HYDROMODIFICATION MANAGEMENT PLAN (HMP) FOR:

Estates at Willow Ridge

County of San Diego TM 5560-RPL 2

Project: PDS 2009-3100-5560
Enviro: 04-09-011A

San Diego County, California

PREPARED FOR:

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Date: 2-27-15

David Yeh, RCE 62717, EXP 6-30-16

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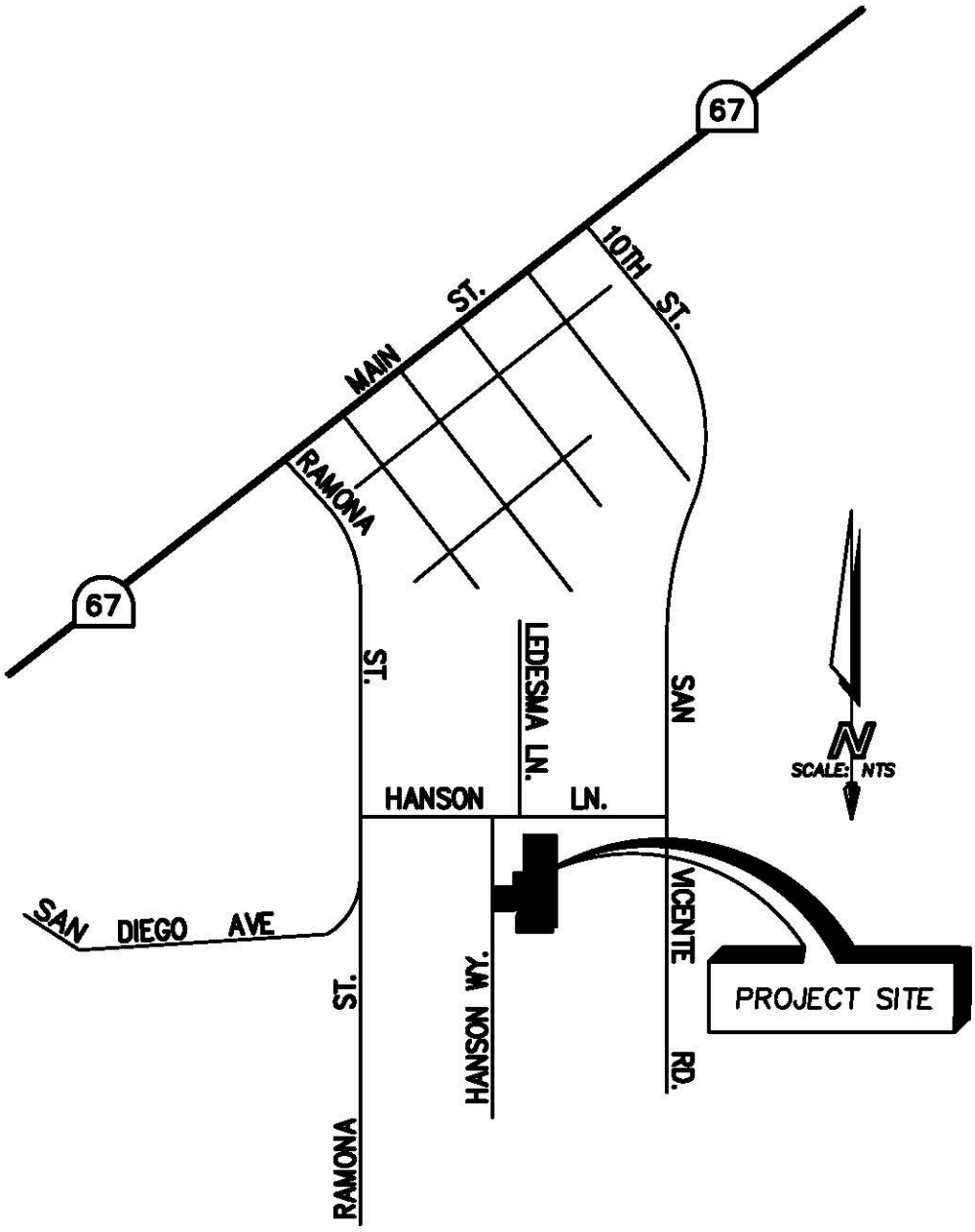


VICINITY MAP

NOT TO SCALE

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 15 single family home pads on approximately 9.8 acres of largely vacant land. The proposed improvements include a two paved streets and water, sewer and other utilities. A proposed storm drain system along the easterly side of the proposed street will convey the runoff from site to the northeasterly corner of the site and into a grass-lined bio-retention and HMP detention basin. The mitigated runoff then enters a 1'x5.5' culvert crossing the existing Hanson Lane an discharges into an existing concrete ditch.

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 southeasterly corner of the intersection of Hanson Lane and Hanson Way, between Ramona Street and San Vincente Road, in the community of Ramona, in the County of San Diego, State of California.

Under the existing conditions, the entire site sheet flows northerly and into an existing 18" RCP culvert crossing the existing Hanson Lane.

Under the proposed conditions, the northerly portion of the site drains on the proposed super-elevated street. The entire site drains onto the street and into a series of grass-lined swales and driveway culverts along the easterly site of the street. The flow eventually enters a major bio-retention grass-lined detention basin located at the southeasterly corner of the intersection of Hanson Lane and proposed street. The flow from the detention basin enters a 1.5'X2.5' box culvert that replaces the existing 18" RCP culvert crossing Hanson Lane. The upstream water shed from the area southwesterly of the project, including the existing development along School Daze drain onto the existing Hanson Lane and into a proposed curb inlet located on the westerly side of the intersection of Glae Jean Court that discharges into a 1'x5.5' box. The runoff is then conveyed easterly within the 1'x5.5' culvert and connects to the 1.5'x2.5' culvert. After this junction point, the proposed culvert crossing Hanson Lane is enlarged to a 1.5'x6.5' box to accommodate the combined runoff. The 1.5'x6.5' box culvert conveys the discharge across Hanson Lane and into an existing 18" concrete ditch.

