

APPENDIX O

SWQMP

City of Escondido PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PALOMAR HEIGHTS
[INSERT RECORD ID (PERMIT) NUMBERS]

555 E Valley Pkwy, Escondido, CA 92025

ASSESSOR'S PARCEL NUMBER(S):
229-450-05 & 06, 230-163-01, 02, 03 & 05

ENGINEER OF WORK:



RAYMOND L. MARTIN, R.C.E. #48670

PREPARED FOR:

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PDP SWQMP PREPARED BY:
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DATE OF SWQMP:
December 2nd 2019

PLANS PREPARED BY:
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SWQMP APPROVED BY:

APPROVAL DATE:



PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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ATTACHMENTS

Attachment 1: Backup for PDP Pollutant Control BMPs

Attachment 1a: Storm Water Pollutant Control Worksheet Calculations (Worksheet B.2-1 DCV, Form I-4)

Attachment 1b: Form I-5, Categorization of Infiltration Feasibility Condition

Attachment 1c: Form I-6, Factor of Safety and Design Infiltration Rate Worksheet

Attachment 1d: Drainage Management Area (DMA) Exhibit

Attachment 1e: Individual Structural BMP DMA Mapbook

Attachment 2: Backup for PDP Hydromodification Control Measures

Attachment 2a: Flow Control Facility Design

Attachment 2b: Hydromodification Management Exhibit

Attachment 2c: Management of Critical Coarse Sediment Yield Areas

Attachment 2d: Geomorphic Assessment of Receiving Channels (optional)

Attachment 2e: Vector Control Plan (if applicable)

Attachment 3: Structural BMP Maintenance Plan

Attachment 3a: Structural BMP Maintenance Thresholds and Actions

Attachment 3b: Draft Maintenance Agreements / Notifications (when applicable)

Attachment 4: City of Escondido PDP Structural BMP Verification

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

Attachment 6: Modular Wetland Maintenance & Specifications

Attachment 7: Third Party Certification for Modular Wetland

Attachment 8: Geotechnical Investigation – Palomar Heights

ACRONYMS

ACP	Alternative Compliance Project
APN	Assessor's Parcel Number
BMP	Best Management Practice
DMA	Drainage Management Area
EOW	Engineer of Work
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWDM	Storm Water Design Manual
SWQMP	Storm Water Quality Management Plan
WMAA	Watershed Management Area Analysis
WQIP	Water Quality Improvement Plan

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: PALOMAR HEIGHTS

Permit Application Number: [Insert Permit Application Number]

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 City of Escondido Storm Water Design Manual, which is a design manual for compliance with the City of Escondido Municipal Code (Chapter 22, Article 2) 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 City of Escondido has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the Storm Water 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 City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.



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

Raymond L. Martin

Print Name

Hunsaker & Associates – San Diego, Inc.

Company

12/2/2019

Date

Engineer's Seal:



PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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	6/18/2019	Initial Submittal
2	9/13/2019	Revisions per plan check comments.
3	12/2/2019	Revisions per plan check comments.
4		

Final Design

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

Plan Changes

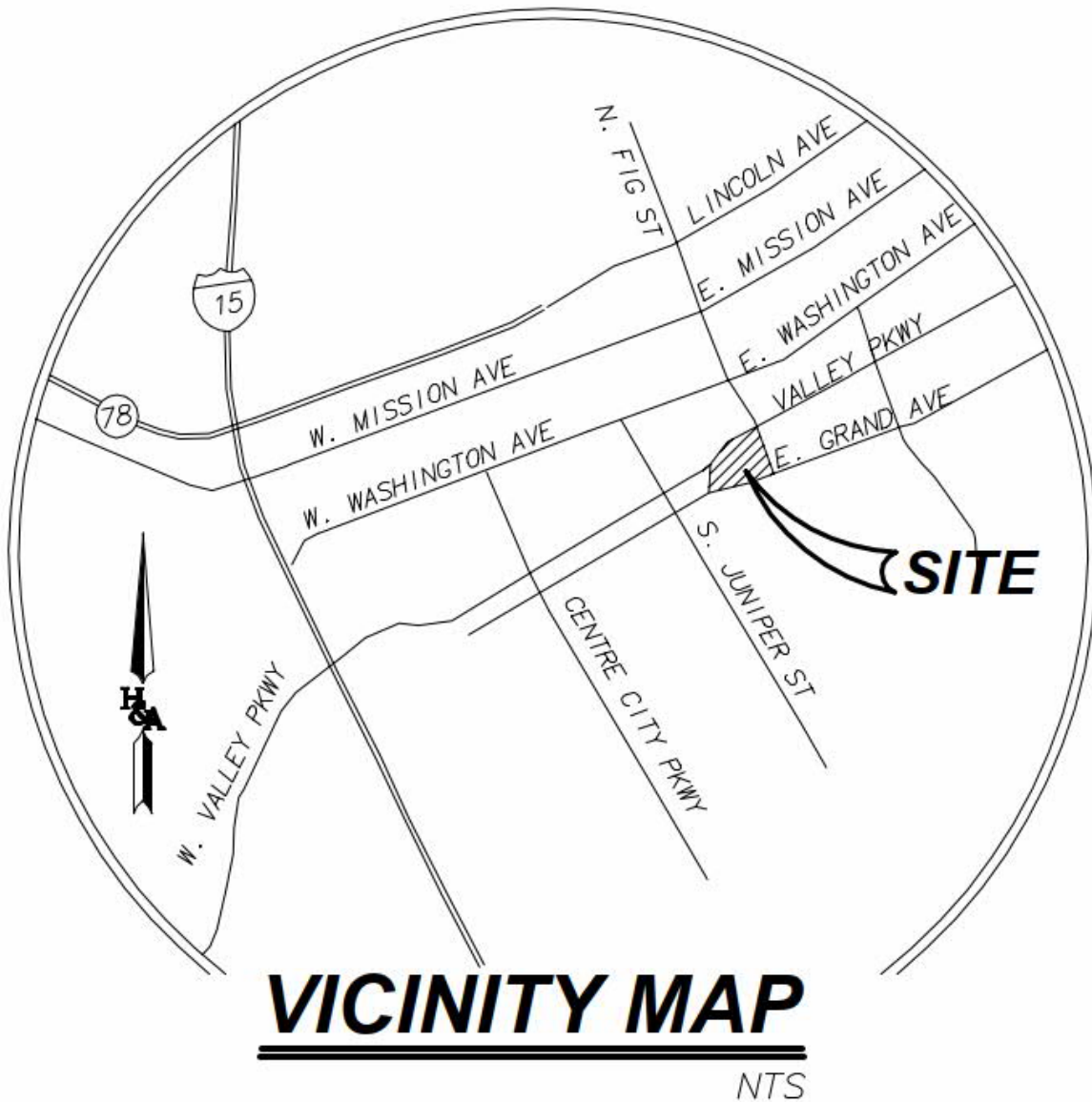
Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PROJECT VICINITY MAP

Project Name: **PALOMAR HEIGHTS**

Record ID: [Insert Record ID or Permit Application Number]



PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 1: Project type determination (Standard or Priority Development Project) (Form I-2a)

Project Summary Information	
Project Name	PALOMAR HEIGHTS
Project Address	555 E Valley Pkwy, Escondido, CA 92025
Assessor's Parcel Number(s)	229-450-05 & 06, 230-163-01, 02, 03 & 05
Permit Application Number	
Project Watershed (Hydrologic Unit)	Select One: <input checked="" type="checkbox"/> Carlsbad 904 <input type="checkbox"/> San Dieguito 905
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	13.80 Acres (<u>601128</u> Square Feet)
Area to be disturbed by the project (Project Area)	13.00 Acres (<u>566318.3</u> Square Feet)
Project Proposed Impervious Area (subset of Project Area)	8.16 Acres (<u>355268.7</u> Square Feet)
Project Proposed Pervious Area (subset of Project Area)	4.84 Acres (<u>211049.6</u> Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	
Confirmation of Priority Development Project Determination	
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: _____ ft ²	

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

Solar energy farms that are not also one of the categories listed in Step 2b of Table 1-1. City staff must also determine that appropriate BMPs are provided to mitigate for downstream impacts due to significant changes to the existing hydrology

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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)	<p>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:</p> <ul style="list-style-type: none"> (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.
Yes <input type="checkbox"/>	No <input checked="" 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.</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.

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Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (iii) 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. (iv) 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)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. <i>Note: See Storm Water Design Manual Section 1.4.2 for additional guidance.</i>

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

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

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

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

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

The area of existing (pre-project) impervious area at the project site is: 541015 ft² (A)

The total proposed newly created or replaced impervious area is 355268.7 ft² (B)

Percent impervious surface created or replaced (B/A)*100: 65.66%

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

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

OR

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

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 1.1: Storm Water Quality Management Plan requirements

Step	Answer	Progression
<p>Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions?</p> <p>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 Storm Water Design Manual <i>in its entirety</i>.</p>	<input type="checkbox"/> Standard Project	<u>Standard Project</u> requirements apply, including <u>Standard Project SWQMP</u> . Complete Form I-1.
	<input checked="" type="checkbox"/> PDP	<u>Standard and PDP</u> requirements apply, including <u>PDP SWQMP</u> . SWQMP Required.
	<input type="checkbox"/> PDP with ACP	If participating in offsite alternative compliance, complete Step 6.3 and an ACP SWQMP.
	<input type="checkbox"/> PDP Exemption	Go to Step 1.2 below.

Step 1.2: Exemption to PDP definitions

<p>Is the project exempt from PDP definitions based on either of the following:</p> <p><input type="checkbox"/> Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria:</p> <ul style="list-style-type: none"> (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 Green Streets Infrastructure; 	<p>If so:</p> <p><u>Standard Project</u> requirements apply, AND <u>any additional requirements specific to the type of project</u>. <u>City concurrence</u> with the exemption is required. <i>Provide discussion and list any additional requirements below in this form.</i></p>
<p><input type="checkbox"/> Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the City of Escondido Guidance on Green Infrastructure.</p>	PDP Exempt.
<p><i>Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:</i></p>	

Step 2: Construction Storm Water BMPs

Construction storm water BMPs shall be shown on the Grading Plan and (if applicable) included in the Storm Water Pollution Prevention Plan (SWPPP).

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Step 3: City of Escondido PDP SWQMP Site Information Checklist (Form I-2a)

Step 3.1: Description of Existing Site Condition

<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 <u>1.38</u> Acres (60113 ft²)</p> <p><input type="checkbox"/> Non-Vegetated Pervious Areas _____ Acres (_____ Square Feet)</p> <p><input checked="" type="checkbox"/> Impervious Areas <u>12.42</u> Acres (541015 ft²)</p> <p><i>Description / Additional Information:</i></p>
<p>Underlying Soil belongs to Hydrologic Soil Group (select all that apply):</p> <p><input 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 type="checkbox"/> NRCS Type D</p>
<p>Approximate Depth to Groundwater (GW) (or N/A for no infiltration BMPs):</p> <p><input type="checkbox"/> GW Depth < 5 feet</p> <p><input type="checkbox"/> 5 feet < GW Depth < 10 feet</p> <p><input checked="" 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 type="checkbox"/> Watercourses</p> <p><input type="checkbox"/> Seeps</p> <p><input type="checkbox"/> Springs</p> <p><input type="checkbox"/> Wetlands</p> <p><input checked="" type="checkbox"/> None</p> <p><input type="checkbox"/> Other</p> <p><i>Description / Additional Information:</i></p>

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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:

The existing drainage conveyance is urban, as the site is a hospital with associated structures and parking lots. No offsite bypass flow is conveyed through the site.

The site discharges flow onto Valley Parkway and Fig Street via area drains and curb outlets.

Flow discharged onto Valley Parkway is intercepted via one of the three inlets. Flow collected by the first and second inlet is routed via an 18" RCP to a 36" RCP where it is confluenced with the flow collected by the third inlet. This flow ultimately discharges into the Escondido Creek.

Flow discharged onto Fig Street from the property enters a curb inlet and is routed via a 12" RCP to a larger 33" RCP where it is confluenced with flow from Fig Street. This flow ultimately discharges into the Escondido Creek.

The existing infrastructure is sized appropriately sized to convey the drainage described above.

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Step 3.3: Description of Proposed Site Development

Project Description / Proposed Land Use and/or Activities:

The Palomar Heights project proposes the construction of 509 multifamily residential/mixed use units with associated roads, walkways, recreation, and landscape areas. The project proposes the construction of a new storm drain network, 2 tree wells, and 12 proprietary biofiltration units to provide water quality treatment for runoff generated in the proposed condition.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

The proposed development will consist of 509 multifamily residential/mixed use units with associated streets, walkways, recreation areas, and storm drain systems.

List/describe proposed pervious features of the project (e.g., landscape areas):

Landscape areas

Does the project include grading and changes to site topography?

☐ Yes

☒ No

Description / Additional Information:

Existing drainage patterns will not be altered in the proposed condition. No proposed changes to site topography are proposed.

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	60,113	211,049.6	251.08%
Pervious (non-vegetated)			
Impervious	541,015	355,268.7	52.28%

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Step 3.4: Description of Proposed Site Drainage Patterns

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

☐ Yes

☐ No

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

Describe proposed site drainage patterns:

The proposed drainage will maintain the existing condition drainage patterns. No offsite bypass flow is conveyed through the site.

Flow generated by each of the DMA's within the subdivision will reach 1 of the 13 proprietary biofiltration treatment BMP's before entering the onsite storm drain network.

The proposed onsite drainage network within the subdivision will tie into the existing drainage network described in Step 3.2

Refer to the Drainage Report for Palomar Heights prepared by Hunsaker & Associates for more information.

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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).

- ☒ 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:

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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):

List any 303(d) impaired water bodies² 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
Escondido Creek	Benthic Community Effects, Bifenthrin, DDT, Indicator Bacteria, Malathion, Manganese, Nitrogen, Phosphate, Selenium, Sulfates, Total Dissolved Solids, Toxicity	Requires development

Identification of Project Site Pollutants*

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

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

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

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² The current list of Section 303(d) impaired water bodies can be found at
http://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/#impaired

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Step 3.7: Hydromodification Management Requirements

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

- ☐ Yes, hydromodification management requirements for flow control and preservation of critical coarse sediment yield areas are applicable.
- ☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- ☐ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- ☒ No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA³ for the watershed in which the project resides.

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

A Hydromodification Management Applicability Evaluation for Escondido Creek prepared by Geosyntec has determined that the Escondido Creek is HMP exempt.

Therefore the Palomar Heights project is HMP exempt. Refer to the report included in Attachment 6

³The Watershed Management Area Analysis (WMAA) is an optional element for inclusion in the Water Quality Improvement Plans (WQIPs) described in the 2013 MS4 Permit [Provision B.3.b.(4)]. It is available online at the Project Clean Water website:

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http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=248

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Step 3.7.1: Critical Coarse Sediment Yield Areas*

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

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

Yes

No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Section 6.2 of the manual been performed?

6.2.1 Verification of GLUs (classification that provides an estimate of sediment yield based on geology, hillslope, and land cover) Onsite

6.2.2 Downstream Systems Sensitivity to Coarse Sediment

6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite

No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.

Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.

Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

N/A PROJECT IS HYDROMODIFICATION EXEMPT

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Flow Control for Post-Project Runoff*

<p>*This Section only required if hydromodification management requirements apply</p> <p><i>List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.</i></p>
<p>Has a geomorphic assessment been performed for the receiving channel(s)?</p> <p><input type="checkbox"/> No, the low flow threshold is 0.1Q2 (default low flow threshold)</p> <p><input type="checkbox"/> Yes, the result is the low flow threshold is 0.1Q2</p> <p><input type="checkbox"/> Yes, the result is the low flow threshold is 0.3Q2</p> <p><input type="checkbox"/> Yes, the result is the low flow threshold is 0.5Q2</p> <p><i>If a geomorphic assessment has been performed, provide title, date, and preparer:</i></p> <p><i>Discussion / Additional Information: (optional)</i></p>

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Step 3.8: Other Site Requirements and Constraints

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

Optional Additional Information or Continuation of Previous Sections As Needed

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

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Step 4: Source Control BMP Checklist (Form I-2b)

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 City Storm Water Design Manual for information to implement source control BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project.</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 City Storm Water 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?		
SC-1 Prevention of Illicit Discharges into the MS4	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Direct irrigation water away from impervious surfaces <input type="checkbox"/> Direct vehicle wash water away from impervious surfaces <input type="checkbox"/> Other: _____			
<i>Discussion / justification if SC-1 not implemented:</i>			
SC-2 Storm Drain Stenciling or Signage	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Stencil or stamp storm drains with anti-dumping message <input type="checkbox"/> Post signs prohibiting illegal dumping <input type="checkbox"/> Other			
<i>Discussion / justification if SC-2 not implemented:</i>			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Store materials inside a covered enclosure <input type="checkbox"/> Direct runoff from downspouts and roofs away from storage areas <input type="checkbox"/> Other			
<i>Discussion / justification if SC-3 not implemented:</i>			

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SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Locate work area away from storm drains or catch basins Work over impermeable surfaces where spills and pollutants can be captured and removed <i>Discussion / justification if SC-4 not implemented:</i>			
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Locate trash containers in a roofed, walled enclosure <input type="checkbox"/> Locate trash containers away from storm drains <i>Discussion / justification if SC-5 not implemented:</i>			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
<input 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 checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> C. Interior parking garages	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> D. Need for future indoor & structural pest control	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> E. Landscape/outdoor pesticide use	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> F. Pools, spas, ponds, fountains, and other water features	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> G. Food service	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> H. Refuse areas	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> I. Industrial processes	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> J. Outdoor storage of equipment or materials	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> K. Vehicle and equipment cleaning	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> L. Vehicle/equipment repair and maintenance	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> M. Fuel dispensing areas	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> N. Loading docks	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> O. Fire sprinkler test water	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> P. Miscellaneous drain or wash water	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Q. Plazas, sidewalks, and parking lots	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<i>Discussion / justification if SC-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.

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Step 5: Site Design BMP Checklist (Form I-2c)

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 City Storm Water Design Manual for information to implement site design BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project.</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 City Storm Water 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?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Maintain existing drainage patterns <i>Discussion / justification if SD-1 not implemented:</i>			
SD-2 Conserve Natural Areas, Soils, and Vegetation	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Preserve trees (see Zoning Code Art. 55 Grading & Erosion Control; Art. 62 Landscape Regulations) <input type="checkbox"/> Avoid sensitive areas such as wetlands and waterways <i>Discussion / justification if SD-2 not implemented:</i>			
SD-3 Minimize Impervious Area	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Install parking and driving aisles to minimum width required to meet standards <i>Discussion / justification if SD-3 not implemented:</i>			

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

SD-4 Minimize Soil Compaction	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Avoid compaction in planned landscaped spaces <input type="checkbox"/> Till and amend soil for improved infiltration capacity <i>Discussion / justification if SD-4 not implemented:</i>			
SD-5 Impervious Area Dispersion	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Drain rooftops, roads or sidewalks into adjacent landscape areas <input type="checkbox"/> Drain impervious surfaces through pervious areas <i>Discussion / justification if SD-5 not implemented:</i> Impervious area dispersion is not applicable			
SD-6 Runoff Collection	<input type="checkbox"/> Yes		
<i>Discussion / justification if SD-6 not implemented:</i>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
SD-7 Landscaping with Native or Drought Tolerant Species			
<i>Discussion / justification if SD-7 not implemented:</i>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
SD-8 Harvesting and Using Precipitation			
<i>Discussion / justification if SD-8 not implemented:</i> Harvest and Use not feasible per harvest and use feasibility screening (see Attachment 1).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A

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

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 6: PDP Structural BMPs (Form I-3)

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

PDP structural BMPs must be verified by the City at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 8.2.3.2 of the Storm Water Design Manual). PDP structural BMPs must be maintained into perpetuity, and the City must confirm the maintenance (see Section 7 of the Storm Water Design Manual).

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

Step 6.1: Description of structural BMP strategy

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

The selection, sizing, and design of storm water treatment BMP was performed based on guidance provided by the City of Escondido's storm water design manual.

The improvements along Valley Boulevard, Grand Avenue, and Fig Street will utilize USEPA Green Street techniques to provide water quality treatment.

Tree-wells will be used to provide water quality treatment for DMA 12.

Infiltration is infeasible and is justified by Geocon's geotechnical investigation (see Attachment 8). If infiltration of storm water occurs, downstream properties may be subjected to seeps, springs, slope instability, raised groundwater, movement of foundations and slabs, or other undesirable impacts as a result of water infiltration.

See flow chart from the City of Escondido's storm water design manual (see below).

