STORM WATER MANAGEMENT PLAN

RANCHO CIELO PARCEL 'H'
December 2011 - TM 5441; EA Log No. 86-06-026B

Prepared For: Rancho Cielo Estates

Prepared By: Fuscoe Engineering, Inc.

Job Number: 02711-01-001

FUSCOE ENGINEERING

full circle thinking

Major Stormwater Management Plan
(Major SWMP)
For
Rancho Cielo Estates
Parcel 'H'

Preparation/Revision Date:
December 2011

Prepared for:

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The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan have been prepared under the direction of the following Registered Civil Engineer and meet the requirements of Regional Water Quality Control Board Order R9-2007-0001 and subsequent amendments.

_____ _____

Robert A. Chase, P.E., RCE #41903 Date

The Major Stormwater Management Plan (Major SWMP) must be completed in its entirety and accompany applications to the County for a permit or approval associated with certain types of development projects. To determine whether your project is required to submit a Major or Minor SWMP, please reference the County's Stormwater Intake Form for Development Projects.

Project Name:	Rancho Cielo Estates – Parcel H
Project Location:	Via Ambiente/El Brazo, Rancho Santa Fe, CA
Permit Number (Land Development Projects):	TM 5441 – Lot 203 of PM 12905
Work Authorization Number (CIP only):	
Applicant:	Rancho Cielo Estates
Applicant's Address:	PO Box 2303, Rancho Santa Fe, CA 92067
Plan Prepared By (*Leave blank if same as applicant*):	Fuscoe Engineering, Inc.
Preparer's Address:	6390 Greenwich Drive, San Diego, CA 92122
Date:	December 2011

The County of San Diego Watershed Protection, Storm Water Management, and Discharge Control Ordinance (WPO) (Ordinance No. 9926) requires all applications for a permit or approval associated with a Land Disturbance Activity to be accompanied by a Storm Water Management Plan (SWMP) (section 67.806.b). The purpose of the SWMP is to describe how the project will minimize the short and long-term impacts on receiving water quality. Projects that meet the criteria for a priority development project are required to prepare a Major SWMP.

Since the SWMP is a living document, revisions may be necessary during various stages of approval by the County. Please provide the approval information requested below.

Project Stages	Does the SWMP need revisions?		If YES, Provide Revision Date	County Reviewer
	YES	NO		

Instructions for a Major SWMP can be downloaded at
http://www.sdcounty.ca.gov/dpw/watersheds/susmp/susmp.html

Completion of the following checklists and attachments will fulfill the requirements of a Major SWMP for the project listed above.

STEP 1

PRIORITY DEVELOPMENT PROJECT DETERMINATION

TABLE 1: IS THE PROJECT IN ANY OF THESE CATEGORIES?

Yes ■	No ❑	A	Housing subdivisions of 10 or more dwelling units. Examples: single-family homes, multi-family homes, condominiums, and apartments.
Yes ❑	No ■	B	Commercial—greater than one acre. Any development other than heavy industry or residential. Examples: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities.
Yes ❑	No ■	C	Heavy industry—greater than one acre. Examples: manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas (bus, truck, etc.).
Yes ❑	No ■	D	Automotive repair shops. A facility categorized in any one of Standard Industrial Classification (SIC) codes 5013, 5014, 5541, 7532-7534, or 7536-7539.
Yes ❑	No ■	E	Restaurants. Any facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except for structural treatment BMP and numeric sizing criteria requirements and hydromodification requirements.
Yes ■	No ❑	F	Hillside development greater than 5,000 square feet. Any development that creates 5,000 square feet of impervious surface and is located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.
Yes ■	No ❑	G	Environmentally Sensitive Areas (ESAs). All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.
Yes ❑	No ■	H	Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff.
Yes ■	No ❑	I	Street, roads, highways, and freeways. Any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes ❑	No ■	J	Retail Gasoline Outlets (RGOs) that are: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

To use the table, review each definition A through K. If any of the definitions match, the project is a Priority Development Project. Note some thresholds are defined by square footage of impervious area created; others by the total area of the development. Please see special requirements for previously developed sites and project exemptions on page 6 of the County SUSMP.

STEP 2

PROJECT STORMWATER QUALITY DETERMINATION

Total Project Site Area: 14.4 Acres

Estimated amount of disturbed area: 14.4 Acres
(If >1 acre, you must also provide a WDID number from the SWRCB) WDID: _____

This number will be provided after the NOI has been submitted, closer to the start date of construction.

Complete A through C and the calculations below to determine the amount of impervious surface on your project before and after construction.

A. Total size of project site: 14.4 Acres

B. Total impervious area (including roof tops) before construction 0.00 Acres

C. Total impervious area (including roof tops) after construction 3.51 Acres

Calculate percent impervious before construction: B/A = 0%
Calculate percent impervious after construction: C/A = 24.4%

Please provide detailed descriptions regarding the following questions:

TABLE 2: PROJECT SPECIFIC STORMWATER ANALYSIS

1.	Please provide a brief description of the project.
This development consists of one lot located on the north side of Via Ambiente approximately two miles east of Rancho Santa Fe in the Rancho Cielo Specific Plan Area. The project is located in the San Dieguito Community Plan Area in the unincorporated portion of San Diego. The surrounding and proposed land use is residential. The development includes one lot containing a total of 14.4 acres. 4.97 Acres will consist of open space and 9.45 Acres of the lot will be used to develop 31 single family units.	
2.	Describe the current and proposed zoning and land use designation.
The land is currently and will continue to be zoned residential. The current and proposed land use designation is residential.	
3.	Describe the pre-project and post-project topography of the project. (Show on Plan)
Currently, the site is vacant land. The site is a gently sloped hill changing approximately 100 feet in elevation from the highest to lowest point on site. The proposed project will maintain existing drainage patterns.	
4.	Describe the soil classification, permeability, erodibility, and depth to groundwater for LID and Treatment BMP consideration. (Show on Plan) If infiltration BMPs are proposed, a Geotechnical Engineer must certify infiltration BMPs in Attachment E.
Per the Custom Soil Resource Report for San Diego County Area, California – Rancho Cielo Parcels H and VC by the United States Department of Agriculture Natural Resources Conservation Service, the typical profile for the site is 0-8 inches: Silt loam, 8-18 inches: Clay loam, silty clay loam, clay, 18 to 23 inches: Gravelly clay loam, gravelly silty clay loam, 23 to 27 inches: Unweathered bedrock. The depth to water table is more than 80 inches. The entire site is described is Soil Type D. Type D Soils are described as having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.	
5.	Describe if contaminated or hazardous soils are within the project area. (Show on Plan)
Based on the review of the available documents, Fuscoe Engineering is not aware of any significant quantities of toxic materials known to have been treated, stored, disposed, spilled or leaked out of this construction site. Rancho Cielo Estates is not aware of any significant quantities of toxic materials known to have been treated, stored, disposed, spilled or leaked out of this construction site.	
6.	Describe the existing site drainage and natural hydrologic features. (Show on Plan).
The proposed surrounding private roads have been graded and drainage system installed. The majority of the site's runoff flows overland in its natural state in a northwesterly direction, which eventually become concentrated in natural drainage	

swales within open space. The southeasterly portion of the site's runoff flows in a northeasterly direction and becomes channelized as it flows through the existing brow ditch and is directed to a Type 'F' inlet. This runoff is collected and piped through the existing 18" RCP drain and discharges east towards Via Ambiante (approximate station 105+79.00). The existing private drainage facilities have been installed per TM4229-1. Refer to the Existing Hydrology Map included in the Project Specific Hydrology Report.

The proposed project generally maintains the existing drainage pattern. Site runoff within the project limits will be conveyed via the development towards Via Ambiente and to the drainage course at the westerly portion of the project. The existing Type T ' catch basin will need to be replaced with a proposed Type 'B' curb inlet to convey the additional runoff created from the road and developed land. Refer to the Proposed Hydrology Map included in the Proposed Hydrology Calculations Section of this report. This report includes hydrology calculations to show the minor increase in runoff due to the proposed development.

