

**Appendix J4. Green Streets Priority Development Project
Exempt Stormwater Quality Management Plan for
Fanita Parkway from Mast Boulevard to Ganley Road,
Cuyamaca Street South of Orchard Village,
Magnolia Avenue and Summit Avenue**

This page intentionally left blank.

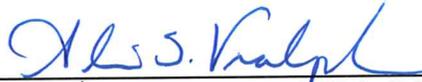
County of San Diego
GREEN STREETS PDP EXEMPT SWQMP

[VESTING TENTATIVE MAP for
FANITA RANCH
(FANITA PARKWAY FROM MAST BOULEVARD TO GANLEY ROAD, CUYAMACA STREET
SOUTH OF ORCHARD VILLAGE, MAGNOLIA AVENUE AND SUMMIT AVENUE)
[GPA2017-2/ TM 2017-3]

[FANITA PARKWAY]
[SANTEE, CA 92071]

ASSESSOR'S PARCEL NUMBER(S):
[APNs: 378-02-050, 378-02-046, 380-03-118]

ENGINEER OF WORK:



[ALISA S. VIALPANDO, RCE# 47945]

PREPARED FOR:

[HomeFed Corporation]
[1903 Wright Place, Ste 220]
[Carlsbad, CA 92008]
[(760) 918-8200]

SWQMP PREPARED BY:

[Hunsaker & Associates San Diego, Inc.]
[9707 Waples Street]
[San Diego, CA 92121]
[(858) 558-4500]

DATE OF SWQMP:
January 2020

PLANS PREPARED BY:
[Hunsaker & Associates San Diego, Inc.]
[9707 Waples Street]
[San Diego, CA 92121]
[(858) 558-4500]

SWQMP APPROVED BY:

APPROVAL DATE:



Page intentionally blank

Table of Contents

Table of Contents..... iv

Attachments..... vi

Acronyms vi

Green Streets PDP Exempt SWQMP Preparer's Certification Page..... vii

Submittal Record ix

Project Vicinity Map..... x

Step 1: Project type determination..... 1

 Step 1.1: Storm Water Quality Management Plan requirements3

 Step 1.2: Exemption to PDP definitions.....3

Step 2: Construction Storm Water BMP Checklist4

Step 3: County of San Diego Green Streets PDP Exempt SWQMP Site Information Checklist8

 Step 3.1: Description of Existing Site Condition8

 Step 3.2: Description of Existing Site Drainage Patterns9

 Step 3.3: Description of Proposed Site Development.....10

 Step 3.4: Description of Proposed Site Drainage Patterns11

 Step 3.5: Potential Pollutant Source Areas12

 Step 3.6: Identification and Narrative of Receiving Water and Pollutants of Concern13

 Step 3.7: Other Site Requirements and Constraints.....14

Step 4: Source Control BMP Checklist15

Step 5: Site Design BMP Checklist.....17

Step 6: Summary of Green Infrastructure Strategies19

 Step 6.1: Description of Green Infrastructure strategy.....19

 Step 6.2: Green Infrastructure Strategies Summary Information21

ATTACHMENT 123

 BACKUP FOR PDP POLLUTANT CONTROL BMPS23

ATTACHMENT 225

 Green Infrastructure Strategies Maintenance Information.....25

ATTACHMENT 327

 Copy of Plan Sheets Showing Green Infrastructure Strategies, Source Control, and Site Design27

ATTACHMENT 429

 Copy of Project's Drainage Report.....29

ATTACHMENT 531
Copy of Project's Geotechnical and Groundwater Investigation Report31

Attachments

- Attachment 1: Backup for Green Streets Strategies
 - Attachment 1a: Storm Water Pollutant Control Worksheet Calculations
 - Attachment 1b: DMA Exhibit
- Attachment 2: Green Streets Strategies Maintenance Plan
 - Attachment 3a: Green Streets Strategies Maintenance Thresholds and Actions
- Attachment 3: Copy of Plan Sheets Showing Green Streets Strategies
- Attachment 4: Copy of Project's Drainage Report
- Attachment 5: Copy of Project's Geotechnical and Groundwater Investigation Report

Acronyms

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

Green Streets PDP Exempt SWQMP Preparer's Certification Page

Project Name: [Fanita Ranch (Fanita Parkway from Mast Boulevard to Ganley Road, Cuyamaca Street South of Orchard Village, Magnolia Avenue and Summit Avenue)]
Permit Application Number: [GPA2017-2/ TM 2017-3]

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the County of San Diego BMP Design Manual, which is a design manual for compliance with local County of San Diego Watershed Protection Ordinance (Sections 67.801 et seq.) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for storm water management.

I have read and understand that the County of San Diego has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by County staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Alisa S. Vialpando 47945 12/31/21
Engineer of Work's Signature, PE Number & Expiration Date

Alisa S. Vialpando
Print Name

Hunsaker & Associates San Diego, Inc.
Company

1/7/20
Date

Engineer's Seal:



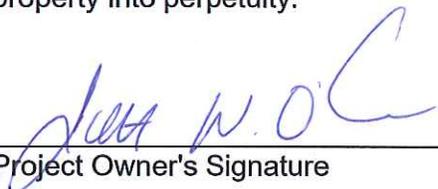
**Green Streets PDP Exempt SWQMP Project Owner's
Certification Page**

Project Name: [Fanita Ranch (Fanita Parkway from Mast Boulevard to Ganley Road,
Cuyamaca Street South of Orchard Village, Magnolia Avenue and Summit Avenue)]
Permit Application Number: GPA2017-2/ TM 2017-3

PROJECT OWNER'S CERTIFICATION

This PDP SWQMP has been prepared for HomeFed Corporation by Hunsaker & Associates San Diego, Inc. The PDP SWQMP is intended to comply with the PDP requirements of the City of Santee BMP Design Manual, which is a design manual for compliance with local City of Santee and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan. Once the undersigned transfers its interests in the property, its successor-in-interest shall bear the aforementioned responsibility to implement the best management practices (BMPs) described within this plan, including ensuring on-going operation and maintenance of structural BMPs. A signed copy of this document shall be available on the subject property into perpetuity.


Project Owner's Signature

JEFF W. O'CONNOR
Print Name

HomeFed Fanita Rancho, LLC
Company

1/8/20
Date

Submittal Record

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

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	June 2018	Initial Submittal
2	September 2019	Resubmittal
3	January 2020	Resubmittal
4		

Final Design

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

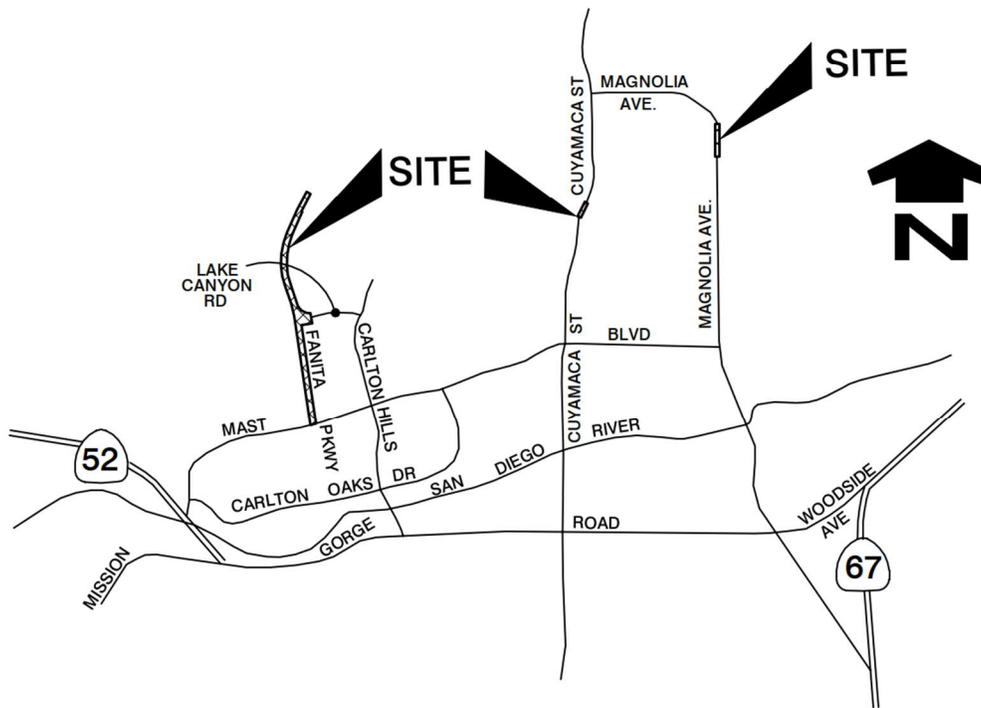
Plan Changes

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

Project Vicinity Map

Project Name: [Tentative Map for Fanita Ranch (Fanita Parkway from Mast Boulevard to Ganley Road, Cuyamaca Street South of Orchard Village, Magnolia Avenue and Summit Avenue)]

Record ID: [GPA2017-2/ TM 2017-3]



VICINITY MAP

NOT TO SCALE

Step 1: Project type determination

Is the project part of another Priority Development Project (PDP)?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If so, a PDP SQWMP is required. Go to Step 2.			
The project is (select one): <input type="checkbox"/> New Development <input checked="" type="checkbox"/> Redevelopment ¹			
The total proposed newly created or replaced impervious area is:		681,053	ft ²
The total existing (pre-project) impervious area is:		288,653	ft ²
The total area disturbed by the project is:		1,022,278	ft ²
If the total area disturbed by the project is 1 acre (43,560 sq. ft.) or more OR the project is part of a larger common plan of development disturbing 1 acre or more, a Waste Discharger Identification (WDID) number must be obtained from the State Water Resources Control Board. WDID: <u>To be determined during Final Engineering</u>			
Is the project in any of the following categories, (a) through (f)?			
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

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

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

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

Project type determination (continued)

Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(d)	<p>New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). “Discharging directly to” includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands).</p> <p><i>Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.</i></p>
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(e)	<p>New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses:</p> <ul style="list-style-type: none"> (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(f)	<p>New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction.</p> <p><i>Note: See BMP Design Manual Section 1.4.2 for additional guidance.</i></p>
<p>Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?</p> <p><input type="checkbox"/> No – the project is <u>not</u> a Priority Development Project (Standard Project).</p> <p><input checked="" type="checkbox"/> Yes – the project is a Priority Development Project (PDP).</p>			
<p>Further guidance may be found in Chapter 1 and Table 1-2 of the BMP Design Manual.</p>			
<p>The following is for redevelopment PDPs only:</p> <p>The area of existing (pre-project) impervious area at the project site (limit of work) is: 288,653 ft² (A)</p> <p>The total proposed newly created or replaced impervious area is: 681,053 ft² (B)</p> <p>Percent impervious surface created or replaced (B/A)*100: [235.9] %</p> <p>The percent impervious surface created or replaced is (select one based on the above calculation):</p> <p><input type="checkbox"/> less than or equal to fifty percent (50%) – only new impervious areas are considered a PDP and subject to stormwater requirements</p> <p>OR</p> <p><input checked="" type="checkbox"/> greater than fifty percent (50%) – the entire project site is considered a PDP and subject to stormwater requirements</p>			

Step 1.1: Storm Water Quality Management Plan requirements

Step	Answer	Progression
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete Step 1 Project Type Determination Checklist on Pages 1 and 2, and see PDP exemption information below. For further guidance, see Section 1.4 of the BMP Design Manual <i>in its entirety</i> .	<input type="checkbox"/> Standard Project	<u>Standard Project</u> requirements apply, including <u>Standard Project SWQMP</u> . Complete Standard Project SWQMP.
	<input type="checkbox"/> PDP	<u>Standard and PDP</u> requirements apply, including <u>PDP SWQMP</u> . Complete PDP SWQMP.
	<input checked="" type="checkbox"/> PDP Exemption	Go to Step 1.2 below.

Step 1.2: Exemption to PDP definitions

Is the project exempt from PDP definitions based on either of the following: <input type="checkbox"/> Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Guidance on Green Infrastructure;	If so: <u>Standard Project</u> requirements apply, AND <u>any additional requirements specific to the type of project</u> . <u>County concurrence</u> with the exemption is required. <i>Provide discussion and list any additional requirements below in this form.</i> Complete Standard Project SWQMP
<input checked="" type="checkbox"/> Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the County of San Diego Guidance on Green Infrastructure.	Complete Green Streets PDP Exempt SWQMP.
<i>Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:</i> [Portions of Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue will be reconstructed and retrofitted. As part of those changes, those street portions will be designed as Green Streets utilizing Green Street concepts and criteria.]	