A proposed detention basin and the outlet structure will hold back portions of the discharge from the basin such that the overall discharge flowing out of the site is at the pre-development level under within the 10% 2-year to 10-year storm ranges.

METHOD OF ANALYSIS

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

San Diego Hydrology Model (SDHM) published by Clear Creek Solutions, Inc. was used in this hydro-modification analysis. The version of the software is V2013/04/29.

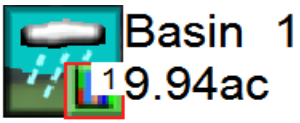
The purpose of the hydrograph modification analysis is to certify that the post-construction hydrologic characteristics of the project simulates the pre-development hydrologic characteristics at the identified point of compliance (POC). For this project, the POC was established at the northeasterly corner of the intersection of Glae Jean Court and Hanson Lane where the discharge from the site enters the proposed box culvert crossing Hanson Lane.

The detention basin located at the northeasterly corner of the site, just upstream of the proposed culvert crossing is the only HMP mitigation facility proposed for this project since all the on-site runoff will enter the basin via the proposed on-site drainage system.

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.

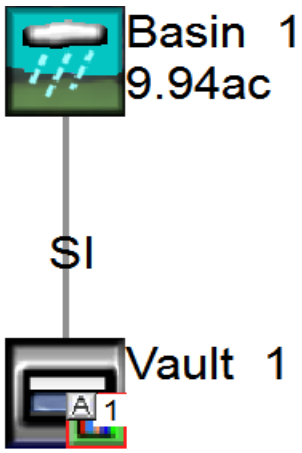
HYDROMODIFICATION ANALYSIS

PRE-DEVELOPMENT SCHEMATIC



LAND COVER	SLOPE	AREA (Ac)
CROP/GRASS/VEGETATION(D-SOIL)	0-5%	2.195
CROP/GRASS/VEGETATION(D-SOIL)	5-10%	3.196
CROP/GRASS/VEGETATION(D-SOIL)	>10%	4.463
IMPERVIOUS (ROOF TOP/PAVING)	FLAT	0.028
IMPERVIOUS (ROOF TOP/PAVING)	MOD	0.061
TOTAL		9.943

POST-DEVELOPMENT SCHEMATIC



LAND COVER	SLOPE	AREA (Ac)
CROP/GRASS/VEGETATION(D-SOIL)	0-5%	0.382
CROP/GRASS/VEGETATION(D-SOIL)	5-10%	1.464
CROP/GRASS/VEGETATION(D-SOIL)	>10%	3.21
LANDSCAPE(B-SOIL)	0-5%	1.99
LANDSCAPE(B-SOIL)	>10%	0.167
IMPERVIOUS (ROOF TOP/PAVING)	FLAT	2.73
IMPERVIOUS (ROOF TOP/PAVING)	MOD	0
TOTAL		9.943

SDHM2011

PROJECT REPORT

Project Name: 1061hmpalt
Site Name: McDonald Estates
Site Address: Hanson Lane
City : Ramona
Report Date: 6/26/2014
Gage : RAMONA
Data Start : 10/01/1963
Data End : 09/30/2004
Precip Scale: 1.00
Version : 2013/04/29

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

High Flow Threshold for POC 1: 10 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Grass,FLAT(0-5%)	2.195
D,Grass,MOD(5-10%)	3.196
D,Grass,STEEP(10-20	4.463
Pervious Total	9.854

Impervious Land Use	Acres
IMPERVIOUS-FLAT	0.028
IMPERVIOUS-MOD	0.061
Impervious Total	0.089
Basin Total	9.943

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Basin 1

Bypass: No

GroundWater: No

Pervious Land Use	Acres
D,Grass,FLAT(0-5%)	.167
D,Grass,MOD(5-10%)	.382
D,Grass,STEEP(10-20	1.464
B,Grass,STEEP(10-20	1.99
B,Grass,FLAT(0-5%)	3.21
Pervious Total	**7.213**

Impervious Land Use	Acres
IMPERVIOUS-FLAT	2.73
Impervious Total	**2.73**

Basin Total **9.943**

Element Flows To:

Surface	Interflow	Groundwater
Vault 1	Vault 1	

Name : Vault 1
Width : 18 ft.
Length : 280 ft.
Depth: 2.5 ft.

Discharge Structure

Riser Height: 1.5 ft.
Riser Diameter: 18 in.
Notch Type: Rectangular
Notch Width: 1.500 ft.
Notch Height: 0.000 ft.
Orifice 1 Diameter: 2 in. **Elevation:** 0 ft.

Element Flows To:

Outlet 1	Outlet 2

Vault Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	0.115	0.000	0.000	0.000
0.0278	0.115	0.003	0.017	0.000
0.0556	0.115	0.006	0.024	0.000
0.0833	0.115	0.009	0.030	0.000
0.1111	0.115	0.012	0.035	0.000
0.1389	0.115	0.016	0.039	0.000
0.1667	0.115	0.019	0.042	0.000