7.	Describe site features and conditions that constrain, or provide opportunities for stormwater control, such as LID features.

The steep topography of the site requires that storm water BMPs on the site have a small footprint in order to minimize the amount of grading and maximize the amount of open space on the site. The presence of Type D soils and shallow bedrock preclude the use of infiltration BMPs.

8.	Is this project within the environmentally sensitive areas as defined on the maps in Appendix A of the *County of San Diego Standard Urban Storm Water Mitigation Plan for Land Development and Public Improvement Projects?*

Yes	(No)

9.	Is this an emergency project? If yes, please provide a description below.

Yes	(No)

CHANNELS & DRAINAGES

Complete the following checklist to determine if the project includes work in channels.

TABLE 3: CHANNEL& DRAINAGE ANALYSIS

No.	CRITERIA	YES	NO	N/A	COMMENTS
1.	Will the project include work in channels?		✓		If YES go to 2 If NO go to 13.
2.	Will the project increase velocity or volume of downstream flow?				If YES go to 6.
3.	Will the project discharge to unlined channels?				If YES go to. 6.
4.	Will the project increase potential sediment load of downstream flow?				If YES go to 6.

No.	CRITERIA	YES	NO	N/A	COMMENTS
5.	Will the project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?				If YES go to 8.
6.	Review channel lining materials and design for stream bank erosion.				Continue to 7.
7.	Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity.				Continue to 8.
8.	Include, where appropriate, energy dissipation devices at culverts.				Continue to 9.
9.	Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.				Continue to 10.
10.	Include, if appropriate, detention facilities to reduce peak discharges.				Continue to 11.
11.	"Hardening" natural downstream areas to prevent erosion is not an acceptable technique for protecting channel slopes, unless pre-development conditions are determined to be so erosive that hardening would be required even in the absence of the proposed development.				Continue to 12.
12.	Provide other design principles that are comparable and equally effective.				Continue to 13.
13.	End				

TEMPORARY CONSTRUCTION BMPS

Please check the construction BMPs that may be implemented during construction of the project. The applicant will be responsible for the placement and maintenance of the BMPs incorporated into the final project design.

- ✓ Silt Fence
- ✓ Fiber Rolls
- ✓ Street Sweeping and Vacuuming
- ✓ Storm Drain Inlet Protection
- ✓ Stockpile Management
- ✓ Solid Waste Management
- ✓ Stabilized Construction Entrance/Exit
- ✓ Dewatering Operations
- ✓ Vehicle and Equipment Maintenance
- □ Desilting Basin
- ✓ Gravel Bag Berm
- ✓ Sandbag Barrier
- ✓ Material Delivery and Storage
- ✓ Spill Prevention and Control
- ✓ Concrete Waste Management
- ✓ Water Conservation Practices
- ✓ Paving and Grinding Operations

- ✓ Any minor slopes created incidental to construction and not subject to a major or minor grading permit shall be protected by covering with plastic or tarp prior to a rain event, and shall have vegetative cover reestablished within 180 days of completion of the slope and prior to final building approval.

EXCEPTIONAL THREAT TO WATER QUALITY DETERMINATION

Complete the checklist below to determine if a proposed project will pose an "exceptional threat to water quality," and therefore require Advanced Treatment Best Management Practices during the construction phase.

TABLE 4: EXCEPTIONAL THREAT TO WATER QUALITY DETERMINATION

No.	CRITERIA	YES	NO	INFORMATION
1.	Is all or part of the proposed project site within 200 feet of waters named on the Clean Water Act (CWA) Section 303(d) list of Water Quality Limited Segments as impaired for sedimentation and/or turbidity? Current 303d list may be obtained from the following site: http://www.swrcb.ca.gov/tmdl/docs/303dlists2006/approved/r9_06_303d_reqtmdls.pdf		✓	If YES, continue to 2. If NO, go to 5.
2.	Will the project disturb more than 5 acres, including all phases of the development?			If YES, continue to 3. If NO, go to 5.
3.	Will the project disturb slopes that are steeper than 4:1 (horizontal: vertical) with at least 10 feet of relief, and that drain toward the 303(d) listed receiving water for sedimentation and/or turbidity?			If YES, continue to 4. If NO, go to 5.
4.	Will the project disturb soils with a predominance of USDA-NRCS Erosion factors k_f greater than or equal to 0.4?			If YES, continue to 6. If NO, go to 5.
5.	Project is not required to use Advanced Treatment BMPs.	✓		Document for Project Files by referencing this checklist.
6.	Project poses an "exceptional threat to water quality" and is required to use Advanced Treatment BMPs.		✓	Advanced Treatment BMPs must be consistent with WPO section 67.811(b)(20)(D) performance criteria

Exemption potentially available for projects that require advanced treatment: Project proponent may perform a Revised Universal Soil Loss Equation, Version 2 (RUSLE 2), Modified Universal Soil Loss Equation (MUSLE), or similar analysis that demonstrates (to the County official's satisfaction) that advanced treatment is not required.

STEP 3

HYDROMODIFICATION DETERMINATION

The following questions provide a guide to collecting information relevant to hydromodification management plan (HMP) issues. If the project is exempt from the HMP criteria, please provide the supporting documentation in Attachment H. Please reference the full descriptions of the HMP exemptions located in Figure 1-1 of the County SUSMP.

TABLE 5: HYDROMODIFICATION DETERMINATION

	QUESTIONS	YES	NO	Information
1.	Will the project reduce the pre-project impervious area and are the unmitigated post-project outflows (outflows without detention routing) to each outlet location less as compared to the pre-project condition?		✓	If NO, continue to 2. If YES, go to 7.
2.	Would the project site discharge runoff directly to an exempt receiving water, such as the Pacific Ocean, San Diego Bay, an exempt reservoir, or a tidally-influenced area?		✓	If NO, continue to 3. If YES, go to 7.
3.	Would the project site discharge to a stabilized conveyance system, which has the capacity for the ultimate $Q_{10,}$ and extends to the Pacific Ocean, San Diego Bay, a tidally-influenced area, an exempt river reach or reservoir?		✓	If NO, continue to 4. If YES, go to 7.
4.	Does the contributing watershed area to which the project discharges have an impervious area percentage greater than 70 percent?		✓	If NO, continue to 5. If YES, go to 7.
5.	Is this an urban infill project which discharges to an existing hardened or rehabilitated conveyance system that extends beyond the "domain of analysis," where the potential for cumulative impacts in the watershed are low, and the ultimate receiving channel has a "Low" susceptibility to erosion as defined in the SCCWRP channel assessment tool?		✓	If NO, continue to 6. If YES, go to 7.
6.	Project is required to manage hydromodification impacts.	✓		Reference Appendix G "Hydromodification Management Plan" of the County SUSMP.
7.	Project is not required to manage hydromodification impacts.		✓	Hydromodification Exempt. Keep on file.

STEP 4

POLLUTANTS OF CONCERN DETERMINATION

WATERSHED

Please check the watershed(s) for the project.

☐ San Juan 901	☐ Santa Margarita 902	☐ San Luis Rey 903	■ Carlsbad 904
■ San Dieguito 905	☐ Penasquitos 906	☐ San Diego 907	☐ Sweetwater 909
☐ Otay 910	☐ Tijuana 911	☐ Whitewater 719*	☐ Clark 720*
☐ West Salton 721*	☐ Anza Borrego 722*	☐ Imperial 723*	

http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml

*Projects located fully within these watersheds require only a Minor SWMP.

HYDROLOGIC SUB-AREA NAME AND BASIN NUMBER(S)

Basin Number	Sub-Area Name
905.11	Rancho Santa Fe
904.61	San Elijo

http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml

SURFACE WATERS that each project discharge point proposes to discharge to.