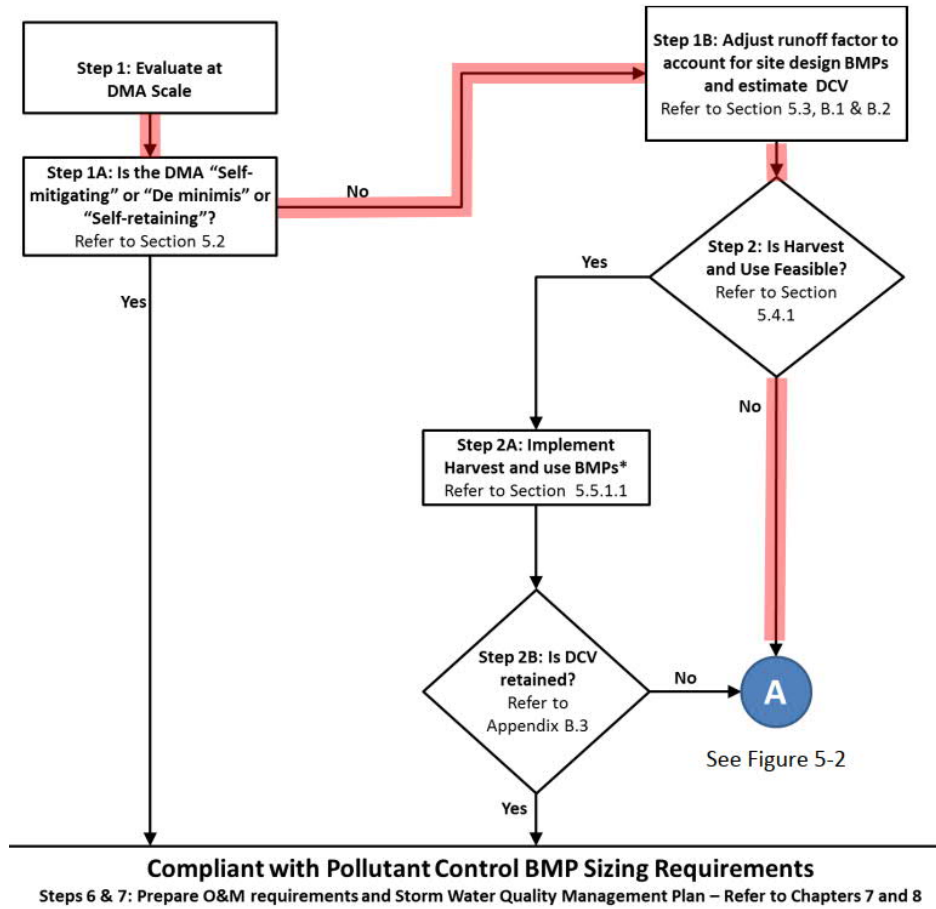
See also the County of San Diego Automated Stormwater Pollutant Control Worksheet (Version 2.0) that demonstrates that the project meets retention requirements.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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

(Continued from previous page)

Chapter 5: Storm Water Pollutant Control Requirements for PDPs



* Step 2C: Project applicant has an option to also conduct feasibility analysis for infiltration and if infiltration is fully or partially feasible has an option to choose between infiltration and harvest and use BMPs. But if infiltration is not feasible and harvest and use is feasible, project applicant must implement harvest and use BMPs

FIGURE 5-1. Storm Water Pollutant Control BMP Selection Flow Chart

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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

(Continued from previous page)

Chapter 5: Storm Water Pollutant Control Requirements for PDPs

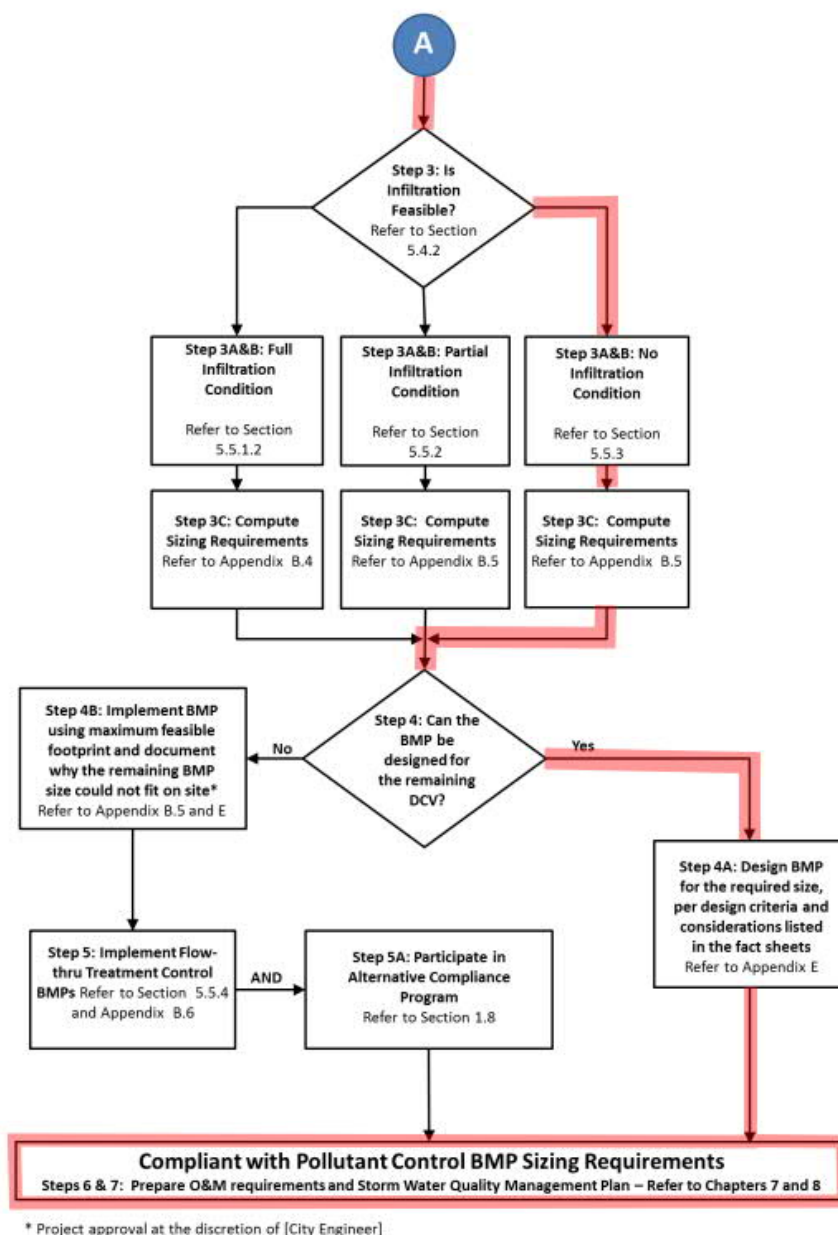


FIGURE 5-2. Storm Water Pollutant Control BMP Selection Flow Chart

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-1	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
<p><i>Discussion (as needed):</i></p> <p><i>(Continue on subsequent pages as necessary)</i></p>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-2	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-3	
Construction Plan Sheet No. TBD	
Type of structural BMP: <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 checked="" 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 with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) <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 type="checkbox"/> Detention pond or vault for hydromodification management <input type="checkbox"/> Other (describe in discussion section below)	
Purpose: <input checked="" type="checkbox"/> Pollutant control only <input type="checkbox"/> Hydromodification control only <input type="checkbox"/> Combined pollutant control and hydromodification control <input type="checkbox"/> Pre-treatment/forebay for another structural BMP <input type="checkbox"/> Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
<i>Discussion (as needed):</i> <i>(Continue on subsequent pages as necessary)</i>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-4	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-5	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-6	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-7-A	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-7-C	
Construction Plan Sheet No. TBD	
Type of structural BMP: <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 checked="" 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 with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) <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 type="checkbox"/> Detention pond or vault for hydromodification management <input type="checkbox"/> Other (describe in discussion section below)	
Purpose: <input checked="" type="checkbox"/> Pollutant control only <input type="checkbox"/> Hydromodification control only <input type="checkbox"/> Combined pollutant control and hydromodification control <input type="checkbox"/> Pre-treatment/forebay for another structural BMP <input type="checkbox"/> Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
<i>Discussion (as needed):</i> <i>(Continue on subsequent pages as necessary)</i>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-7-D	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-8	
Construction Plan Sheet No. TBD	
Type of structural BMP: <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 checked="" 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 with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) <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 type="checkbox"/> Detention pond or vault for hydromodification management <input type="checkbox"/> Other (describe in discussion section below)	
Purpose: <input checked="" type="checkbox"/> Pollutant control only <input type="checkbox"/> Hydromodification control only <input type="checkbox"/> Combined pollutant control and hydromodification control <input type="checkbox"/> Pre-treatment/forebay for another structural BMP <input type="checkbox"/> Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-9	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-10	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-11	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. MWS-12	
Construction Plan Sheet No. TBD	
<p>Type of structural BMP:</p> <p><input type="checkbox"/> Retention by harvest and use (HU-1)</p> <p><input type="checkbox"/> Retention by infiltration basin (INF-1)</p> <p><input type="checkbox"/> Retention by bioretention (INF-2)</p> <p><input type="checkbox"/> Retention by permeable pavement (INF-3)</p> <p><input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1)</p> <p><input type="checkbox"/> Biofiltration (BF-1)</p> <p><input checked="" type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2)</p> <p><input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F</p> <p><input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)</p> <p><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)</p> <p><input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)</p> <p><input type="checkbox"/> Detention pond or vault for hydromodification management</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
<p>Purpose:</p> <p><input checked="" type="checkbox"/> Pollutant control only</p> <p><input type="checkbox"/> Hydromodification control only</p> <p><input type="checkbox"/> Combined pollutant control and hydromodification control</p> <p><input type="checkbox"/> Pre-treatment/forebay for another structural BMP</p> <p><input type="checkbox"/> Other (describe in discussion section below)</p>	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	TBD
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	
(Continue on subsequent pages as necessary)	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 6.3: Offsite Alternative Compliance Participation Form

THIS FORM IS NOT APPLICABLE AT THIS TIME: An Alternative Compliance Program is under consideration by the City of Escondido.	
PDP INFORMATION	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
What are your PDP Pollutant Control Debits? *See Attachment 1 of the PDP SWQMP	
What are your PDP HMP Debits? (if applicable) *See Attachment 2 of the PDP SWQMP	
ACP Information	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
Project Owner/Address	
What are your ACP Pollutant Control Credits? *See Attachment 1 of the ACP SWQMP	
What are your ACP HMP Debits? (if applicable) *See Attachment 2 of the ACP SWQMP	
Is your ACP in the same watershed as your PDP? <input type="checkbox"/> Yes <input type="checkbox"/> No	Will your ACP project be completed prior to the completion of the PDP? <input type="checkbox"/> Yes <input type="checkbox"/> No
Does your ACP account for all Deficits generated by the PDP? <input type="checkbox"/> Yes <input type="checkbox"/> No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.)	What is the difference between your PDP debits and ACP Credits? *(ACP Credits -Total PDP Debits = Total Earned Credits)

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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PALOMAR HEIGHTS
BIOFILTRATION BMP DMA CALCULATIONS

	Imp. RF	Pervious RF	% Imp	DMA 1	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA 2	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA 3	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	
				SOFT		SOFT	SOFT		SOFT		SOFT	SOFT		SOFT		SOFT	SOFT		
BASIN	0.90	0.10	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
INDUSTRIAL	0.90	0.10	87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MULTIUSE/COMMERCIAL	0.90	0.10	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PARK	0.90	0.10	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
RESIDENTIAL/PATIOS	0.90	0.10	90	23643.50	0.61	21279	2364.35	19388	23644	0.65	21279.15	2364.35	19387.67	16002.00	0.69	14401.80	1600.20	13121.64	
ROAD/DRIVEWAY	0.90	0.10	85	11422.00	0.28	9709	1713.30	8909	10832	0.28	9207.20	1624.80	8448.96	5884.00	0.24	5001.40	882.60	4589.52	
SCHOOL	0.90	0.10	80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SLOPES	0.90	0.10	0	34397.50	0.11	0.00	34397.500	3440	19072	0.06	0.00	19071.50	1907.15	12644.00	0.07	0.00	12644.00	1264.40	
				69463.00	1.00	30987.85	38475.15	31736.58	53547.00	1.00	30486.35	23060.65	29743.78	34530.00	1.00	19403.20	15126.80	18975.56	
							Weighted C = 0.46						Weighted C = 0.56					Weighted C = 0.55	

	Imp. RF	Pervious RF	% Imp	DMA 4	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA 5	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA 6	Fraction of Total	Imp Area	Pervious Area	Summation RF x A
				SOFT		SOFT	SOFT		SOFT		SOFT	SOFT		SOFT		SOFT	SOFT	
BASIN	0.90	0.10	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INDUSTRIAL	0.90	0.10	87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MULTIUSE/COMMERCIAL	0.90	0.10	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PARK	0.90	0.10	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RESIDENTIAL/PATIOS	0.90	0.10	90	0.00	0.00	0.00	0.00	0.00	26652	0.58	23986.80	2665.20	21854.64	36953.00	0.56	33257.70	3695.30	30301.46
ROAD/DRIVEWAY	0.90	0.10	85	14183.00	0.85	12055.55	2127.45	11062.74	19633	0.40	16688.05	2944.95	15313.74	27532.00	0.40	23402.20	4129.80	21474.96
SCHOOL	0.90	0.10	80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SLOPES	0.90	0.10	0	19604.00	0.15	0.00	19604.00	1960.40	6818	0.02	0.00	6818.00	681.80	19187.30	0.04	0.00	19187.30	1918.73
				33787.00	1.00	12055.55	21731.45	13023.14	53103.00	1.00	40674.85	12428.15	37850.18	83672.30	1.00	56659.90	27012.40	53695.15
							Weighted C = 0.39					Weighted C = 0.71					Weighted C = 0.64	

	Imp. RF	Pervious RF	% Imp	DMA-7-A	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA-7-B	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA-7-C	Fraction of Total	Imp Area	Pervious Area	Summation RF x A
				SOFT		SOFT	SOFT		SOFT		SOFT	SOFT		SOFT		SOFT	SOFT	
BASIN	0.90	0.10	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INDUSTRIAL	0.90	0.10	87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MULTIUSE/COMMERCIAL	0.90	0.10	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PARK	0.90	0.10	10	0.00	0.00	0.00	0.00	0.00	5839.00	0.88	583.90	5255.10	1051.02	0.00	0.00	0.00	0.00	0.00
RESIDENTIAL/PATIOS	0.90	0.10	90	9134.00	0.63	8220.60	913.40	7489.88	0.00	0.00	0.00	0.00	0.00	9134.00	0.63	8220.60	913.40	7489.88
ROAD/DRIVEWAY	0.90	0.10	85	5362.00	0.35	4557.70	804.30	4182.36	0.00	0.00	0.00	0.00	0.00	5362.00	0.35	4557.70	804.30	4182.36
SCHOOL	0.90	0.10	80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SLOPES	0.90	0.10	0	2666.20	0.02	0.00	2666.20	266.62	1500.00	0.12	0.00	1500.00	150.00	1309.00	0.01	0.00	1309.00	130.90
				17162.20	1.00	12778.30	4383.90	11938.86	7339.00	1.00	583.90	6755.10	1201.02	15805.00	1.00	12778.30	3026.70	11803.14
							Weighted C = 0.70					Weighted C = 0.16					Weighted C = 0.75	

	Imp. RF	Pervious RF	% Imp	DMA-7-D	Fraction of Total	Imp Area	Pervious Area	Summation RF x A
				SOFT		SOFT	SOFT	
PARK	0.90	0.10	10	0.00	0.00	0.00	0.00	0.00
RESIDENTIAL/PATIOS	0.90	0.10	90	0.00	0.00	0.00	0.00	0.00
ROAD/DRIVEWAY	0.90	0.10	85	3163.00	1.00	2688.55	474.45	2467.14
SCHOOL	0.90	0.10	80	0.00	0.00	0.00	0.00	0.00
SLOPES	0.90	0.10	0	0.00	0.00	0.00	0.00	0.00
				3163.00	1.00	2688.55	474.45	2467.14
							Weighted C = 0.78	

PALOMAR HEIGHTS
BIOFILTRATION BMP DMA CALCULATIONS

	Imp. RF	Pervious RF	% Imp	DMA 8	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA 9	Fraction of Total	Imp Area	Pervious Area	Summation RF x A
				SQFT		SQFT	SQFT		SQFT		SQFT	SQFT	
BASIN	0.90	0.10	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INDUSTRIAL	0.90	0.10	87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MULTIUSE/COMMERCIAL	0.90	0.10	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PARK	0.90	0.10	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RESIDENTIAL/PATIOS	0.90	0.10	90	26652.00	0.54	23986.80	2665.20	21854.64	33951.00	0.52	30555.90	3395.10	27839.82
ROAD/DRIVEWAY	0.90	0.10	85	23533.00	0.45	20003.05	3529.95	18355.74	30591.00	0.45	26002.35	4588.65	23860.98
SCHOOL	0.90	0.10	80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SLOPES	0.90	0.10	0	6362.00	0.02	0.00	6362.00	636.20	17866.00	0.03	0.00	17866.00	1786.60
				56547.00	1.00	43989.85	12557.15	40846.58	82408.00	1.00	56558.25	25849.75	53487.40
							Weighted C =	0.72				Weighted C =	0.65

	Imp. RF	Pervious RF	% Imp	DMA 10	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA 11	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA 12	Fraction of Total	Imp Area	Pervious Area	Summation RF x A
				SQFT		SQFT	SQFT		SQFT		SQFT	SQFT		SQFT		SQFT	SQFT	
BASIN	0.90	0.10	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INDUSTRIAL	0.90	0.10	87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MULTIUSE/COMMERCIAL	0.90	0.10	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PARK	0.90	0.10	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RESIDENTIAL/PATIOS	0.90	0.10	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27454.00	0.86	24708.60	2745.40	22512.28
ROAD/DRIVEWAY	0.90	0.10	85	7940.00	1.00	6749.00	1191.00	6193.20	5054.00	1.00	4295.90	758.10	3942.12	2830.00	0.08	2405.50	424.50	2207.40
SCHOOL	0.90	0.10	80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SLOPES	0.90	0.10	0	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	14430.00	0.06	0.00	14430.00	1443.00
				7940.00	1.00	6749.00	1191.00	6193.20	5054.00	1.00	4295.90	758.10	3942.12	44714.00	1.00	27114.10	17599.90	26162.68
							Weighted C = 0.78				Weighted C = 0.78					Weighted C = 0.59		

PALOMAR HEIGHTS

DCV CALCULATION

DMA 1: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	1.595	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.46	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	1,481	cubic-feet

DMA 2: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	1.23	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.56	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	1,388	cubic-feet

DMA 3: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	0.79	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.55	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	886	cubic-feet

DMA 4: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	0.78	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.39	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	608	cubic-feet

PALOMAR HEIGHTS

DCV CALCULATION

DMA 5: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	1.22	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.71	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	1,766	cubic-feet

DMA 6: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	1.92	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.64	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	2,506	cubic-feet

DMA-7-A: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	0.39	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.70	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	557	cubic-feet

DMA-7-B: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	0.17	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.16	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	56	cubic-feet

PALOMAR HEIGHTS

DCV CALCULATION

DMA-7-C: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	0.36	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.75	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=	551	cubic-feet

DMA-7-D: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	0.07	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.78	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=	115	cubic-feet

DMA 8: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	1.30	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.72	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=	1,906	cubic-feet

DMA 9: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	1.89	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.65	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=	2,496	cubic-feet

PALOMAR HEIGHTS

DCV CALCULATION

DMA 10: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	0.18	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.78	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	289	cubic-feet

DMA 11: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	0.12	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.78	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	184	cubic-feet

DMA 12: Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.56	inches
2	Area tributary to BMP (s)	A=	1.03	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.59	unitless
4	Street trees volume reduction	TCV=	0.00	cubic-feet
5	Rain barrels volume reduction	RCV=	0.00	cubic-feet
6	Calculate DCV= $(3630 \times C \times d \times A) - TCV - RCV$	DCV=	1,221	cubic-feet

SPECIFICATIONS

FLOW-BASED DESIGNS

The Modular Wetlands® System Linear can be used in stand-alone applications to meet treatment flow requirements. Since the Modular Wetlands® is the only biofiltration system that can accept inflow pipes several feet below the surface, it can be used not only in decentralized design applications but also as a large central end-of-the-line application for maximum feasibility.

MODEL #	DIMENSIONS	WETLAND MEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-4	4' x 4'	23	0.052
MWS-L-4-6	4' x 6'	32	0.073
MWS-L-4-8	4' x 8'	50	0.115
MWS-L-4-13	4' x 13'	63	0.144
MWS-L-4-15	4' x 15'	76	0.175
MWS-L-4-17	4' x 17'	90	0.206
MWS-L-4-19	4' x 19'	103	0.237
MWS-L-4-21	4' x 21'	117	0.268
MWS-L-6-8	7' x 9'	64	0.147
MWS-L-8-8	8' x 8'	100	0.230
MWS-L-8-12	8' x 12'	151	0.346
MWS-L-8-16	8' x 16'	201	0.462
MWS-L-8-20	9' x 21'	252	0.577
MWS-L-8-24	9' x 25'	302	0.693
MWS-L-10-20	10' x 20'	302	0.693

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 1: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	1,481	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	1,481	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	1.59	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.46	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.146	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.219	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based (e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either volume in :ie 4 or flow
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-19	4' x 19'	103	0.237

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 2: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	1,388	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	1,388	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	1.23	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.56	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.14	cfs
10	Treatment Flow Rate = 1.5 X Q	Q=	0.20	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and flow based (e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either volume in Line 4 or flow rate in Line 9.
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLAND MEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-17	4' x 17'	90	0.206

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 3: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	886	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	886	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	0.79	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.55	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.09	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.13	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either volume
- 3) Propietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-13	4' x 13'	63	0.144

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 4: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	608	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	608	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	0.78	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.39	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.06	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.09	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either volume
- 3) Propietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-8	4' x 8'	50	0.115

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 5: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	1,766.34	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	1,766	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	1.22	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.71	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.17	cfs
10	Treatment Flow Rate = 1.5 X Q	Q=	0.26	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and flow based (e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either volume in Line 4 or flow rate in Line 9.
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLAND MEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-21	4' x 21'	117	0.268

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 6: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	2,506	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	2,506	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	1.92	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.64	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.25	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.37	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-8-16	8' x 16'	201	0.462

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA-7-A: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	557	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	557	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	0.39	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.70	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.05	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.08	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-8	4' x 8'	50	0.115

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA-7-C: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	555	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	555	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	0.38	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.71	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.05	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.08	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-8	4' x 8'	50	0.115

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA-7-D: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	115	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	115	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	0.07	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.78	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.01	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.02	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-4	4' x 4'	23	0.052

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 8: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	1,906	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	1,906	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	1.30	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.72	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.19	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.28	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-8-12	8' x 12'	151	0.346

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 9: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	2,496	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	2,496	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	1.89	acres
8	using Appendix B.2)	C=	0.65	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.25	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.37	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-8-16	8' x 16'	201	0.462

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 10: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	289	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	289	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	0.18	acres
8	using Appendix B.2)	C=	0.78	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.03	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.04	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-4	4' x 4'	23	0.052

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 11: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	184	cubic-feet
2	DCV Retained	DCV Retained	0.00	cubic-feet
3	DCV Biofiltered	DCV Biofiltered	0.00	cubic-feet
4	1.5 DCV requiring flow-thru (Line 1 - Line 2 - 0.67*Line 3)	DCV flow-thru	184	cubic-feet
5	Adjustment Factor (Line 4 / Line1)	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.2	in/hr
7	Area tributary to BMP(s)	A=	0.12	acres
8	using Appendix B.2)	C=	0.78	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.02	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.03	cfs

- 1) Adjustment factor shall be estimated considering only retention and biofiltration BMPs located upstream of flow-thru BMPs. That is, if the flow-thru BMP is upstream of the project's retention and biofiltration BMPs then the flow-thru BMP shall be sized using an adjustment factor of 1.
- 2) Volume based (e.g., dry extended detention basin) flow-thru treatment control BMPs shall be sized to the volume in Line 4 and dlow based)e.g., vegetated swales) shall be sized to flow rate in Line 9. Sand filter and media filter can be designed by either
- 3) Proprietary BMPs, if used, shall provide certified treatment capacity equal to or greater than the calculated flow rate in Line 9; certified treatment capacity per unit shall be consistent with third party certifications.