Step 2: Construction Storm Water BMP Checklist

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

Table 1. Construction Storm Water BMP Checklist

Minimum Required Best Management Practices (BMPs)	CALTRANS SW Handbook ² Detail or County Std. Detail	✓ BMP Selected	Each selected BMP must be shown on the plan. If no BMP is selected, an explanation must be provided.
A. Select Erosion Control Method for Disturbed Slopes (choose at least one for the appropriate season)			
Vegetation Stabilization Planting ³ (Summer)	SS-2, SS-4	<input type="checkbox"/>	[This SWQMP is prepared for preliminary design purposes. Selected BMPs will be shown as part of SWPPP to be prepared during Final Engineering phase.]
Hydraulic Stabilization Hydroseeding ² (Summer)	SS-4	<input checked="" type="checkbox"/>	
Bonded Fiber Matrix or Stabilized Fiber Matrix ⁴ (Winter)	SS-3	<input checked="" type="checkbox"/>	
Physical Stabilization Erosion Control Blanket ³ (Winter)	SS-7	<input type="checkbox"/>	
B. Select erosion control method for disturbed flat areas (slope < 5%) (choose at least one)			
County Standard Lot Perimeter Protection Detail	PDS 659 ⁵ , SC-2	<input type="checkbox"/>	[This SWQMP is prepared for preliminary design purposes. Selected BMPs will be shown as part of SWPPP to be prepared during Final Engineering phase.]
Will use erosion control measures from Item A on flat areas also	SS-3, 4, 7	<input checked="" type="checkbox"/>	
County Standard Desilting Basin (must treat all site runoff)	PDS 660 ⁶ , SC-2	<input type="checkbox"/>	
Mulch, straw, wood chips, soil application	SS-6, SS-8	<input checked="" type="checkbox"/>	

² State of California Department of Transportation (Caltrans). 2003. Storm Water Quality Handbooks, Construction Site Best Management Practices (BMPs) Manual. March. Available online at: <http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>.

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

⁴ All slopes over three feet must have established vegetative cover prior to final permit approval.

⁵ County of San Diego, Planning & Development Services. 2012. Standard Lot Perimeter Protection Design System. Building Division. PDS 659. Available online at <http://www.sandiegocounty.gov/pds/docs/pds659.pdf>.

⁶ County of San Diego, Planning & Development Services. 2012. County Standard Desilting Basin for Disturbed Areas of 1 Acre or Less Building Division. PDS 659. Available online at <http://www.sandiegocounty.gov/pds/docs/pds660.pdf>.

Table 1. Construction Storm Water BMP Checklist (continued)

Minimum Required Best Management Practices (BMPs)	CALTRANS SW Handbook Detail or County Std. Detail	✓ BMP Selected	Each selected BMP must be shown on the plan. If no BMP is selected, an explanation must be provided.
C. If runoff or dewatering operation is concentrated, velocity must be controlled using an energy dissipater			
Energy Dissipater Outlet Protection ⁷	SS-10	<input checked="" type="checkbox"/>	[This SWQMP is prepared for preliminary design purposes. Selected BMPs will be shown as part of SWPPP to be prepared during Final Engineering phase.]
D. Select sediment control method for all disturbed areas (choose at least one)			
Silt Fence	SC-1	<input checked="" type="checkbox"/>	[This SWQMP is prepared for preliminary design purposes. Selected BMPs will be shown as part of SWPPP to be prepared during Final Engineering phase.]
Fiber Rolls (Straw Wattles)	SC-5	<input checked="" type="checkbox"/>	
Gravel & Sand Bags	SC-6 & 8	<input checked="" type="checkbox"/>	
Dewatering Filtration	NS-2	<input type="checkbox"/>	
Storm Drain Inlet Protection	SC-10	<input checked="" type="checkbox"/>	
Engineered Desilting Basin (sized for 10-year flow)	SC-2	<input type="checkbox"/>	
E. Select method for preventing offsite tracking of sediment (choose at least one)			
Stabilized Construction Entrance	TC-1	<input checked="" type="checkbox"/>	[This SWQMP is prepared for preliminary design purposes. Selected BMPs will be shown as part of SWPPP to be prepared during Final Engineering phase.]
Construction Road Stabilization	TC-2	<input checked="" type="checkbox"/>	
Entrance/Exit Tire Wash	TC-3	<input type="checkbox"/>	
Entrance/Exit Inspection & Cleaning Facility	TC-1	<input type="checkbox"/>	
Street Sweeping and Vacuuming	SC-7	<input checked="" type="checkbox"/>	
F. Select the general site management BMPs			
F.1 Materials Management			
Material Delivery & Storage	WM-1	<input checked="" type="checkbox"/>	[This SWQMP is prepared for preliminary design purposes. Selected BMPs will be shown as part of SWPPP to be prepared during Final Engineering phase.]
Spill Prevention and Control	WM-4	<input checked="" type="checkbox"/>	
F.2 Waste Management⁸			
Waste Management Concrete Waste Management	WM-8	<input checked="" type="checkbox"/>	[This SWQMP is prepared for preliminary design purposes. Selected BMPs will be shown as part of SWPPP to be prepared during Final Engineering phase.]
Solid Waste Management	WM-5	<input checked="" type="checkbox"/>	
Sanitary Waste Management	WM-9	<input checked="" type="checkbox"/>	
Hazardous Waste Management	WM-6	<input checked="" type="checkbox"/>	

⁷ Regional Standard Drawing D-40 – Rip Rap Energy Dissipater is also acceptable for velocity reduction.

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

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

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

Step 3.1: Description of Existing Site Condition

Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	San Diego Hydrologic unit (907.00) Lower San Diego Hydrologic Area (907.10) Santee Hydrologic Sub-Area (907.12)
<p>Current Status of the Site (select all that apply):</p> <p><input checked="" type="checkbox"/> Existing development</p> <p><input type="checkbox"/> Previously graded but not built out</p> <p><input type="checkbox"/> Demolition completed without new construction</p> <p><input type="checkbox"/> Agricultural or other non-impervious use</p> <p><input type="checkbox"/> Vacant, undeveloped/natural</p> <p><i>Description / Additional Information:</i></p>	
<p>Existing Land Cover Includes (select all that apply and provide each area on site):</p> <p><input checked="" type="checkbox"/> Vegetative Cover [18.700] Acres ([] Square Feet)</p> <p><input type="checkbox"/> Non-Vegetated Pervious Areas [] Acres ([] Square Feet)</p> <p><input checked="" type="checkbox"/> Impervious Areas [6.627] Acres ([] Square Feet)</p> <p><i>Description / Additional Information:</i></p> <p>[]</p>	
<p>Underlying Soil belongs to Hydrologic Soil Group (select all that apply):</p> <p><input checked="" type="checkbox"/> NRCS Type A</p> <p><input type="checkbox"/> NRCS Type B</p> <p><input checked="" type="checkbox"/> NRCS Type C</p> <p><input checked="" type="checkbox"/> NRCS Type D</p>	
<p>Approximate Depth to Groundwater (GW) (or N/A if not using infiltration):</p> <p><input type="checkbox"/> GW Depth < 5 feet</p> <p><input checked="" type="checkbox"/> 5 feet < GW Depth < 10 feet</p> <p><input type="checkbox"/> 10 feet < GW Depth < 20 feet</p> <p><input type="checkbox"/> GW Depth > 20 feet</p>	
<p>Existing Natural Hydrologic Features (select all that apply):</p> <p><input checked="" type="checkbox"/> Watercourses</p> <p><input type="checkbox"/> Seeps</p> <p><input type="checkbox"/> Springs</p> <p><input type="checkbox"/> Wetlands</p> <p><input type="checkbox"/> None</p> <p><input type="checkbox"/> Other</p> <p><i>Description / Additional Information:</i></p> <p>[An existing constructed watercourse is located alongside the western side of Fanita Parkway.]</p>	

Step 3.2: Description of Existing Site Drainage Patterns

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

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

Describe existing site drainage patterns:

[This project encompasses the retrofitting of the existing Fanita Parkway, Cuyamaca Street Magnolia Avenue, and Summit Avenue that will provide future access to the Fanita Ranch development within the City of Santee.

The existing drainage relative to Fanita Parkway can be considered to be mostly urban although there are some sections which appear to include small natural conveyance including finger canyon tributaries. The existing storm drain infrastructure along Fanita Parkway includes conveyance of offsite runoff from developed areas to the east as well as inlets to collect street runoff. Runoff is discharged into the existing open channel which parallels Fanita Parkway.

The existing drainage relative to Cuyamaca Street and Magnolia Avenue is considered urban and the proposed improvements represent a widening of the existing paved roadways, with major drainage patterns maintained.

The *Master Drainage Study for Fanita Ranch Tentative Map* (September 2019) provides an analysis of the existing condition flows along Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue including the discharge locations, flows, and respective drainage areas.]

Step 3.3: Description of Proposed Site Development

<p><i>Project Description / Proposed Land Use and/or Activities:</i> [This SWQMP is being prepared for the construction/retrofitting of existing Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue. As such, the land use is for transportation.]</p>
<p><i>List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):</i> [The proposed impervious features associated with the construction of Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue include pavement, curb & gutter, and sidewalk.]</p>
<p><i>List/describe proposed pervious features of the project (e.g., landscape areas):</i> [The proposed pervious surfaces proposed for the project include landscaped parkways, and rock gardens and tree wells.]</p>
<p>Does the project include grading and changes to site topography? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><i>Description / Additional Information:</i> [Although the project will include grading, minor or negligible changes area expected to alter the existing topography.]</p>

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

Change in Land Cover Type Summary			
Land Cover Type	Existing (acres or ft ²)	Proposed (acres or ft ²)	Percent Change
Vegetation	18.700 ac	9.692 ac	-48.2
Pervious (non-vegetated)			
Impervious	6.627 ac	15.635 ac	+135.9

Step 3.4: Description of Proposed Site Drainage Patterns

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

- Yes
 No

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

Describe proposed site drainage patterns:

This project encompasses the retrofitting of the existing Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue that will provide future access to the Fanita Ranch development within the City of Santee.

The proposed project will reconstruct and/or widen existing Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue and will include features in accordance with Green Street criteria including rock garden swales and tree wells. Street reconstruction will reset roadway widths, medians, utilities, and storm drain conveyance systems as needed. The proposed storm drain system will be constructed to collect and convey both onsite runoff as well offsite runoff from developed areas east of Fanita Parkway. As described in Section 3.2 above, this offsite runoff confluences with the Fanita Parkway flows. However, instead of discharging into an open channel along the western side of Fanita Parkway, confluence flow will be conveyed within a storm drain pipe underneath Fanita Parkway. Along Cuyamaca Street, between Chaparral Drive and Mast Boulevard, green street trees will be installed in the median to address the widening/addition of two inside travel lanes. The drainage along this section of Cuyamaca Street will be tied into the existing storm drain conveyance system. Along Summit Avenue a single green street tree will be installed at the southerly tie in to the existing road.

Please refer to the Master Drainage Study for Fanita Ranch Tentative Map (September 2019) for complete discussion of proposed drainage facilities and related hydrologic calculations.

Step 3.5: Potential Pollutant Source Areas

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

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

Description / Additional Information:

The applicable streets which this Green Street SWQMP is being prepared for will include curb inlets and sidewalks.]

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

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):
 [Runoff from the site will enter the storm drain system at inlets and be conveyed via storm drain. Runoff from Fanita Parkway is then directed towards Sycamore Creek which then empties into the San Diego River. Runoff from Cuyamaca Street will tie into the existing storm drain conveyance system traveling south to the San Diego River. The San Diego River empties into the Pacific Ocean.]

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

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
San Diego River (Lower)	Benthic Community Effects, Cadmium, Indicator Bacteria, Nitrogen, Dissolved Oxygen, Phosphorus, Total Dissolved Solids, Toxicity.	Coliform Bacteria, Total Dissolved Solids, Nutrients, Petroleum Chemicals, Toxics and Trash
Sycamore Canyon	Dissolved Oxygen	Coliform Bacteria, Total Dissolved Solids, Nutrients, Petroleum Chemicals, Toxics and Trash
Pacific Ocean at San Diego River outlet at Dog Beach	Indicator Bacteria	Coliform Bacteria, Total Dissolved Solids, Nutrients, Petroleum Chemicals, Toxics and Trash

Step 3.7: Other Site Requirements and Constraints

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

[The street corridors relative to the three applicable streets are narrow with limited available parkway area.]

Optional Additional Information or Continuation of Previous Sections As Needed

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

[]

Step 4: Source Control BMP Checklist

Source Control BMPs			
<p>All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the County BMP Design Manual for information to implement source control BMPs shown in this checklist.</p> <p>Answer each category below pursuant to the following:</p> <ul style="list-style-type: none"> • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the County BMP Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided. 			
Source Control Requirement	Applied?		
4.2.1 Prevention of Illicit Discharges into the MS4	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<p><i>Discussion / justification if 4.2.1 not implemented:</i> []</p>			
4.2.2 Storm Drain Stenciling or Signage	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<p><i>Discussion / justification if 4.2.2 not implemented:</i> []</p>			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<p><i>Discussion / justification if 4.2.3 not implemented:</i> []</p>			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<p><i>Discussion / justification if 4.2.4 not implemented:</i> []</p>			

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

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

Step 5: Site Design BMP Checklist

Site Design BMPs			
<p>All development projects must implement site design BMPs SD-A through SD-H where applicable and feasible. See Chapter 4.3 and Appendix E of the County BMP Design Manual for information to implement site design BMPs shown in this checklist.</p> <p>Answer each category below pursuant to the following:</p> <ul style="list-style-type: none"> • "Yes" means the project will implement the site design BMP as described in Chapter 4.3 and/or Appendix E of the County BMP Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided. 			
Site Design Requirement	Applied?		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<p><i>Discussion / justification if 4.3.1 not implemented:</i> [Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue are existing roads; as such there are no existing natural drainage pathways or hydrologic features that can be maintained.]</p>			
4.3.2 Conserve Natural Areas, Soils, and Vegetation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<p><i>Discussion / justification if 4.3.2 not implemented:</i> [Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue are existing roads; as such there are no existing natural areas, soils or vegetation that can be conserved.]</p>			
4.3.3 Minimize Impervious Area	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<p><i>Discussion / justification if 4.3.3 not implemented:</i> [As the project proposes the inclusion of landscaped medians and parkways, this site design BMP will be incorporated within the project.]</p>			
4.3.4 Minimize Soil Compaction	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<p><i>Discussion / justification if 4.3.4 not implemented:</i> [Project will not compact areas other than necessary for road and slope construction.]</p>			
4.3.5 Impervious Area Dispersion	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<p><i>Discussion / justification if 4.3.5 not implemented:</i> [Runoff generated by impervious surfaces is dispersed to multiple vegetated landscaped areas/treewells throughout the parkway improvement. Sidewalk areas will be directed to landscaped parkway areas.]</p>			

Site Design Requirement	Applied?		
4.3.6 Runoff Collection	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.6 not implemented:</i> [The site consisting of three street corridors consists of limited areas to implement this site design. The narrow street widths restrict the use of permeable pavement within the street section.]			
4.3.7 Landscaping with Native or Drought Tolerant Species	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.7 not implemented:</i> []			
4.3.8 Harvesting and Using Precipitation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<i>Discussion / justification if 4.3.8 not implemented:</i> []			

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

Step 6: Summary of Green Infrastructure Strategies

Green Streets PDP exempt projects must implement Green Infrastructure strategies for storm water pollutant control (see Chapter 5 of the BMP Design Manual). Selection of Green Infrastructure strategies for storm water pollutant control must be based on the selection process described in Chapter 5.