SURFACE WATERS (river, creek, stream, etc.)	Hydrologic Unit Basin Number	Impairment(s) listed [303(d) listed waters or waters with established TMDLs]. List the impairments identified in **Table 7**.	Distance to Project
	905.11	n/a	
	904.61	n/a	

http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r9_06_303d_reqtmdls.pdf

GROUND WATERS

Ground Waters	Hydrologic Unit Basin Number	MUN	AGR	IND	PROC	GWR	FRESH	POW	REC1	REC2	BIOL	WARM	COLD	WILD	RARE	SPWN
Rancho Santa Fe	905.11	+	+	+												
San Elijo	904.61	○	+	+												

http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml

+ Excepted from Municipal ● Existing Beneficial Use ○ Potential Beneficial Use

PROJECT ANTICIPATED AND POTENTIAL POLLUTANTS

Using Table 6, identify pollutants that are anticipated to be generated from the proposed priority project categories. Pollutants associated with any hazardous material sites that have been remediated or are not threatened by the proposed project are not considered a pollutant of concern.

TABLE 6: ANTICIPATED AND POTENTIAL POLLUTANTS GENERATED BY LAND USE TYPE

	General Pollutant Categories								
PDP Categories	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Detached Residential Development	X	X			X	X	X	X	X
Attached Residential Development	X	X			X	P(1)	P(2)	P	X
Commercial Development 1 acre or greater	P(1)	P(1)		P(2)	X	P(5)	X	P(3)	P(5)
Heavy industry /industrial development	X		X	X	X	X	X		
Automotive Repair Shops			X	X(4)(5)	X		X		
Restaurants					X	X	X	X	
Hillside Development >5,000 ft^2	X	X			X	X	X		X
Parking Lots	P(1)	P(1)	X		X	P(1)	X		P(1)
Retail Gasoline Outlets			X	X	X	X	X		
Streets, Highways & Freeways	X	P(1)	X	X(4)	X	P(5)	X		

X = anticipated
P = potential
(1) A potential pollutant if landscaping exists on-site.
(2) A potential pollutant if the project includes uncovered parking areas.
(3) A potential pollutant if land use involves food or animal waste products.
(4) Including petroleum hydrocarbons.
(5) Including solvents.

PROJECT POLLUTANTS OF CONCERN SUMMARY TABLE

Please summarize the identified project pollutants-of-concern by checking the appropriate boxes in the table below and list any surface water impairments identified. Pollutants anticipated to be generated by the project, which are also causing impairment of receiving waters, shall be considered the primary pollutants of concern. For projects where no primary pollutants of concern exist, those pollutants identified as anticipated shall be considered secondary pollutants of concern.

TABLE 7: PROJECT POLLUTANTS OF CONCERN

Pollutant Category	Anticipated (X)	Potential (P)	Surface Water Impairments
Sediments		P	
Nutrients	X		
Heavy Metals		P	
Organic Compounds	X		
Trash & Debris	X		
Oxygen Demanding Substances	X		
Oil & Grease		P	
Bacteria & Viruses	X		
Pesticides	X		

STEP 5

LID AND SITE DESIGN STRATEGIES

Each numbered item below is a Low Impact Development (LID) requirement of the WPO. Please check the box(s) under each number that best describes the LID BMP(s) and Site Design Strategies selected for this project. LID BMPs selected on this table will be typically represented as a self-retaining area, self-treating area, pervious pavement and greenroof, which, should be delineated in the Drainage Management Area map in Attachment C.

TABLE 8: LID AND SITE DESIGN

1. Conserve natural Areas, Soils, and Vegetation
☐ Preserve well draining soils (Type A or B)
☐ Preserve Significant Trees
☐ Preserve critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions
■ Other. Description: No existing significant trees to preserve in area. No well-draining soils exist on site.
2. Minimize Disturbance to Natural Drainages
☐ Set-back development envelope from drainages
■ Restrict heavy construction equipment access to planned green/open space areas
☐ Other. Description:
3. Minimize and Disconnect Impervious Surfaces (see 5)
■ Clustered Lot Design
■ Items checked in 5
☐ Other. Description:
4. Minimize Soil Compaction
■ Restrict heavy construction equipment access to planned green/open space areas
■ Re-till soils compacted by construction vehicles/equipment
☐ Collect & re-use upper soil layers of development site containing organic materials
☐ Other. Description:
5. Drain Runoff from Impervious Surfaces to Pervious Areas
<u>LID Street & Road Design</u>
☐ Curb-cuts to landscaping
☐ Rural Swales
☐ Concave Median
☐ Cul-de-sac Landscaping Design
☐ Other. Description:

LID Parking Lot Design
☐ Permeable Pavements
☐ Curb-cuts to landscaping
☐ Other. Description:
LID Driveway, Sidewalk, Bike-path Design
☐ Permeable Pavements
■ Pitch pavements toward landscaping
☐ Other. Description:
LID Building Design
☐ Cisterns & Rain Barrels
■ Downspout to swale or landscaping
☐ Vegetated Roofs
☐ Other. Description:
LID Landscaping Design
☐ Soil Amendments
☐ Reuse of Native Soils
■ Smart Irrigation Systems
■ Street Trees
☐ Other. Description:
6. Minimize erosion from slopes
■ Disturb existing slopes only when necessary
☐ Minimize cut and fill areas to reduce slope lengths
☐ Incorporate retaining walls to reduce steepness of slopes or to shorten slopes
☐ Provide benches or terraces on high cut and fill slopes to reduce concentration of flows
☐ Rounding and shaping slopes to reduce concentrated flow
☐ Collect concentrated flows in stabilized drains and channels
☐ Other. Description:

STEP 6

SOURCE CONTROL

Please complete the checklist on the following pages to determine Source Control BMPs. Below is instruction on how to use the checklist. (Also see instructions on page 60 of the *SUSMP)*

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies and list in Table 9.

2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your Source Control Exhibit in Attachment B.

3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs into Table 9.

4. Use the format in Table 9 below to summarize the project Source Control BMPs. Incorporate all identified Source Control BMPs in your Source Control Exhibit in Attachment B.

TABLE 9: PROJECT SOURCE CONTROL BMPS

Potential source of runoff pollutants	*Permanent source control BMPs*	*Operational source control BMPs*
A. On-site storm drain inlets	Mark inlets with the words "No Dumping! Flows to Bay."	Maintain and periodically repaint or replace inlet markings.
		Provide stormwater pollution prevention information to new site owners.
		Include the following note on the Improvement Plans, "Owner shall not allow anyone to discharge anything to storm drain or to store or deposit materials so as to create a potential discharge to storm drains."
D2. Landscape / Outdoor Pesticide Use	Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.	Maintain landscaping using minimum or no pesticides.
	Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.	See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
	Where landscaped areas are used to retain or detain	Provide IPM information to new owners, lessees and

	stormwater, specify plants that are tolerant of saturated soil conditions.	operators.
	Consider using pest-resistant plants, especially adjacent to hardscape.	
	To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	
P. Plazas, sidewalks and parking lots		Plazas, sidewalks, and parking lots shall be swept regularly to prevent the accumulation of litter and debris. Debris from pressure washing shall be collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.

Describe your specific Source Control BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting Source Control BMPs or substituting alternatives.

Several Source Control BMPs will be implemented for this project. The first source control BMP is to mark all storm drain inlets with the words "No dumping! Flows to Bay" or similar. This will reduce the potential for pollutants entering runoff through on site storm drain inlets. This inlet marking will be maintained and periodically repainted by the responsible party. Secondly, existing native trees, shrubs and ground cover will be preserved to the maximum extent possible. Landscaping will be maintained using little to no pesticides. Using native plants reduces the potential for encouraging pesticide use, as native plants are typically not significantly affected by local pests. Owner shall consider using pest-resistant plants. Landscaping will be designed to minimize irrigation and run-off. Thirdly, plazas, sidewalks and parking lots will be regularly to prevent the accumulation of litter and debris. Debris from pressure washing shall be collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
✓ A. On-site storm drain inlets	✓ Locations of inlets.	✓ Mark all inlets with the words "No Dumping! Flows to Bay" or similar where feasible.	✓ Maintain and periodically repaint or replace inlet markings. ✓ Provide stormwater pollution prevention information to new site owners, lessees, or operators. ✓ See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com ✓ Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."
❑ B. Interior floor drains and elevator shaft sump pumps		❑ State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	❑ Inspect and maintain drains to prevent blockages and overflow.
✓ C. Interior parking garages		✓ State that parking garage floor drains will be plumbed to the sanitary sewer.	✓ Inspect and maintain drains to prevent blockages and overflow.