MODEL #	DIMENSIONS	WETLANDMEDIA SURFACE AREA (sq. ft.)	TREATMENT FLOW RATE (cfs)
MWS-L-4-4	4' x 4'	23	0.052

Automated Worksheet B.1: Calculation of Design Capture Volume (V2.0)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA 1	DMA 2	DMA 3	DMA 4	DMA 5	DMA 6	DMA-7-A	DMA-7-C	DMA 8	DMA 9	unitless
	2	85th Percentile 24-hr Storm Depth	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	inches
	3	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	35,066	34,476	21,886	14,183	46,285	56,660	29,886	50,185	64,542	7,940	sq-ft
	4	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)											sq-ft
	5	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)											sq-ft
	6	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)											sq-ft
	7	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)											sq-ft
	8	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)	34,368	19,072	12,644	19,604	6,818	19,187	11,667	6,362	17,866		sq-ft
	9	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)											sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces Directed to Dispersion Area per SD-B (Ci=0.90)											sq-ft
	12	Semi-Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	13	Engineered Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	14	Natural Type A Soil Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	15	Natural Type B Soil Serving as Dispersion Area per SD-B (Ci=0.14)											sq-ft
	16	Natural Type C Soil Serving as Dispersion Area per SD-B (Ci=0.23)											sq-ft
	17	Natural Type D Soil Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	18	Number of Tree Wells Proposed per SD-A											#
	19	Average Mature Tree Canopy Diameter											ft
	20	Number of Rain Barrels Proposed per SD-E											#
Initial Runoff Factor Calculation	21	Average Rain Barrel Size											gal
	22	Total Tributary Area	69,433	53,548	34,530	33,787	53,103	75,847	41,553	56,547	82,408	7,940	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.57	0.66	0.65	0.51	0.81	0.73	0.71	0.82	0.75	0.90	unitless
	24	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
	25	Initial Weighted Runoff Factor	0.973	0.66	0.65	0.51	0.81	0.73	0.71	0.82	0.75	0.90	unitless
Dispersion Area Adjustments	26	Initial Design Capture Volume	1,913	1,708	1,085	833	2,079	2,676	1,426	2,241	2,987	345	cubic-feet
	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	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
	31	Runoff Factor After Dispersion Techniques	0.57	0.66	0.65	0.51	0.81	0.73	0.71	0.82	0.75	0.90	unitless
	32	Design Capture Volume After Dispersion Techniques	1,913	1,708	1,085	833	2,079	2,676	1,426	2,241	2,987	345	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.57	0.66	0.65	0.51	0.81	0.73	0.71	0.82	0.75	0.90	unitless
	36	Final Effective Tributary Area	39,577	35,342	22,445	17,231	43,013	55,368	29,503	46,369	61,806	7,146	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	1,913	1,708	1,085	833	2,079	2,676	1,426	2,241	2,987	345	cubic-feet
No Warning Messages													

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
Basic Analysis	1	Drainage Basin ID or Name	DMA 1	DMA 2	DMA 3	DMA 4	DMA 5	DMA 6	DMA-7-A	DMA-7-C	DMA 8	DMA 9	unitless
	2	85th Percentile Rainfall Depth	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	inches
	3	Predominant NRCS Soil Type Within BMP Location	C	C	C	C	C	C	C	C	C	C	unitless
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	unitless
	5	Nature of Restriction	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	No	No	No	No	No	No	No	No	No	yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	No	No	No	No	No	No	No	No	No	No	yes/no
	9	Design Infiltration Rate Recommended by Geotechnical Engineer											in/hr
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	in/hr
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	percentage
	12	Fraction of DCV Requiring Retention	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	ratio
	13	Required Retention Volume	38	34	22	17	42	54	29	45	60	7	cubic-feet
No Warning Messages													

Automated Worksheet B.1: Calculation of Design Capture Volume (V2.0)

Category	#	Description	i	ii	iii	iv	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA-7-B	DMA 10	DMA 11	DMA 12	unitless
	2	85th Percentile 24-hr Storm Depth	0.58	0.58	0.58	0.58	inches
	3	Impervious Surfaces <u>Not Directed to Dispersion Area</u> (C=0.90)	6,193	7,940	5,054	35,444	sq-ft
	4	Semi-Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.30)					sq-ft
	5	Engineered Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.10)	1,500			9,270	sq-ft
	6	Natural Type A Soil <u>Not Serving as Dispersion Area</u> (C=0.10)					sq-ft
	7	Natural Type B Soil <u>Not Serving as Dispersion Area</u> (C=0.14)					sq-ft
	8	Natural Type C Soil <u>Not Serving as Dispersion Area</u> (C=0.23)			17,866		sq-ft
	9	Natural Type D Soil <u>Not Serving as Dispersion Area</u> (C=0.30)					sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	Yes	No	No	Yes	yes/no
	11	Impervious Surfaces Directed to Dispersion Area per SD-B (Ci=0.90)					sq-ft
	12	Semi-Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.30)					sq-ft
	13	Engineered Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.10)					sq-ft
	14	Natural Type A Soil Serving as Dispersion Area per SD-B (Ci=0.10)					sq-ft
	15	Natural Type B Soil Serving as Dispersion Area per SD-B (Ci=0.14)					sq-ft
	16	Natural Type C Soil Serving as Dispersion Area per SD-B (Ci=0.23)					sq-ft
	17	Natural Type D Soil Serving as Dispersion Area per SD-B (Ci=0.30)					sq-ft
	18	Number of Tree Wells Proposed per SD-A	7			16	#
	19	Average Mature Tree Canopy Diameter	10			15	ft
	20	Number of Rain Barrels Proposed per SD-E					#
	21	Average Rain Barrel Size					gal
Initial Runoff Factor Calculation	22	Total Tributary Area	7,693	7,940	22,920	44,714	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.74	0.57	0.38	0.73	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.74	0.57	0.38	0.73	unitless
	26	Initial Design Capture Volume	275	219	421	1,578	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.74	0.57	0.38	0.73	unitless
	32	Design Capture Volume After Dispersion Techniques	275	219	421	1,578	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	280	0	0	1,600	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.00	0.57	0.38	0.00	unitless
	36	Final Effective Tributary Area	0	4,526	8,710	0	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	280	0	0	1,600	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	0	219	421	0	cubic-feet

No Warning Messages

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	i	ii	iii	iv	Units
Basic Analysis	1	Drainage Basin ID or Name	DMA-7-B	DMA 11	DMA 11	DMA 12	unitless
	2	85th Percentile Rainfall Depth	0.58	0.58	0.58	0.58	inches
	3	Predominant NRCS Soil Type Within BMP Location	C	C	C	C	unitless
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted	Restricted	Restricted	Restricted	unitless
	5	Nature of Restriction	n/a	n/a	n/a	n/a	unitless
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	Yes	Yes	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	No	No	No	yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	No	No	No	No	yes/no
	9	Design Infiltration Rate Recommended by Geotechnical Engineer					in/hr
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	0.000	0.000	0.000	in/hr
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	4.5%	4.5%	4.5%	percentage
	12	Fraction of DCV Requiring Retention	0.02	0.02	0.02	0.02	ratio
	13	Required Retention Volume	0	4	8	0	cubic-feet
No Warning Messages							

Automated Worksheet B.1: Calculation of Design Capture Volume (V2.0)

Category	#	Description	i	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA-7-D	unitless
	2	85th Percentile 24-hr Storm Depth	0.58	inches
	3	Impervious Surfaces <u>Not Directed to Dispersion Area</u> (C=0.90)	3,163	sq-ft
	4	Semi-Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.30)		sq-ft
	5	Engineered Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.10)		sq-ft
	6	Natural Type A Soil <u>Not Serving as Dispersion Area</u> (C=0.10)		sq-ft
	7	Natural Type B Soil <u>Not Serving as Dispersion Area</u> (C=0.14)		sq-ft
	8	Natural Type C Soil <u>Not Serving as Dispersion Area</u> (C=0.23)		sq-ft
	9	Natural Type D Soil <u>Not Serving as Dispersion Area</u> (C=0.30)		sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	yes/no
	11	Impervious Surfaces Directed to Dispersion Area per SD-B (Ci=0.90)		sq-ft
	12	Semi-Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.30)		sq-ft
	13	Engineered Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.10)		sq-ft
	14	Natural Type A Soil Serving as Dispersion Area per SD-B (Ci=0.10)		sq-ft
	15	Natural Type B Soil Serving as Dispersion Area per SD-B (Ci=0.14)		sq-ft
	16	Natural Type C Soil Serving as Dispersion Area per SD-B (Ci=0.23)		sq-ft
	17	Natural Type D Soil Serving as Dispersion Area per SD-B (Ci=0.30)		sq-ft
	18	Number of Tree Wells Proposed per SD-A		#
	19	Average Mature Tree Canopy Diameter		ft
	20	Number of Rain Barrels Proposed per SD-E		#
	21	Average Rain Barrel Size		gal
Initial Runoff Factor Calculation	22	Total Tributary Area	3,163	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.90	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	unitless
	25	Initial Weighted Runoff Factor	0.90	unitless
	26	Initial Design Capture Volume	138	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	sq-ft
	28	Total Pervious Dispersion Area	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.90	unitless
	32	Design Capture Volume After Dispersion Techniques	138	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.90	unitless
	36	Final Effective Tributary Area	2,847	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	138	cubic-feet
No Warning Messages				

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	i	Units
Basic Analysis	1	Drainage Basin ID or Name	DMA-7-D	unitless
	2	85th Percentile Rainfall Depth	0.58	inches
	3	Predominant NRCS Soil Type Within BMP Location	C	unitless
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted	unitless
	5	Nature of Restriction	n/a	unitless
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	No	yes/no
	9	Design Infiltration Rate Recommended by Geotechnical Engineer		in/hr
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	in/hr
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	percentage
	12	Fraction of DCV Requiring Retention	0.02	ratio
	13	Required Retention Volume	3	cubic-feet
No Warning Messages				

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
Basic Analysis	1	Drainage Basin ID or Name	DMA 1	DMA 2	DMA 3	DMA 4	DMA 5	DMA 6	DMA-7-A	DMA-7-C	DMA 8	DMA 9	unitless
	2	85th Percentile Rainfall Depth	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	inches
	3	Predominant NRCS Soil Type Within BMP Location	C	C	C	C	C	C	C	C	C	C	unitless
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted	unitless
	5	Nature of Restriction	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	No	No	No	No	No	No	No	No	No	yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	No	No	No	No	No	No	No	No	No	No	yes/no
	9	Design Infiltration Rate Recommended by Geotechnical Engineer											in/hr
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	in/hr
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	percentage
	12	Fraction of DCV Requiring Retention	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	ratio
	13	Required Retention Volume	38	34	22	17	42	54	29	45	60	7	cubic-feet
No Warning Messages													

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	i	ii	iii	iv	Units
Basic Analysis	1	Drainage Basin ID or Name	DMA-7-B	DMA 11	DMA 11	DMA 12	unitless
	2	85th Percentile Rainfall Depth	0.58	0.58	0.58	0.58	inches
	3	Predominant NRCS Soil Type Within BMP Location	C	C	C	C	unitless
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted	Restricted	Restricted	Restricted	unitless
	5	Nature of Restriction	n/a	n/a	n/a	n/a	unitless
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	Yes	Yes	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	No	No	No	yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	No	No	No	No	yes/no
	9	Design Infiltration Rate Recommended by Geotechnical Engineer					in/hr
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	0.000	0.000	0.000	in/hr
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	4.5%	4.5%	4.5%	percentage
	12	Fraction of DCV Requiring Retention	0.02	0.02	0.02	0.02	ratio
	13	Required Retention Volume	0	4	8	0	cubic-feet
No Warning Messages							

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	i	Units
Basic Analysis	1	Drainage Basin ID or Name	DMA-7-D	unitless
	2	85th Percentile Rainfall Depth	0.58	inches
	3	Predominant NRCS Soil Type Within BMP Location	C	unitless
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted	unitless
	5	Nature of Restriction	n/a	unitless
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	No	yes/no
	9	Design Infiltration Rate Recommended by Geotechnical Engineer		in/hr
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	in/hr
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	percentage
	12	Fraction of DCV Requiring Retention	0.02	ratio
	13	Required Retention Volume	3	cubic-feet
No Warning Messages				

Total Required Retention Volume for DMA's 1-11 = **363 CUFT**

Modular Wetland Volume Calculation for MWS-L-4-17-V: (4' * 9.83' * 3.33' = 131.06 CUFT)

Void Space for Storage for MWS-L-4-17-V: (131.06 CUFT) * (0.45) = 58.97 CUFT

Total Number of MWS units with volume greater than or equal to 131.06 CUFT : 7 Units

Storage provided by the 7 units : (7 units) * (58.97 CUFT/units) = **412.8 CUFT**

412.8 CUFT > 360 CUFT

Therefore, retention requirements are met.

Harvest and Use Feasibility Checklist		Worksheet B.3-1
<p>1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?</p> <p><input checked="" type="checkbox"/> Toilet and urinal flushing</p> <p><input checked="" type="checkbox"/> Landscape irrigation</p> <p><input type="checkbox"/> Other</p>		
<p>2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.</p> <p>[Provide a summary of calculations here]</p> <p>Mod. ETWU = $2.8 \left[\left[\frac{(.70)(97,228)}{.90} \right] \right] (0.015) = 3176$ Cubic Feet</p>		
<p>3. Calculate the DCV using worksheet B-2.1.</p> <p>DCV = <u>12,753</u> Cubic Feet .25 (12,753) = <u>3,188</u> Cubic Feet</p>		
<p>3a. Is the 36 hour demand greater than or equal to the DCV?</p> <p><input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No ➡</p> <p>↓</p>	<p>3b. Is the 36 hour demand greater than 0.25DCV but less than the full DCV?</p> <p><input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No ➡</p> <p>↓</p>	<p>3c. Is the 36 hour demand less than 0.25DCV?</p> <p><input checked="" type="checkbox"/> Yes</p> <p>↓</p>
<p>Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.</p>	<p>Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.</p>	<p>Harvest and use is considered to be infeasible.</p>
<p>The Harvest and Use calculations were performed for the residential DMA's only.</p>		

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Categorization of Infiltration Feasibility Condition		Form I-5	
Part 1 - Full Infiltration Feasibility Screening Criteria Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?			
Criteria	Screening Question	Yes	No
1	Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X
Provide basis: Based on the NRCS Web Soil Survey, The project is located in predominately hydrologic type C soils with a corresponding infiltration rate of 0.10 in/hr			
Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
2	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X
Provide basis: Based on the preliminary Geotechnical Study performed by Geocon Inc., infiltration of storm water may have adverse impacts to downstream properties such as slope instability, raised groundwater levels, and movement of foundations and slabs.			
Infiltration is therefore not advised. Refer to the Geotechnical study for more info Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			

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Form I-5			
Criteria	Screening Question	Yes	No
3	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		x
<p>Provide basis:</p> <p>Based on the preliminary Geotechnical Study performed by Geocon Inc., infiltration of storm water may have adverse impacts to downstream properties such as slope instability, raised groundwater levels, and movement of foundations and slabs.</p> <p>Infiltration is therefore not advised. Refer to the Geotechnical study for more info</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
4	Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		x
<p>Provide basis:</p> <p>Infiltration is infeasible</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</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>		

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Form I-5			
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
<p>Provide basis:</p> <p>Based on the NRCS Web Soil Survey, The project is located in predominately hydrologic type C soils with a corresponding infiltration rate of 0.10 in/hr</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
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
<p>Provide basis:</p> <p>Based on the preliminary Geotechnical Study performed by Geocon Inc., infiltration of storm water may have adverse impacts to downstream properties such as slope instability, raised groundwater levels, and movement of foundations and slabs.</p> <p>Infiltration is therefore not advised. Refer to the Geotechnical study for more info</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			

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Form I-5			
Criteria	Screening Question	Yes	No
7	Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		X
<p>Provide basis:</p> <p>Based on the preliminary Geotechnical Study performed by Geocon Inc., infiltration of storm water may have adverse impacts to downstream properties such as slope instability, raised groundwater levels, and movement of foundations and slabs.</p> <p>Infiltration is therefore not advised. Refer to the Geotechnical study for more info</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
8	Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		X
<p>Provide basis:</p> <p>A study on water rights was not performed. However, infiltration is not feasible per the Geotechnical Engineer recommendation.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
Part 2 Result*	<p>If all answers from row 5-8 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	

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

The DMA Exhibit must identify:

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

LEGEND

PROJECT BOUNDARY

DMA BOUNDARY

DMA ID DMA 12
MWS ID MWS 11
TREEWELL ID TW 12

- DMA 1
- DMA 2
- DMA 3
- DMA 4
- DMA 5
- DMA 6
- DMA 7A
- DMA 7B
- DMA 7C
- DMA 7D
- DMA 8
- DMA 9
- DMA 10
- DMA 11
- DMA 12

MODULAR WETLAND (OR SIMILAR)

HYDROLOGIC SOIL TYPE

TREE WELL FOR WATER QUALITY

SITE DESIGN BMP's (FORM I-2B IN SWQMP)

SC-1 PREVENTION OF ILLICIT DISCHARGES INTO THE MS4

SC-2 STORM DRAIN STENCILING OR SINAGE

SC-3 PROTECT OUTDOOR MATERIALS AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL

SC-4 PROTECT MATERIALS STORED IN OUTDOOR WORK AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL

SC-5 PROTECT TRASH AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL

SC-6 ONSITE STORM DRAIN INELTS

SC-6 LANDSCAPE/OUTDOOR PESTICIDE USE

SC-6 PLAZAS, SIDEWALKS, AND PARKING LOTS

NOTES:

GROUND WATER IS 10' - 20' BELOW SURFACE

NO EXISTING NATURAL HYDROLOGIC FEATURES FOUND ON-SITE

SOURCE CONTROL BMP's (FORM I-2C IN SWQMP)