0.1944	0.115	0.022	0.046	0.000
0.2222	0.115	0.025	0.049	0.000
0.2500	0.115	0.028	0.052	0.000
0.2778	0.115	0.032	0.055	0.000
0.3056	0.115	0.035	0.058	0.000
0.3333	0.115	0.038	0.060	0.000
0.3611	0.115	0.041	0.063	0.000
0.3889	0.115	0.045	0.065	0.000
0.4167	0.115	0.048	0.067	0.000
0.4444	0.115	0.051	0.070	0.000
0.4722	0.115	0.054	0.072	0.000
0.5000	0.115	0.057	0.074	0.000
0.5278	0.115	0.061	0.076	0.000
0.5556	0.115	0.064	0.078	0.000
0.5833	0.115	0.067	0.080	0.000
0.6111	0.115	0.070	0.082	0.000
0.6389	0.115	0.073	0.084	0.000
0.6667	0.115	0.077	0.085	0.000
0.6944	0.115	0.080	0.087	0.000
0.7222	0.115	0.083	0.089	0.000
0.7500	0.115	0.086	0.091	0.000
0.7778	0.115	0.090	0.092	0.000
0.8056	0.115	0.093	0.094	0.000
0.8333	0.115	0.096	0.095	0.000
0.8611	0.115	0.099	0.097	0.000
0.8889	0.115	0.102	0.099	0.000
0.9167	0.115	0.106	0.100	0.000
0.9444	0.115	0.109	0.102	0.000
0.9722	0.115	0.112	0.103	0.000
1.0000	0.115	0.115	0.105	0.000
1.0278	0.115	0.118	0.106	0.000
1.0556	0.115	0.122	0.107	0.000
1.0833	0.115	0.125	0.109	0.000
1.1111	0.115	0.128	0.110	0.000
1.1389	0.115	0.131	0.112	0.000
1.1667	0.115	0.135	0.113	0.000
1.1944	0.115	0.138	0.114	0.000
1.2222	0.115	0.141	0.116	0.000
1.2500	0.115	0.144	0.117	0.000
1.2778	0.115	0.147	0.118	0.000
1.3056	0.115	0.151	0.120	0.000
1.3333	0.115	0.154	0.121	0.000
1.3611	0.115	0.157	0.122	0.000
1.3889	0.115	0.160	0.123	0.000
1.4167	0.115	0.163	0.125	0.000
1.4444	0.115	0.167	0.126	0.000
1.4722	0.115	0.170	0.127	0.000
1.5000	0.115	0.173	0.128	0.000
1.5278	0.115	0.176	0.197	0.000
1.5556	0.115	0.180	0.322	0.000
1.5833	0.115	0.183	0.483	0.000
1.6111	0.115	0.186	0.674	0.000
1.6389	0.115	0.189	0.890	0.000
1.6667	0.115	0.192	1.129	0.000
1.6944	0.115	0.196	1.389	0.000
1.7222	0.115	0.199	1.668	0.000
1.7500	0.115	0.202	1.965	0.000

1.7778	0.115	0.205	2.278	0.000
1.8056	0.115	0.208	2.608	0.000
1.8333	0.115	0.212	2.953	0.000
1.8611	0.115	0.215	3.313	0.000
1.8889	0.115	0.218	3.687	0.000
1.9167	0.115	0.221	4.074	0.000
1.9444	0.115	0.225	4.474	0.000
1.9722	0.115	0.228	4.888	0.000
2.0000	0.115	0.231	5.313	0.000
2.0278	0.115	0.234	5.750	0.000
2.0556	0.115	0.237	6.199	0.000
2.0833	0.115	0.241	6.660	0.000
2.1111	0.115	0.244	7.131	0.000
2.1389	0.115	0.247	7.613	0.000
2.1667	0.115	0.250	8.106	0.000
2.1944	0.115	0.253	8.609	0.000
2.2222	0.115	0.257	9.122	0.000
2.2500	0.115	0.260	9.646	0.000
2.2778	0.115	0.263	10.17	0.000
2.3056	0.115	0.266	10.72	0.000
2.3333	0.115	0.270	11.27	0.000
2.3611	0.115	0.273	11.83	0.000
2.3889	0.115	0.276	12.40	0.000
2.4167	0.115	0.279	12.98	0.000
2.4444	0.115	0.282	13.57	0.000
2.4722	0.115	0.286	14.16	0.000
2.5000	0.115	0.289	14.77	0.000
2.5278	0.115	0.292	15.38	0.000
2.5556	0.000	0.000	16.01	0.000

ANALYSIS RESULTS

Predeveloped Landuse Totals for POC #1
Total Pervious Area:9.854
Total Impervious Area:0.089

Mitigated Landuse Totals for POC #1
Total Pervious Area:7.213
Total Impervious Area:2.73

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	1.667582
5 year	2.835266
10 year	4.039574
25 year	5.038732

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	1.354098

5 year	2.244911
10 year	3.245738
25 year	3.92568

POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1668	621	671	108	Pass
0.2059	545	599	109	Pass
0.2450	483	526	108	Pass
0.2841	431	473	109	Pass
0.3232	405	422	104	Pass
0.3624	367	382	104	Pass
0.4015	333	352	105	Pass
0.4406	311	317	101	Pass
0.4797	287	287	100	Pass
0.5188	266	265	99	Pass
0.5580	245	245	100	Pass
0.5971	230	227	98	Pass
0.6362	215	219	101	Pass
0.6753	205	206	100	Pass
0.7144	195	184	94	Pass
0.7535	184	175	95	Pass
0.7927	173	162	93	Pass
0.8318	163	148	90	Pass
0.8709	156	139	89	Pass
0.9100	149	132	88	Pass
0.9491	139	128	92	Pass
0.9883	136	122	89	Pass
1.0274	134	118	88	Pass
1.0665	126	110	87	Pass
1.1056	120	104	86	Pass
1.1447	116	102	87	Pass
1.1839	110	100	90	Pass
1.2230	103	94	91	Pass
1.2621	98	89	90	Pass
1.3012	88	83	94	Pass
1.3403	86	77	89	Pass
1.3795	83	73	87	Pass
1.4186	77	69	89	Pass
1.4577	74	63	85	Pass
1.4968	70	54	77	Pass
1.5359	67	51	76	Pass
1.5751	64	48	75	Pass
1.6142	63	45	71	Pass
1.6533	63	44	69	Pass
1.6924	56	40	71	Pass
1.7315	55	39	70	Pass
1.7707	54	36	66	Pass
1.8098	54	36	66	Pass
1.8489	53	34	64	Pass