Use this section to provide narrative description of the plan of action for Green Infrastructure strategies implementation at the project site in the box below.

Step 6.1: Description of Green Infrastructure strategy

Describe the plan of action for Green Infrastructure strategies implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the BMP Design Manual were followed, and the results (type of Green Infrastructure strategies selected). At the end of this discussion provide a summary of all the Green Infrastructure strategies within the project including the type and number.

[This reconstruction of the portions of Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue considered for this Green Street SWQMP will utilize green street criteria.

1. The street cross sections will consist of the paved road, sidewalk, and parkway areas. The graded slope areas along the sites exterior will be vegetated and entirely pervious.
 - A. The slopes along the sites exterior will be completely pervious and considered self-mitigating DMAs and not included in the DCV calculations.
 - B. Worksheet B-2.1 from the City of Santee BMP Design Manual was utilized in calculating the DCV tributary to each tree well. The DCV calculations for each tree well are included in Attachment 1b.
2. A Harvest and Use Feasibility Screening is not applicable for this project.
3. The NRCS Web Soil Survey was referenced in determining the soil characteristics and classification. Per this source, it was determined that the site consists of Hydrologic soil types A, C, and D. See Attachment 1d for data obtained from the NRCS website. Specific infiltration information will be obtained during the final engineering phase to determine the actual rates expected along each roadway.
4. After DCV and feasibility determination was completed per Steps 1-3 above, the Green Street Design Standard Drawings were referenced to determine which Green Street options are most feasible for applying at the site. In consideration of the right of way constraints, it was determined that tree wells could be the most feasible alternative.
5. Step 5 is not applicable to this project since Step 4 addresses treatment of DCV.
6. This SWQMP is prepared as Step 6.
7. Maintenance Thresholds for the proposed site BMPs are included within Attachment 3. Maintenance agreements associated with this project will processed during the final engineering phase and are therefore not included as part of this SWQMP

]

(Continue on following page as necessary.)

**Plan of action for Green Infrastructure strategies Continued
(Page reserved for continuation of description of plan of action for Green Infrastructure strategies implementation at the site)**

(Continued from previous page)

[The tree wells proposed for the Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue project will be sized to treat only the new additional impervious areas associated with the improvements.

As this portion of Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue exists, the BMP design manuals allows for the exemption of PDP requirements; as such the tree wells will be sized for only water quality treatment requirements using the County of San Diego's DCV Multipliers for Tree Well Structural Soil Depth.]

Step 6.2: Green Infrastructure Strategies Summary Information

(Copy this page as needed to provide information for each individual proposed Green Infrastructure strategy)	
Green Infrastructure Strategies ID No.	
Construction Plan Sheet No.	
Type of Green Infrastructure strategy: <input type="checkbox"/> Retention by harvest and use (HU-1) <input type="checkbox"/> Retention by infiltration basin (INF-1) <input type="checkbox"/> Retention by bioretention (INF-2) <input type="checkbox"/> Retention by permeable pavement (INF-3) <input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1) <input type="checkbox"/> Biofiltration (BF-1) <input type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2) <input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F <input type="checkbox"/> Flow -thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) <input type="checkbox"/> Flow -thru treatment control with alternative compliance (provide BMP type/description in discussion section below) <input checked="" type="checkbox"/> Other (describe in discussion section below)) Tree wells proposed for the project will be sized to treat only the new additional impervious areas associated with the improvements. The tree wells will be sized for water quality treatment requirements using the County of San Diego’s DCV calculator for Tree Well Structural Soil Depth.	
Purpose: <input type="checkbox"/> Pollutant control only <input type="checkbox"/> Pre -treatment/forebay for another Green Infrastructure strategy <input checked="" type="checkbox"/> Other (describe in discussion section below) The tree wells will be sized for water quality treatment requirements using the County of San Diego’s DCV calculator for Tree Well Structural Soil Depth	
Who will be the final owner of this Green Infrastructure strategy?	<input type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> County <input checked="" type="checkbox"/> Other (describe) The treewells are constructed as part of the public street landscaping, as such, they will be property of the City of Santee.
Who will maintain this Green Infrastructure strategy into perpetuity?	<input type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> County <input checked="" type="checkbox"/> Other (describe) As treewells are the BMP, they will only require typical landscaping maintenance per standard roadway landscape maintenance requirements.
What Category (1-4) is the Green Infrastructure strategy? Refer to the Category definitions in Section 7.3 of the BMP DM.	N/A

Discussion (as needed):

[]

(Continue on subsequent pages as necessary)

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

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

ATTACHMENT 1a
STORM WATER POLLUTANT CONTROL
WORKSHEET CALCULATIONS

WORKSHEET B.2-1

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

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
Standard Drainage Basin Inputs	0	Drainage Basin ID or Name	BF-3-1	BF-3-2	BF-3-3	BF-3-4	BF-3-5	BF-3-6	GS-1-1	GS-1-2	GS-1-3	GS-1-4	unitless
	1	Basin Drains to the Following BMP Type	Flow-Thru	Flow-Thru	Flow-Thru	Flow-Thru	Flow-Thru	Flow-Thru	Biofiltration	Biofiltration	Biofiltration	Biofiltration	unitless
	2	85th Percentile 24-hr Storm Depth	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	inches
	3	Design Infiltration Rate Recommended by Geotechnical Engineer	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	in/hr
	4	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	28,750	41,382	44,431	46,174	28,750	70,132	218,236	6,098	23,958	140,000	sq-ft
	5	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)	6,534	6,970	7,841	8,276	5,227	12,197					sq-ft
	6	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)											sq-ft
	7	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)											sq-ft
	8	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)											sq-ft
	9	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)											sq-ft
10	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)											sq-ft	
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	11	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	Yes	Yes	Yes	Yes	yes/no						
	12	Impervious Surfaces Directed to Dispersion Area per SD-B (Ci=0.90)											sq-ft
	13	Semi-Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	14	Engineered Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	15	Natural Type A Soil Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	16	Natural Type B Soil Serving as Dispersion Area per SD-B (Ci=0.14)											sq-ft
	17	Natural Type C Soil Serving as Dispersion Area per SD-B (Ci=0.23)											sq-ft
	18	Natural Type D Soil Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	19	Number of Tree Wells Proposed per SD-A							50	2	6	32	#
	20	Average Mature Tree Canopy Diameter							20	20	20	20	ft
21	Number of Rain Barrels Proposed per SD-E											#	
22	Average Rain Barrel Size											gal	
Treatment Train Inputs & Calculations	23	Does BMP Overflow to Stormwater Features in Downstream Drainage?	No	No	No	No	unitless						
	24	Identify Downstream Drainage Basin Providing Treatment in Series											unitless
	25	Percent of Upstream Flows Directed to Downstream Dispersion Areas											percent
	26	Upstream Impervious Surfaces Directed to Dispersion Area (Ci=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
	27	Upstream Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
Initial Runoff Factor Calculation	28	Total Tributary Area	35,284	48,352	52,272	54,450	33,977	82,328	218,236	6,098	23,958	140,000	sq-ft
	29	Initial Runoff Factor for Standard Drainage Areas	0.79	0.81	0.81	0.81	0.81	0.81	0.90	0.90	0.90	0.90	unitless
	30	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	31	Initial Weighted Runoff Factor	0.79	0.81	0.81	0.81	0.81	0.81	0.90	0.90	0.90	0.90	unitless
	32	Initial Design Capture Volume	1,254	1,762	1,905	1,985	1,238	3,001	8,839	247	970	5,670	cubic-feet
Dispersion Area Adjustments	33	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	34	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	35	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	ratio						
	36	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	37	Runoff Factor After Dispersion Techniques	0.79	0.81	0.81	0.81	0.81	0.81	0.90	0.90	0.90	0.90	unitless
	38	Design Capture Volume After Dispersion Techniques	1,254	1,762	1,905	1,985	1,238	3,001	8,839	247	970	5,670	cubic-feet
Tree & Barrel Adjustments	39	Total Tree Well Volume Reduction	0	0	0	0	0	0	9,000	360	1,080	5,760	cubic-feet
	40	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	41	Final Adjusted Runoff Factor	0.79	0.81	0.81	0.81	0.81	0.81	0.00	0.00	0.00	0.00	unitless
	42	Final Effective Tributary Area	27,874	39,165	42,340	44,105	27,521	66,686	0	0	0	0	sq-ft
	43	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	9,000	360	1,080	5,760	cubic-feet
	44	Final Design Capture Volume Tributary to BMP	1,254	1,762	1,905	1,985	1,238	3,001	0	0	0	0	cubic-feet

Worksheet B.1-1 General Notes:

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

FANITA RANCH GREEN STREETS

DCV CALCULATION- TREE WELLS

GS-1-1 (Fanita Pkwy) : Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP (s)	A=	5.010	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= (3630 x C x d x A) - TCV - RCV	DCV=	8,839	cubic-feet

GS-1-2 (Cuyamaca Street): Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP (s)	A=	0.140	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= (3630 x C x d x A) - TCV - RCV	DCV=	247	cubic-feet

GS-1-3 (Magnolia Avenue): Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP (s)	A=	0.550	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= (3630 x C x d x A) - TCV - RCV	DCV=	970	cubic-feet

GS-1-4 (Cuyamaca Street): Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP (s)	A=	3.214	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= (3630 x C x d x A) - TCV - RCV	DCV=	5,670	cubic-feet

FANITA RANCH GREEN STREETS

DCV CALCULATION- TREE WELLS

GS-1-5 (Summit Avenue): Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP (s)	A=	0.094	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - \text{TCV} - \text{RCV}$	DCV=	166	cubic-feet

Fanita Ranch Green Street DMA Calcs							
DMA ID	GS-1-1	GS-1-2	GS-1-3	GS-1-4	GS-1-5	Total (ac)	Total (sf)
Road	Fanita	Cuyamaca	Magnolia	Cuyamaca*	Summit		
EX- Impervious (ac)	5.430	0.180	0.650	0.115	0.252	6.627	288653
EX- Pervious (ac)	13.130	0.220	0.550	4.706	0.094	18.700	814592
EX- Total Area (ac)	18.560	0.400	1.200	4.821	0.346	25.327	1103245
PR- Impervious (ac)	10.440	0.320	1.200	3.329	0.346	15.635	681053
PR- Pervious (ac)	8.120	0.080	0.000	1.492	0.000	9.692	422192
PR-Total Disturbed Area (ac)	18.560	0.400	1.200	3.214	0.094	23.468	1022278
PR-Net Increase Impervious (ac)	5.010	0.140	0.550	3.214	0.094	9.008	
PR-Net Increase Impervious (sf)	218236	6098	23958	140000	4108		392400
*Cyuamaca Street ~ 5,000 l.f. from Chaparral Drive to Mast Boulevard, widening/median area only.							