SD-1 MAINTAIN NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES

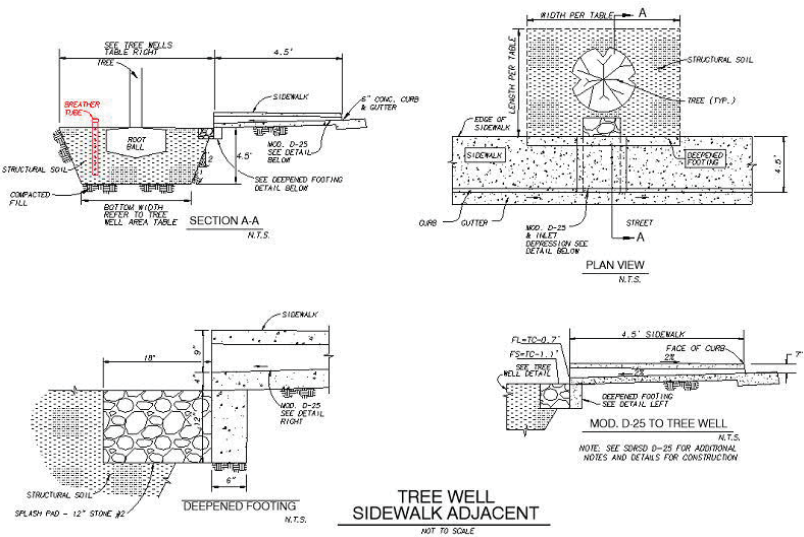
SD-2 CONSERVE NATURAL AREAS, SOILS, AND VEGETATION

SD-3 MINIMIZE IMPERVIOUS AREAS

SD-4 MINIMIZE SOIL COMPACTION

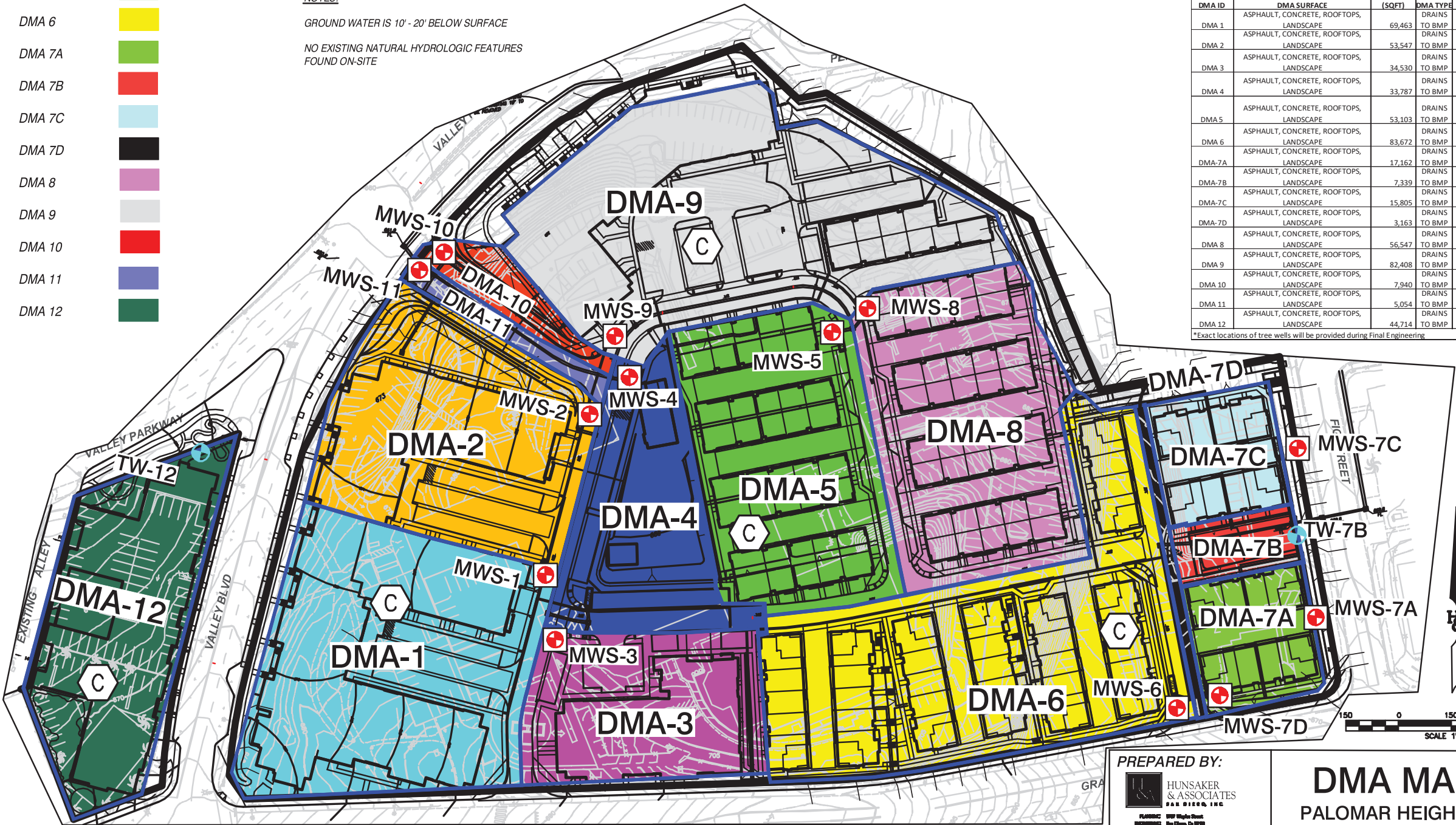
SD-6 IMPERVIOUS AREA DISPERSION

SD-7 LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES



DMA ID	DMA SURFACE	DMA AREA (SQFT)	DMA TYPE	BMP TYPE	BMP ID
DMA 1	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	69,463	DRAINS TO BMP	PROPRIETARY	MWS-1
DMA 2	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	53,547	DRAINS TO BMP	PROPRIETARY	MWS-2
DMA 3	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	34,530	DRAINS TO BMP	PROPRIETARY	MWS-3
DMA 4	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	33,787	DRAINS TO BMP	PROPRIETARY	MWS-4
DMA 5	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	53,103	DRAINS TO BMP	PROPRIETARY	MWS-5
DMA 6	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	83,672	DRAINS TO BMP	PROPRIETARY	MWS-6
DMA 7A	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	17,162	DRAINS TO BMP	PROPRIETARY	MWS-7A
DMA 7B	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	7,339	DRAINS TO BMP	TREE WELL	TW-7B*
DMA 7C	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	15,805	DRAINS TO BMP	PROPRIETARY	MWS-7C
DMA 7D	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	3,163	DRAINS TO BMP	PROPRIETARY	MWS-7D
DMA 8	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	56,547	DRAINS TO BMP	PROPRIETARY	MWS-8
DMA 9	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	82,408	DRAINS TO BMP	PROPRIETARY	MWS-9
DMA 10	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	7,940	DRAINS TO BMP	PROPRIETARY	MWS-10
DMA 11	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	5,054	DRAINS TO BMP	PROPRIETARY	MWS-11
DMA 12	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	44,714	DRAINS TO BMP	TREE WELL	TW-12*

*Exact locations of tree wells will be provided during Final Engineering



PREPARED BY:



DMA MAP
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

SHEET

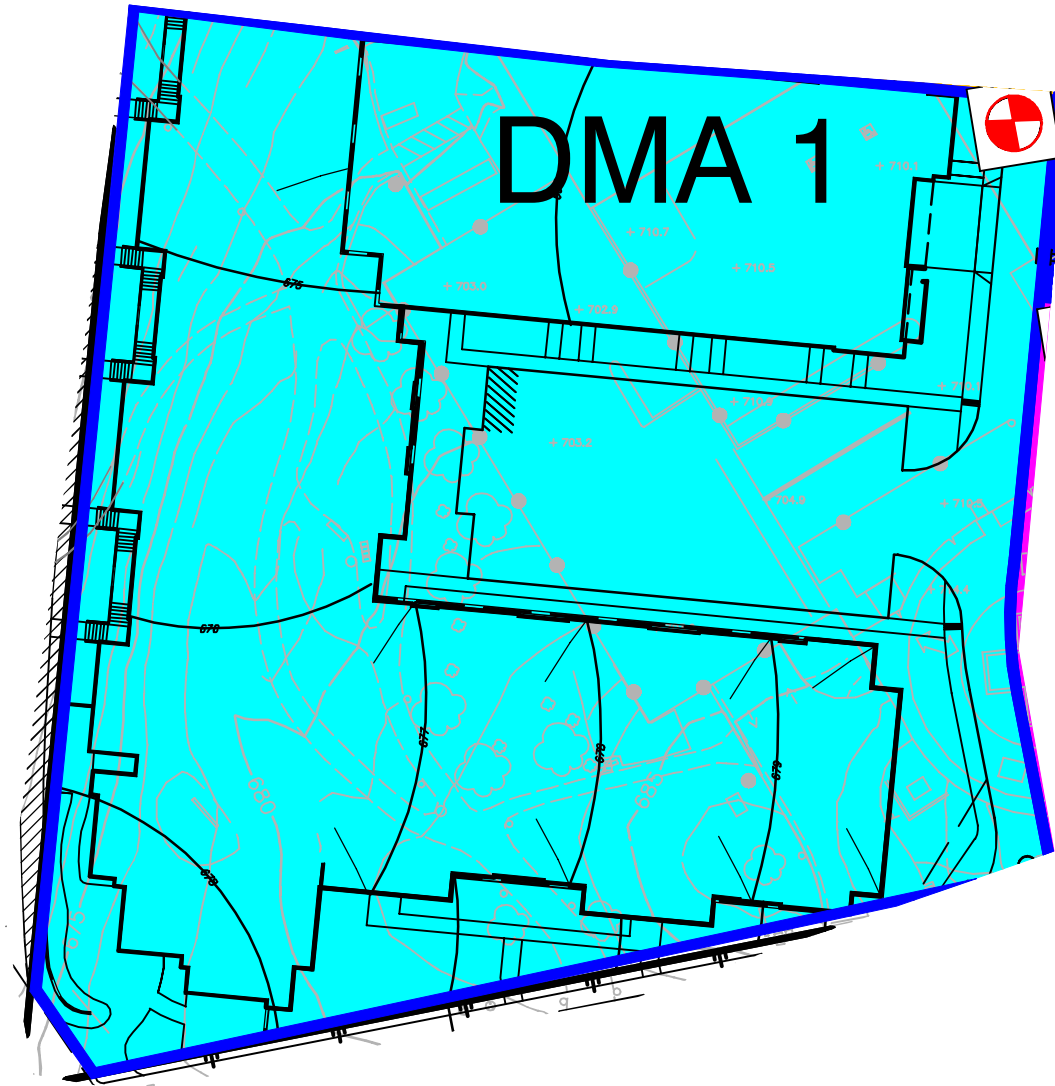
1
OF
1

NO. 200-17

MODULAR WETLAND (OR SIMILAR)



LEGEND: SEE DMA MAP
SCALE: 1" = 70'



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**HUNSAKER
& ASSOCIATES**
SAN DIEGO, INC.

PLANNING 6507 Wiegman Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH: 619-594-4800 • FX: 619-594-1414

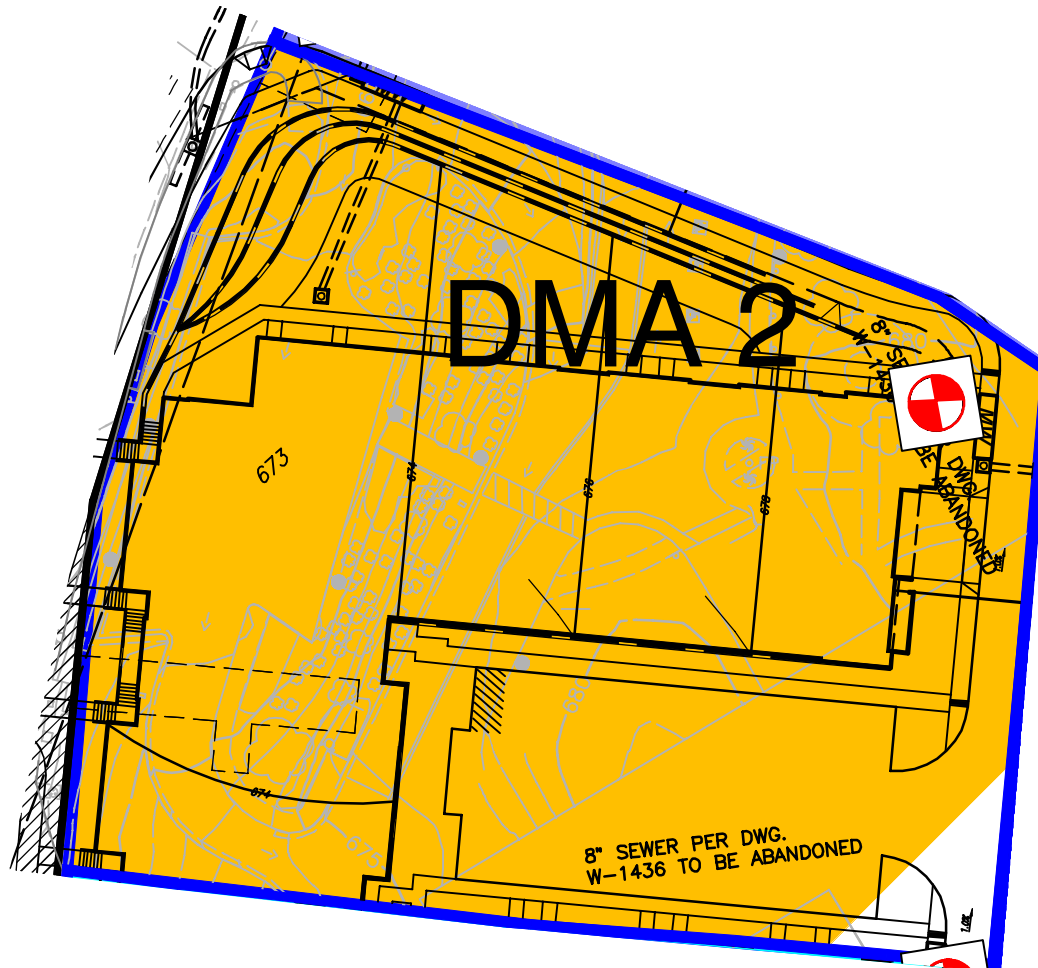
DMA 1 MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

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MODULAR WETLAND (OR SIMILAR)



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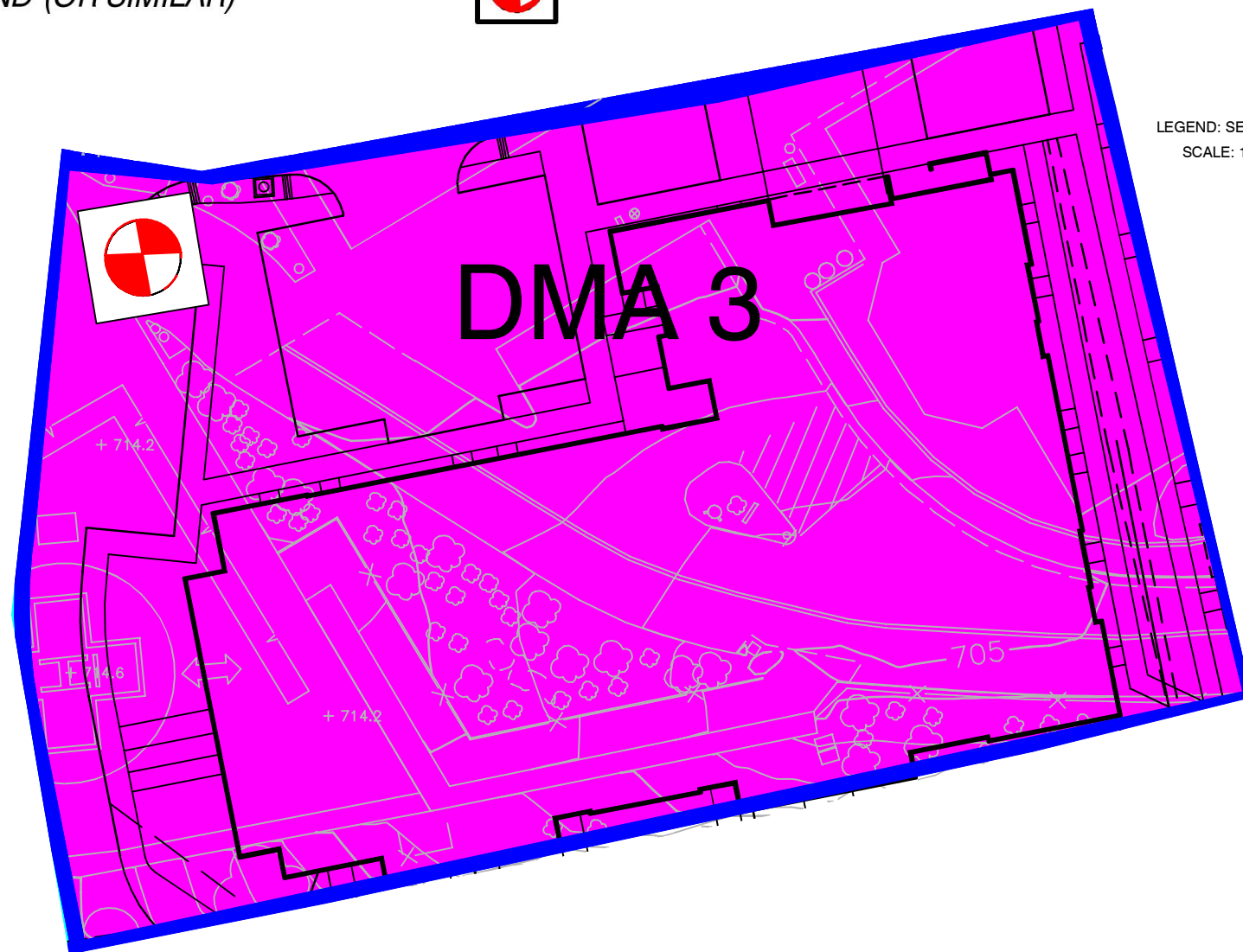
PREPARED BY:

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& ASSOCIATES**
SAN DIEGO, INC.
PLANNING: 5050 Village Street
ENGINEERING: 5050 Village Street, Suite 200, San Diego, CA 92121
SURVEYING: 11111 La Jolla Village Drive, San Diego, CA 92037

DMA 2 MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

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MODULAR WETLAND (OR SIMILAR)



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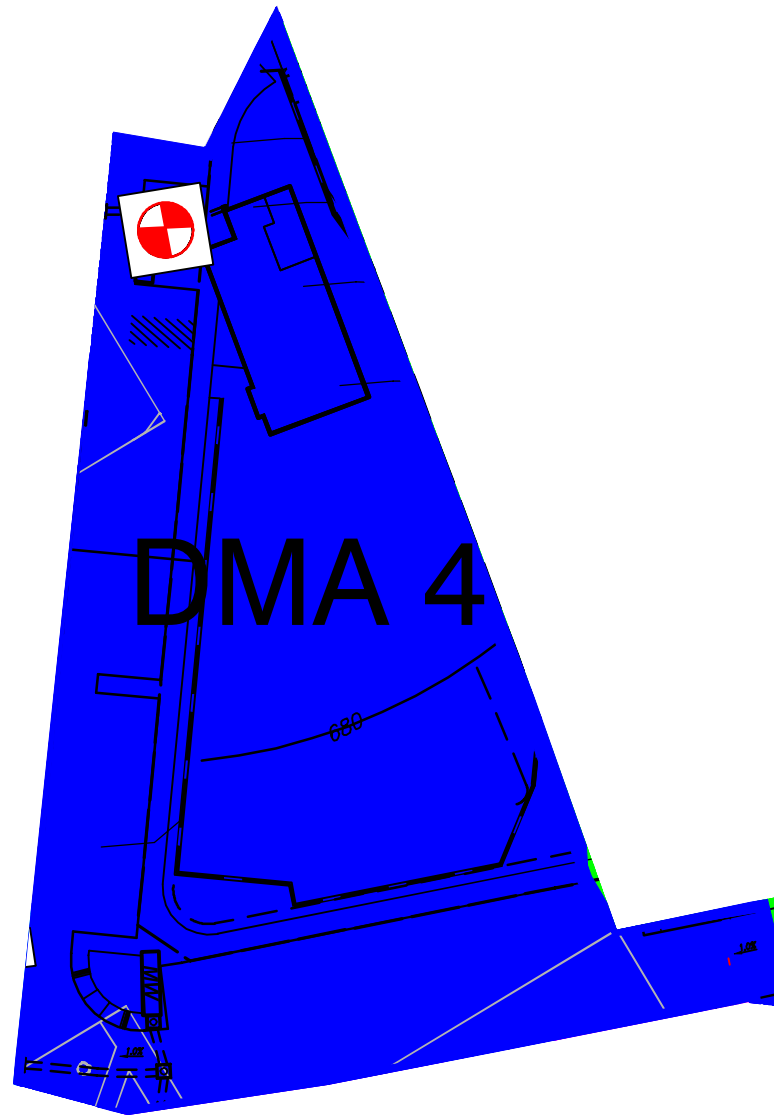
PREPARED BY:



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ENGINEERING San Diego, Ca 92131
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DMA 3 MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

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MODULAR WETLAND (OR SIMILAR)



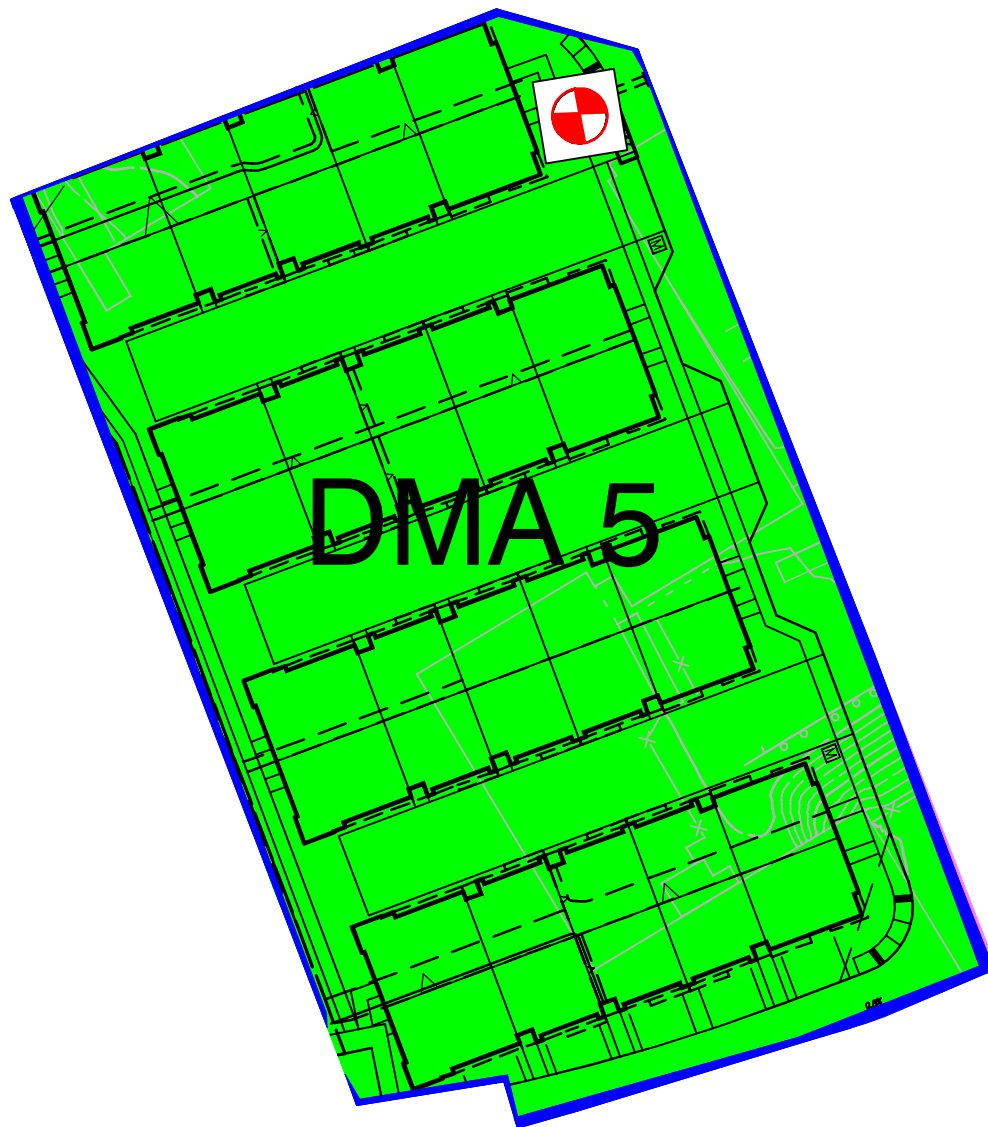
PREPARED BY:

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**DMA 4 MAPBOOK
FOR
PALOMAR HEIGHTS**
ESCONDIDO, CALIFORNIA

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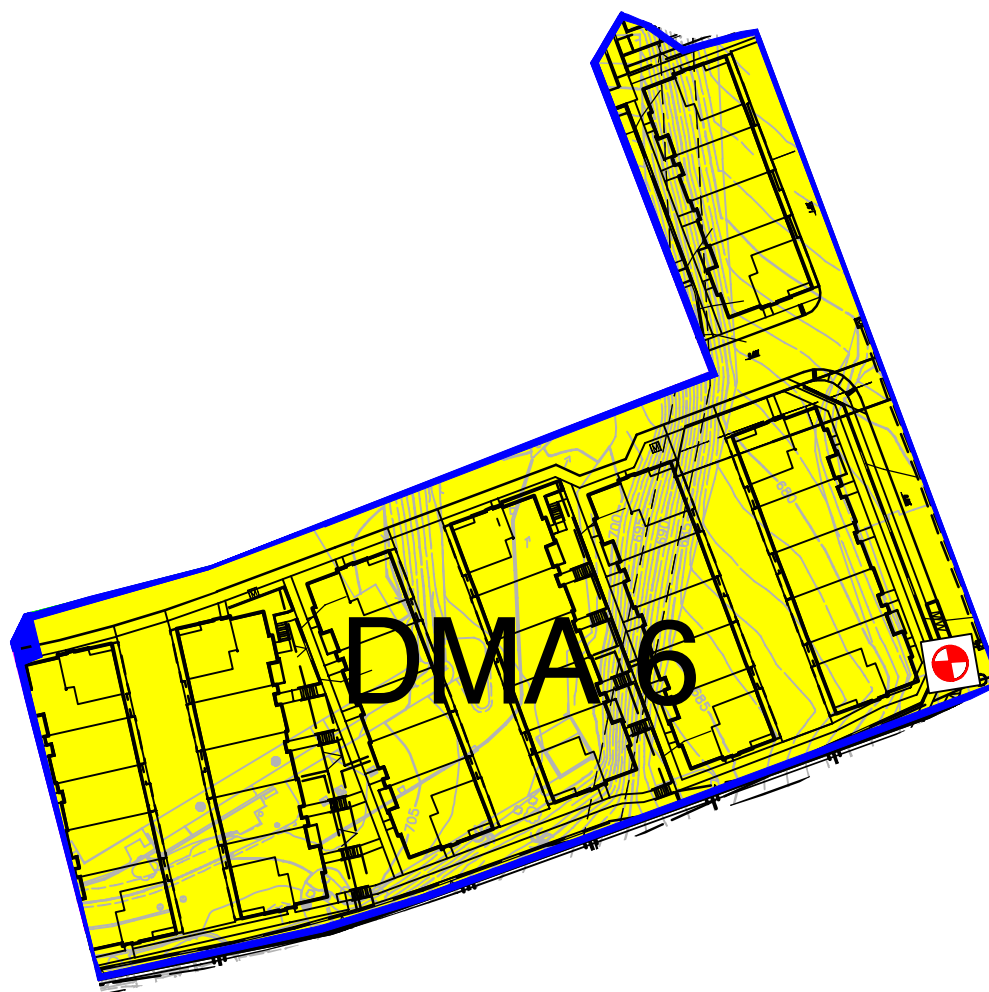
**HUNSAKER
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ENGINEERING San Diego, Ca 92121
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**DMA 5 MAPBOOK
FOR
PALOMAR HEIGHTS**
ESCONDIDO, CALIFORNIA

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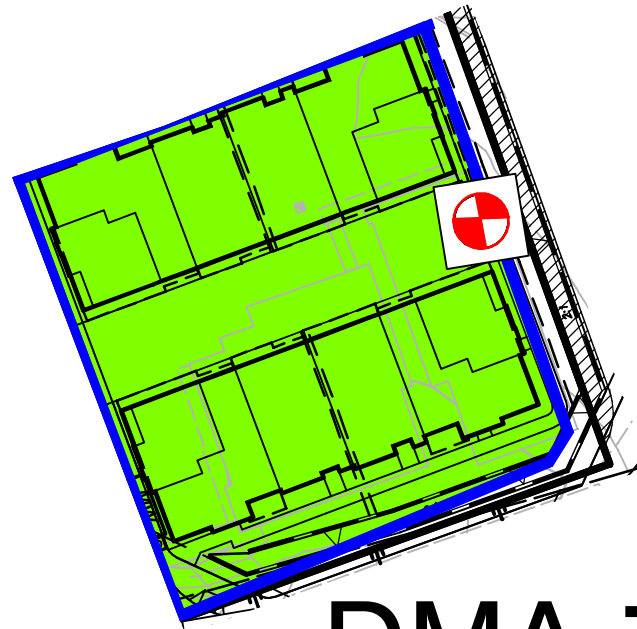
**HUNSAKER
& ASSOCIATES**
SAN DIEGO, INC.

PLANNING 6707 Wiegler Street
ENGINEERING San Diego, Ca 92121
SURVEYING PHONE 619-480-1700 FAX 619-596-1414

DMA 6 MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

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DMA-7A

MODULAR WETLAND (OR SIMILAR)



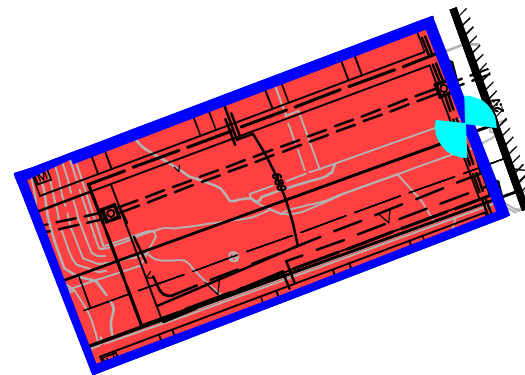
PREPARED BY:



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& ASSOCIATES
SAN DIEGO, INC.
PLANNING 6707 Wagon Street
ENGINEERING San Diego, Ca 92121
SURVEYING PHONE 619-480-1700 FAX 619-596-1414

DMA-7A MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

LEGEND: SEE DMA MAP
SCALE: 1" = 70'



DMA-7B

TREE WELL FOR WATER QUALITY



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ENGINEERING San Diego, Ca 92121
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DMA-7B MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

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DMA-7C

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MODULAR WETLAND (OR SIMILAR)



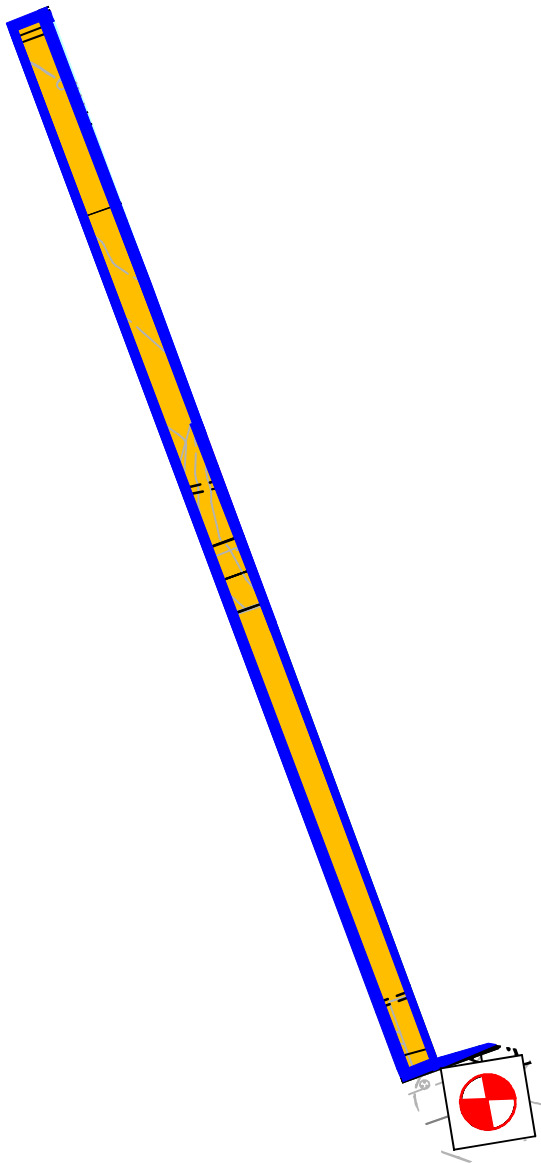
PREPARED BY:

**HUNSAKER
& ASSOCIATES**
SAN DIEGO, INC.

PLANNING 6507 Wagon Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH: 619-594-4300 • FX: 619-594-1414

DMA-7C MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

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DMA-7D

MODULAR WETLAND (OR SIMILAR)

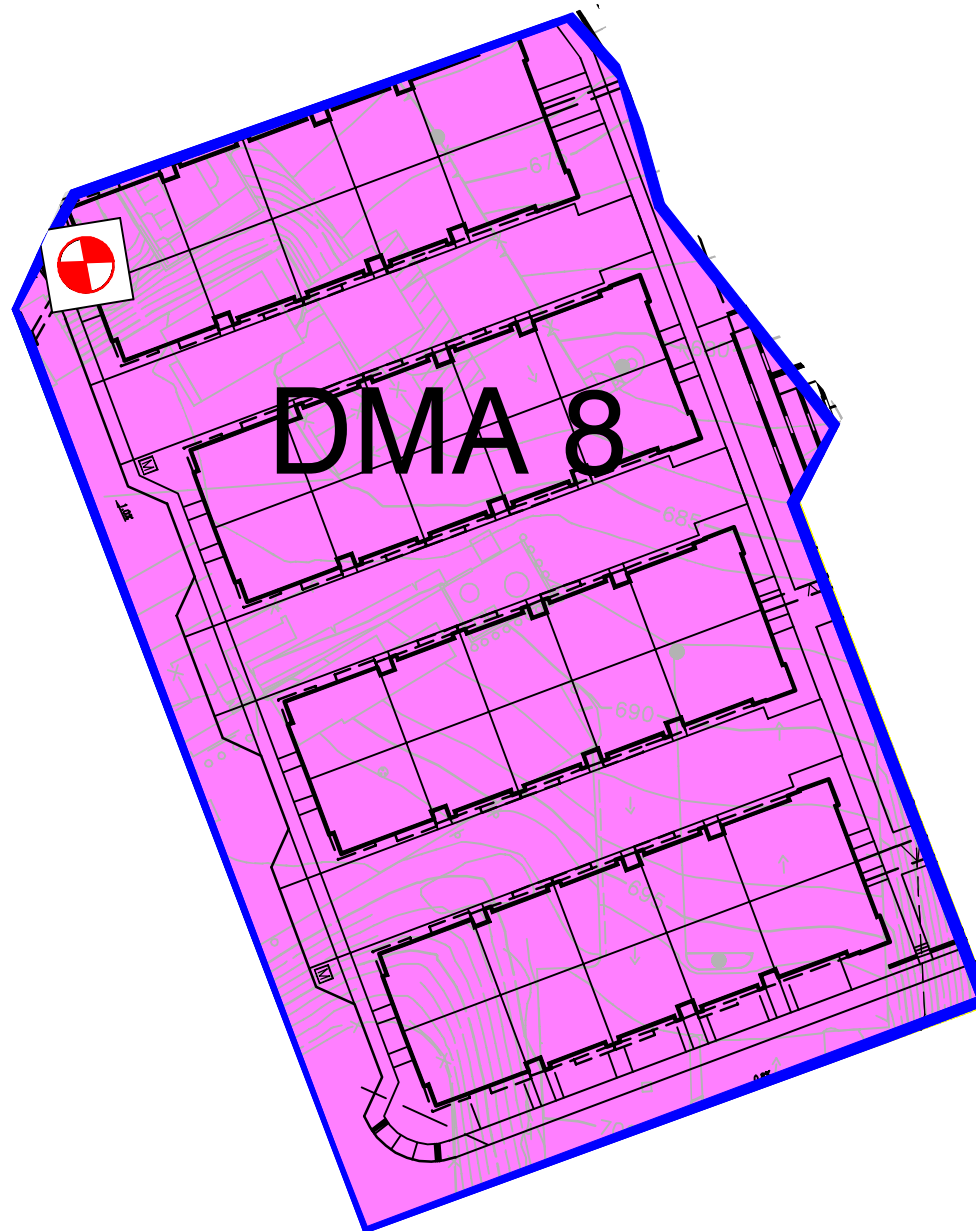


PREPARED BY:



PLANNING 6507 Wagon Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH: 619-594-4300 • FX: 619-594-1414

DMA-7D MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA



LEGEND: SEE DMA MAP
SCALE: 1" = 70'



MODULAR WETLAND (OR SIMILAR)



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**HUNSAKER
& ASSOCIATES**
SAN DIEGO, INC.
PLANNING: 6047 Village Street
ENGINEERING: San Diego, CA 92121
SURVEYING: (619) 594-4000 • FAX: (619) 594-4001

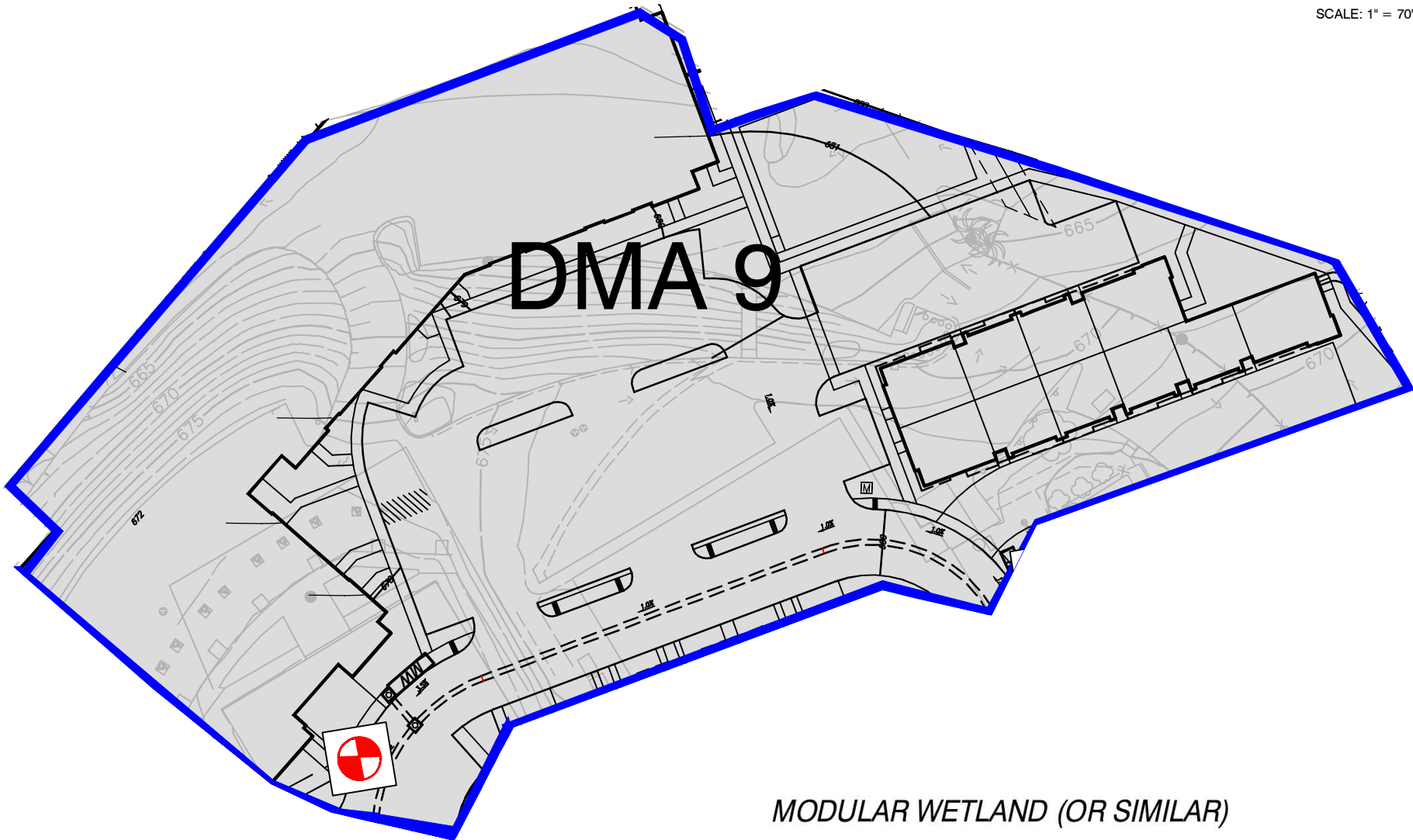
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FOR
PALOMAR HEIGHTS**
ESCONDIDO, CALIFORNIA

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SCALE: 1" = 70'



DMA 9



MODULAR WETLAND (OR SIMILAR)



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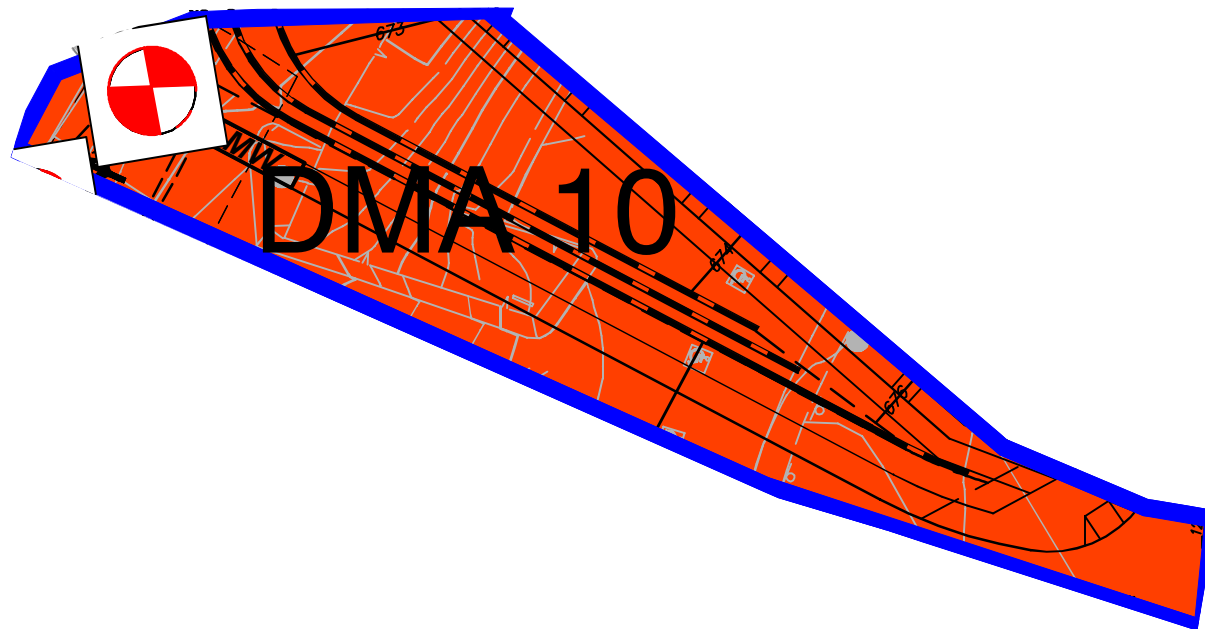
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& ASSOCIATES**
SAN DIEGO, INC.