1.8880	50	34	68	Pass
1.9271	46	33	71	Pass
1.9662	43	33	76	Pass
2.0054	42	28	66	Pass
2.0445	40	27	67	Pass
2.0836	35	27	77	Pass
2.1227	32	26	81	Pass
2.1618	30	26	86	Pass
2.2010	28	26	92	Pass
2.2401	25	24	96	Pass
2.2792	24	21	87	Pass
2.3183	23	19	82	Pass
2.3574	22	19	86	Pass
2.3966	20	18	90	Pass
2.4357	18	17	94	Pass
2.4748	17	16	94	Pass
2.5139	17	15	88	Pass
2.5530	17	15	88	Pass
2.5922	16	14	87	Pass
2.6313	16	14	87	Pass
2.6704	16	14	87	Pass
2.7095	16	14	87	Pass
2.7486	16	14	87	Pass
2.7878	16	14	87	Pass
2.8269	15	14	93	Pass
2.8660	14	13	92	Pass
2.9051	14	13	92	Pass
2.9442	13	12	92	Pass
2.9834	13	12	92	Pass
3.0225	13	12	92	Pass
3.0616	12	12	100	Pass
3.1007	12	11	91	Pass
3.1398	12	11	91	Pass
3.1789	12	11	91	Pass
3.2181	11	10	90	Pass
3.2572	10	10	100	Pass
3.2963	10	10	100	Pass
3.3354	10	9	90	Pass
3.3745	10	9	90	Pass
3.4137	10	9	90	Pass
3.4528	10	9	90	Pass
3.4919	10	9	90	Pass
3.5310	10	8	80	Pass
3.5701	10	8	80	Pass
3.6093	10	8	80	Pass
3.6484	9	8	88	Pass
3.6875	9	8	88	Pass
3.7266	9	8	88	Pass
3.7657	9	7	77	Pass
3.8049	9	4	44	Pass
3.8440	8	4	50	Pass
3.8831	8	4	50	Pass
3.9222	7	4	57	Pass
3.9613	7	3	42	Pass
4.0005	7	3	42	Pass
4.0396	7	3	42	Pass