Design Capture Volume for DMA GS-1-1		Worksheet B.2-1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP(S)	A=	5.01	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Trees Credit Volume Reduction	TCV=	9000	cubic-feet
5	Rain barrels Credit Volume Reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x D x A) - TCV - RCV	DCV=	-161	cubic-feet

Weighted Runoff Factor				
DMA	Type of Surface	Area (sq-ft)	Runoff Factor	Weighted C
1	Roof, Concrete, Asphalt	454766	0.9	0.64
	Pervious, Natural (D type soil)	353707	0.3	

Tree Credit Volume			
DMA	Tree Canopy Diameter (ft)	Tree Credit Volume	Total Tree Credit Volume
1	20	180	180

Required Amended Soil					
Tree canopy diameter (ft)	Required soil volume (cf)	Soil depth (IN)	Soil area (sf)	Soil diameter (ft)	soil diameter calc
5	39.27	36	13.1	4.08	4.09
10	157.08	36	52.4	8.16	8.17
15	353.43	36	117.8	12.25	12.26
20	628.32	36	209.4	16.33	16.34
25	981.75	36	327.3	20.41	20.42
30	1413.72	36	471.2	24.49	24.50

PROPOSED STRUCTURAL SOIL PER TREE WELL											
DMA	TREE NUMBER	TREE CANOPY DIAMETER (FT)	REQUIRED VOLUME (CU-FT)	PROPOSED DEPTH (IN)	AREA (SQ-FT)	PROPOSED DIAMETER (FT)	VOLUME PROVIDED (CU-FT)	1.5 X CANOPY RADIUS (FT)	DIAMETER OF SOIL < 1.5 RADIUS OF CANOPY?	2 X CANOPY AREA (SQ-FT)	VOLUME > 2X CANOPY AREA?
GS-1-1	50	20	628.3	43.0	175.3	16.3	37571	15	NO	628	YES

Design Capture Volume for DMA GS-1-2		Worksheet B.2-1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP(S)	A=	0.14	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Trees Credit Volume Reduction	TCV=	360	cubic-feet
5	Rain barrels Credit Volume Reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x D x A) - TCV - RCV	DCV=	-113	cubic-feet

Weighted Runoff Factor				
DMA	Type of Surface	Area (sq-ft)	Runoff Factor	Weighted C
1	Roof, Concrete, Asphalt	13939	0.9	0.78
	Pervious, Natural (D type soil)	3485	0.3	

Tree Credit Volume			
DMA	Tree Canopy Diameter (ft)	Tree Credit Volume	Total Tree Credit Volume
1	20	180	180

Required Amended Soil					
Tree canopy diameter (ft)	Required soil volume (cf)	Soil depth (IN)	Soil area (sf)	Soil diameter (ft)	soil diameter calc
5	39.27	36	13.1	4.08	4.09
10	157.08	36	52.4	8.16	8.17
15	353.43	36	117.8	12.25	12.26
20	628.32	36	209.4	16.33	16.34
25	981.75	36	327.3	20.41	20.42
30	1413.72	36	471.2	24.49	24.50

PROPOSED STRUCTURAL SOIL PER TREE WELL											
DMA	TREE NUMBER	TREE CANOPY DIAMETER (FT)	REQUIRED VOLUME (CU-FT)	PROPOSED DEPTH (IN)	AREA (SQ-FT)	PROPOSED DIAMETER (FT)	VOLUME PROVIDED (CU-FT)	1.5 X CANOPY RADIUS (FT)	DIAMETER OF SOIL < 1.5 RADIUS OF CANOPY?	2 X CANOPY AREA (SQ-FT)	VOLUME > 2X CANOPY AREA?
GS-1-2	2	20	628.3	43.0	175.3	16.3	1503	15	NO	628	YES

Design Capture Volume for DMA GS-1-3		Worksheet B.2-1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP(S)	A=	0.55	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Trees Credit Volume Reduction	TCV=	1080	cubic-feet
5	Rain barrels Credit Volume Reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x D x A) - TCV - RCV	DCV=	-110	cubic-feet

Weighted Runoff Factor				
DMA	Type of Surface	Area (sq-ft)	Runoff Factor	Weighted C
1	Roof, Concrete, Asphalt	52272	0.9	0.90
	Pervious, Natural (D type soil)	0	0.3	

Tree Credit Volume			
DMA	Tree Canopy Diameter (ft)	Tree Credit Volume	Total Tree Credit Volume
1	20	180	180

Required Amended Soil					
Tree canopy diameter (ft)	Required soil volume (cf)	Soil depth (IN)	Soil area (sf)	Soil diameter (ft)	soil diameter calc
5	39.27	36	13.1	4.08	4.09
10	157.08	36	52.4	8.16	8.17
15	353.43	36	117.8	12.25	12.26
20	628.32	36	209.4	16.33	16.34
25	981.75	36	327.3	20.41	20.42
30	1413.72	36	471.2	24.49	24.50

PROPOSED STRUCTURAL SOIL PER TREE WELL											
DMA	TREE NUMBER	TREE CANOPY DIAMETER (FT)	REQUIRED VOLUME (CU-FT)	PROPOSED DEPTH (IN)	AREA (SQ-FT)	PROPOSED DIAMETER (FT)	VOLUME PROVIDED (CU-FT)	1.5 X CANOPY RADIUS (FT)	DIAMETER OF SOIL < 1.5 RADIUS OF CANOPY?	2 X CANOPY AREA (SQ-FT)	VOLUME > 2X CANOPY AREA?
GS-1-3	6	20	628.3	43.0	175.3	16.3	4508	15	NO	628	YES

Design Capture Volume for DMA GS-1-4		Worksheet B.2-1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP(S)	A=	3.214	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Trees Credit Volume Reduction	TCV=	5760	cubic-feet
5	Rain barrels Credit Volume Reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x D x A) - TCV - RCV	DCV=	-90	cubic-feet

Weighted Runoff Factor				
DMA	Type of Surface	Area (sq-ft)	Runoff Factor	Weighted C
1	Roof, Concrete, Asphalt	52272	0.9	0.90
	Pervious, Natural (D type soil)	0	0.3	

Tree Credit Volume			
DMA	Tree Canopy Diameter (ft)	Tree Credit Volume	Total Tree Credit Volume
1	20	180	180

Required Amended Soil					
Tree canopy diameter (ft)	Required soil volume (cf)	Soil depth (IN)	Soil area (sf)	Soil diameter (ft)	soil diameter calc
5	39.27	36	13.1	4.08	4.09
10	157.08	36	52.4	8.16	8.17
15	353.43	36	117.8	12.25	12.26
20	628.32	36	209.4	16.33	16.34
25	981.75	36	327.3	20.41	20.42
30	1413.72	36	471.2	24.49	24.50

PROPOSED STRUCTURAL SOIL PER TREE WELL											
DMA	TREE NUMBER	TREE CANOPY DIAMETER (FT)	REQUIRED VOLUME (CU-FT)	PROPOSED DEPTH (IN)	AREA (SQ-FT)	PROPOSED DIAMETER (FT)	VOLUME PROVIDED (CU-FT)	1.5 X CANOPY RADIUS (FT)	DIAMETER OF SOIL < 1.5 RADIUS OF CANOPY?	2 X CANOPY AREA (SQ-FT)	VOLUME > 2X CANOPY AREA?
GS-1-4	32	20	628.3	43.0	175.3	16.3	24045	15	NO	628	YES

Design Capture Volume for DMA GS-1-5		Worksheet B.2-1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.54	inches
2	Area tributary to BMP(S)	A=	0.094	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.90	unitless
4	Trees Credit Volume Reduction	TCV=	180	cubic-feet
5	Rain barrels Credit Volume Reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x D x A) - TCV - RCV	DCV=	-14	cubic-feet

Weighted Runoff Factor				
DMA	Type of Surface	Area (sq-ft)	Runoff Factor	Weighted C
1	Roof, Concrete, Asphalt	52272	0.9	0.90
	Pervious, Natural (D type soil)	0	0.3	

Tree Credit Volume			
DMA	Tree Canopy Diameter (ft)	Tree Credit Volume	Total Tree Credit Volume
1	20	180	180

Required Amended Soil					
Tree canopy diameter (ft)	Required soil volume (cf)	Soil depth (IN)	Soil area (sf)	Soil diameter (ft)	soil diameter calc
5	39.27	36	13.1	4.08	4.09
10	157.08	36	52.4	8.16	8.17
15	353.43	36	117.8	12.25	12.26
20	628.32	36	209.4	16.33	16.34
25	981.75	36	327.3	20.41	20.42
30	1413.72	36	471.2	24.49	24.50

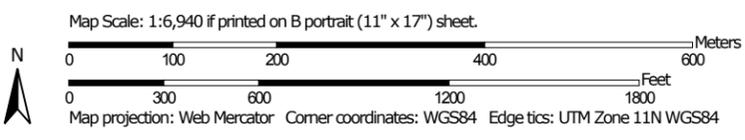
PROPOSED STRUCTURAL SOIL PER TREE WELL											
DMA	TREE NUMBER	TREE CANOPY DIAMETER (FT)	REQUIRED VOLUME (CU-FT)	PROPOSED DEPTH (IN)	AREA (SQ-FT)	PROPOSED DIAMETER (FT)	VOLUME PROVIDED (CU-FT)	1.5 X CANOPY RADIUS (FT)	DIAMETER OF SOIL < 1.5 RADIUS OF CANOPY?	2 X CANOPY AREA (SQ-FT)	VOLUME > 2X CANOPY AREA?
GS-1-4	1	20	628.3	43.0	175.3	16.3	751	15	NO	628	YES

ATTACHMENT 1b
FORM 1-8, CATEGORIZATION OF INFILTRATION
FEASIBILITY CONDITION

Hydrologic Soil Group—San Diego County Area, California
(Fanita Parkway)



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
 Survey Area Data: Version 12, Sep 13, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2010—Jan 4, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DoE	Diablo-Olivenhain complex, 9 to 30 percent slopes	D	0.1	0.1%
RhC	Redding-Urban land complex, 2 to 9 percent slopes	D	12.5	18.0%
SbA	Salinas clay loam, 0 to 2 percent slopes, warm MAAT, MLRA 19	C	13.8	19.8%
SvE	Stony land	A	34.6	49.9%
W	Water		8.5	12.2%
Totals for Area of Interest			69.3	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils 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.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group—San Diego County Area, California
(Cuyamaca Street)



Map Scale: 1:1,060 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
 Survey Area Data: Version 12, Sep 13, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 7, 2014—Jan 4, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DoE	Diablo-Olivenhain complex, 9 to 30 percent slopes	D	2.2	88.9%
ReE	Redding cobbly loam, 9 to 30 percent slopes	D	0.3	11.1%
Totals for Area of Interest			2.5	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils 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.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

FANITA RANCH

Categorization of Infiltration Feasibility Condition		Worksheet C.4-1	
<p><u>Part 1 - Full Infiltration Feasibility Screening Criteria</u></p> <p>Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?</p>			
Criteria	Screening Question	Yes	No
1	<p>Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.</p>		X
<p>Provide basis:</p> <p>Based on information collected from the USDA NRCS website, Basins 4 through 7 are generally going to be underlain with soils classified as Hydrologic Soil Group C and D, which are not considered suitable for infiltration BMP's. These basins will be graded and result in a cut/fill transition with compacted fill ranging from approximately 25 to 105 feet thick and cuts of approximately 10 to 95 feet exposing dense gabbroic/granitic rock. Infiltration BMP's supported by compacted fill are not recommended due to the increased potential for soil saturation, settlement of granular fill soils, heaving of expansive soils, and lateral water migration. Lateral water migration could result in distress to downgradient properties and improvements. The underlying gabbroic/granitic rock is considered practically impermeable.</p>			
2	<p>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.</p>		X
<p>Provide basis:</p> <p>Infiltration BMP's supported by compacted fill ranging from 25 to 105 feet are not recommended. The potential for long-term settlement of the granular fill soils, heaving of the near surface expansive soils, and lateral water migration to adversely impact existing and proposed utilities and to adversely impact existing and proposed foundations and improvements is high. The underlying gabbroic/granitic rock is considered practically impermeable.</p>			

Worksheet C.4-1 Page 2 of 4

Criteria	Screening Question	Yes	No
3	<p>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	X	
<p>Provide basis:</p> <p>Groundwater is not located within 10 feet from the bottom of Basin 3, therefore the risk of storm water infiltration BMP's adversely impacting groundwater is considered negligible.</p>			
4	<p>Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	X	
<p>Provide basis:</p> <p>It is our opinion there are no adverse impacts to groundwater, water balance impacts to stream flow, or impacts on any downstream water rights. It should be noted that researching downstream water rights or evaluating water balance issues to stream flows is beyond the scope of the geotechnical consultant.</p>			
Part 1 Result*	<p>If all answers to rows 1 - 4 are “Yes” a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration</p> <p>If any answer from row 1-4 is “No”, infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a “full infiltration” design. Proceed to Part 2</p>		No Infiltration

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

Worksheet C.4-1 Page 3 of 4

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

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

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

Provide basis:

Based on information collected from the USDA NRCS website, Basins 4 through 7 are generally going to be underlain with soils classified as Hydrologic Soil Group C and D, which are not considered suitable for infiltration BMP's. These basins will be graded and result in a cut/fill transition with compacted fill ranging from approximately 25 to 105 feet thick and cuts of approximately 10 to 95 feet exposing dense gabbroic/granitic rock. Infiltration BMP's supported by compacted fill are not recommended due to the increased potential for soil saturation, settlement of granular fill soils, heaving of expansive soils, and lateral water migration. Lateral water migration could result in distress to downgradient properties and improvements. The underlying gabbroic/granitic rock is considered practically impermeable.

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

Provide basis:

Infiltration BMP's supported by compacted fill ranging from 25 to 105 feet are not recommended. The potential for long-term settlement of the granular fill soils, heaving of the near surface expansive soils, and lateral water migration to adversely impact existing and proposed utilities and to adversely impact existing and proposed foundations and improvements is high. The underlying gabbroic/granitic rock is considered practically impermeable.

