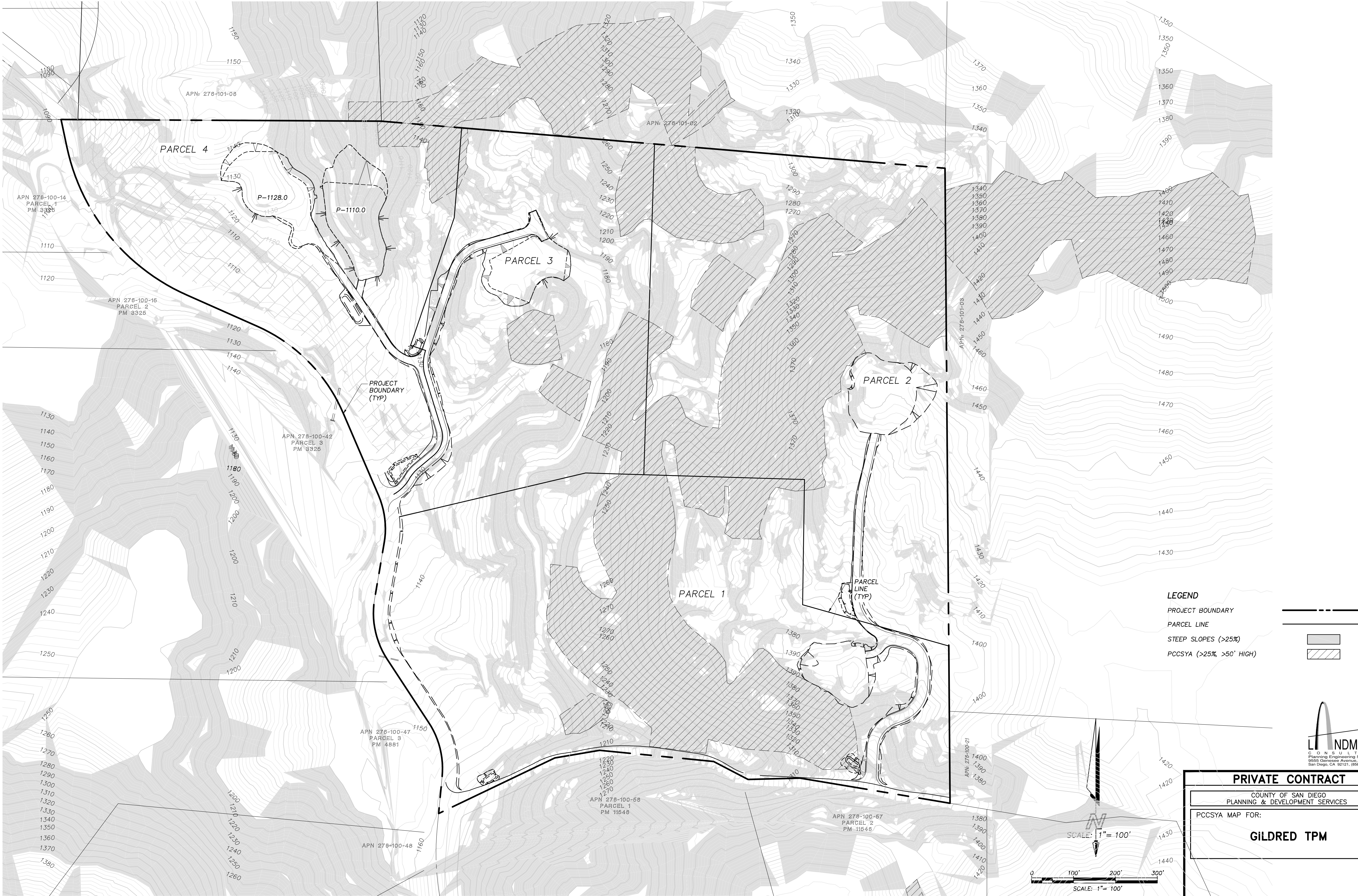
Attachment 2c. Critical Coarse Sediment Yield Area Analysis

The potential critical coarse sediment yield areas are delineated on both the HMP exhibit and DMA map. The areas are shaded in grey and represent the slopes on-site that are greater than 25% and more than 50' high per the 2016 San Diego County BMP Design Manual. The project disturbance area avoids nearly all of these delineated areas on site. No portions of these areas are proposed to be disturbed. Therefore, no mitigation for critical coarse sediment yield areas is required in accordance with Appendix H in the current County of San Diego BMP Design Manual. Furthermore, the proposed bypass storm drains connecting natural drainage networks beneath the proposed developments are designed to convey upstream critical coarse sediments without sink conditions. Overall, the project is not anticipated to produce any net impacts to downstream critical coarse sediment loads.