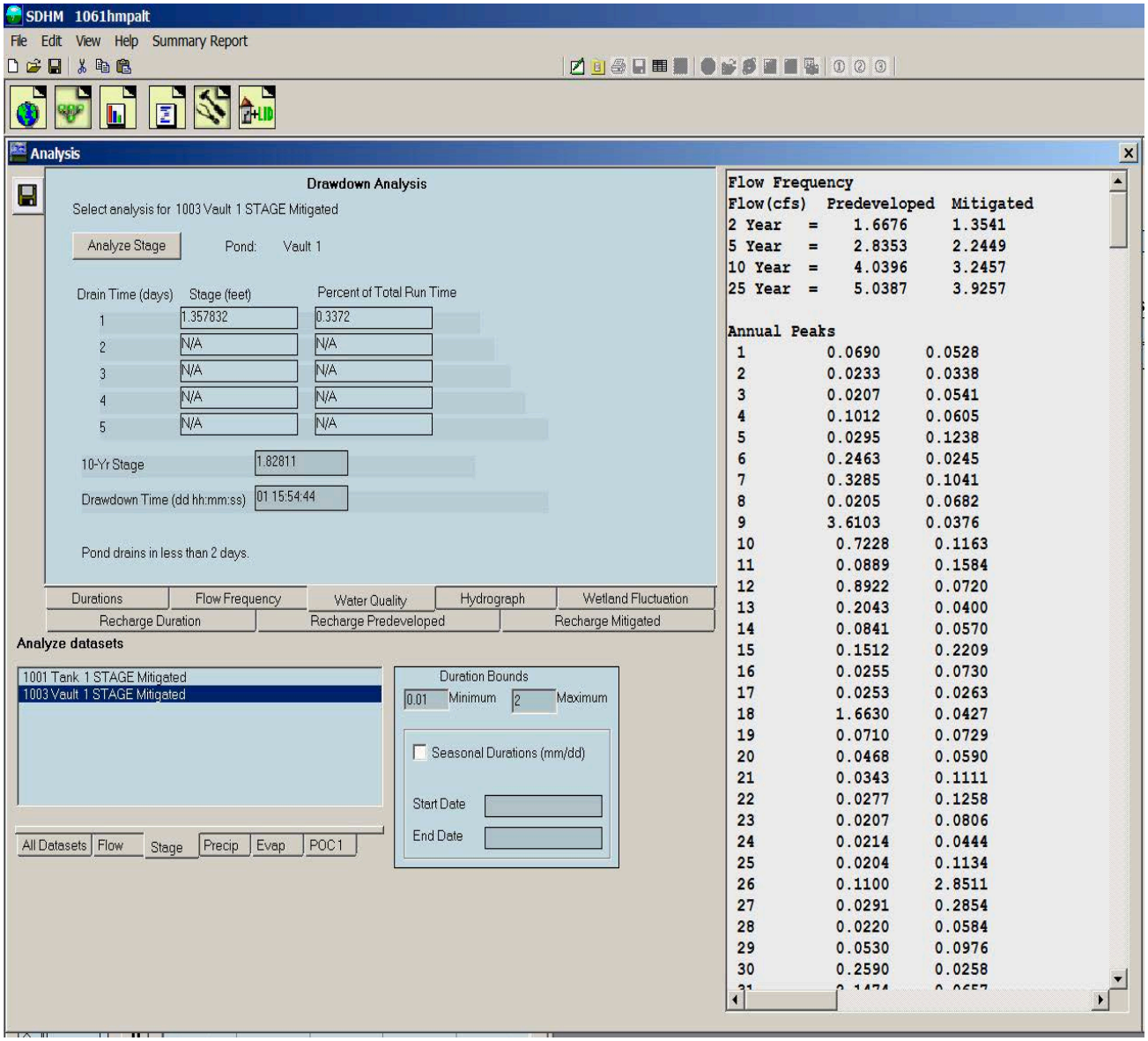
Drawdown Time Results
Pond: Vault 1

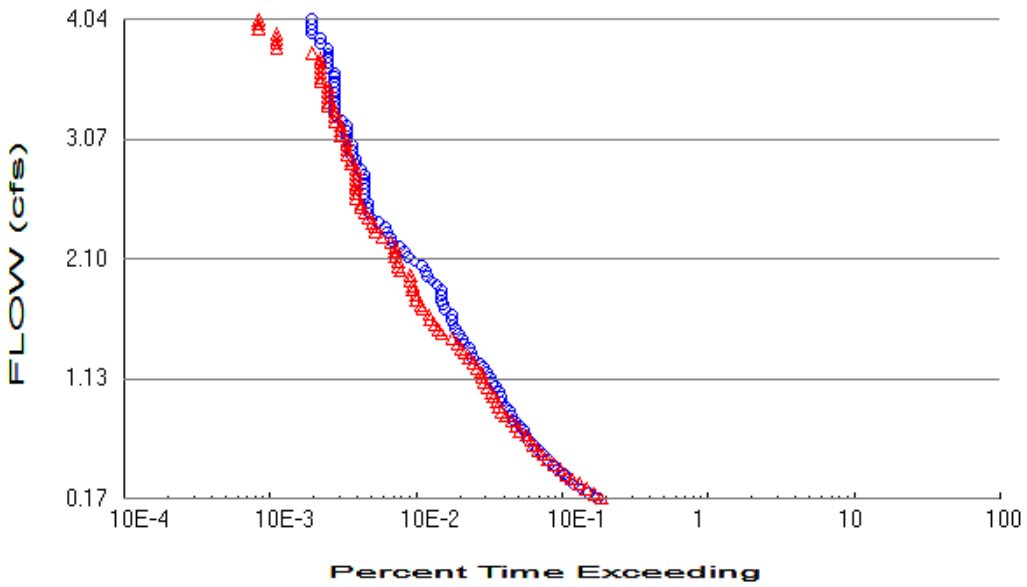
Days	Stage(feet)	Percent of Total Run Time
1	1.357	0.3372
2	2.500	0.0000
3	2.500	0.0000
4	2.500	0.0000
5	2.500	0.0000

Maximum Stage: 1.828
Drawdown Time: 01 01:38:50

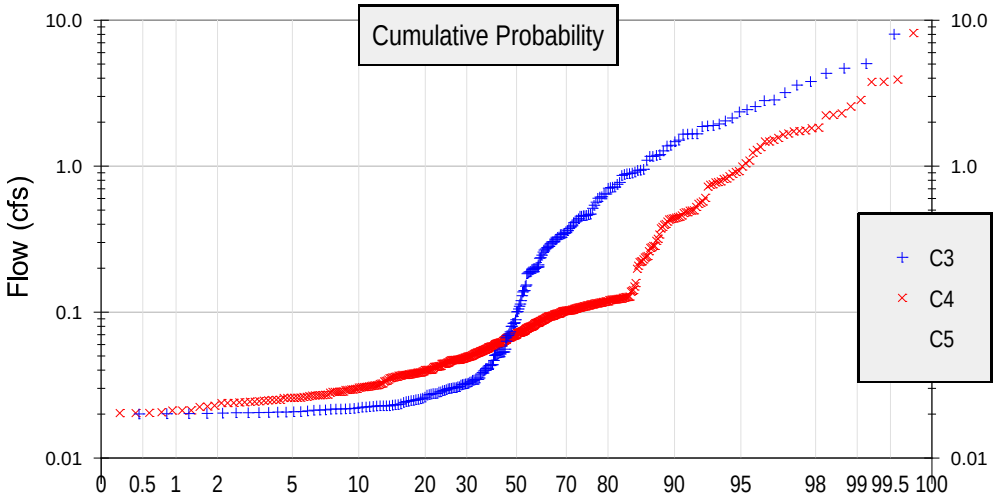
Perlnd and Implnd Changes

No changes have been made.


SDHM 1061hmpalt
File Edit View Help Summary Report
Analysis
Drawdown Analysis
Select analysis for 1003 Vault 1 STAGE Mitigated
Analyze Stage
Pond: Vault 1
Drain Time (days) Stage (feet) Percent of Total Run Time
1 1.357832 0.3372
2 N/A N/A
3 N/A N/A
4 N/A N/A
5 N/A N/A
10-Yr Stage 1.82811
Drawdown Time (dd hh:mm:ss) 01 15:54:44
Pond drains in less than 2 days.
Durations
Flow Frequency
Water Quality
Hydrograph
Wetland Fluctuation
Recharge Duration
Recharge Predeveloped
Recharge Mitigated
Analyze datasets
1001 Tank 1 STAGE Mitigated
1003 Vault 1 STAGE Mitigated
Duration Bounds
0.01 Minimum
2 Maximum
Seasonal Durations (mm/dd)
Start Date
End Date
All Datasets
Flow
Stage
Precip
Evap
POC 1
Flow Frequency
Flow(cfs) Predeveloped Mitigated
2 Year = 1.6676 1.3541
5 Year = 2.8353 2.2449
10 Year = 4.0396 3.2457
25 Year = 5.0387 3.9257
Annual Peaks
1 0.0690 0.0528
2 0.0233 0.0338
3 0.0207 0.0541
4 0.1012 0.0605
5 0.0295 0.1238
6 0.2463 0.0245
7 0.3285 0.1041
8 0.0205 0.0682
9 3.6103 0.0376
10 0.7228 0.1163
11 0.0889 0.1584
12 0.8922 0.0720
13 0.2043 0.0400
14 0.0841 0.0570
15 0.1512 0.2209
16 0.0255 0.0730
17 0.0253 0.0263
18 1.6630 0.0427
19 0.0710 0.0729
20 0.0468 0.0590
21 0.0343 0.1111
22 0.0277 0.1258
23 0.0207 0.0806
24 0.0214 0.0444
25 0.0204 0.1134
26 0.1100 2.8511
27 0.0291 0.2854
28 0.0220 0.0584
29 0.0530 0.0976
30 0.2590 0.0258