Worksheet C.4-1 Page 4 of 4

Criteria	Screening Question	Yes	No
7	<p>Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	X	
<p>Provide basis:</p> <p>Groundwater is not located within 10 feet from the bottom of Basin 3, therefore the risk of storm water infiltration BMP's adversely impacting groundwater is considered negligible.</p>			
8	<p>Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	X	
<p>Provide basis:</p> <p>Geocon is not aware of any downstream water rights that would be affected by incidental infiltration of storm water. Researching downstream water rights is beyond the scope of the geotechnical consultant.</p>			
Part 2 Result*	<p>If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration.</p> <p>If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.</p>		No Infiltration

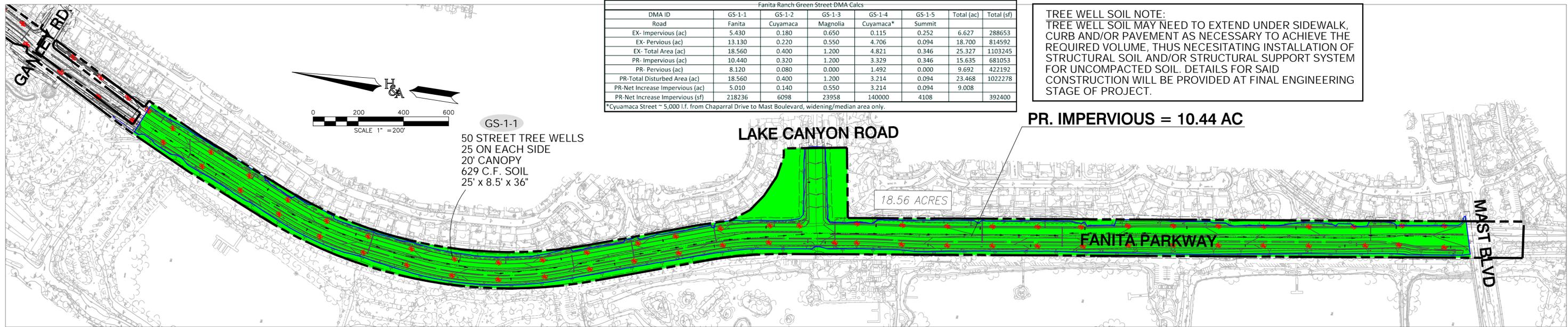
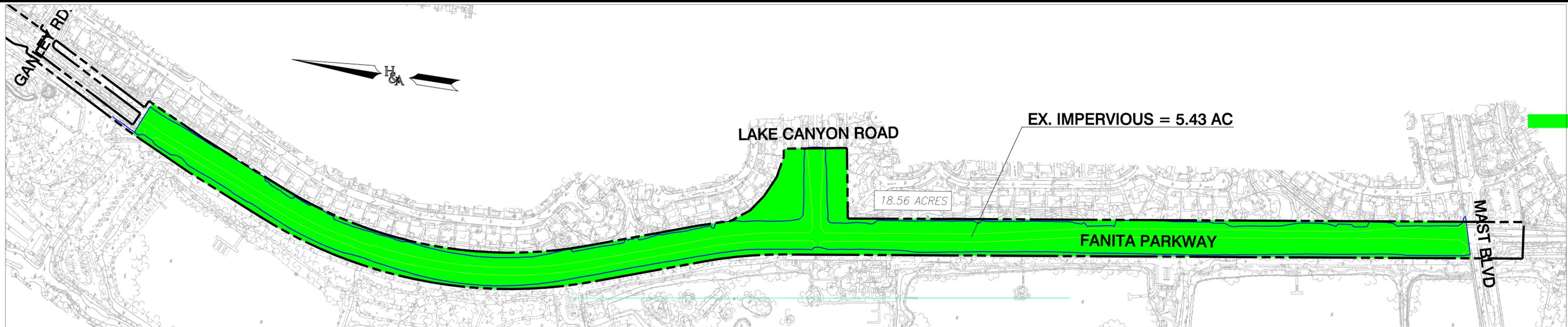
*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the City to substantiate findings.

ATTACHMENT 1c
DMA EXHIBIT

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

The DMA Exhibit must identify:

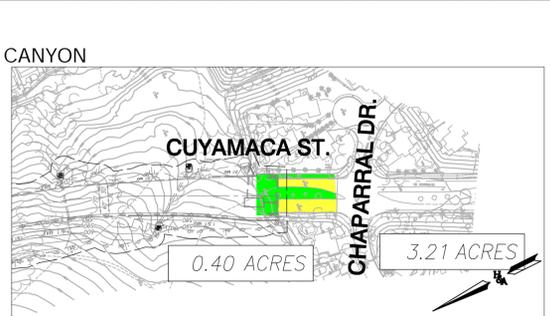
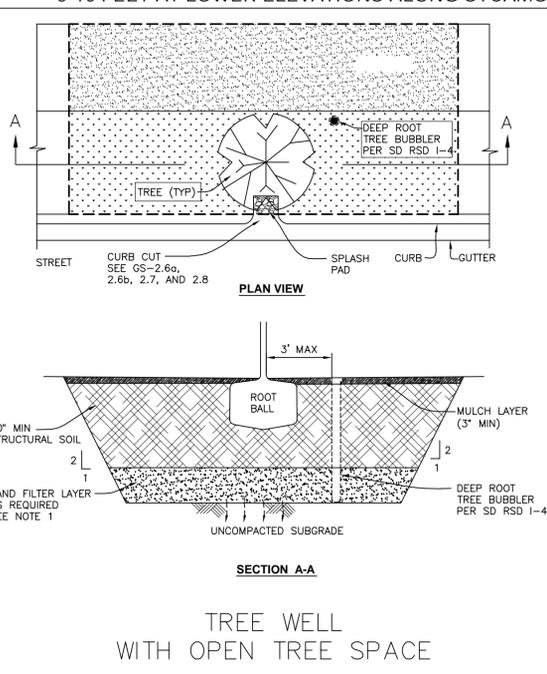
- Underlying hydrologic soil group
- Approximate depth to groundwater
- Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- Critical coarse sediment yield areas to be protected
- Existing topography and impervious areas
- Existing and proposed site drainage network and connections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



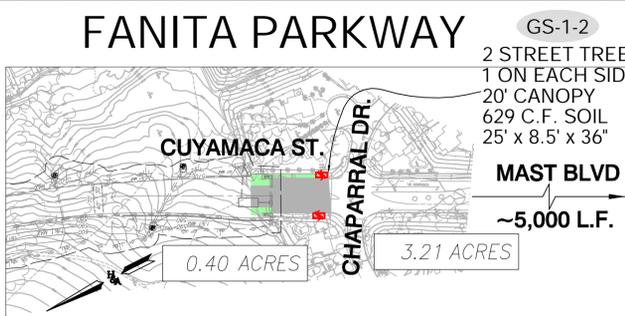
Fanita Ranch Green Street DMA Gals							
DMA ID	GS-1-1	GS-1-2	GS-1-3	GS-1-4	GS-1-5	Total (ac)	Total (sf)
Road	Fanita	Cuyamaca	Magnolia	Cuyamaca*	Summit		
EX- Impervious (ac)	5.430	0.180	0.650	0.115	0.252	6.627	288653
EX- Pervious (ac)	13.130	0.220	0.550	4.706	0.094	18.700	814592
EX- Total Area (ac)	18.560	0.400	1.200	4.821	0.346	25.327	1103245
PR- Impervious (ac)	10.440	0.320	1.200	3.329	0.346	15.635	681053
PR- Pervious (ac)	8.120	0.080	0.000	1.492	0.000	9.692	422192
PR-Total Disturbed Area (ac)	18.560	0.400	1.200	3.214	0.094	23.468	1022278
PR-Net Increase Impervious (ac)	5.010	0.140	0.550	3.214	0.094	9.008	
PR-Net Increase Impervious (sf)	218236	6098	23958	140000	4108		392400

TREE WELL SOIL NOTE:
 TREE WELL SOIL MAY NEED TO EXTEND UNDER SIDEWALK, CURB AND/OR PAVEMENT AS NECESSARY TO ACHIEVE THE REQUIRED VOLUME, THUS NECESITATING INSTALLATION OF STRUCTURAL SOIL AND/OR STRUCTURAL SUPPORT SYSTEM FOR UNCOMPACTED SOIL. DETAILS FOR SAID CONSTRUCTION WILL BE PROVIDED AT FINAL ENGINEERING STAGE OF PROJECT.

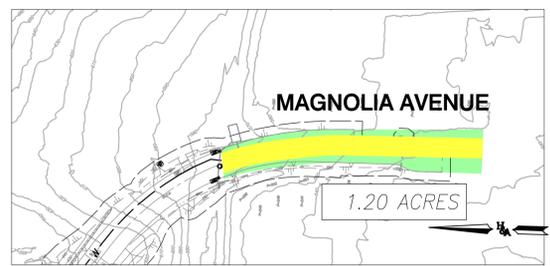
-UNDERLYING HYDROLOGIC SOIL GROUPS: A, C, & D
 -APPROXIMATE DEPTH TO GROUNDWATER:
 5-10 FEET AT LOWER ELEVATIONS ALONG SYCAMORE CANYON



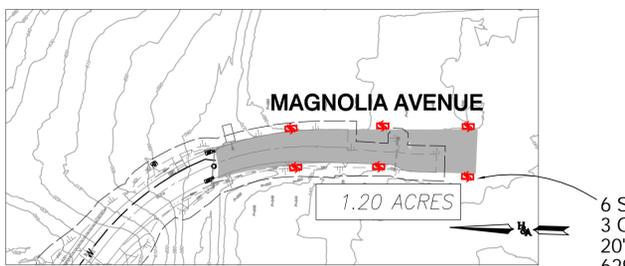
EX. CUYAMACA STREET



PR. CUYAMACA STREET



EX. MAGNOLIA AVENUE



PR. MAGNOLIA AVENUE

GS-1-2
 2 STREET TREE WELLS
 1 ON EACH SIDE
 20' CANOPY
 629 C.F. SOIL
 25' x 8.5' x 36"

GS-1-4
 32 STREET TREE WELLS
 WITHIN MEDIAN
 20' CANOPY
 629 C.F. SOIL
 25' x 8.5' x 36"

LEGEND

- PROJECT BOUNDARY
- DMA BOUNDARY
- FLOW DIRECTION
- SUBAREA ACREAGE
- EXISTING IMPERVIOUS
- PROPOSED IMPERVIOUS
- PROPOSED & EXISTING PERVIOUS
- STREET TREE LOCATIONS (TYPICAL)

- SITE DESIGN / LID BMPS:**
- SD-1 CONSERVE NATURAL DRAINAGE PATHWAYS
 - Existing drainage patterns will be maintained where possible
 - SD-2 CONSERVE NATURAL AREAS, SOILS, AND VEGETATION
 - Conserve Natural Areas Along Site's Exterior Where Possible
 - SD-3 MINIMIZE IMPERVIOUS AREA
 - Maximize the Amount of Landscaping (Parkways and Medians)
 - SD-5 IMPERVIOUS AREA DISPERSION
 - Direct sidewalk areas to landscaped parkways, road are to tree wells
 - SD-7 LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES
- SOURCE CONTROL BMPS:**
- SC-1 PREVENTION OF ILLICIT DISCHARGES INTO THE MS4
 - Smart Irrigation Systems
 - SC-2 / SC-6a STORM DRAIN STENCILING OR SIGNAGE
 - SC-6 ON-SITE STORM DRAIN INLETS
 - Maintain Inlets
 - SC-6 PLAZAS, SIDEWALKS AND PARKING LOTS
 - Sweep Streets Regularly

PREPARED BY:

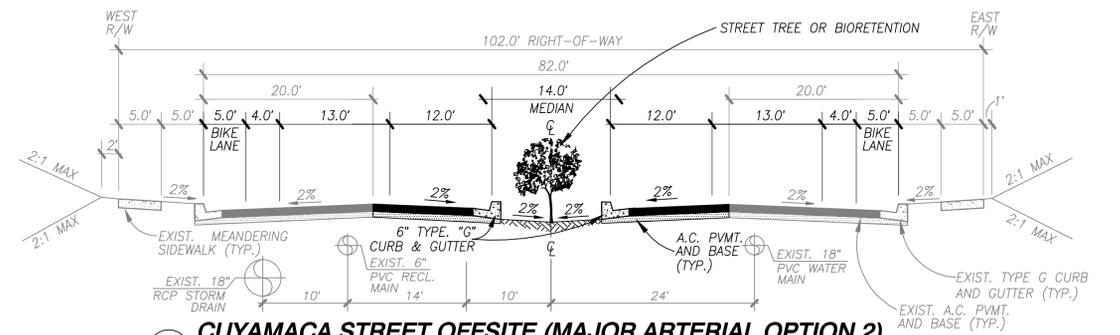
HUNSAKER & ASSOCIATES
 SAN DIEGO, INC

PLANNING 9707 Waples Street
 ENGINEERING San Diego, Ca 92121
 SURVEYING PH(858)558-4500 · FX(858)558-1414

GREEN STREET DMA EXHIBIT FOR:

FANITA PKWY
CUYAMACA STREET
MAGNOLIA AVENUE
 CITY OF SANTEE, CALIFORNIA

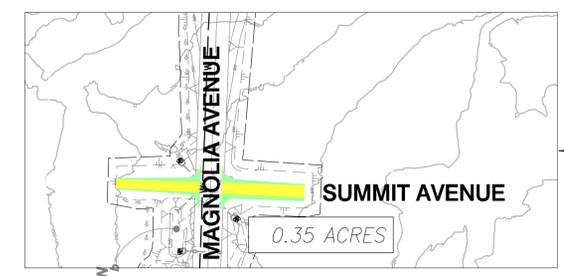
SHEET
 1
 OF
 2



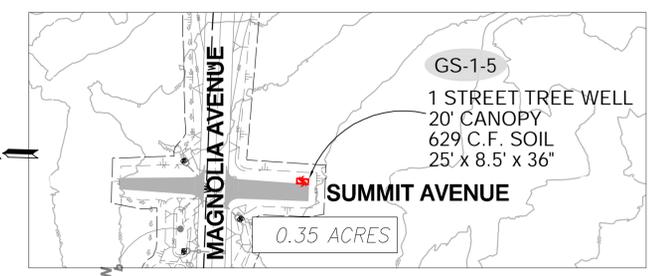
2 CUYAMACA STREET OFFSITE (MAJOR ARTERIAL OPTION 2)
MAST BLVD TO CHAPARRAL DR SCALE 1"=10'

GREEN STREETS AND/OR ALTERNATIVE COMPLIANCE MAY BE USED FOR MEETING WATER QUALITY REQUIREMENTS FOR CUYAMACA STREET IN AREAS OUTSIDE OF THE VILLAGE WHERE THE EXISTING RIGHT-OF-WAY IS LIMITED OR OTHERWISE CONSTRAINED. SUBJECT TO THE APPROVAL OF THE DIRECTOR OF DEVELOPMENT SERVICES.