PLANNING 9507 Wingle Street
ENGINEERING San Diego, Ca 92131
SURVEYING PH: 619-596-4800 • FX: 619-596-1414

DMA 9 MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

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SCALE: 1" = 70'



MODULAR WETLAND (OR SIMILAR)



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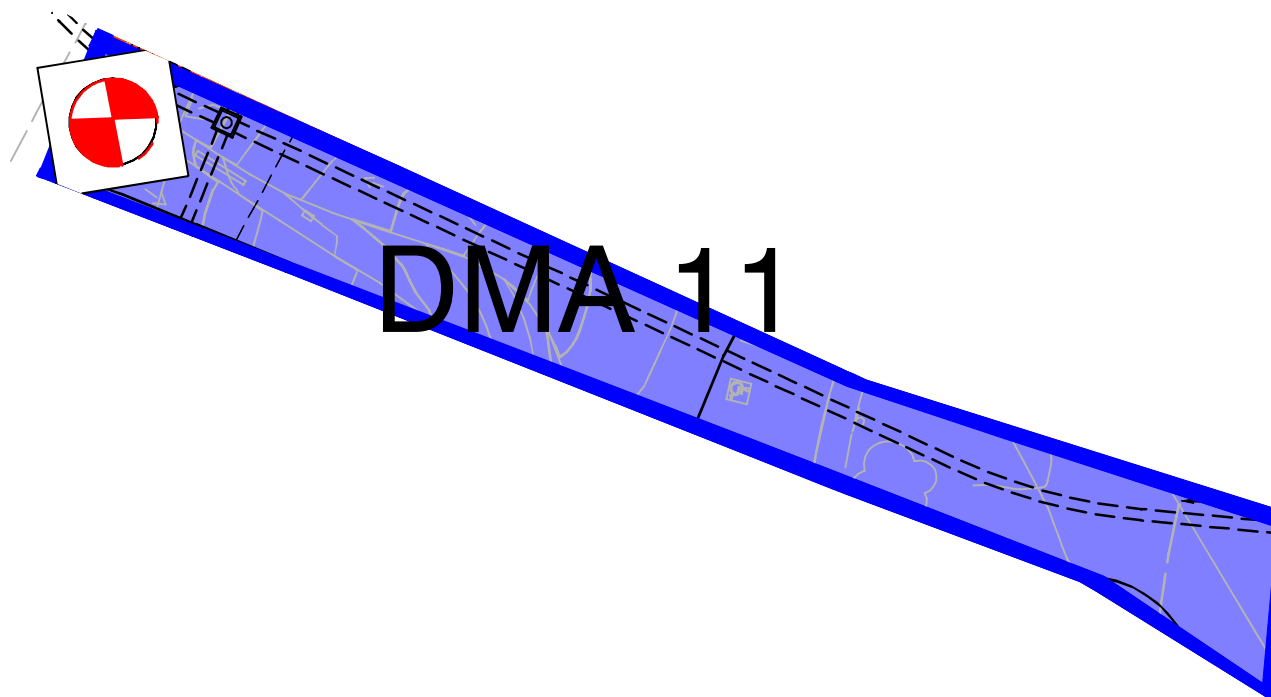
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SAN DIEGO, INC.

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ENGINEERING San Diego, Ca 92121
SURVEYING PH: 619-596-4800 • FX: 619-596-1414

DMA 10 MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

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SCALE: 1" = 70'



DMA 11

MODULAR WETLAND (OR SIMILAR)



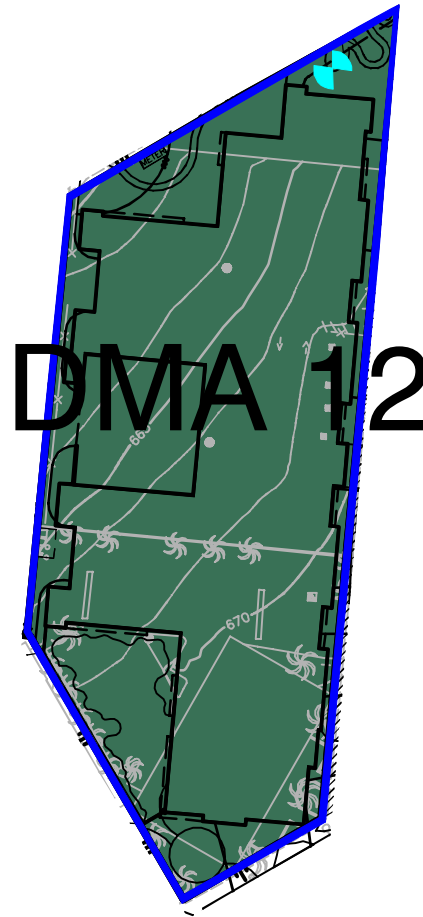
PREPARED BY:

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& ASSOCIATES**
SAN DIEGO, INC.

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ENGINEERING San Diego, Ca 92131
SURVEYING PHONE 619-480-1700 FAX 619-596-1414

**DMA 11 MAPBOOK
FOR
PALOMAR HEIGHTS**
ESCONDIDO, CALIFORNIA

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SCALE: 1" = 70'



TREE WELL FOR WATER QUALITY



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& ASSOCIATES
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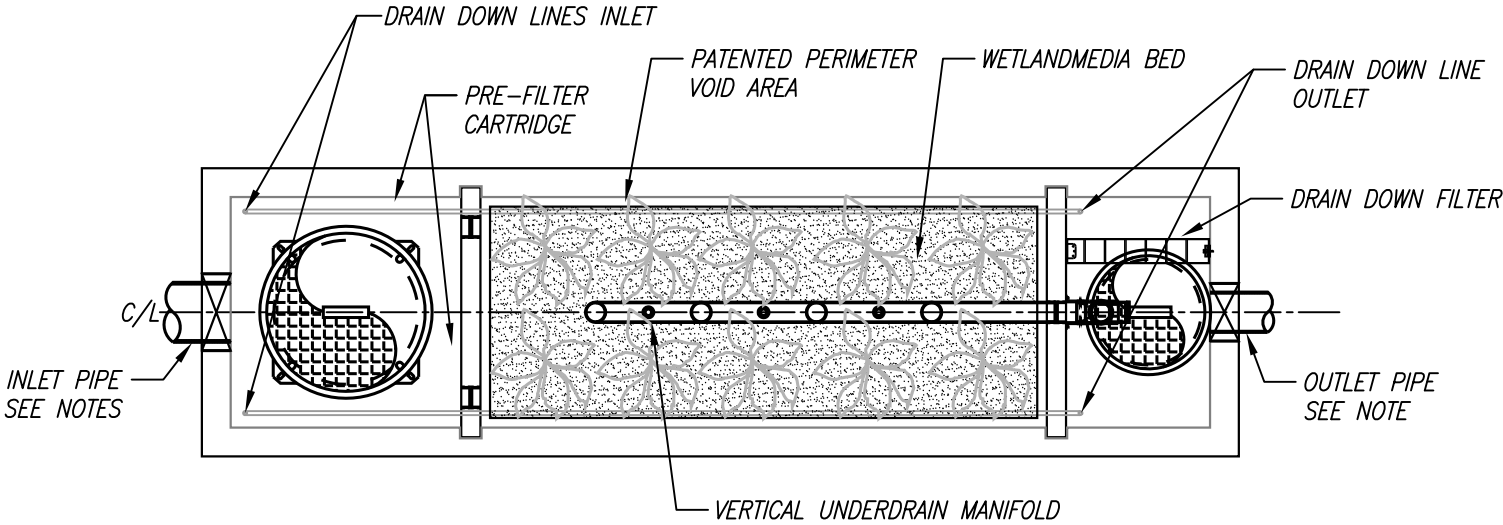
PLANNING 6507 Wiggins Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH: 619-596-4800 • FX: 619-596-1414

DMA 12 MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

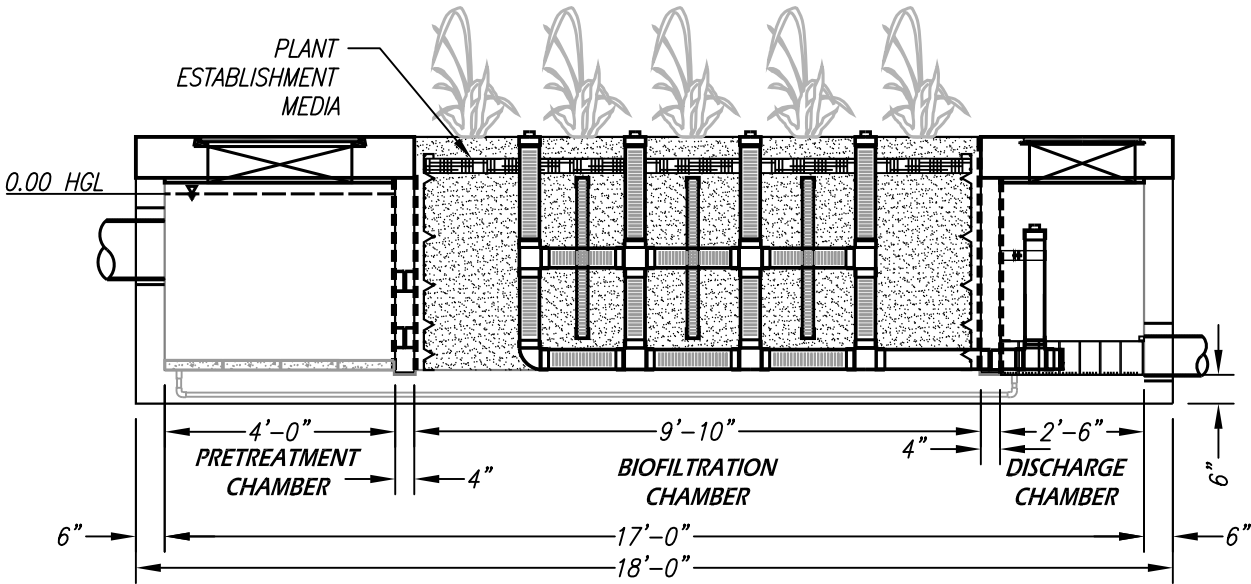
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SITE SPECIFIC DATA*				
PROJECT NAME				
PROJECT LOCATION				
STRUCTURE ID				
PERFORMANCE DATA				
TREATMENT VOLUME (CF)				
TREATMENT HGL (FT)		3.4		
BYPASS FLOW RATE (CFS)		DEPENDANT ON PIPE SIZE		
PROJECT PARAMETERS				
PIPE DATA		I.E.	MATERIAL	DIAMETER
INLET PIPE 1				
OUTLET PIPE 1				
RIM ELEVATION				
SURFACE LOADING REQUIREMENT			PARKWAY	
FRAME & COVER	PRETREATMENT		BIOFILTRATION	DISCHARGE
	30		OPEN MEDIA	24
WETLANDMEDIA VOLUME (CY)				
MEDIA DELIVERED				
ORIFICE SIZE (DIA)				
MAX PICK WEIGHT (LBS)				
NOTES:				
*PER ENGINEER OF RECORD				

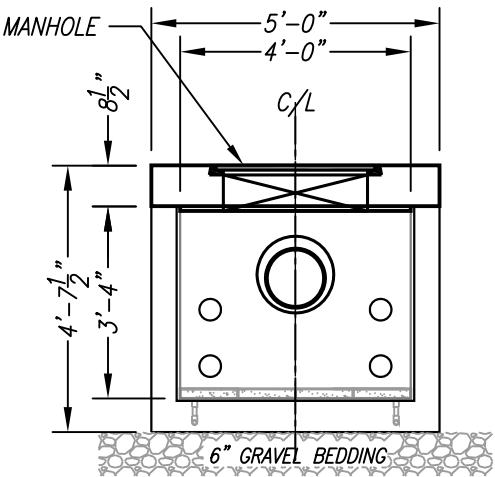
PRELIMINARY MODULAR WETLAND BIOFILTRATION DETAIL. MORE INFORMATION WILL BE PROVIDED DURING A LATER SUBMITTAL



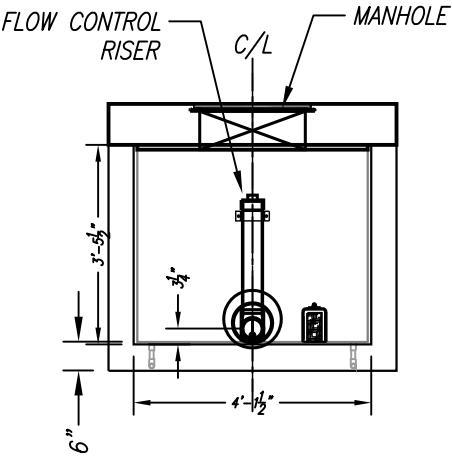
PLAN VIEW



ELEVATION VIEW



LEFT END VIEW



RIGHT END VIEW

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. MANUFACTURER RECOMMENDS A MINIMUM 6"LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH).
4. INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR.
5. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
6. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.

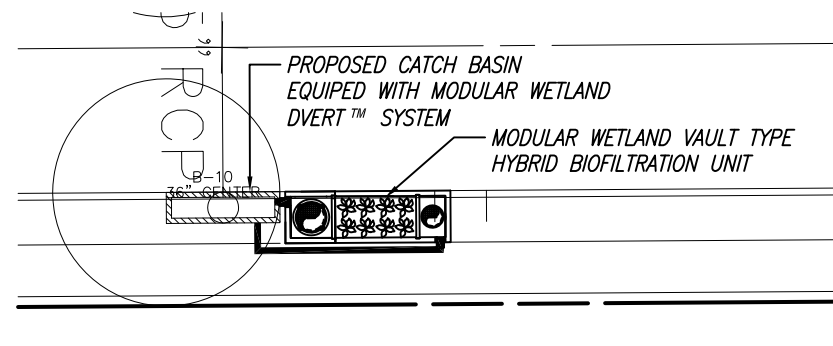
<p>THE PRODUCT DESCRIBED MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING US PATENTS: 7,425,262; 7,470,362; 7,674,378; 8,303,816; RELATED FOREIGN PATENTS OR OTHER PATENTS PENDING</p>	<p>PROPRIETARY AND CONFIDENTIAL:</p> <p>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MODULAR WETLANDS SYSTEMS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MODULAR WETLANDS SYSTEMS IS PROHIBITED.</p>		<p>MWS-L-4-17-V</p> <p>STORMWATER BIOFILTRATION SYSTEM</p> <p>STANDARD DETAIL</p>
--	--	---	--



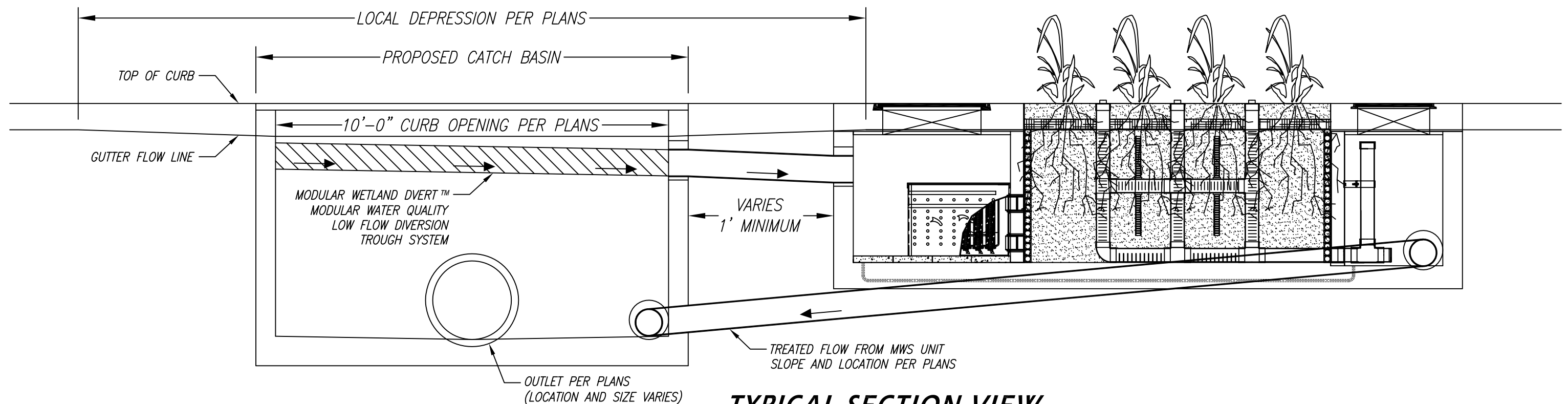
DVERT™

MODULAR WATER QUALITY DIVERSION WEIR SYSTEM

PRELIMINARY MODULAR WETLAND BIOFILTRATION DETAIL. MORE INFORMATION WILL BE PROVIDED DURING A LATER SUBMITTAL



SITE PLAN



TYPICAL SECTION VIEW

INSTALLATION NOTES:

1. TROUGH TO BE CONNECTED TO CONCRETE BELOW CURB OPENING USING 1/2" x 1-1/2" 316 STAINLESS STEEL SPIKE MUSHROOM HEAD DRIVE ANCHORS SPACED 12" ON CENTER
2. USE DAP CONCRETE WATERTIGHT FILLER & SEALANT TO SEAL SEAM BETWEEN FIBERGLASS WEIR & CONCRETE WALL OF CATCH BASIN.

MODULAR WETLAND SYSTEMS INC.
P.O. BOX 869
OCEANSIDE, CA 92049
www.ModularWetlands.com

PROPRIETARY AND CONFIDENTIAL

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	NAME	DATE	TITLE: DVERT SYSTEM		
DRAWN					
EDITED					
COMMENTS:			SIZE	DWG. NO.	REV
			SCALE	NTS	UNITS = INCHES
			SHEET 1 OF 1		

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENT 2

BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

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

Indicate which Items are Included behind this cover sheet:

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

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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

The Hydromodification Management Exhibit must identify:

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

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENT 3

Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Plan (Required)	<input type="checkbox"/> Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Storm Water Control Facilities Maintenance Agreement (SWCFMA) (when applicable)	<input type="checkbox"/> Included <input type="checkbox"/> Not Applicable

ATTACHMENT WILL BE PROVIDED DURING FINAL ENGINEERING.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Attachment 3a must identify:

- ☐ Specific maintenance indicators and actions for proposed structural BMP(s). This must be based on Section 7.7 of the Storm Water Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- ☐ How to access the structural BMP(s) 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 structural BMP and compare to maintenance thresholds)
- ☐ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☐ Maintenance thresholds specific to the structural BMP(s), 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

Attachment 3b: For all Structural BMPs, Attachment 3b must include a draft maintenance agreement in the City's standard format (PDP applicant to contact City staff to obtain the current maintenance agreement forms or download from City's website).

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENT 4

City of Escondido PDP Structural BMP Verification for Permitted Land Development Projects

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

City of Escondido Storm Water Structural BMP Verification Form Page 1 of 4	
Project Summary Information	
Project Name: PALOMAR HEIGHTS	
Record ID (e.g., grading/improvement plan number)	TBD
Project Address	555 E VALLEY PKWY, ESCONDIDO, CA 92025
Assessor's Parcel Number(s) (APN(s))	229-450-05 & 06, 230-163-01, 02, 03 & 05
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	CARLSBAD 904
Maintenance Notification / Agreement No.	
Responsible Party for Construction Phase	
Developer's Name	INTEGRAL PARTNERS LLC
Address	2235 ENCINITAS BOULEVARD SUITE 216 ENCINITAS, CA 92024
Email Address	
Phone Number	
Engineer of Work	RAYMOND L. MARTN
Engineer's Phone Number	(858) 558-4500
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	TBD
Address	
Email Address	
Phone Number	
*Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.	

Note: If this is a partial verification of Structural BMPs, provide a list and map denoting Structural BMPs that have already been submitted, those for this submission, and those anticipated in future submissions.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

City of Escondido Storm Structural BMP Verification Form Page 3 of 4

Checklist for Engineer of Work (EOW) to submit to Field Engineering:

- ☐ Copy of the final accepted SWQMP and any accepted addendum.
- ☐ Copy of the most current plan showing the Storm Water Structural BMP Table, plans/cross-section sheets of the Structural BMPs and the location of each verified as-built Structural BMP.
- ☐ Photograph of each Structural BMP.
- ☐ Photograph(s) of each Structural BMP during the construction process to illustrate proper construction.
- ☐ Copy of the approved Structural BMP maintenance agreement and associated security

By signing below, I certify that the Structural BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the City reserves the right to inspect the above BMPs to verify compliance with the approved plans and Storm Water Ordinance. Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

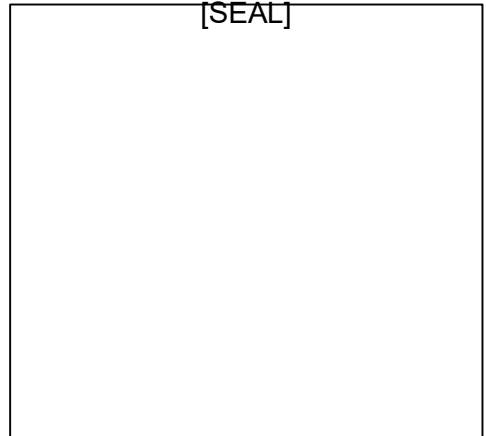
Please sign your name and seal.

Professional Engineer's Printed Name:

Professional Engineer's Signed Name:

Date: _____

[SEAL]



PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

City of Escondido Storm Water Structural BMP Verification Form Page 4 of 4

CITY - OFFICIAL USE ONLY:

Permit #: _____

City Inspector: _____

Date Project has/expects to close: _____

Date verification received from Engineer of Work (EOW): _____

By signing below, City Inspector concurs that every noted Structural BMP has been installed per plan.

City Inspector's Signature: _____ Date: _____

FOR Environmental Programs:

Date Received from Field Engineering: _____

Environmental Programs Submittal Reviewer: _____

Environmental Programs Reviewer concurs that the information provided for the following Structural BMPs is acceptable to enter into the Structural BMP Maintenance verification inventory:

List acceptable Structural BMPs:

Environmental Programs Reviewer's Signature: _____

Date: _____

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Storm Water BMPs, 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:

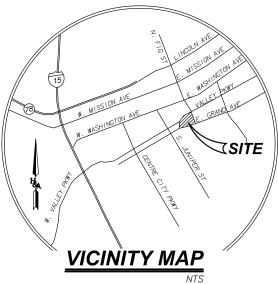
The plans must identify:

- ☒ Structural BMP(s) with ID numbers matching Step 6 Summary of PDP Structural BMPs
- ☒ 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 structural BMP(s)
- ☒ Signage indicating the location and boundary of structural BMP(s) as required by City staff
- ☒ How to access the structural BMP(s) 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 structural BMP and compare to maintenance thresholds)
- ☒ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☒ Maintenance thresholds specific to the structural BMP(s), 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 structural BMP(s)
- ☒ 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 SWQMP. Can be included as a separate exhibit as necessary.