DURATION



FREQUENCY

SUMMARY

PEAK FLOW

	10% Q2	Q2	Q5	Q10
	(CFS)	(CFS)	(CFS)	(CFS)
PRE-DEV	0.2	1.7	2.8	4.0
POST-DEV	0.1	1.3	2.2	3.2

MITIGATION DEVICE	PROPOSED VOLUME (AC-FT)	DETAIL DESCRIPTION
GRASS-LINED DETENTION BASIN	0.174	A 2.5' effective deep irregular detention basin with an 18" diameter standpipe outlet. A 2" diameter orifice will be placed at the bottom of the baqsin. A 18" wide notch will also be cut into the stand pipe from the bottom of the basin.

As presented in this report, the post-development discharge durations will not deviate above the pre-development durations from 0.1Q2 to Q10. The flow rates from 0.1Q2 to Q10, under the post-development conditions, will not deviate above those under the pre-development conditions. The proposed detention basin is sized to mitigate the anticipated hydromodification peak flow and duration as a result of the proposed development's increased impervious areas. The proposed development will not adversely affect downstream drainage facilities.

The draw down time for the facility is 1 day, 15:54:44, less than 96 hours, no vector control plan is required. The detention basin as well as the outlet structure will be maintained by the property owner or HOA.

HMP EXHIBITS

San Onofre
Sandia Creek Rd
Rainbow Camp
Oat Flats
Fallbrook
Pala 3SW
Couser Canyon
Palomar Observ
Coyote Creek
Bonsall
Cole Grade Road
Birch Hill
Rincon Springs
La Jolla Amago
Borrego Palm
Lake Henshaw
Valley Center
Oceanside
Skyline Ranch
Ranchita
Borrego CRS
Loma Alta
Buena Vista
Deer Springs
Lake Wohlford
Agua Hedionda
Carlsbad
San Marcos CRS
Escondido
Sutherland Res
Volcan Mountain
Ocotillo Wells
San Marcos
Harmony Grove
Lake Hodges
Santa Ysabel
San Felipe
El Camino del Norte
Julian
Witch Creek FS
Encinitas
Ramona
San Elijo Lagoon
Rancho Bernardo
Barona
Pine Hills FS
Mt. Woodson
Solana Beach
SD Country Estates
Lake Cuyamaca
Ranchita Margarita
Agua Caliente
Poway
Miramar Lake
San Vicente Res
El Capitan Res
Echo Dell
Cactus County Park
Flinn Springs
Viejas Mountain
Descanso R.S.
Mount Laguna
Keeney Mesa
Santee
Los Coches Cr
Harbison Canyon
Lake Murray
Granite Hills
Fashion Valley
La Mesa
Lindbergh Field
Roads Div I
Bonita Road
Bonita
Barrett Dam
Morena Lake
Plaza Bonita
Thousand Trails
Tierra del Sol
Campo
Lower Otay Res
Dulzura Summit
Potrero Park
Marron Valley
Puente San Jose II
San Ysidro
Rio Alamar @ Toll Bridge
Loma Tova
Rancho Tecate
Rodriguez Reservoir
MEXICO