- GS-1-4 102' RIGHT OF WAY
 WIDENING AND MEDIAN AREA ONLY;
 EXISTING IMPERVIOUS WIDTH=1' (EX. AC BERM TO BE REMOVED)
 PROPOSED IMPERVIOUS WIDTH=29'
 PROPOSED INCREASE OF IMPERVIOUS WIDTH=28'
 APPROXIMATELY 5,000 L.F. IMPROVED ROADWAY
 PROPOSED INCREASE IN IMPERVIOUS AREA=140,000 S.F. (3.214 AC)
 R.F. OF NEW IMPERVIOUS AREA=0.9
 1 STREET TREE WELL IN MEDIAN PER 130 L.F. ROADWAY (32 TOTAL)
 20' CANOPY, 629 C.F. SOIL, 25' x 8.5' x 36"



EX. SUMMIT AVENUE



PR. SUMMIT AVENUE

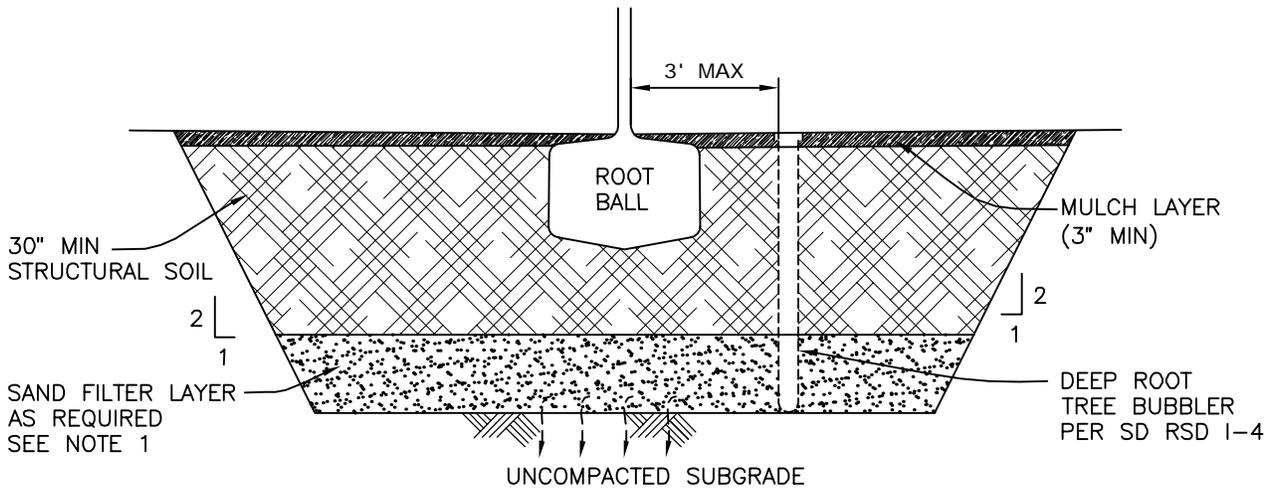
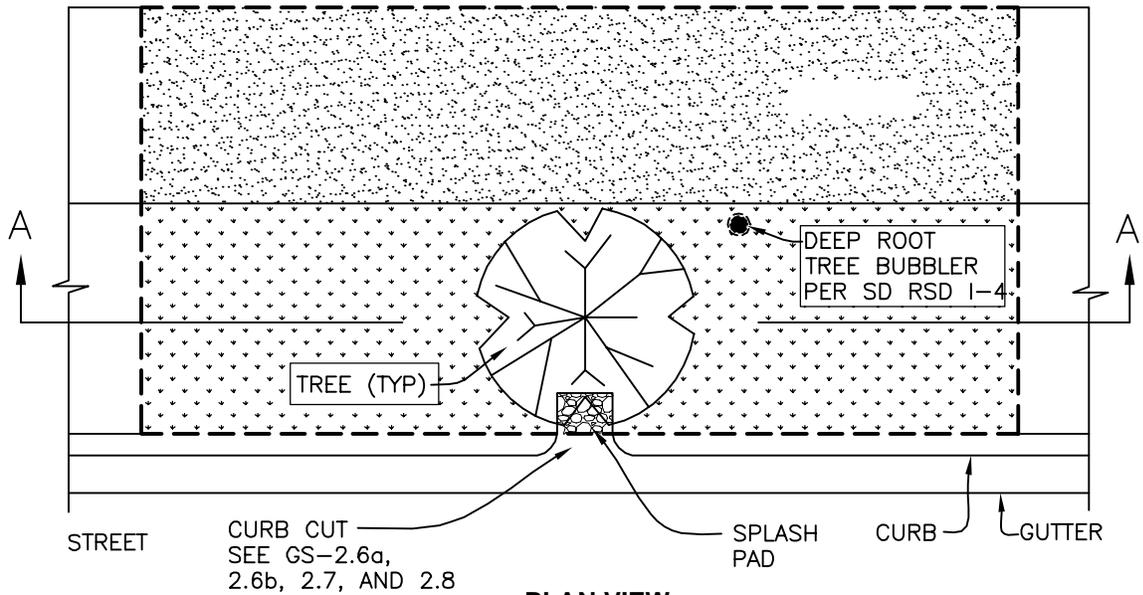
PREPARED BY:

HUNSAKER & ASSOCIATES
 SAN DIEGO, INC
 PLANNING 9707 Waples Street
 ENGINEERING San Diego, Ca 92121
 SURVEYING PH(858)558-4500 · FX(858)558-1414

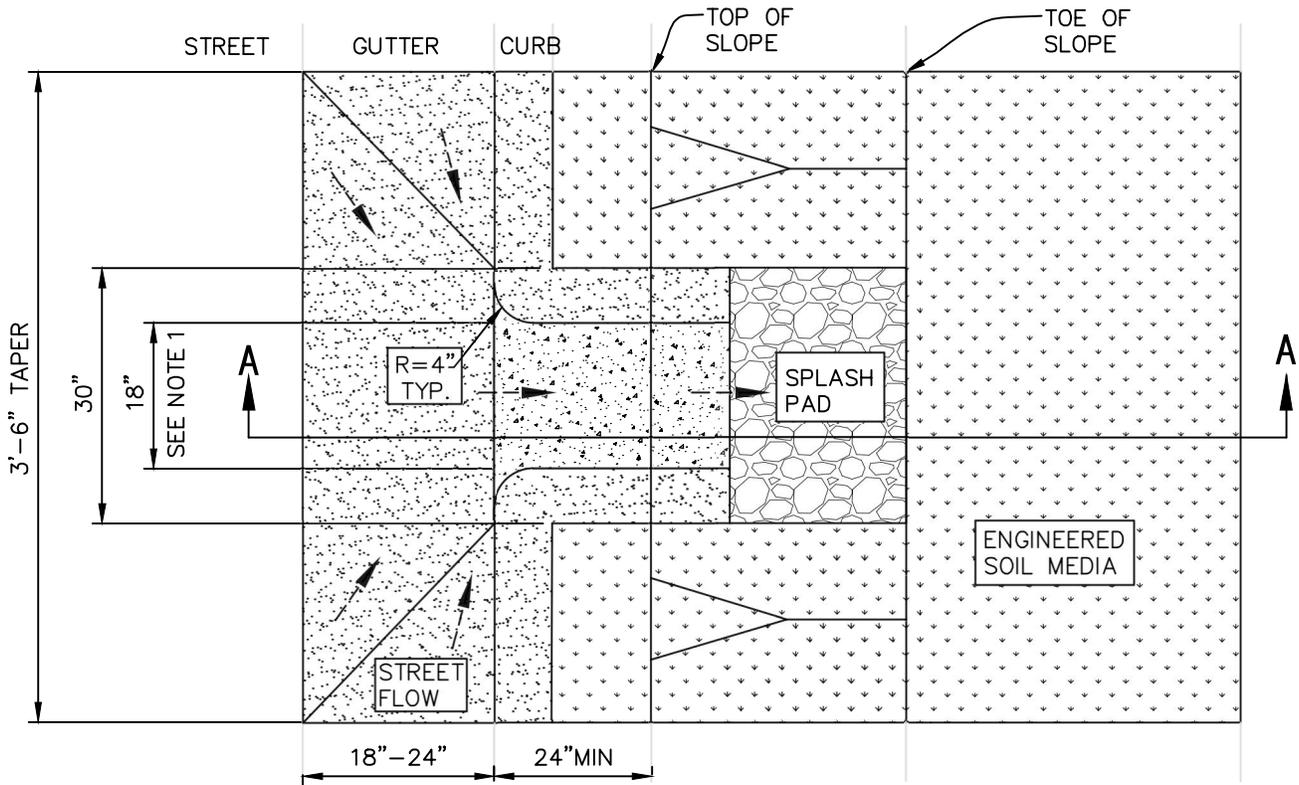
GREEN STREET DMA EXHIBIT FOR:
SUMMIT AVENUE
CUYAMACA STREET
 CITY OF SANTEE, CALIFORNIA

SHEET
2
 OF
2

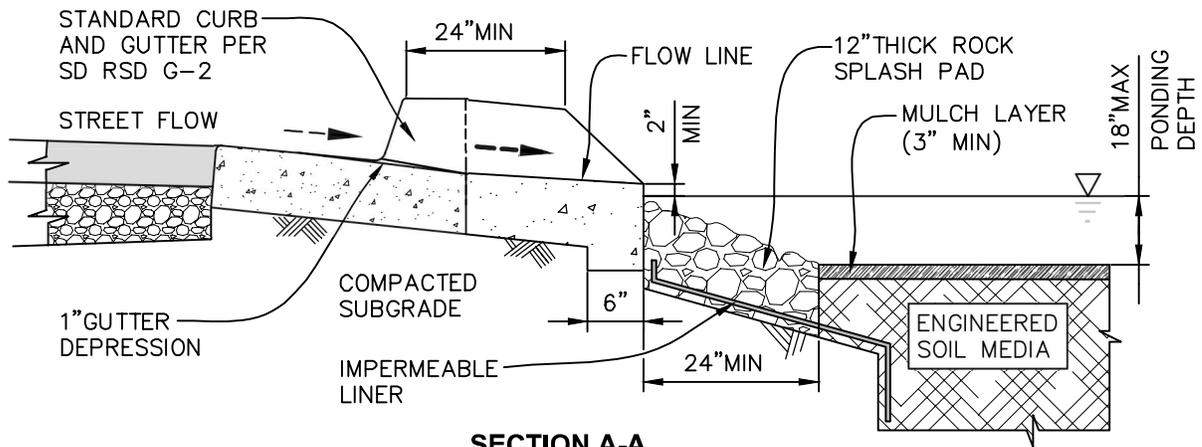
ATTACHMENT 1d
INDIVIDUAL GREEN INFRASTRUCTURE
STRATEGIES DMA MAPBOOK



TREE WELL
WITH OPEN TREE SPACE



**CONCRETE FLUME WITH WINGWALLS
AND ROCK SPLASH PAD**



SECTION A-A

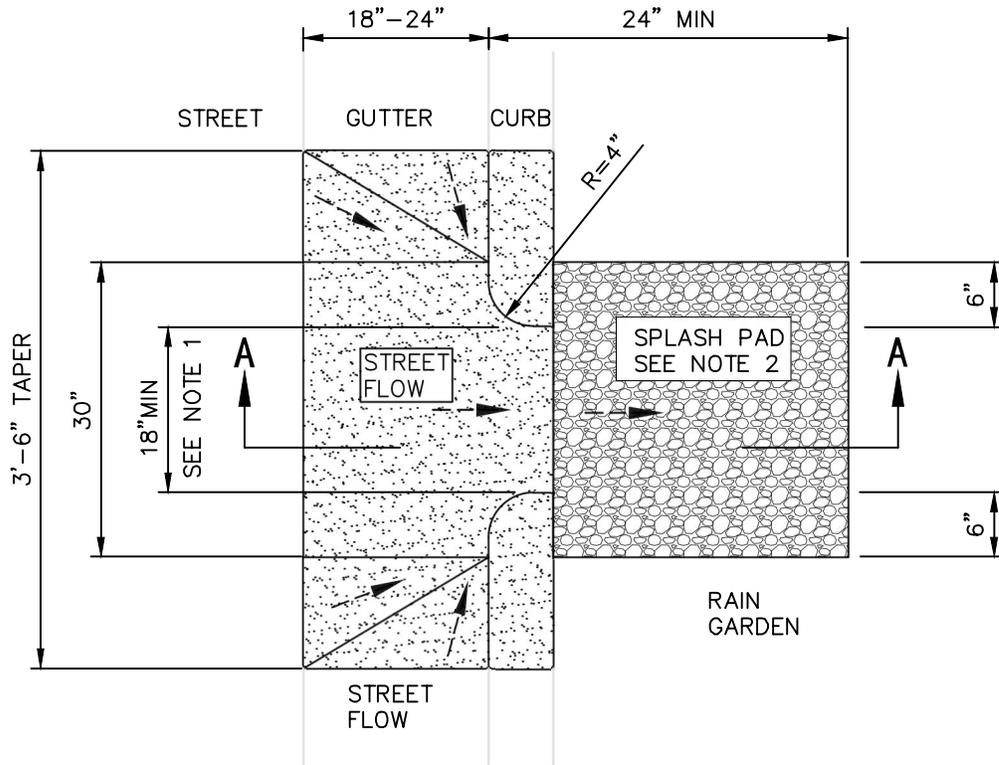
NOTES:

1. CURB OPENING DIMENSION SHOWN IS A MINIMUM. CURB CUT SHALL BE SIZED TO CONVEY 85TH PERCENTILE RAINFALL.
2. SEE DWG GS-2.8 FOR METAL TRENCH DRAIN COVER CURB CUT.
3. SIDE SLOPES STEEPER THAN 3:1 MAY BE ALLOWED WITH COUNTY APPROVAL.