***Note: Plan sheets included in this attachment can be full size or half size.**

TENTATIVE MAP PALOMAR HEIGHTS

City of Escondido, California



LEGEND

EXISTING PROJECT BOUNDARY	---
PROPOSED PROJECT BOUNDARY	---
LOT NUMBER & LOT AREA	LOT 3 10.06 AC
PROPOSED LOT LINE	---
PROPOSED EASEMENT LINE	---
PROPOSED SEWER MAIN WITH MANHOLE	---○---
EXISTING SEWER MAIN WITH MANHOLE	---○---
PROPOSED WATER MAIN (8" PVC UNLESS OTHERWISE NOTED)	---W---
EXISTING WATER MAIN	---W---
PROPOSED FIRE HYDRANT	---FH---
EXISTING FIRE HYDRANT	---FH---
PROPOSED PVT. ST. LIGHT	---
PROPOSED STORM DRAIN SYSTEM	---SD---
% OF GRADE	1.27%
PROPOSED CENTERLINE PVT. ST. ELEVATION	602.0
EXISTING CONTOURS	---
PROPOSED CONTOURS	---
PROPOSED SLOPE (2:1 MAX.)	---
LIMITS OF PROPOSED GRADING/DAYLIGHT	---
CUT/FILL LINE	---

ABBREVIATIONS

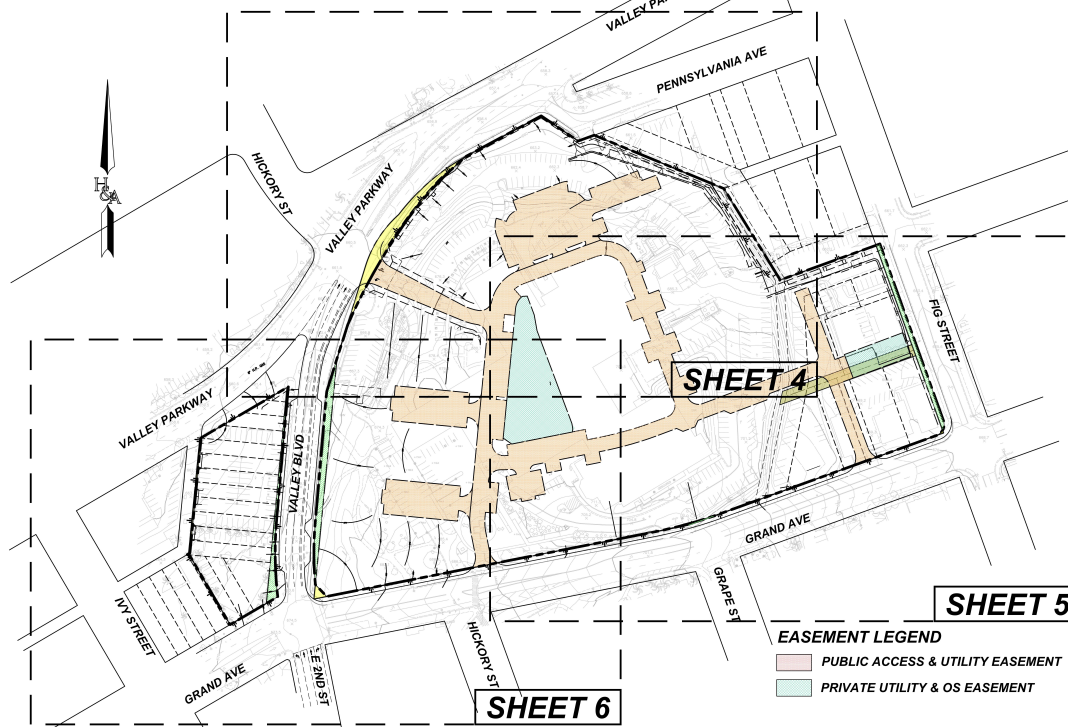
FL	FLOW LINE	R/W	RIGHT OF WAY
TW	TOP OF WALL	PL	PROPERTY LINE
BM	BOTTOM OF WALL	GB	GRADE BREAK
TF	TOP OF FOOTING	PI	POINT OF INTERSECTION (V.C.)
FS	FINISH SURFACE	P	PAD ELEVATION
S	SEWER	GS	GROSS SQ. FT.
W	WATER	NSF	NET SQ. FT.
RW	RECLAIMED WATER	FP	FLOOD PLAIN
SD	STORM DRAIN	VC	VERTICAL CURVE
NTS	NOT TO SCALE	MH	MANHOLE
ELEV	ELEVATION	ROP	REINFORCED CONCRETE PIPE
IE	INVERT ELEVATION		

PUBLIC UTILITIES AND DISTRICTS

WATER	CITY OF ESCONDIDO
SEWER	CITY OF ESCONDIDO
POLICE	CITY OF ESCONDIDO
FIRE	CITY OF ESCONDIDO
GAS AND ELECTRICITY	SAN DIEGO GAS AND ELECTRIC
HIGH SCHOOL DISTRICT	ESCONDIDO UNION HIGH SCHOOL DISTRICT
ELEMENTARY SCHOOL DISTRICT	ESCONDIDO UNION ELEMENTARY SCHOOL DISTRICT

CONDOMINIUM NOTE

THIS IS A MAP OF A CONDOMINIUM PROJECT AS DEFINED IN SECTION 4125 OF THE CIVIL CODE OF THE STATE OF CALIFORNIA AND IS FILED PURSUANT TO THE SUBDIVISION MAP ACT. THE TOTAL NUMBER OF RESIDENTIAL CONDOMINIUM DWELLING UNITS IS 510 (90 UNITS LOT 1, 148 UNITS LOT 2, 70 UNITS LOT 3, 40 UNITS LOT 4, 90 UNITS LOT 5, 42 UNITS LOT 6, AND 30 UNITS LOT 7).



PROJECT MAP

SCALE: 1"=100'

PROJECT SUMMARY

PROJECT SUMMARY	SF	AC
TOTAL GROSS SITE AREA	601,247	13.80
DEDICATION	5,395	0.12
VACATION	4,813	0.11
ACQUISITION	7,267	0.16
TOTAL NET PROJECT AREA	600,665	13.97
PROPOSED PRIVATE DRIVE	154,464	3.55
ASLES/PARKING	241,367	5.54
PROPOSED BUILDING COVERAGE	204,834	4.88
TOTAL PROPOSED NET SITE AREA	600,665	13.97

LOTGING SUMMARY

LOT SUMMARY	SF	AC
LOT 1	46,150	1.06
LOT 2	129,549	2.97
LOT 3	87,213	2.00
LOT 4	38,136	0.90
LOT 5	137,980	3.17
LOT 6	73,176	1.68
LOT 7	60,517	1.39
LOT A	34,771	0.80
Lot Area Total	608,486	13.97

TOPOGRAPHY

TOPO SOURCE: R.J. LUNG CO., INC. - FLOWN FEBRUARY 9, 2018
BENCHMARK: CITY OF ESCONDIDO NO. 357-A, CHISELED BOX CUT ON TOP OF CURB 30 FEET WEST OF GRAND AVE. ENTRANCE TO HOSPITAL PARKING STRUCTURE. EL. 682.86' (NGVD '29)

OPEN SPACE SUMMARY

REQUIRED: 300 S.F. PER UNIT X 510 UNITS
TOTAL REQUIRED - 153,000 S.F.

PROVIDED:
PRIVATE - 37,995 S.F.
ACTIVE - 29,855 S.F.
PASSIVE - 91,476 S.F.
SLOPED - 34,844 S.F.
TOTAL - 194,170 S.F.

SOILS ENGINEER

GEOTECH, INCORPORATED
6960 FLANDERS DRIVE
SAN DIEGO, CA 92121

LEGAL DESCRIPTION

SEE SHEET NO. 8 FOR LEGAL DESCRIPTION.

EASEMENT NOTES

SEE SHEET NO. 8 FOR EASEMENT INFORMATION.

SHEET INDEX

SHEET 1	TITLE SHEET
SHEET 2	EXISTING STREET SECTIONS
SHEET 3	PROPOSED STREET SECTIONS & DETAILS
SHEET 4	PROJECT DESIGN
SHEET 5	PROJECT DESIGN
SHEET 6	PROJECT DESIGN
SHEET 7	EXISTING TOPO AND CONDITIONS MAP
SHEET 8	RECORD BOUNDARY & ENCUMBRANCES

GENERAL NOTES

- TOTAL PROJECT GROSS SITE AREA: 13.80 ACRES
- TOTAL PROJECT PROPOSED NET SITE AREA: 13.97 ACRES
- NUMBER OF LOTS: 8
- NUMBER OF RESIDENTIAL LOTS: 7
- PROPOSED STREET DEDICATION AREA: 5,395 S.F.
- PROPOSED STREET VACATION AREA: 4,813 S.F.
- PROPOSED STREET ACQUISITION: 7,267 S.F.
- ASSESSOR'S PARCEL NUMBERS: 229-450-05 & 06, 230-163-01, 02, 03 & 05, 229-442-01, 02, 03, 04 & 18, 230-163-04
- EXISTING GENERAL PLAN LAND USE DESIGNATION SPECIFIC PLAN AREA
- EXISTING ZONING SPECIFIC PLAN: DOWNTOWN SPECIFIC PLAN
- PROPOSED ZONING: DOWNTOWN SPECIFIC PLAN
- PROJECT GROSS/NET DENSITY: 36.5
- THOMAS BROTHERS COORDINATES: 1129J2 & 1130A2
- INDIVIDUAL TRASH PICKUP IS PROPOSED WITH THIS SUBDIVISION.

GENERAL DESIGN NOTES

- ALL PRIVATE STREET DESIGNS, PRIVATE STREET LIGHTS, AND FIRE HYDRANTS SHALL CONFORM TO CITY OF ESCONDIDO DESIGN STANDARDS AND/OR AS APPROVED BY THE CITY.
- EASEMENTS SHALL BE PER CITY ENGINEER AND PUBLIC UTILITIES AND DISTRICTS.
- CONTRACT INTERVALS: 2 AND 10 FOOT
- FINISHED GRADES ARE APPROXIMATE ONLY AND SUBJECT TO CHANGE IN FINAL DESIGN CONSISTENT WITH THE CITY'S SUBSTANTIAL CONFORMANCE POLICY.
- APPROXIMATE RAW GRADING QUANTITIES: RAW CUT: 103,000 C.Y. RAW FILL: 103,000 C.Y.
- RAW QUANTITIES SHOWN DO NOT INCLUDE THE EFFECTS OF REMEDIAL GRADING. THE PROJECT BALANCES ON SITE AFTER TAKING SHRINKAGE AND BULKING INTO CONSIDERATION BASED ON INFORMATION PROVIDED BY SOILS ENGINEER.
- SOILS REPORT PREPARED BY: [REDACTED]
- CUT AND FILL SLOPES SHALL NOT EXCEED 2:1.
- ALL PROPOSED LOTS SHALL BE ON A SANITARY SEWER SYSTEM.
- ALL PROPOSED SEWER AND WATER IMPROVEMENTS SHOWN ON THIS MAP SHALL BE PUBLIC WITHIN THE PROJECT BOUNDARY AND PUBLIC OUTSIDE OF THE BOUNDARY.
- THIS PROJECT IS A "MULTIPLE PHASE" SUBDIVISION. IT IS THE INTENT THAT MULTIPLE FINAL MAPS MAY BE FILED PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT. THE FINAL MAP MAY CONSIST OF ONE OR MORE MULTIPLE LOTS AS SHOWN ON THIS TENTATIVE MAP.
- A SOILS REPORT WAS PRODUCED IN COORDINATION WITH THIS PROJECT FROM GEOTECH INCORPORATED WHICH IS DATED SEPTEMBER 9, 2019.

OWNER'S CERTIFICATE

I (WE) HEREBY CERTIFY THAT I (WE) AM (ARE) THE RECORD OWNER OF THE PROPERTY SHOWN ON THE TENTATIVE SUBDIVISION MAP AND THAT SAID MAP SHOWS ALL MY (OUR) CONTIGUOUS OWNERSHIP IN WHICH I (WE) HAVE ANY DEED OR TRUST INTEREST. I (WE) UNDERSTAND THAT MY (OUR) PROPERTY IS CONSIDERED CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, PRIVATE STREETS, UTILITY EASEMENTS, OR RAILROAD RIGHTS OF WAY.

APPLICANT/SUBDIVIDER

THE PALOMAR HEIGHTS PROJECT
2235 ENCINITAS BOULEVARD
SUITE 216
ENCINITAS, CA 92024

APPLICANT

DATE

ENGINEER



RAYMOND L. MARTIN
MY REGISTRATION EXPIRES ON: 6/30/25
R.C.E. 48670
DATE

PREPARED BY:

HUNSAKER & ASSOCIATES
SAN DIEGO, INC.
PLANNING: 9702 Waples Street
ENGINEERING: San Diego, CA 92121
SURVEYING: PH080500-0100-10008500-HH

NO.	REVISIONS	DATE	BY
1	PRE-APP	12/20/18	HBA
2	1ST SUBMITTAL	06/25/19	HBA
3	2ND SUBMITTAL	09/11/19	HBA
4			
5			
6			
7			
8			

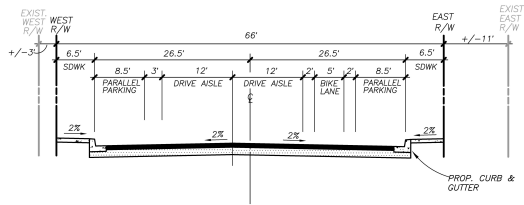
**TENTATIVE MAP
PALOMAR HEIGHTS**
City of Escondido, California

**SHEET
1
OF
8**

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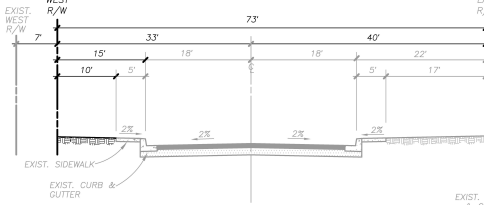


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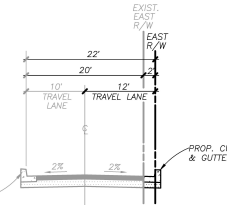
PROPOSED VALLEY BOULEVARD

NOT TO SCALE



PROPOSED FIG STREET

NOT TO SCALE



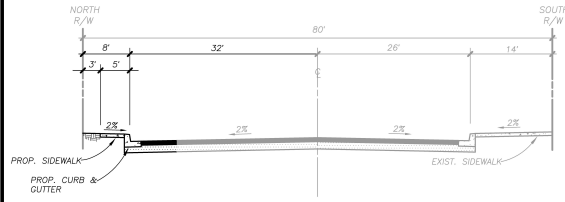
PROPOSED ALLEY

NOT TO SCALE



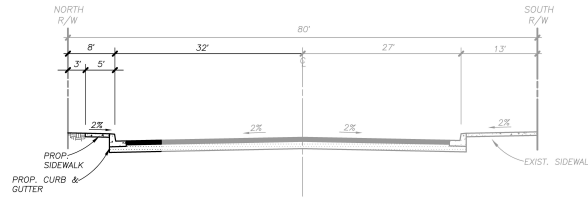
PROPOSED SITE

NOT TO SCALE



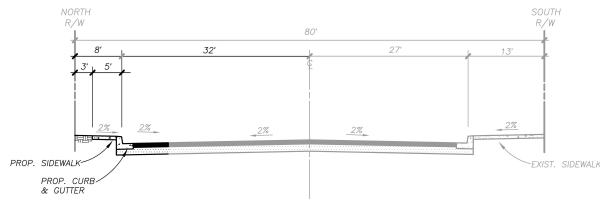
**PROPOSED GRAND AVENUE
(BTWN VALLEY BLVD AND GRAPE)**

NOT TO SCALE



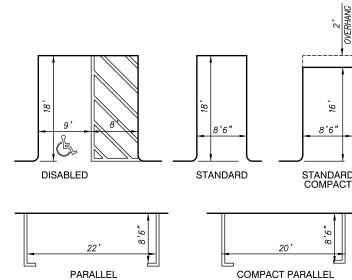
**PROPOSED GRAND AVENUE
(BTWN GRAPE AND FIG)**

NOT TO SCALE



**PROPOSED GRAND AVENUE
(BTWN GRAPE AND FIG)**

NOT TO SCALE



TYPICAL PARKING DETAIL

NOT TO SCALE

PROPOSED STREET SECTIONS

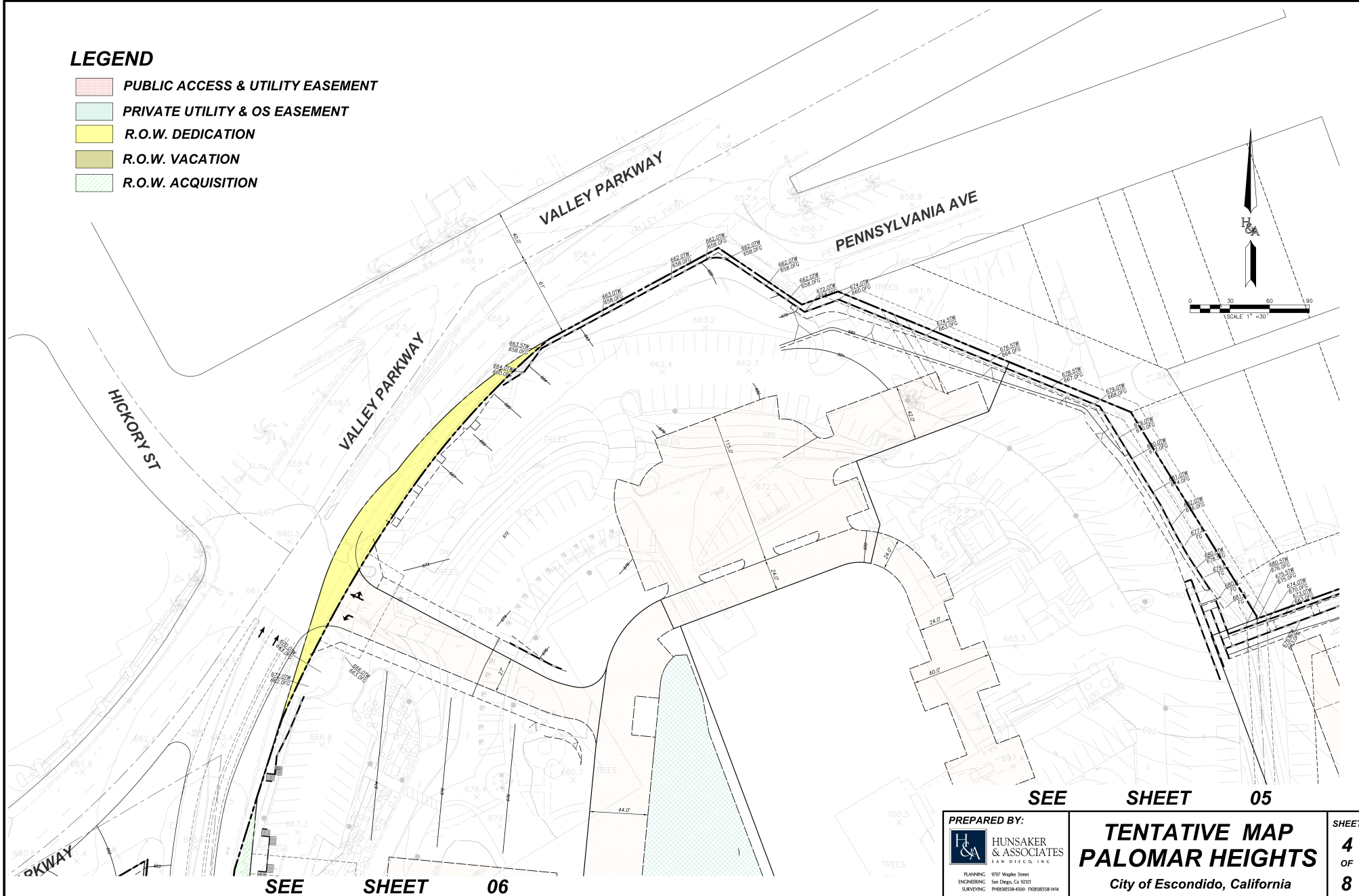
PREPARED BY:
HUNSAKER & ASSOCIATES
LAND DESIGN INC.
PLANNING 9107 Wagon Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH08580558-4000 PH08580558-1114

**TENTATIVE MAP
PALOMAR HEIGHTS**
City of Escondido, California

**SHEET
3
OF
8**

LEGEND

- PUBLIC ACCESS & UTILITY EASEMENT
- PRIVATE UTILITY & OS EASEMENT
- R.O.W. DEDICATION
- R.O.W. VACATION
- R.O.W. ACQUISITION