5
15
8
163
805

N

0 4 8
SCALE IN MILES

LEGEND

RIVERS/CREEKS
WATERSHEDS
PRECIPITATION

Bonita ● STATION TO BE INCLUDED IN HYDROMODIFICATION RAINFALL DATA SET

Bonsall ▲ OTHER ALERT STATION

FIGURE 1

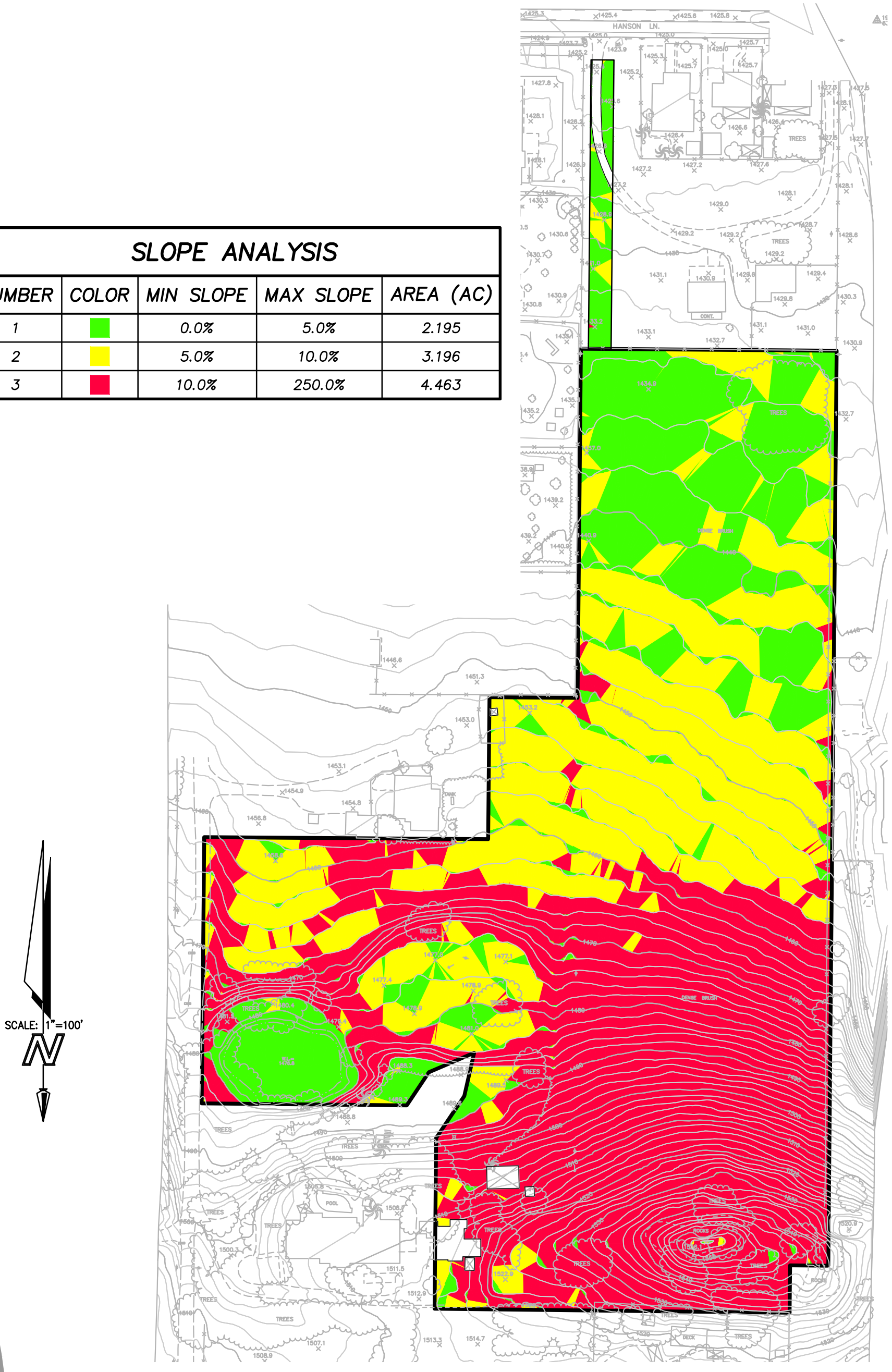
RAINFALL STATION MAP

PROJECT LOCATION	DATE	PROJECT NUMBER
SAN DIEGO COUNTY, CALIFORNIA	OCT 2008	133904

BROWN AND CALDWELL
SAN DIEGO, CALIFORNIA

PRE-DEVELOPMENT SLOPE ANALYSIS - NATURAL AREAS
ESTATES AT McDONALD

SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	2.195
2		5.0%	10.0%	3.196
3		10.0%	250.0%	4.463

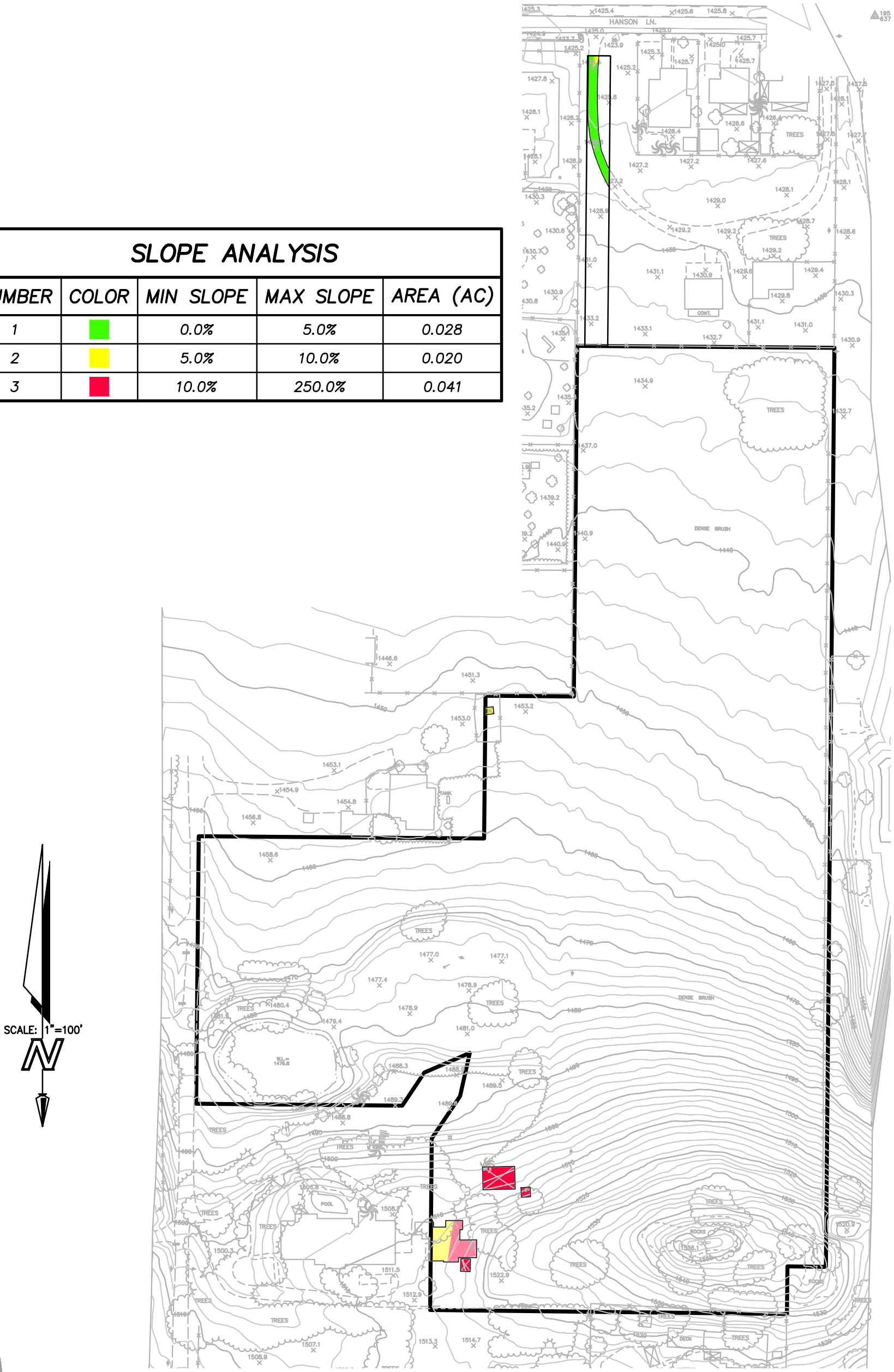


SCALE: 1"=100'