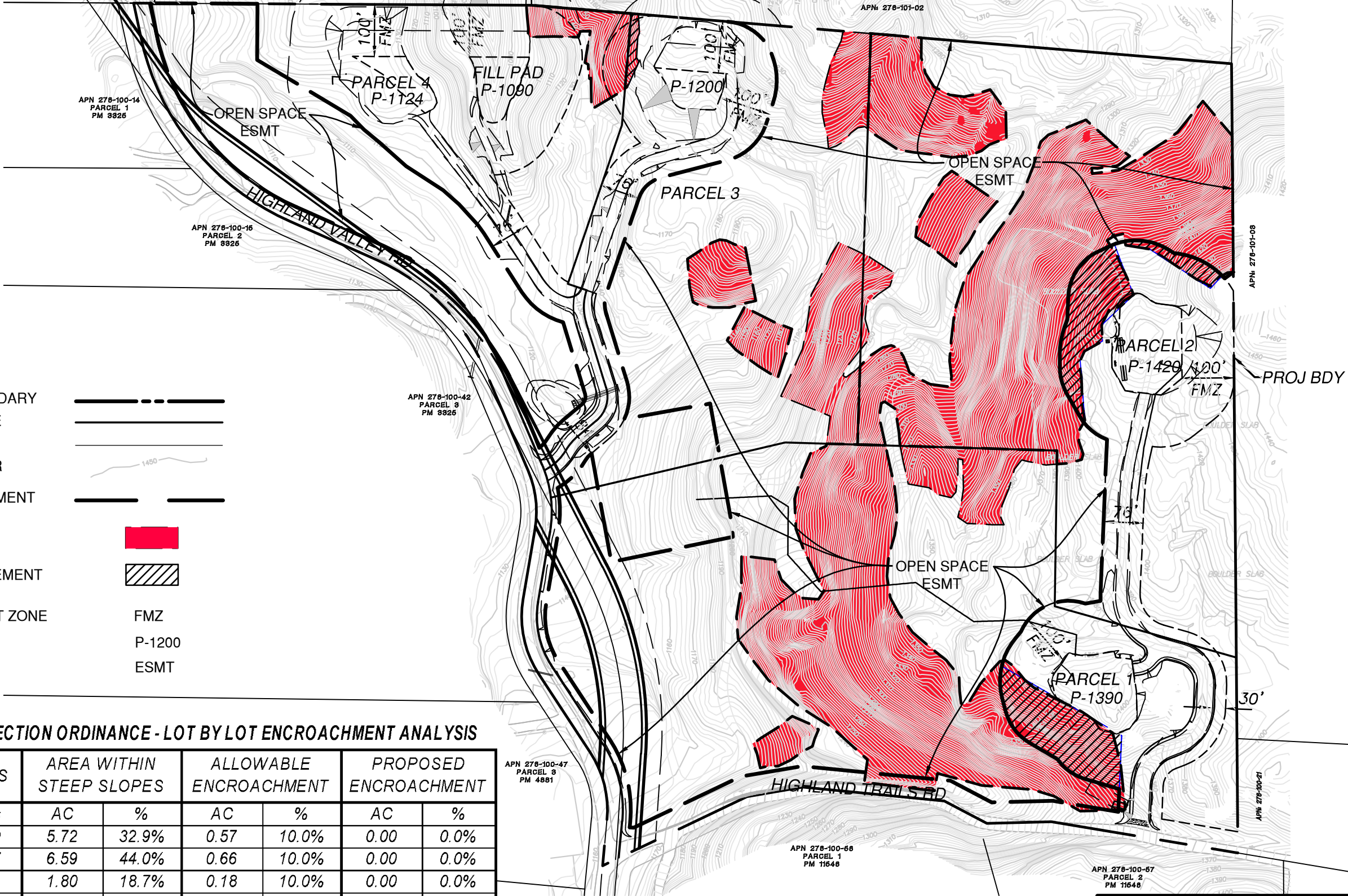
The project is designed to bypass upstream potential critical coarse sediment yield areas through several culverts. The proposed culverts are sized according to Appendix H of the County of San Diego BMP Design Manual. In all cases, the slope of the proposed bypass culvert exceeds 2.0%, thus the required velocity for the transport of critical coarse sediment can be achieved. A summary of the bypass culverts is shown below.