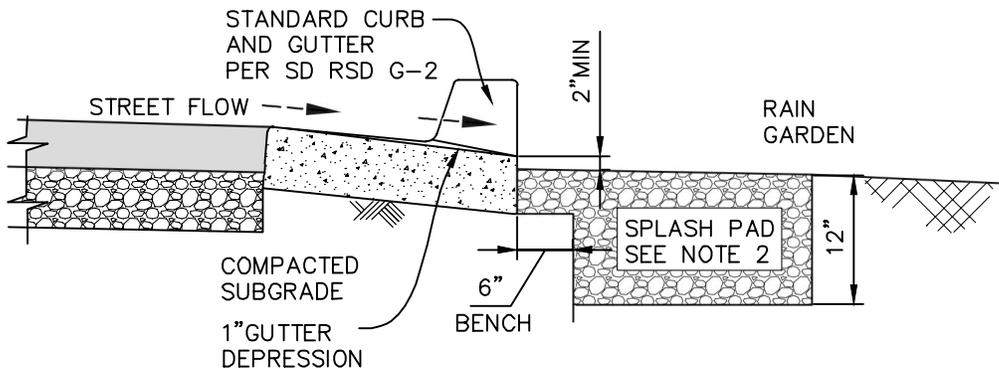
DRAWING NOT TO SCALE

DRAWN BY: _____	CHECKED BY: _____	SAN DIEGO COUNTY DESIGN STANDARD	REVISIONS	APPROVED	DATE
RECOMMENDED BY: JEFF S. MOODY, P.E.					
APPROVED BY COUNTY ENGINEER		CURB CUT WITH SPLASH PAD - 1			
DATE: _____					
DEYLAMIAN SIROUS, P.E. R.C.E. NO. 53192, EXP 6/30/2017			DRAWING NUMBER GS-2.6a		

NOTE: THIS DRAWING IS TO BE INCLUDED ON PLANS UNTIL SIGNED BY THE COUNTY ENGINEER. ONCE SIGNED, IT CAN BE REFERENCED BY NUMBER



**CONCRETE FLUME WITH
ROCK SPLASH PAD**



NOTES:

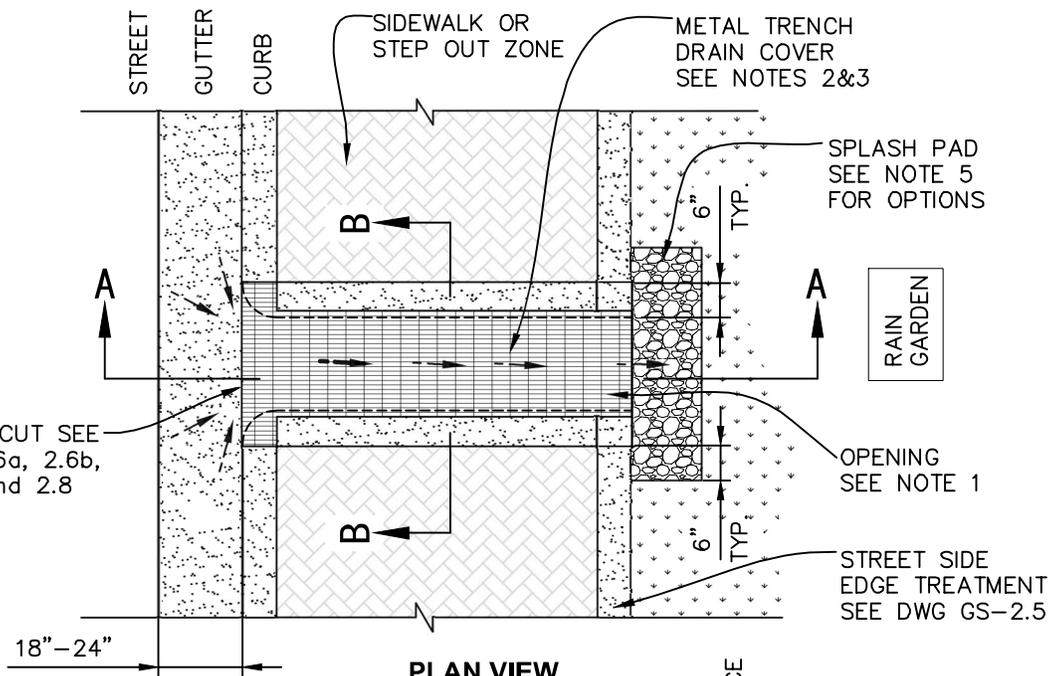
SECTION A-A

1. CURB OPENING DIMENSION SHOWN IS A MINIMUM. CURB CUT SHALL BE SIZED TO CONVEY 85TH PERCENTILE RAINFALL.
2. SPLASH PAD THICKNESS OPTIONS: 12" STONE #2, 4" CONCRETE SLAB, OR PAVER BLOCKS ON 6" AGGREGATE AASHTO #57.

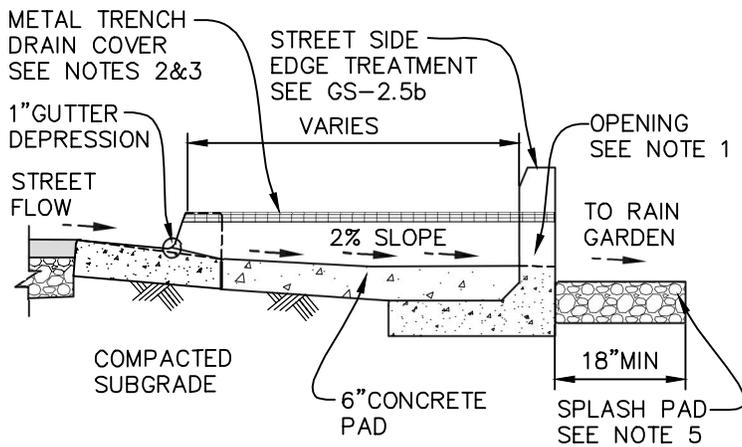
DRAWING NOT TO SCALE

DRAWN BY: _____	CHECKED BY: _____	SAN DIEGO COUNTY DESIGN STANDARD	REVISIONS	APPROVED	DATE
RECOMMENDED BY: JEFF S. MOODY, P.E.	APPROVED BY COUNTY ENGINEER				
DATE: _____	DEYLAMIAN SIROUS, P.E. R.C.E. NO. 53192, EXP 6/30/2017	CURB CUT WITH SPLASH PAD - 2	DRAWING NUMBER GS-2.6b		

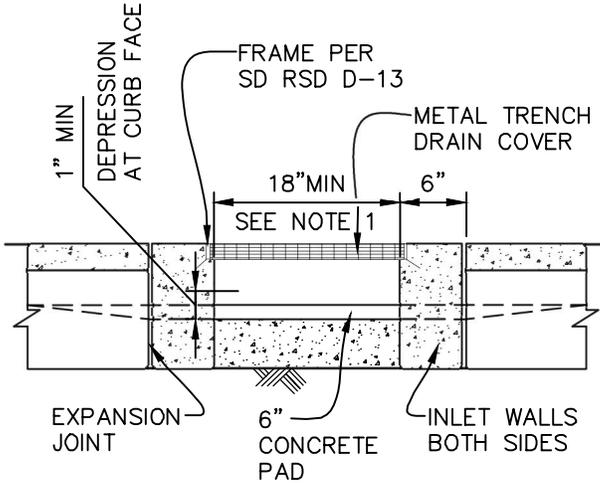
NOTE: THIS DRAWING IS TO BE INCLUDED ON PLANS UNTIL SIGNED BY THE COUNTY ENGINEER. ONCE SIGNED, IT CAN BE REFERENCED BY NUMBER



PLAN VIEW



SECTION A-A



SECTION B-B

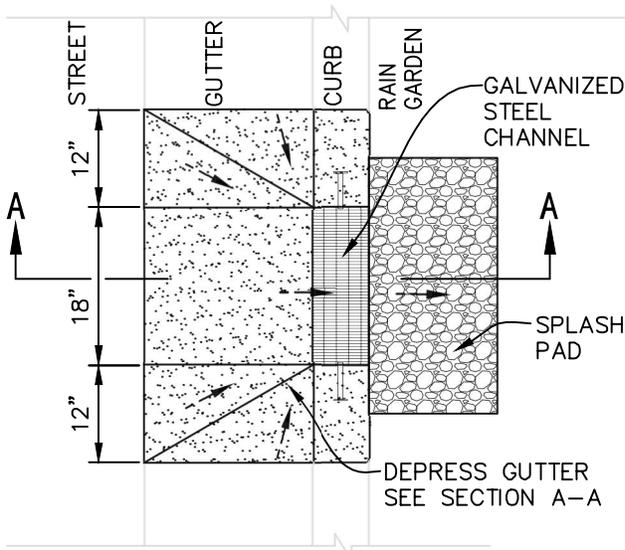
NOTES:

1. CURB OPENING DIMENSION SHOWN IS 18" MINIMUM. CURB CUT SHALL BE SIZED TO CONVEY 85TH PERCENTILE RAINFALL.
2. PROVIDE AND MAINTAIN A SAFE PEDESTRIAN WALKWAY ACCESS THAT COMPLIES WITH APPLICABLE ADA STANDARDS AND SD SUPPLEMENT TO GREEN BOOK SEC 7-10 "PUBLIC CONVENIENCE AND SAFETY".
3. REFER TO DESIGN PLANS FOR SIZE AND TYPE OF COVER.
4. METAL TRENCH DRAIN COVER TO BE BOLTED DOWN (THEFT PROTECTED) BUT REMOVABLE.
5. SPLASH PAD DEPTH OPTIONS: 12" STONE #2, 4" CONCRETE SLAB, OR PAVER BLOCKS ON 6" AGGREGATE AASHTO #57.

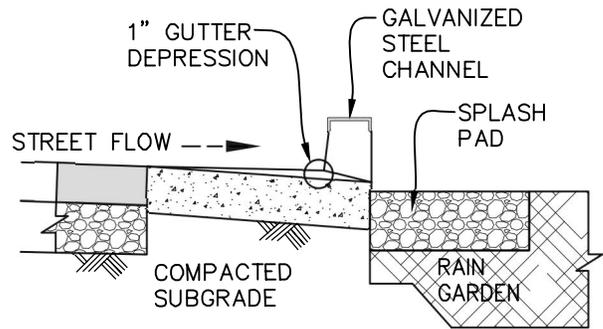
DRAWING NOT TO SCALE

DRAWN BY: _____	CHECKED BY: _____	SAN DIEGO COUNTY DESIGN STANDARD	REVISIONS	APPROVED	DATE
RECOMMENDED BY: JEFF S. MOODY, P.E.					
APPROVED BY COUNTY ENGINEER		CURB CUT METAL TRENCH COVER			
DATE: _____					
DEYLAMIAN SIROUS, P.E. R.C.E. NO. 53192, EXP 6/30/2017			DRAWING NUMBER	GS-2.7	

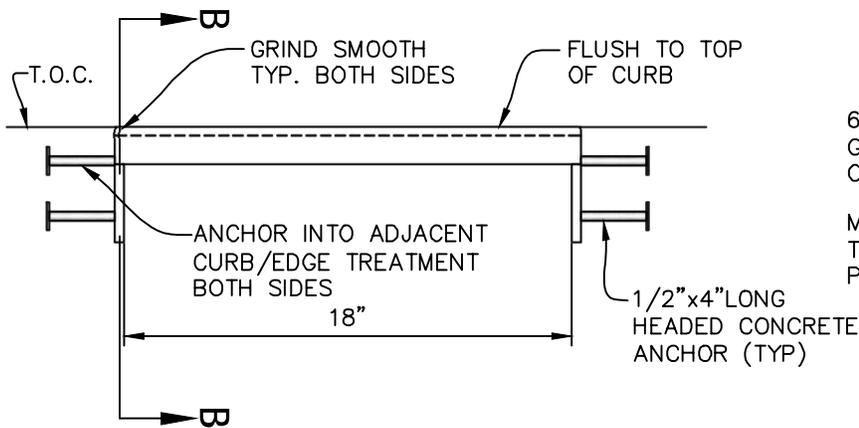
NOTE: THIS DRAWING IS TO BE INCLUDED ON PLANS UNTIL SIGNED BY THE COUNTY ENGINEER. ONCE SIGNED, IT CAN BE REFERENCED BY NUMBER



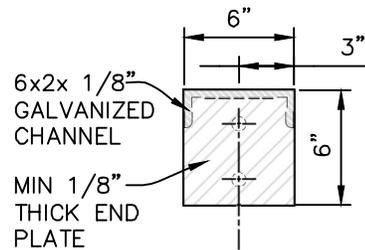
PLAN VIEW



SECTION A-A



ELEVATION



SECTION B-B

NOTES:

1. METAL COVER OVER CURB CUT MAY BE OMITTED WITH COUNTY APPROVAL.
2. ENTIRE ASSEMBLY SHALL BE HOT DIP GALVANIZED STEEL IN ACCORDANCE WITH ASTM A-123.
3. SHARP POINTS, CORNERS AND EDGES OF METAL COVER SHALL BE POLISHED SMOOTH.
4. SINGLE BEVEL GROOVE WELD.
5. DESIGN VERTICAL WHEEL LOAD IS 8.5 KIPS ONE HALF OF TANDEM AXLE WEIGHT SPECIFIED IN FHWA HOP-06-105).
6. ALTERNATE MATERIAL FOR ASSEMBLY MAY BE USED PER COUNTY APPROVAL.