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
❑ D1. Need for future indoor & structural pest control		❑ Note building design features that discourage entry of pests.	❑ Provide Integrated Pest Management information to owners, lessees, and operators.

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
✓ D2. Landscape/ Outdoor Pesticide Use Note: Should be consistent with project landscape plan (if applicable).	❑ Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained. ❑ Show self-retaining landscape areas, if any. ✓ Show stormwater treatment facilities.	State that final landscape plans will accomplish all of the following: ✓ Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. ✓ Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. ✓ Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. ✓ Consider using pest-resistant plants, especially adjacent to hardscape. ✓ To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	✓ Maintain landscaping using minimum or no pesticides. ✓ See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com ✓ Provide IPM information to new owners, lessees and operators.

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
❑ E. Pools, spas, ponds, decorative fountains, and other water features.	❑ Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet.	❑ If the local municipality requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.	❑ See applicable operational BMPs in Fact Sheet SC-72, "Fountain and Pool Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
❑ F. Food service	❑ For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment. ❑ On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.	❑ Describe the location and features of the designated cleaning area. ❑ Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.	❑

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
❑ G. Refuse areas	❑ Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas. ❑ If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area. ❑ Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.	❑ State how site refuse will be handled and provide supporting detail to what is shown on plans. ❑ State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	❑ State how the following will be implemented: Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
❑ H. Industrial processes.	❑ Show process area.	❑ If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."	❑ See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPs		
1 Potential Sources of Runoff Pollutants – List in Table 9	2 Permanent Controls—Show on Source Control Exhibit, Attachment B	3 Permanent Controls—List in Table 9 and Narrative	4 Operational BMPs—Include in Table 9 and Narrative
❑ I. Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)	❑ Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area. ❑ Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults. ❑ Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.	❑ Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains. Where appropriate, reference documentation of compliance with the requirements of local Hazardous Materials Programs for: ▪ Hazardous Waste Generation ▪ Hazardous Materials Release Response and Inventory ▪ California Accidental Release (CalARP) ▪ Aboveground Storage Tank ▪ Uniform Fire Code Article 80 Section 103(b) & (c) 1991 ▪ Underground Storage Tank	❑ See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

❑ J. Vehicle and Equipment Cleaning	❑ Show on drawings as appropriate: (1) Commercial/industrial facilities having vehicle /equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses. (2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use). (3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer. (4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.	❑ If a car wash area is not provided, describe measures taken to discourage on-site car washing and explain how these will be enforced.	Describe operational measures to implement the following (if applicable): ❑ Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system. ❑ Car dealerships and similar may rinse cars with water only. ❑ See Fact Sheet SC-21, "Vehicle and Equipment Cleaning," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

❑ K. Vehicle/Equipment Repair and Maintenance	❑ Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater. ❑ Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas. ❑ Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.	❑ State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area. ❑ State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements. ❑ State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.	In the SUSMP report, note that all of the following restrictions apply to use the site: ❑ No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains. ❑ No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately. ❑ No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.

❑ L. Fuel Dispensing Areas	❑ Fueling areas[1] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable. ❑ Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.		❑ The property owner shall dry sweep the fueling area routinely. ❑ See the Business Guide Sheet, "Automotive Service—Service Stations" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

[1] The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

❑ M. Loading Docks	❑ Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas should be drained to the sanitary sewer where feasible. Direct connections to storm drains from depressed loading docks are prohibited. ❑ Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation. ❑ Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.		❑ Move loaded and unloaded items indoors as soon as possible. ❑ See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
❑ N. Fire Sprinkler Test Water		❑ Provide a means to drain fire sprinkler test water to the sanitary sewer.	❑ See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

O. Miscellaneous Drain or Wash Water ❑ Boiler drain lines ❑ Condensate drain lines ❑ Rooftop equipment ❑ Drainage sumps ❑ Roofing, gutters, and trim.		❑ Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. ❑ Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. ❑ Rooftop mounted equipment with potential to produce pollutants shall be roofed and/or have secondary containment. ❑ Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. ❑ Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.	
✓ P. Plazas, sidewalks, and parking lots.			✓ Plazas, sidewalks, and parking lots shall be swept regularly to prevent the accumulation of litter and debris. Debris from pressure washing shall be collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.

STEP 7

LID AND TREATMENT CONTROL SELECTION

A treatment control BMP and/or LID IMP must be selected to treat the project pollutants of concern identified in Table 7 "Project Pollutants of Concern". A treatment control facility with a high or medium pollutant removal efficiency for the project's most significant pollutant of concern shall be selected. It is recommended to use the design procedure in Chapter 4 of the SUSMP to meet NPDES permit LID requirements, treatment requirements, and flow control requirements. If your project does not utilize this approach, the project will need to demonstrate compliance with LID, treatment and hydromodification flow control requirements. Review Chapter 2 "Selection of Stormwater Treatment Facilities" in the SUSMP to assist in determining the appropriate treatment facility for your project.

Will this project be utilizing the unified LID design procedure as described in Chapter 4 of the Local SUSMP? *(If yes, please document in Attachment D following the steps in Chapter 4 of the County SUSMP)*	
(Yes)	No
If this project is not utilizing the unified LID design procedure, please describe how the alternative treatment facilities will comply with applicable LID criteria, stormwater treatment criteria, and hydromodification management criteria.	

- Indicate the project pollutants of concern (POCs) from Table 7 in Column 2 below.

TABLE 10: GROUPING OF POTENTIAL POLLUTANTS of Concern (POCs) by fate during stormwater treatment

Pollutant	Check Project Specific POCs	Coarse Sediment and Trash	Pollutants that tend to associate with fine particles during treatment	Pollutants that tend to be dissolved following treatment
Sediment		X	X	
Nutrients	✓		X	X
Heavy Metals			X	
Organic Compounds	✓		X	
Trash & Debris	✓	X		
Oxygen Demanding	✓		X	
Bacteria	✓		X	
Oil & Grease			X	
Pesticides	✓		X	

- Indicate the treatment facility(s) chosen for this project in the following table.

TABLE 11: GROUPS OF POLLUTANTS and relative effectiveness of treatment facilities

Pollutants of Concern	Bioretention Facilities (LID)	Settling Basins (Dry Ponds)	Wet Ponds and Constructed Wetlands	Infiltration Devices (LID)	Media Filters	Higher-rate biofilters	Higher-rate media filters	Trash Racks & Hydro-dynamic Devices	Vegetated Swales
Coarse Sediment and Trash	High	High	High	High	High	High	High	High	High
Pollutants that tend to associate with fine particles during treatment	High	High	High	High	High	Medium	Medium	Low	Medium
Pollutants that tend to be dissolved following treatment	Medium	Low	Medium	High	Low	Low	Low	Low	Low

- Please check the box(s) that best describes the Treatment Control BMP(s) and/or LID IMP selected for this project. Please check if the treatment facility is designed for water quality or hydromodification flow control.

TABLE 12: PROJECT LID AND TC-BMPS

LID and TC-BMP Type	Water Quality Treatment Only	Hydromodification Flow Control
Bioretention Facilites (LID)		
□ Bioretention area		
□ Flow-through Planter		
□ Cistern with Bioretention		
Settling Basins (Dry Ponds)		
■ Extended/dry detention basin with grass/vegetated lining		
□ Extended/dry detention basin with impervious lining		
Infiltration Devices (LID)		
□ Infiltration basin		
□ Infiltration trench		
□ Other_____		

Wet Ponds and Constructed Wetlands		
□ Wet pond/basin (permanent pool)		
□ Constructed wetland		
Vegetated Swales (LID[1])		
□ Vegetated Swale		
Media Filters		
□ Austin Sand Filter		
□ Delaware Sand Filter		
□ Multi-Chambered Treatment Train (MCTT)		
Higher-rate Biofilters		
□ Tree-pit-style unit		
□ Other_____		
Higher-rate Media Filters		
□ Vault-based filtration unit with replaceable cartridges		
□ Other_____		
Hydrodynamic Separator Systems		
□ Swirl Concentrator		
□ Cyclone Separator		
Trash Racks		
□ Catch Basin Insert		
□ Catch Basin Insert w/ Hydrocarbon boom		
□ Other_____		

[1] Must be designed per SUSMP "Vegetated Swales" design criteria for water quality treatment credit (p. 65).