LANDMARK
CONSULTING
Planning Engineering Surveying
9555 Genesee Avenue, Suite 200
San Diego, CA 92121, (858) 587-8070

PRE-DEVELOPMENT SLOPE ANALYSIS - IMPERVIOUS AREAS
ESTATES AT McDONALD

SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.028
2		5.0%	10.0%	0.020
3		10.0%	250.0%	0.041



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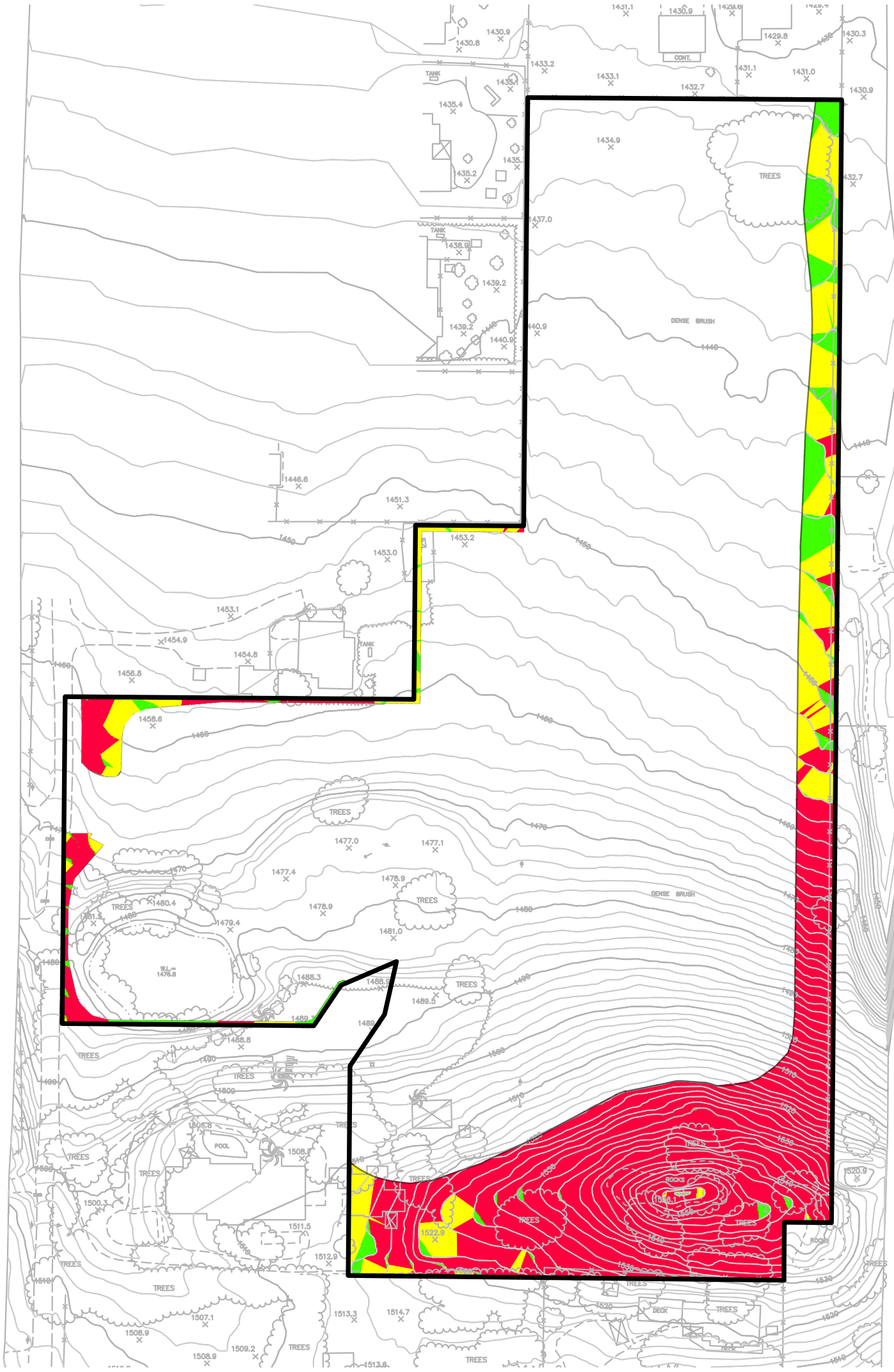
POST-DEVELOPMENT SLOPE ANALYSIS - NATURAL AREAS
ESTATES AT McDONALD



SCALE: 1"=100'

SLOPE ANALYSIS				
NUMBER	COLOR	MIN SLOPE	MAX SLOPE	AREA (AC)
1		0.0%	5.0%	0.167
2		5.0%	10.0%	0.382
3		10.0%	250.0%	1.464

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P:\106-1 ESTATES AT MCDONALD\REPORTS & ANALYSIS\SLOPE ANALYSIS\106-1_POST-DEVELOPMENT PERVIOUS.DWG 6/20/2014 11:44 AM