DRAWING NOT TO SCALE

DRAWN BY: _____ CHECKED BY: _____ RECOMMENDED BY: JEFF S. MOODY, P.E. APPROVED BY COUNTY ENGINEER DATE: _____ DEYLAMIAN SIROUS, P.E. R.C.E. NO. 53192, EXP 6/30/2017	SAN DIEGO COUNTY DESIGN STANDARD GALVANIZED STEEL CHANNEL OVER CURB CUT	REVISIONS APPROVED DATE
		DRAWING NUMBER GS-2.8

NOTE: THIS DRAWING IS TO BE INCLUDED ON PLANS UNTIL SIGNED BY THE COUNTY ENGINEER. ONCE SIGNED, IT CAN BE REFERENCED BY NUMBER

ATTACHMENT 2

Green Infrastructure Strategies Maintenance Information

This is the cover sheet for Attachment 2.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 2a	Green Infrastructure strategies Maintenance Plan (Required)	<input checked="" type="checkbox"/> Included See Green Infrastructure strategies Maintenance Information Checklist on the back of this Attachment cover sheet.

Use this checklist to ensure the required information has been included in the Green Infrastructure Strategies Maintenance Information Attachment:

Attachment 2a must identify:

- Specific maintenance indicators and actions for proposed Green Infrastructure strategy(ies). This must be based on Appendix K.4 of the BMP Design Manual and enhanced to reflect actual proposed components of the Green Infrastructure strategy.
- How to access the Green Infrastructure strategies to inspect and perform maintenance
- Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the Green Infrastructure strategies and compare to maintenance thresholds)
- Manufacturer and part number for proprietary parts of Green Infrastructure strategies when applicable
- Maintenance thresholds specific to the Green Infrastructure strategies, with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the Green Infrastructure strategy)
- Recommended equipment to perform maintenance
- When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

SD-1

Tree Wells

BMP MAINTENANCE FACT SHEET FOR SITE DESIGN BMP SD-1 TREE WELLS

Tree wells as site design BMPs are trees planted in configurations that allow storm water runoff to be directed into the soil immediately surrounding the tree. The tree may be contained within a planter box or structural cells. The surrounding area will be graded to direct runoff to the tree well. There may be features such as tree grates, suspended pavement design, or shallow surface depressions designed to allow runoff into the tree well. Typical tree well components include:

- Trees of the appropriate species for site conditions and constraints
- Available growing space based on tree species, soil type, water availability, surrounding land uses, and project goals
- Entrance/opening that allows storm water runoff to flow into the tree well (e.g., a curb opening, tree grate, or surface depression)
- Optional suspended pavement design to provide structural support for adjacent pavement without requiring compaction of underlying layers
- Optional root barrier devices as needed; a root barrier is a device installed in the ground, between a tree and the sidewalk, intended to guide roots down and away from the sidewalk in order to prevent sidewalk lifting from tree roots
- Optional tree grates; to be considered to maximize available space for pedestrian circulation and to protect tree roots from compaction related to pedestrian circulation; tree grates are typically made up of porous material that will allow the runoff to soak through
- Optional shallow surface depression for ponding of excess runoff
- Optional planter box drain

Normal Expected Maintenance

Tree health shall be maintained as part of normal landscape maintenance. Additionally, ensure that storm water runoff can be conveyed into the tree well as designed. That is, the opening that allows storm water runoff to flow into the tree well (e.g., a curb opening, tree grate, or surface depression) shall not be blocked, filled, re-graded, or otherwise changed in a manner that prevents storm water from draining into the tree well. A summary table of standard inspection and maintenance indicators is provided within this Fact Sheet.

Non-Standard Maintenance or BMP Failure

Tree wells are site design BMPs that normally do not require maintenance actions beyond routine landscape maintenance. The normal expected maintenance described above ensures the BMP functionality. If changes have been made to the tree well entrance / opening such that runoff is prevented from draining into the tree well (e.g., a curb inlet opening is blocked by debris or a grate is clogged causing runoff to flow around instead of into the tree well, or a surface depression has been filled so runoff flows away from the tree well), the BMP is not performing as intended to protect downstream waterways from pollution and/or erosion. Corrective maintenance will be required to restore drainage into the tree well as designed.

Surface ponding of runoff directed into tree wells is expected to infiltrate/evapotranspire within 24-96 hours following a storm event. Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health, and surface ponding longer than approximately 96 hours following a storm event poses a risk of vector (mosquito) breeding. Poor drainage can result from clogging or compaction of the soils surrounding the tree. Loosen or replace the soils to restore drainage.

SD-1

Tree Wells

Other Special Considerations

Site design BMPs, such as tree wells, installed within a new development or redevelopment project are components of an overall storm water management strategy for the project. The presence of site design BMPs within a project is usually a factor in the determination of the amount of runoff to be managed with structural BMPs (i.e., the amount of runoff expected to reach downstream retention or biofiltration basins that process storm water runoff from the project as a whole). When site design BMPs are not maintained or are removed, this can lead to clogging or failure of downstream structural BMPs due to greater delivery of runoff and pollutants than intended for the structural BMP. Therefore, the [City Engineer] may require confirmation of maintenance of site design BMPs as part of their structural BMP maintenance documentation requirements. Site design BMPs that have been installed as part of the project should not be removed, nor should they be bypassed by re-routing roof drains or re-grading surfaces within the project. If changes are necessary, consult the [City Engineer] to determine requirements.

SD-1 Tree Wells

SUMMARY OF STANDARD INSPECTION AND MAINTENANCE FOR SD-1 TREE WELLS		
<p>The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district.</p> <p>Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.</p>		
Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Tree health	Routine actions as necessary to maintain tree health.	<ul style="list-style-type: none"> • Inspect monthly. • Maintenance when needed.
Dead or diseased tree	Remove dead or diseased tree. Replace per original plans.	<ul style="list-style-type: none"> • Inspect monthly. • Maintenance when needed.
Standing water in tree well for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to tree health	Loosen or replace soils surrounding the tree to restore drainage.	<ul style="list-style-type: none"> • Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintenance when needed.
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	Disperse any standing water from the tree well to nearby landscaping. Loosen or replace soils surrounding the tree to restore drainage (and prevent standing water).	<ul style="list-style-type: none"> • Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintenance when needed
Entrance / opening to the tree well is blocked such that storm water will not drain into the tree well (e.g., a curb inlet opening is blocked by debris or a grate is clogged causing runoff to flow around instead of into the tree well; or a surface depression is filled such that runoff drains away from the tree well)	Make repairs as appropriate to restore drainage into the tree well.	<ul style="list-style-type: none"> • Inspect monthly. • Maintenance when needed.

SD-1 Tree Wells

References

American Mosquito Control Association.

<http://www.mosquito.org/>

County of San Diego. 2014. Low Impact Development Handbook.

<http://www.sandiegocounty.gov/content/sdc/dpw/watersheds/susmp/lid.html>

San Diego County Copermittees. 2016. Model BMP Design Manual, Appendix E, Fact Sheet SD-1.

http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=250&Itemid=220

SD-1 Tree Wells

Date:	Inspector:	BMP ID No.:
Permit No.:	APN(s):	
Property / Development Name:		Responsible Party Name and Phone Number:
Property Address of BMP:		Responsible Party Address:

INSPECTION AND MAINTENANCE CHECKLIST FOR SD-1 TREE WELLS PAGE 1 of 2			
Threshold/Indicator	Maintenance Recommendation	Date	Description of Maintenance Conducted
Dead or diseased tree Maintenance Needed? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> Remove dead or diseased tree <input type="checkbox"/> Replace per original plans <input type="checkbox"/> Other / Comments:		
Standing water in tree well for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to tree health Maintenance Needed? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> Loosen or replace soils surrounding the tree to restore drainage <input type="checkbox"/> Other / Comments:		

SD-1 Tree Wells

Date:	Inspector:	BMP ID No.:
Permit No.:	APN(s):	

INSPECTION AND MAINTENANCE CHECKLIST FOR SD-1 TREE WELLS PAGE 2 of 2			
Threshold/Indicator	Maintenance Recommendation	Date	Description of Maintenance Conducted
<p>Presence of mosquitos/larvae</p> <p>For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology</p> <p>Maintenance Needed?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A</p>	<p><input type="checkbox"/> Disperse any standing water from the tree well to nearby landscaping</p> <p><input type="checkbox"/> Loosen or replace soils surrounding the tree to restore drainage (and prevent standing water)</p> <p><input type="checkbox"/> Other / Comments:</p>		
<p>Entrance / opening to the tree well is blocked such that storm water will not drain into the tree well (e.g., a curb inlet opening is blocked by debris or a grate is clogged causing runoff to flow around instead of into the tree well; or a surface depression is filled such that runoff drains away from the tree well)</p> <p>Maintenance Needed?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A</p>	<p><input type="checkbox"/> Make repairs as appropriate to restore drainage into the tree well</p> <p><input type="checkbox"/> Other / Comments:</p>		

Section 2 Maintenance Schedule

Tree Wells			
When	Maintenance Task	Frequency	Time of the Year
Initial maintenance during establishment period (First three years)	Inspect tree for health and establishment and report any changes to County	Three times during establishment; Every five years for life of tree	Spring 1st Season Fall 1st Season Fall 2nd Season
	Remove stakes and wires.	One time	One year after planting
	Water tree – first year	25 gallons Weekly via slow release device	April-October
	Water tree – second & third year	25 gallons Bi-Monthly via slow release device	April-October
Routine Maintenance	Remove weeds and trash	Quarterly inspection at minimum and maintenance as needed.	March-November
	Remove sediment and trash from any inlets and slot drains	Annually or as needed.	
As-Needed Maintenance	Mulch with 3 inches double ground shredded hardwood mulch. Place mulch in a ring to capture rain water. Mulch shall not be mounded around tree.	Annually or as needed.	Feb-April
	Inspect tree for damage, disease, or interference with utilities. Contact County if pruning is required.	Annually or as needed.	Broken branches should be pruned at any time. Most trees should be pruned in the winter or fall.

ATTACHMENT 3**Copy of Plan Sheets Showing Green Infrastructure Strategies, Source Control, and Site Design**

This is the cover sheet for Attachment 5.

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

The plans must identify:

- Green Infrastructure Strategies(s) with ID numbers matching Step 6 Summary of Green Infrastructure Strategies
- The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- Details and specifications for construction of Green Infrastructure Strategies
- Signage indicating the location and boundary of Green Infrastructure Strategies(s) as required by County staff
- How to access the Green Infrastructure Strategies to inspect and perform maintenance
- Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the Green Infrastructure Strategies and compare to maintenance thresholds)
- Manufacturer and part number for proprietary parts of Green Infrastructure Strategies when applicable
- Maintenance thresholds specific to the Green Infrastructure Strategies, with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- Recommended equipment to perform maintenance
- When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
- Include landscaping plan sheets showing vegetation requirements for vegetated Green Infrastructure Strategies
- All BMPs must be fully dimensioned on the plans
- When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number must be provided. Photocopies of general brochures are not acceptable.
- Include all source control and site design measures described in Steps 4 and 5 of the SQWMP. Can be included as a separate exhibit as necessary.

Page intentionally blank

ATTACHMENT 4

Copy of Project's Drainage Report

This is the cover sheet for Attachment 4.

If hardcopy or CD is not attached, the following information should be provided:

Title: [Master Drainage Study for Fanita Ranch Tentative Map]

Prepared By: [Hunsaker & Associates San Diego, Inc.]

Date: [September 2019]

Page intentionally blank

ATTACHMENT 5

Copy of Project's Geotechnical and Groundwater Investigation Report

This is the cover sheet for Attachment 5.

If hardcopy or CD is not attached, the following information should be provided:

Title: []

Prepared By: []

Date: []

This page was left intentionally blank.