For design guidelines and calculations refer to Chapter 4 "Low Impact Development Design Guide" in the SUSMP. Please show all calculations and design sheets for all treatment control BMPs proposed in Attachment D.

- Create a Construction Plan SWMP Checklist for your project.

Instructions on how to fill out table

1. Number and list each measure or BMP you have specified in your SWMP in Columns 1 and Maintenance Category in Column 3 of the table. Leave Column 2 blank.

2. When you submit construction plans, duplicate the table (by photocopy or electronically). Now fill in Column 2, identifying the plan sheets where the BMPs are shown. List all plan sheets on which the BMP appears. **This table must be shown on the front sheet of the grading and improvement plans.**

Stormwater Treatment Control BMPs and LID BMPs			
Description / Type	Sheet	Maintenance Category	Revisions
Extended Detention Basin		HOA Maintained	

BMP's approved as part of Stormwater Management Plan (SWMP) dated 12/05/11 on file with DPW. Any changes to the above BMP's will require SWMP revision and Plan Change approvals.

- Please describe why the chosen treatment control BMP(s) was selected for this project. For projects utilizing a low performing BMP, please provide a **feasibility analysis** that demonstrates utilization of a treatment control BMP with a high or medium removal efficiency ranking is infeasible.

Extended Detention Basins were chosen for the project due to their ability to perform as multi-function Integrated Management Practices for the project, handling the treatment control, hydromodification flow control, and peak detention requirements in one storm water component. Due to the hillside nature of the site, their small footprint also makes them the most feasible BMP for the project site which offers a high or medium removal efficiency for most anticipated and potential pollutants. Bioretention facilities are not feasible for the project site due to the large footprint required. Wet ponds or constructed wetlands are not feasible for the project site due to the dry climate and need for water conservation. Infiltration facilities are not feasible for the project due to the presence of Type D soils and shallow bedrock.

Please provide the sizing design calculations for each Drainage Management Area in Attachment D. Guidelines for design calculations are located in Chapter 4 of the County SUSMP. To assist in these calculations a BMP sizing calculator is available for use at the following location: http://www.projectcleanwater.org/html/wq_susmp.html

STEP 8

OPERATION AND MAINTENANCE

- Please check the box that best describes the maintenance mechanism(s) for this project.

TABLE 13: PROJECT BMP CATEGORY

CATEGORY	SELECTED		BMP Description
	YES	NO	
First[1]			Extended Detention Basin
Second[2]	✓		
Third[3]			
Fourth[4]			

Note:

1. A maintenance notification will be required.
2. A recorded maintenance agreement and access easement will be required.
3. The project will be required to establish or be included in a watershed specific Community Facility District (CFD) for long-term maintenance.
4. The developer would be required to dedicate the BMP (and the property on which it is located and any necessary access) to the County.

- Please list all individual LID and Treatment Control BMPs (TC-BMPs) incorporated into the project. Please ensure the "BMP Identifier" is consistent with the legend in Attachment C "Drainage Management Area Exhibit". Please attach the record plan sheets upon completion of project and amend the Major SWMP where appropriate. For each type of LID or TC-BMP provide an inspection sheet in Attachment F "Maintenance Plan".

TABLE 14: PROJECT SPECIFIC LID AND TC-BMPS

BMP Identifier*: (Identifier to match TC-BMPs on TC-BMP Table.)	Type	Record Plan Page for TC-BMP	BMP Pollutant of Concern Efficiency (H,M,L)
	Extended Detention Basin		High – Coarse Sediment and Trash High – Pollutants that tend to associate with fine particles during treatment. High- Pollutants that tend to be

			dissolved following treatment.

* For location of BMP's, see approved Record Plan dated 06/23/2011, Grading Plan Sheet 3.

- Responsible Party for Long-term Maintenance:

Identify the parties responsible for long-term maintenance of the BMPs identified above and Source Controls specified in Attachment B. Include the appropriate written agreement with the entities responsible for O&M in Attachment F. Please see Chapter 5 "Stormwater Facility Maintenance" of the County SUSMP for appropriate maintenance mechanisms.

Representative Name: Mark J. Rowsen
Company Name: Rancho Cielo Estates
Phone Number: 858.756.5667
Street Address: PO Box 2303
City/State/Zip: Rancho Santa Fe, California 92067
Email Address: mrowson@cielorsf.com

- Funding Source:

Provide the funding source or sources for long-term operation and maintenance of each BMP identified above. Please see Chapter 5 "Stormwater Facility Maintenance" of the County SUSMP for the appropriate funding source options. By certifying the Major SWMP the applicant is certifying that the funding responsibilities have been addressed and will be transferred to future owners.

Installation and construction will be the financial responsibility of the developer. Upon completion of Construction, the financial funding of for the long-term operation and maintenance will be privately owned, responsibility of the individual owners, or HOA.

ATTACHMENTS

Please include the following attachments.

ATTACHMENT		COMPLETED	N/A
A	Project Location Map	✓	
B	Source Control Exhibit	✓	
C	Drainage Management Area (DMA)Exhibit	✓	
D	BMP Sizing Design Calculations (Water Quality and Hydromodification) and TC-BMP/IMP Design Details	✓	
E	Geotechnical Certification Sheet	✓	

F	Maintenance Plan	✓	
G	Treatment Control BMP Certification	✓	
H	HMP Exemption Documentation	✓	
I	Addendum	✓	

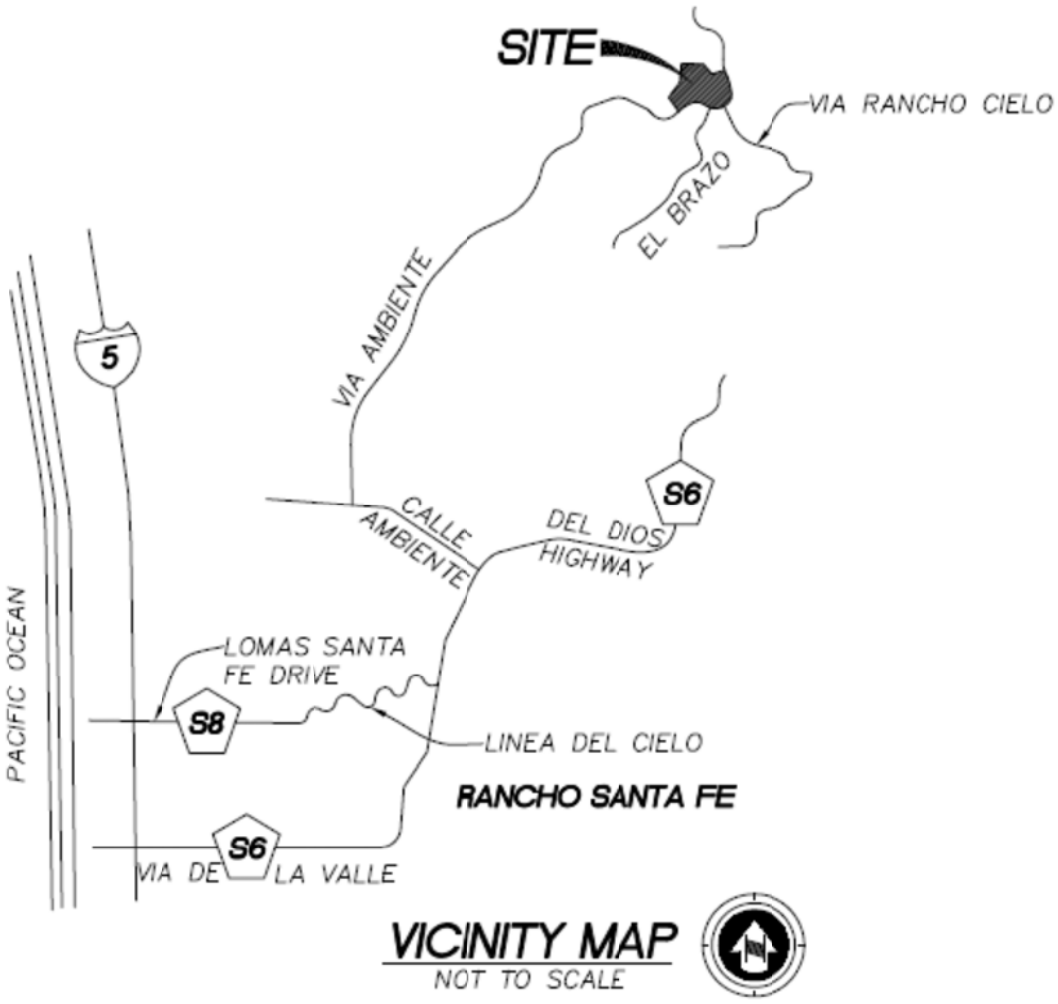
Note: Attachments B and C may be combined.