UPSTREAM CCSYA BYPASS SUMMARY				
DMA	AREA (AC)	CULVERT DIAMETER (IN)	CULVERT LENGTH (FT)	CULVERT SLOPE
1	12.77	18	66	17%
3	15.64	18	66	6.60%
7	41.38	2-30" CULVERTS	86	4.80%
		18	46	15.20%
15	2.00	18	36	10.00%

POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS
GILDRED TPM

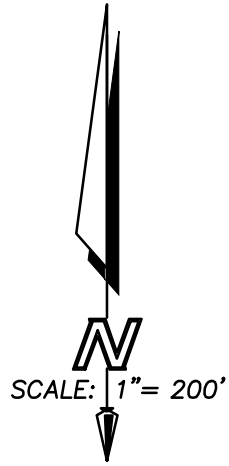


STEEP SLOPE ANALYSIS



LEGEND

- SUBDIVISION BOUNDARY
- PROP. PARCEL LINE
- EX. LOT LINE
- EXISTING CONTOUR
- OPEN SPACE EASEMENT
- STEEP SLOPES
- STEEP SLOPE EASEMENT
- FUEL MANAGEMENT ZONE FMZ
- PAD ELEVATION P-1200
- EASEMENT ESMT



RESOURCE PROTECTION ORDINANCE - LOT BY LOT ENCROACHMENT ANALYSIS

PARCEL	ACRES	AREA WITHIN STEEP SLOPES		ALLOWABLE ENCROACHMENT		PROPOSED ENCROACHMENT	
		AC	%	AC	%	AC	%
1	Gross 17.39	5.72	32.9%	0.57	10.0%	0.00	0.0%
2	14.97	6.59	44.0%	0.66	10.0%	0.00	0.0%
3	9.65	1.80	18.7%	0.18	10.0%	0.00	0.0%
4	9.72	0.44	4.5%	0.04	10.0%	0.00	0.0%
HV RD	1.38						
TOTAL	53.11	14.55		1.45		0.00	

NOTE: LEACH FIELD AREAS AND FMZ AREAS SHOWN WILL NOT REQUIRE GRADING/ALTERING OF THE NATURAL GROUND LINE.



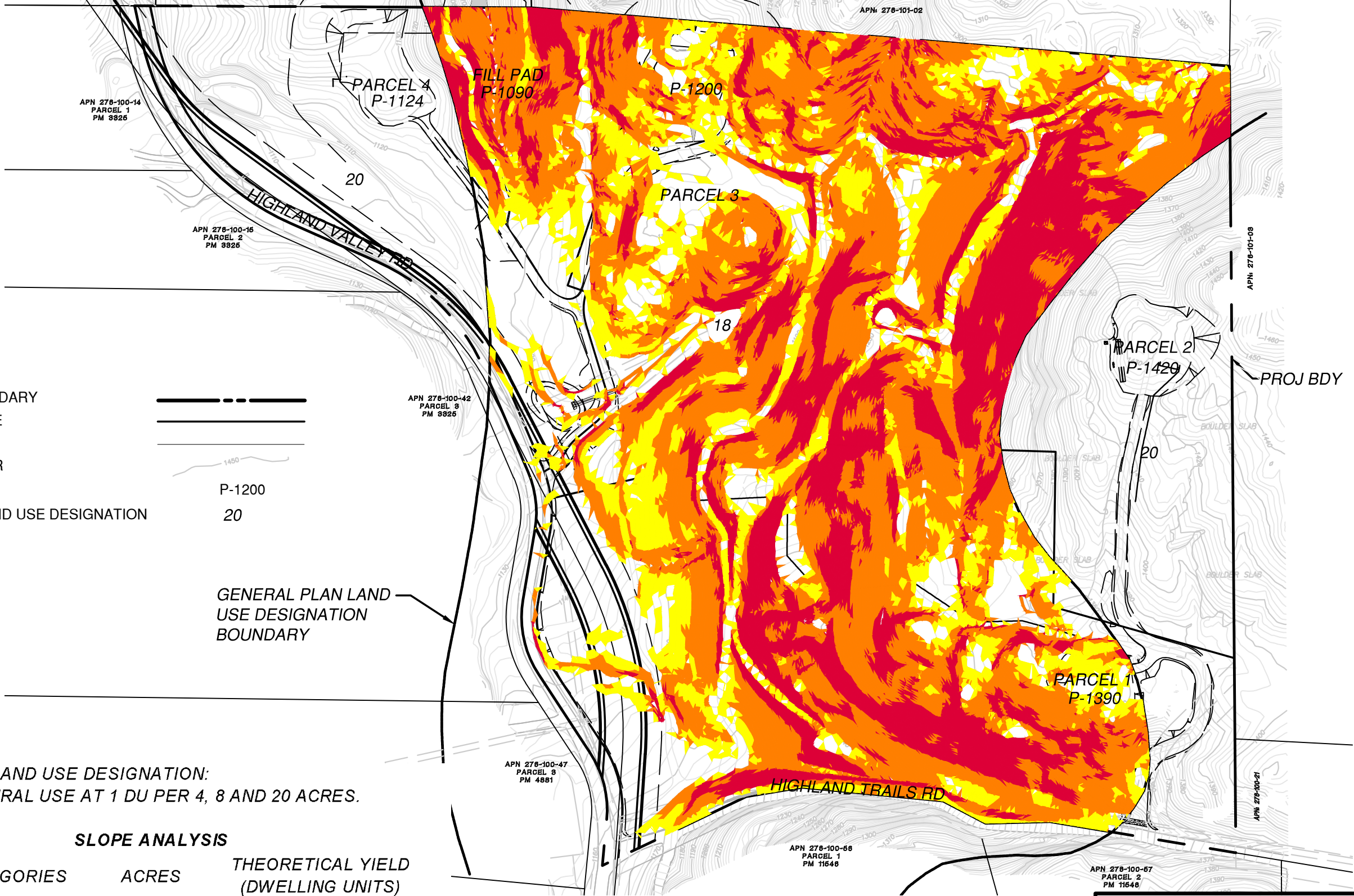
COUNTY OF SAN DIEGO TPM 21176

GILDRED TPM

STEEP SLOPE ANALYSIS

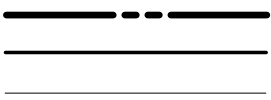
SHEET NO. 1 OF 1 SHEET

SLOPE ANALYSIS



LEGEND

- SUBDIVISION BOUNDARY
- PROP. PARCEL LINE
- EX. LOT LINE
- EXISTING CONTOUR
- PAD ELEVATION
- GENERAL PLAN LAND USE DESIGNATION



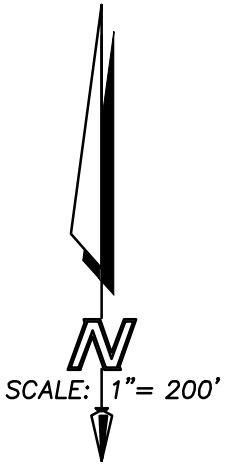
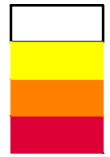
P-1200
20

GENERAL PLAN LAND
USE DESIGNATION
BOUNDARY

GENERAL PLAN LAND USE DESIGNATION:
(18) MULTIPLE RURAL USE AT 1 DU PER 4, 8 AND 20 ACRES.

SLOPE ANALYSIS

SLOPE CATEGORIES	ACRES	THEORETICAL YIELD (DWELLING UNITS)	
0%-15%	8.91	2.23	
15%-25%	6.62	1.66	
25%-50%	15.13	1.89	
> 50%	8.74	0.44	
TOTALS:	39.40	6.21	=6 UNITS



COUNTY OF SAN DIEGO TPM 21176

GILDRED TPM

SLOPE ANALYSIS

SHEET NO. 1 OF 1 SHEET