ATTACHMENT A

Project Location Map

ATTACHMENT A

Project Location Map



ATTACHMENT B

Source Control Exhibit

ATTACHMENT C

Drainage Management Area (DMA) Exhibit

SELF TREATING AREA

DMA	Area
ST1	33,770 sf
ST2	47,850 sf

IMPs

DMA	DMA Area	Post Project Surface Type	Soil Type	IMP Name
1.1 IMP	60,113 sf	Impervious	D	IMP 1.1
1.1 PER	57,064 sf	Pervious		

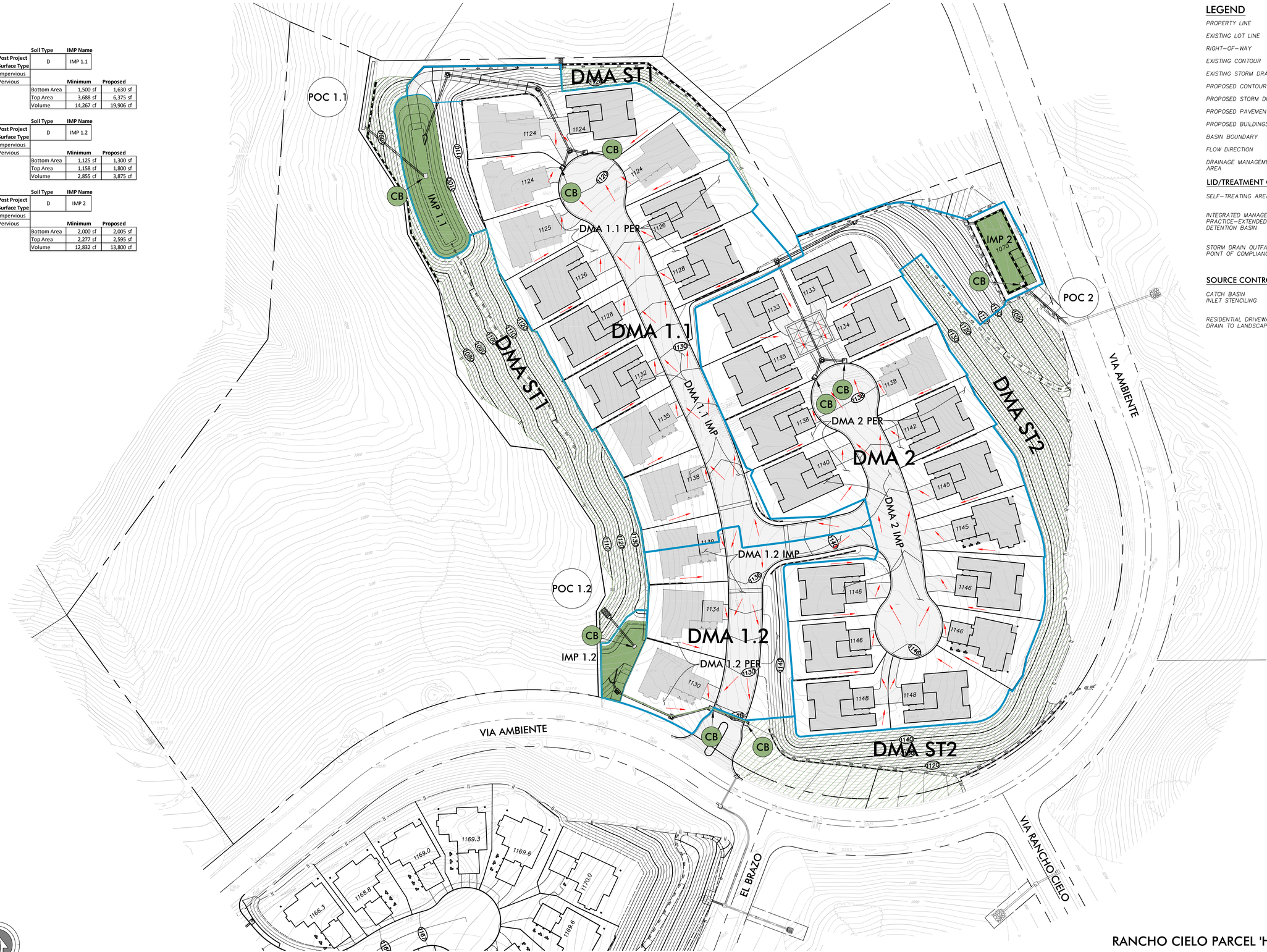
	Minimum	Proposed
Bottom Area	1,500 sf	1,630 sf
Top Area	3,688 sf	6,375 sf
Volume	14,267 cf	19,906 cf

DMA	DMA Area	Post Project Surface Type	Soil Type	IMP Name
1.2 IMP	16,117 sf	Impervious	D	IMP 1.2
1.2 PER	17,424 sf	Pervious		

	Minimum	Proposed
Bottom Area	1,125 sf	1,300 sf
Top Area	1,158 sf	1,800 sf
Volume	2,855 cf	3,875 cf

DMA	DMA Area	Post Project Surface Type	Soil Type	IMP Name
2 IMP	72,310 sf	Impervious	D	IMP 2
2 PER	64,900 sf	Pervious		

	Minimum	Proposed
Bottom Area	2,000 sf	2,005 sf
Top Area	2,277 sf	2,595 sf
Volume	12,832 cf	13,800 cf



LEGEND

- PROPERTY LINE
- EXISTING LOT LINE
- RIGHT–OF–WAY
- EXISTING CONTOUR
- EXISTING STORM DRAIN
- PROPOSED CONTOUR
- PROPOSED STORM DRAIN
- PROPOSED PAVEMENT
- PROPOSED BUILDINGS
- BASIN BOUNDARY
- FLOW DIRECTION
- DRAINAGE MANAGEMENT AREA — DMA #

LID/TREATMENT CONTROL BMPS

- SELF–TREATING AREA
- INTEGRATED MANAGEMENT PRACTICE–EXTENDED DETENTION BASIN — IMP #
- STORM DRAIN OUTFALL/ POINT OF COMPLIANCE — POC #

SOURCE CONTROL BMPS

- CATCH BASIN INLET STENCILING — CB
- RESIDENTIAL DRIVEWAYS–DRAIN TO LANDSCAPING

SCALE: 1"= 40

40 20 0 40 80 120
GRAPHIC SCALE IN FEET

RANCHO CIELO PARCEL 'H'
STORM WATER MANAGEMENT PLAN EXHIBIT
ATTACHMENTS B, C AND D

COUNTY OF SAN DIEGO, CA
PROJECT NUMBER: 02711-001-01
DATE: 5/25/11

FUSCOE ENGINEERING
6390 Greenwich Drive, Suite 170
San Diego, California 92122
tel 858.554.1500 ◦ fax 858.597.0335
www.fuscoe.com

ATTACHMENT D

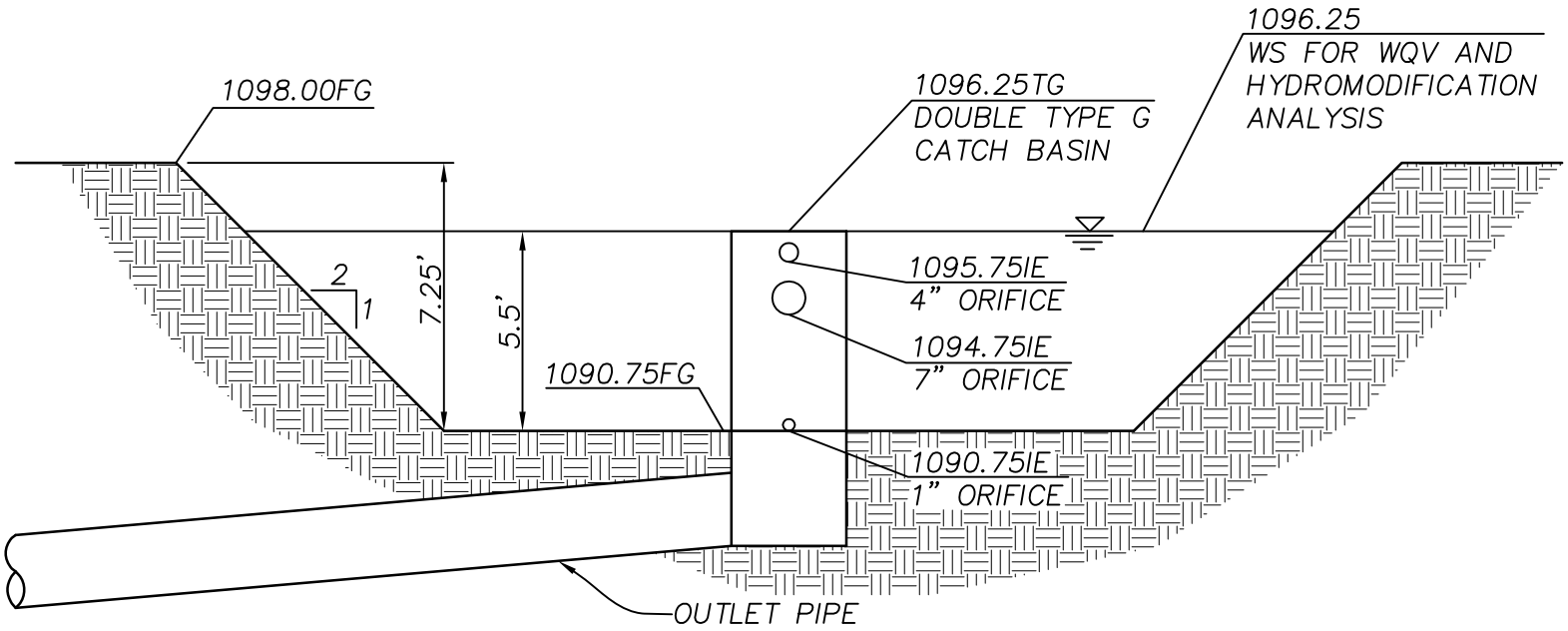
Sizing Design Calculations and TC-BMP/LID Design Details

(Provide BMP Sizing Calculator results and/or continuous simulation modeling results, if applicable)

ATTACHMENT D

Drainage Management Area (DMA) Map

The DMA Map associated with Attachment D
has been incorporated with
Attachments B & C located in the Map Pocket



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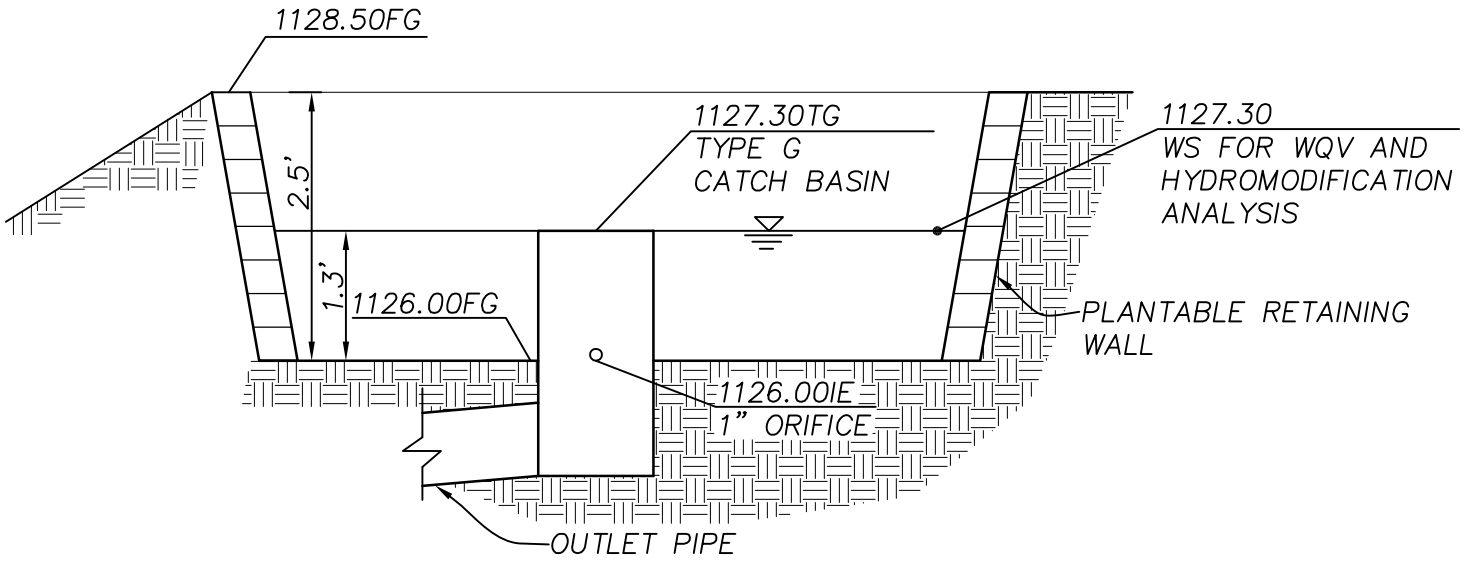
IMP 1.1
OUTLET STRUCTURE DETAIL

NOT TO SCALE



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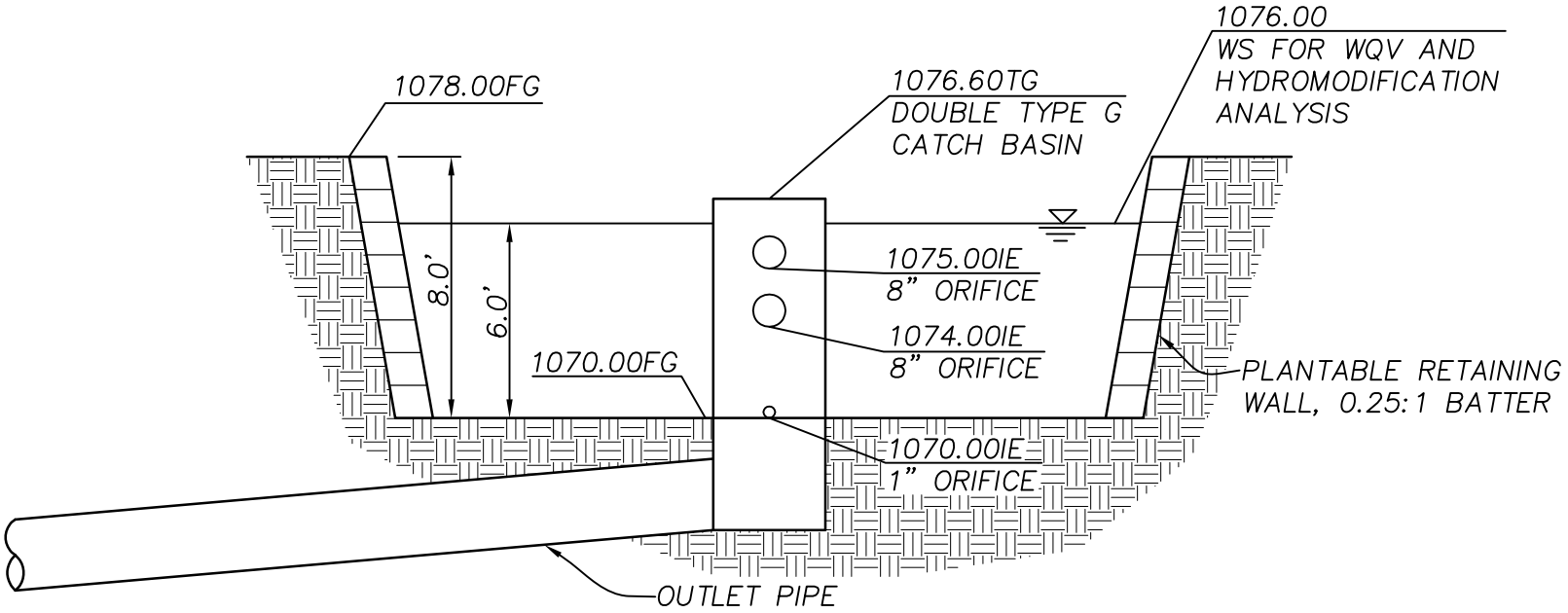
IMP 1.2
OUTLET STRUCTURE DETAIL

NOT TO SCALE



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IMP 2
OUTLET STRUCTURE DETAIL

NOT TO SCALE

ATTACHMENT E

Geotechnical Certification Sheet

(if applicable)

The design of stormwater treatment and other control measures proposed in this plan requiring specific soil infiltration characteristics and/or geological conditions has been reviewed and approved by a registered Civil Engineer, Geotechnical Engineer, or Geologist in the State of California.

_____ _____

Name and registration # Date

ATTACHMENT F

Maintenance Plan

1. INSPECTION FREQUENCY

Inspections of the extended detention basins (EDBs) will occur at a minimum of once a month. Inspections will also occur before and after large storm events or on a weekly basis during periods of wet weather. The rainy season within the jurisdiction of the San Diego Regional Water Quality Control Board is October 1 – April 30. Refer to Attachment D for extended detention basin locations.

2. PREVENTATIVE ACTIONS

The following is a list of actions that will help prevent problems from occurring. They should be done on a routine basis throughout the duration of the project.

VEGETATION CONTROL

Vegetation in the basin should be trimmed and mowed to keep a maximum height of 18 inches. All vegetation clippings should be removed from the basin when trimming and mowing is conducted. Trimming and mowing prevents marsh vegetation from overtaking the basin and creating faunal habitats. It also prevents areas of water stagnation which can create a vector and health problem.

BASIN CLEANING

Trash and debris should be removed from the basin. Special attention should be given to the inlet and outlet structures. A build up of trash and debris in these areas can decrease the efficiency of the basin or make it inoperable during storms.

VECTOR CONTROL

Sediments deposited at the inlet structures should be managed to prevent areas of ponding and possible vector problems. Sediment grading can be accomplished by manually raking the deposits.

REMOVAL OF SEDIMENT ACCUMULATION

Sediments that settle in the basin should be removed when the accumulation grows to a depth of 18 inches or 10% of the basin volume, whichever is less.

EQUIPMENT INSPECTION

All physical components of the basin should be regularly inspected for operability. This includes all valves, fence gates, locks, and access hatches.

GENERAL CLEANUP

Graffiti will be removed in a timely manner to improve the appearance of the basin. Weeds will be removed around fences and grass trimmed to keep the basin from becoming an eyesore and help discourage further graffiti or vandalism. All landscape clippings and cleaning solvents used to remove graffiti should be properly removed from the basin after cleanup.

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3. MAINTENANCE INDICATORS AND CORRECTIVE ACTIONS

The following is a list of indicators that would trigger immediate corrective actions to be taken. Corrective action should be taken within 10 days to ensure that damage does not occur from the extended detention basin not operating efficiently.

BLOCKAGE OF INLETS/OUTLETS

Any blockages from sediment, debris, or vegetation that keep the basin from operating effectively will be removed immediately and properly disposed of. The basin should be able to completely drain within 72 hours after a storm.

STRUCTURAL DAMAGE

If any damage to the structural components of the basin is found, repairs will be made promptly. Designers and contractors will conduct repairs where structural damage has occurred.

EMBANKMENT DAMAGE

Any damage to the embankments and slopes will be repaired quickly so that no erosion will occur.

EROSION DAMAGE

If there is damage due to erosion such as siltation, steps will be taken to prevent further loss of soil and repair any conditions that may cause the basin to not operate effectively. Possible corrective steps include erosion control blankets, riprap, sodding, or reduced flow through the area. Design engineers will be consulted to address erosion problems if the solution is not evident.

FENCE DAMAGE

Timely repair of fences will be done to maintain the security of the site and the safety of residents.

INVASIVE VEGETATION

If necessary, elimination of trees and woody vegetation will be required. Woody vegetation will be removed from embankments.

ANIMAL BURROWS

Animal burrows will be filled and compacted. Further steps may be needed to physically remove the animals if the problem persists. Vector control specialists will be consulted regarding possible solutions. This consulting is necessary as the threat of rabies in some areas may necessitate the animals being destroyed rather than relocated.

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EQUIPMENT DAMAGE

General corrective maintenance will be done to fix any damage done to the basin or related components. If corrective maintenance is being done to one component, other components will be inspected to see if maintenance is needed.

4. PROPOSED METHOD OF DISPOSING OF SEDIMENT AND POLLUTANTS

Removed sediment materials are not considered hazardous waste and can be disposed of as landscaping material. If it is determined that hazardous waste has been deposited into the basin, the suspected waste will be analyzed to determine proper disposal options.

5. COST ESTIMATE

Based on Appendix H of the County of San Diego's SUSMP, each extended detention basin costs approximately $4330 a year to maintain. A private maintenance company will be hired to maintain them.

6. PROPOSED MECHANISM TO ASSURE MAINTENANCE FUNDING

The extended detention basins are to fall under the Second Category BMP Maintenance Plan per the County of San Diego SUSMP. The County needs to assure ongoing maintenance, but primary maintenance is the responsibility of the landowners. An agreement will be entered into with the County which will: 1) commit the land to be used for BMP maintenance only; 2) require the land owner(s) to maintain the facilities in accordance with the SMP; and 3) create an easement to the County granting them the right to enter onto the land to maintain BMPs, if needed. Although the landowner(s) are responsible for maintenance, the developer must provide the County with security (equal to the amount of the estimated cost of two years of maintenance) and will remain in place for a period of five years. The security may be a cash deposit, letter of credit or other form acceptable to the County. The developer's fee for two years of maintenance on four (4) extended detention basins will equal $17,320. ($4,330/yr x 4 basins x 2 years). Additionally, the developer will pay a $4,000 deposit to cover the costs of reviewing the Engineer's Report and forming the "Stormwater Management Zone".

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Inspected By: _____ Inspection Date: _____

Extended Detention Basin Location: _____

MAINTENANCE ACTIVITY CHECKLIST

- ☐ Has trash and debris been removed from the detention basin?
- ☐ Has the outlet riser been inspected and debris and sediment removed from it?
- ☐ Is the sediment 18" deep or volume decreased by 10%? If so, has the accumulated materials been removed?
- ☐ Is Vegetation in the basin taller than 18 inches? If so, was it trimmed and mowed?
- ☐ Were the banks of the basin inspected for vegetative stabilization?
- ☐ Do the banks need replanting?
- ☐ Are there signs of severe erosion in the form of ruts or sediment deposits?
- ☐ Have the banks been inspected for structural integrity?
- ☐ Have the fences been inspected?
- ☐ Is there graffiti? Has it been removed?
- ☐ Has the grass been trimmed around fences, the basin, outlet structures, and sampling structures?
- ☐ Have weeds been removed?
- ☐ Have alluvial deposits created zones of ponded water? If so, were the sediments manually raked to eliminate the ponding zones?
- ☐ Have all the valves, fence gates, locks, and access hatches been inspected?
- ☐ Are there any trees or woody vegetation on the embankments? Have they been removed?
- ☐ Are there any animal burrows? Were they filled and compacted?

Items Repaired or Replaced:

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