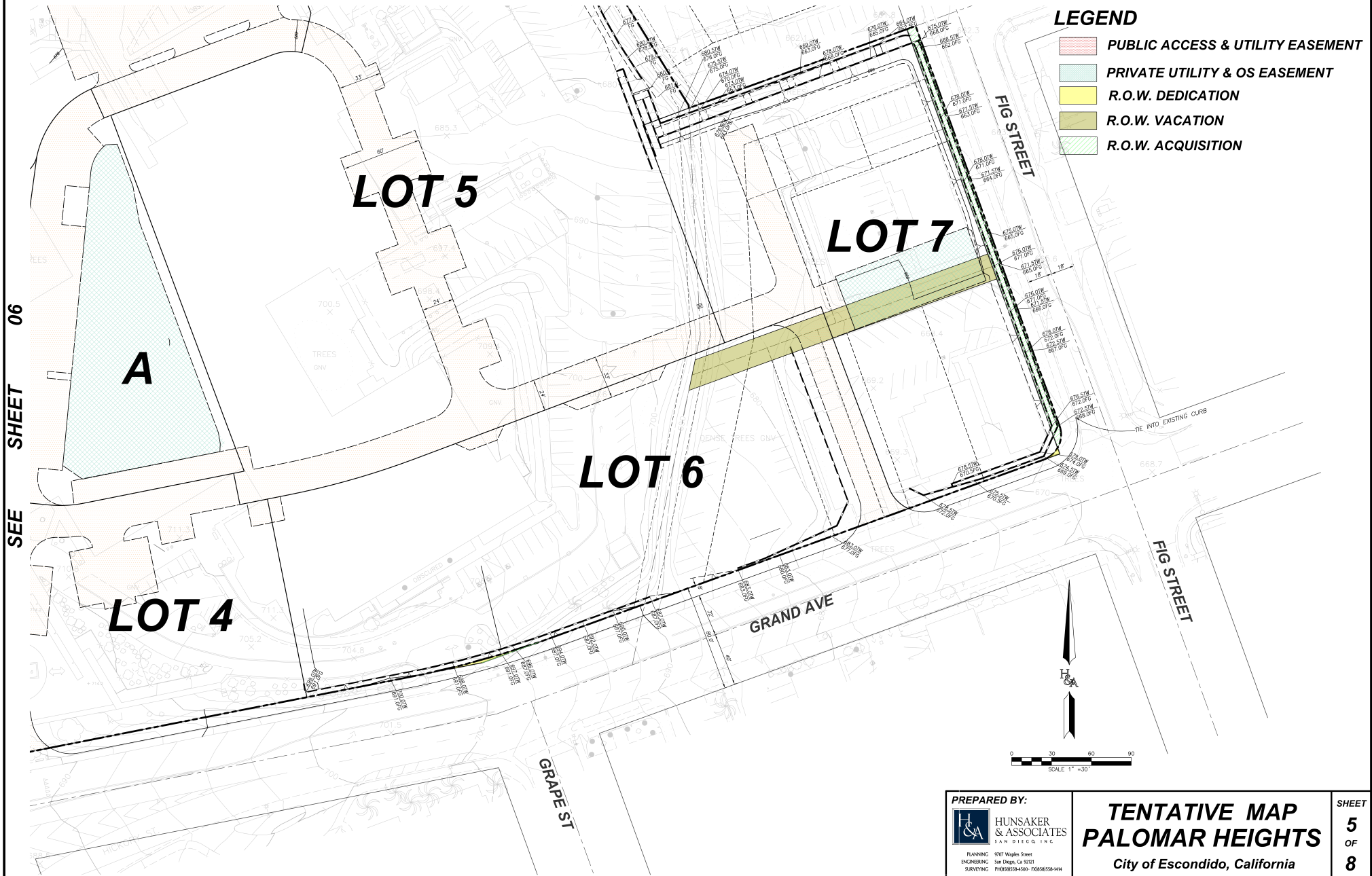
PREPARED BY:








**HUNSAKER
& ASSOCIATES**
LAND DESIGN, INC.
PLANNING 9107 Wagon Street
ENGINEERING San Diego, CA 92121
SURVEYING PH08080158-4000 FAX08080158-4114

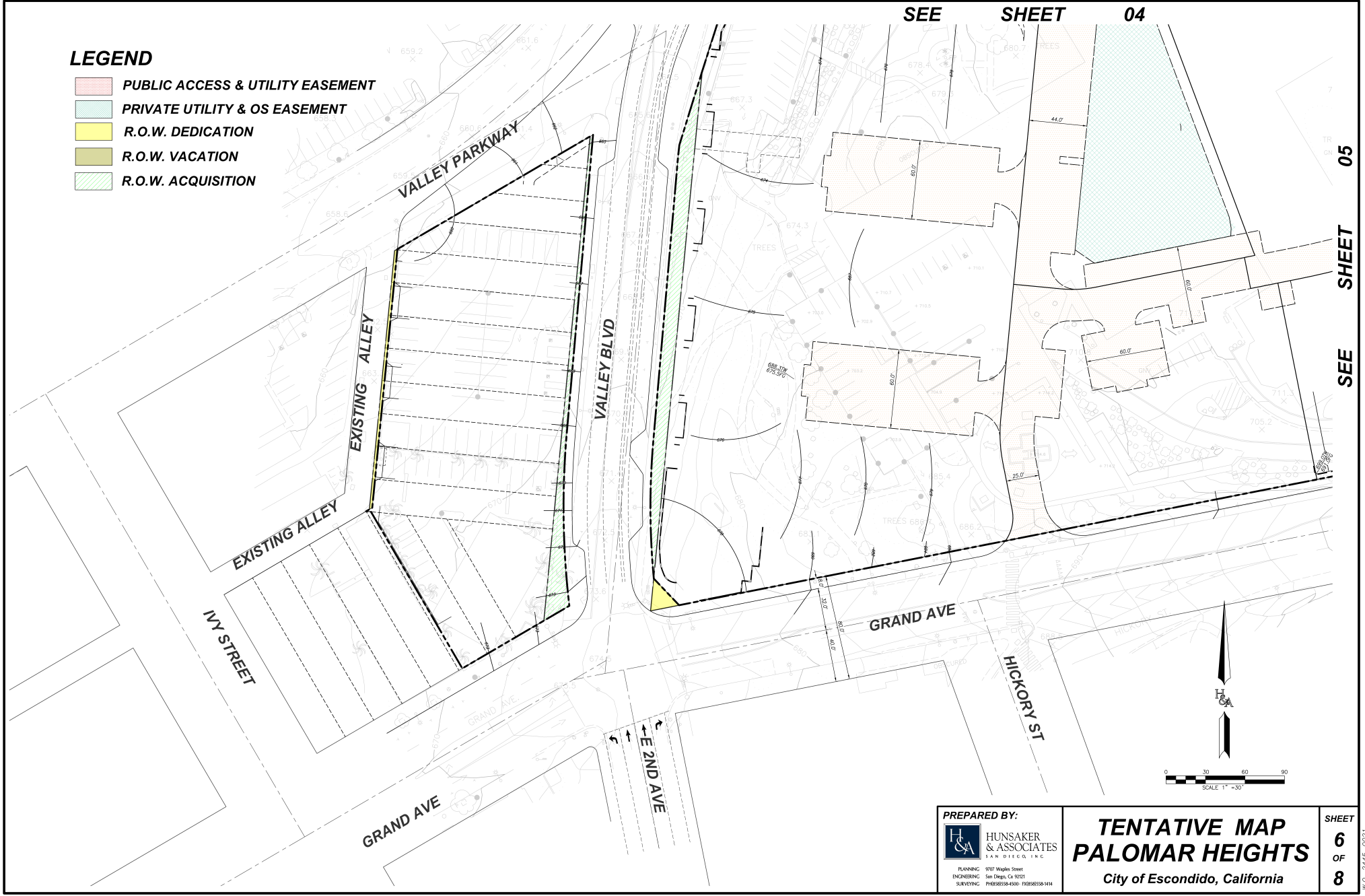
**TENTATIVE MAP
PALOMAR HEIGHTS**
City of Escondido, California

SHEET
4
OF
8



LEGEND

-  PUBLIC ACCESS & UTILITY EASEMENT
-  PRIVATE UTILITY & OS EASEMENT
-  R.O.W. DEDICATION
-  R.O.W. VACATION
-  R.O.W. ACQUISITION



PREPARED BY:
 HUNSAKER & ASSOCIATES
LAND DESIGN INC.
PLANNING 9107 Wagon Street
ENGINEERING San Diego, CA 92121
SURVEYING PH08580158-4000 PH08580158-4114

TENTATIVE MAP
PALOMAR HEIGHTS
City of Escondido, California

SHEET
6
OF
8

C.R. 36336

~~BLOCK~~ 33

VALLEY PKWY

MAP NO. 2574

PALOMAR MEMORIAL HOSPITAL SUBDIVISION

BLOCK 339

EXIST. WALKWAY

EXIST. FENCE

EXIST. MASON WALL

EXIST. CURT

700.5

60

605

BLOCK

BLOCK 338

Block

GRAND AVE

CITY TIE 2214A

EXISTING TOPO AND CONDITIONS MAP

TENTATIVE MAP
PALOMAR HEIGHTS
City of Escondido, California

SHEET
7
OF
8

PREPARED BY:



R:\1477\&Pin\PALOMAR HEIGHTS- A MAP TM Sht 07.dwg[Sep-11-2019:10:27

TITLE REFERENCE:

THIS SURVEY IS BASED ON THE COMMITMENT FOR TITLE INSURANCE ISSUED BY FNTS-CHICAGO
TITLE COMPANY AS ORDER NO. 001037070-996-001-474, EFFECTIVE DATE NOVEMBER 26, 2016

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF ESCONDIDO, IN THE COUNTY OF SAN DIEGO,
STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A: (APN: 229-450-06)

BLOCK 339 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO,
STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574, FILED IN THE OFFICE OF THE COUNTY RECORDER OF
SAN DIEGO COUNTY, JUNE 1, 1949, TOGETHER WITH THAT PORTION OF HICKORY STREET ADJACENT TO SAID BLOCK
339 ON THE WEST AS VACATED AND CLOSED TO PUBLIC USE, A CERTIFIED COPY OF RESOLUTION NO. 85-209
RECORDED AUGUST 4, 1982 AS FILE NO. 1982-230468 AND RE-RECORDED AUGUST 27, 1982 AS FILE NO. 1982-
230468, ALSO THAT PORTION OF GRAPE STREET AND E. PENNSYLVANIA AVENUE ADJACENT TO SAID BLOCK 339
ON THE EAST, NORTHEAST AND NORTH AS VACATED AND CLOSED TO PUBLIC USE BY ORDINANCE OF THE CITY OF
ESCONDIDO NO. 784 RECORDED MAY 29, 1987 AND BY A CERTIFIED COPY OF RESOLUTION NO. 5791 RECORDED
NOVEMBER 13, 1987 AS FILE NO. 119214.

PARCEL B: (APN: 229-450-05)

BLOCK 339 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO,
STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574, FILED IN THE OFFICE OF THE COUNTY RECORDER OF
SAN DIEGO COUNTY, JUNE 1, 1949, TOGETHER WITH THAT PORTION OF HICKORY STREET ADJACENT TO SAID BLOCK
339 ON THE EAST AS VACATED AND CLOSED TO PUBLIC USE, A CERTIFIED COPY OF RESOLUTION NO. 85-209
RECORDED AUGUST 4, 1982 AS FILE NO. 1982-230468 AND RE-RECORDED AUGUST 27, 1982 AS FILE NO. 1982-
230468, ACCORDING TO MAP THEREOF NO. 336, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN
DIEGO COUNTY, JULY 10, 1886.

PARCEL C: (APN: 230-163-05)

LOT 5, BLOCK 34, PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO,
STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574, FILED IN THE OFFICE OF THE COUNTY RECORDER OF
SAN DIEGO COUNTY, JULY 1, 1949, TOGETHER WITH THAT PORTION OF GRAPE STREET ADJACENT TO SAID BLOCK
339 ON THE EAST AS VACATED AND CLOSED BY ORDER OF THE CITY COUNCIL OF THE CITY OF ESCONDIDO, A
CERTIFIED COPY OF SAID ORDER BEING RECORDED MAY 29, 1987 AS FILE NO. 1987-230468, TOGETHER WITH THE
SOUTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID
LAND BY OPERATION OF LAW, TOGETHER WITH THAT PORTION OF THE SOUTHERLY HALF OF
THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID LAND BY OPERATION OF
LAW.

PARCEL D: (APN: 230-163-01)

ALL THAT PORTION OF LOTS 9, 10, AND 11 OF BLOCK 34 AND OF THE EASTERLY ONE HALF OF GRAPE STREET
ADJOINING SAID LOT 11 ON THE WEST AS VACATED AND CLOSED TO PUBLIC USE AND A PORTION OF OHIO
AVENUE AS VACATED AND CLOSED TO PUBLIC USE IN PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF
ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574, FILED IN THE
OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 1, 1949, DESCRIBED AS A WHOLE AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHEASTERLY LINE OF SAID LOT 11 WHICH IS DISTANT SOUTH 89°39'30" WEST
ALONG THE SOUTHEASTERLY BOUNDARY OF SAID LOTS 9, 10 AND 11 A DISTANCE OF 123.00 FEET FROM THE MOST
EASTERLY CORNER OF SAID LOT 9; THENCE ALONG SAID SOUTHEASTERLY BOUNDARY OF SAID LOT 11 AND THE
SOUTHEASTERLY BOUNDARY THEREOF SOUTH 89°39'30" WEST 108.50 FEET TO THE CENTER LINE OF THE ABOVE
MENTIONED GRAPE STREET; THENCE ALONG SAID CENTER LINE NORTH 11°00'00" EAST 19.45 FEET TO AN ANGLE
POINT THEREIN; THENCE CONTINUING ALONG SAID CENTER LINE NORTH 72°00'00" WEST 141.02 FEET, MORE OR LESS,
TO AN INTERSECTION WITH A LINE BEARING SOUTH 88°40'00" WEST FROM THE NORTHWESTERLY CORNER OF SAID LOT 11;
THENCE NORTH 88°40'00" EAST 40.00 FEET TO SAID NORTHWESTERLY CORNER OF SAID LOT 11; THENCE ALONG
THE NORTHERLY LINE OF SAID LOT 11 NORTH 69°39'30" WEST 14.14 FEET TO THE POINT OF BEGINNING TOGETHER
WITH THAT PORTION OF OHIO AVENUE; THENCE ALONG THE NORTHERLY BOUNDARY OF SAID VACATED PORTION OF OHIO
AVENUE NORTH 43°04'00" EAST 35.00 FEET TO A POINT OF BEGINNING; THENCE CONTINUING
ALONG SAID NORTHERLY BOUNDARY NORTH 43°04'00" EAST 3.50 FEET TO AN ANGLE POINT THEREIN; THENCE
CURVE ALONG SAID NORTHERLY BOUNDARY NORTH 69°39'30" WEST 75.00 FEET TO THE BEGINNING OF TANGENT
15.00 FOOT RADIUS CURVE CONCAVE SOUTHWESTERLY; THENCE EASTERLY AND SOUTHEASTERLY ALONG SAID CURVE
THROUGH A CENTRAL ANGLE OF 80°09'30" TO THE POINT OF TANGENCY; SAID POINT OF TANGENCY BEING ALSO A
POINT IN THE WESTERLY BOUNDARY OF 160 STREET BEARING SAID LOT 9 ON THE EAST; THENCE ALONG SAID
WESTERLY BOUNDARY OF SAID 160 STREET, SOUTH 20°12'30" EAST 40.70 FEET TO A POINT IN SAID WESTERLY
BOUNDARY DISTANT THEREON NORTH 20°12'30" WEST 40.50 FEET FROM THE MOST EASTERLY CORNER OF SAID LOT 9;
THENCE PARALLEL WITH THE SOUTHEASTERLY BOUNDARY OF SAID LOTS 9, 10, AND 11, SOUTH 69°39'30" WEST 63.00
FEET TO A POINT HEREIN DESIGNATED AS POINT "P"; THENCE CONTINUING ALONG SAID PARALLEL LINE SOUTH
69°39'30" WEST 42.00 FEET; THENCE PARALLEL WITH THE EASTERLY BOUNDARY OF SAID LOT 9, SOUTH 20°12'30"
EAST 40.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT 11 AND THE POINT OF BEGINNING TOGETHER
WITH THAT PORTION OF THE SOUTHEASTERLY HALF OF EAST OHIO AVENUE AS VACATED AND CLOSED TO PUBLIC USE
BY RESOLUTION NO. 74-511 TO THE CITY COUNCIL OF THE CITY OF ESCONDIDO RECORDED OCTOBER 21, 1974 AS
FILE NO. 1974-280073, OFFICIAL RECORDS, TOGETHER WITH THE NORTHERLY HALF OF THE ALLEY CONTIGUOUS WITH
SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID LAND BY OPERATION OF LAW, TOGETHER WITH THAT
PORTION OF GRAPE STREET ADJOINING THE NORTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH
UPON VACATION WOULD REVERT TO SAID LAND BY OPERATION OF LAW.

PARCEL E: (APN: 230-163-03)

LOTS 7, 8 AND THE EASTERLY 20 FEET OF LOT 6, OF BLOCK 34 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION,
IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574,
FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY ON JULY 1, 1949, TOGETHER WITH THE
SOUTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID
LAND BY OPERATION OF LAW.

PARCEL F: (APN: 230-163-02)

ALL THAT PORTION OF LOTS 9, 10 AND 11 OF BLOCK 34 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE
CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF 2574, FILED IN
THE OFFICE OF THE COUNTY RECORDER OF SAID SAN DIEGO COUNTY, JULY 1, 1949, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LOT 9; THENCE ALONG THE EASTERLY BOUNDARY THEREOF
NORTH 20°12'30" WEST 80.50 FEET; THENCE PARALLEL WITH THE SOUTHERLY BOUNDARY OF SAID LOT 9, 10 AND 11,
SOUTH 69°39'30" WEST 125.00 FEET; THENCE PARALLEL WITH THE EASTERLY BOUNDARY OF SAID LOT 9 SOUTH
20°12'30" EAST 40.50 FEET TO THE SOUTHERLY BOUNDARY OF LOT 11; THENCE ALONG THE SOUTHERLY BOUNDARY
OF LOTS 11, 10 AND 9, NORTH 69°39'30" WEST 125.00 FEET TO THE POINT OF BEGINNING. TOGETHER WITH THE
NORTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID
LAND BY OPERATION OF LAW.

PARCEL G: (APN: 229-442-01)

LOTS 18, 19 AND 20 IN BOOK 64 OF ESCONDIDO, CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF
CALIFORNIA, ACCORDING TO MAP THEREOF NO. 336, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO
COUNTY, JULY 10, 1886.

PARCEL H: (APN: 229-442-03 & 18)

LOTS 6, 7, 8, 9, 10, 14 AND 15 EXCEPT THE WEST 3 FEET OF SAID LOT 6, IN BLOCK 64 OF ESCONDIDO, IN THE
CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 336, FILED
IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 10, 1886.

PARCEL I: (APN: 229-442-04)

LOTS 11, 12 AND 13 IN BLOCK 64 OF THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA,
ACCORDING TO MAP THEREOF NO. 336, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY,
JULY 10, 1886.

PARCEL J: (APN: 229-442-02)

LOTS 16 & 17 IN BLOCK 64 IN THE CITY OF ESCONDIDO, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA,
ACCORDING TO MAP THEREOF NO. 336, ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY.

PARCEL K: (APN: 230-163-04)

LOT 6 IN BLOCK 34 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF ESCONDIDO, COUNTY OF SAN
DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP NO. 2574, FILED IN THE OFFICE OF THE COUNTY RECORDER OF
SAN DIEGO COUNTY, JULY 1, 1949, EXCEPTING THEREFROM THE EASTERLY 20 FEET THEREOF TOGETHER WITH THE
SOUTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID
LAND BY OPERATION OF LAW.

ENCUMBRANCES:

THE FOLLOWING MATTERS AFFECT PARCELS A, B, C AND D:

- △ EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO
AS RESERVED IN A DOCUMENT:
PURPOSE: THE CONSTRUCTION, OPERATION AND MAINTENANCE OF PUBLIC UTILITIES
RECORDING DATE: MAY 29, 1987
RECORDING NO. 85-209 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCELS A, C AND D
- △ EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO
AS RESERVED IN A DOCUMENT:
PURPOSE: TO ERECT, CONSTRUCT, REPLACE, MAINTAIN, AND USE OF POLES, WIRES
AND INCIDENTAL PURPOSES
FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY
RECORDING DATE: NOVEMBER 13, 1987
RECORDING NO. 176114 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCEL A.
- △ EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO,
AS GRANTED IN A DOCUMENT:
GRANTED TO: CITY OF ESCONDIDO
PURPOSE: TO CONSTRUCT, MAINTAIN AND OPERATE UNDERGROUND WATER PIPE LINES
AND APPURTENANCES THERETO
RECORDING DATE: FEBRUARY 28, 1984
RECORDING NO. 84-070912 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCELS A AND B
- △ EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO,
AS GRANTED IN A DOCUMENT:
GRANTED TO: CITY OF ESCONDIDO
PURPOSE: TRAFFIC SIGNAL AND APPURTENANCES THERETO
RECORDING DATE: SEPTEMBER 29, 1989
RECORDING NO. 89-507498 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCEL A.
- △ EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO,
AS GRANTED IN A DOCUMENT:
GRANTED TO: CITY OF ESCONDIDO
PURPOSE: PUBLIC STREET
RECORDING DATE: SEPTEMBER 29, 1989
RECORDING NO. 89-507874 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCEL A.

THE FOLLOWING MATTERS AFFECT PARCEL H:

- △ AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO
AS SET FORTH IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDED: APRIL 26, 1992 AS INSTRUMENT NO. 1992-0246179, OF OFFICIAL
RECORDS
AFFECTS: THE NORTHERLY 15.00 FEET OF THE WESTERLY 8.00 FEET OF SAID LOT 10
AFFECTS: LOTS 7 - 10 & 14, 15, PORTION 6

THE FOLLOWING MATTERS AFFECT PARCEL J:

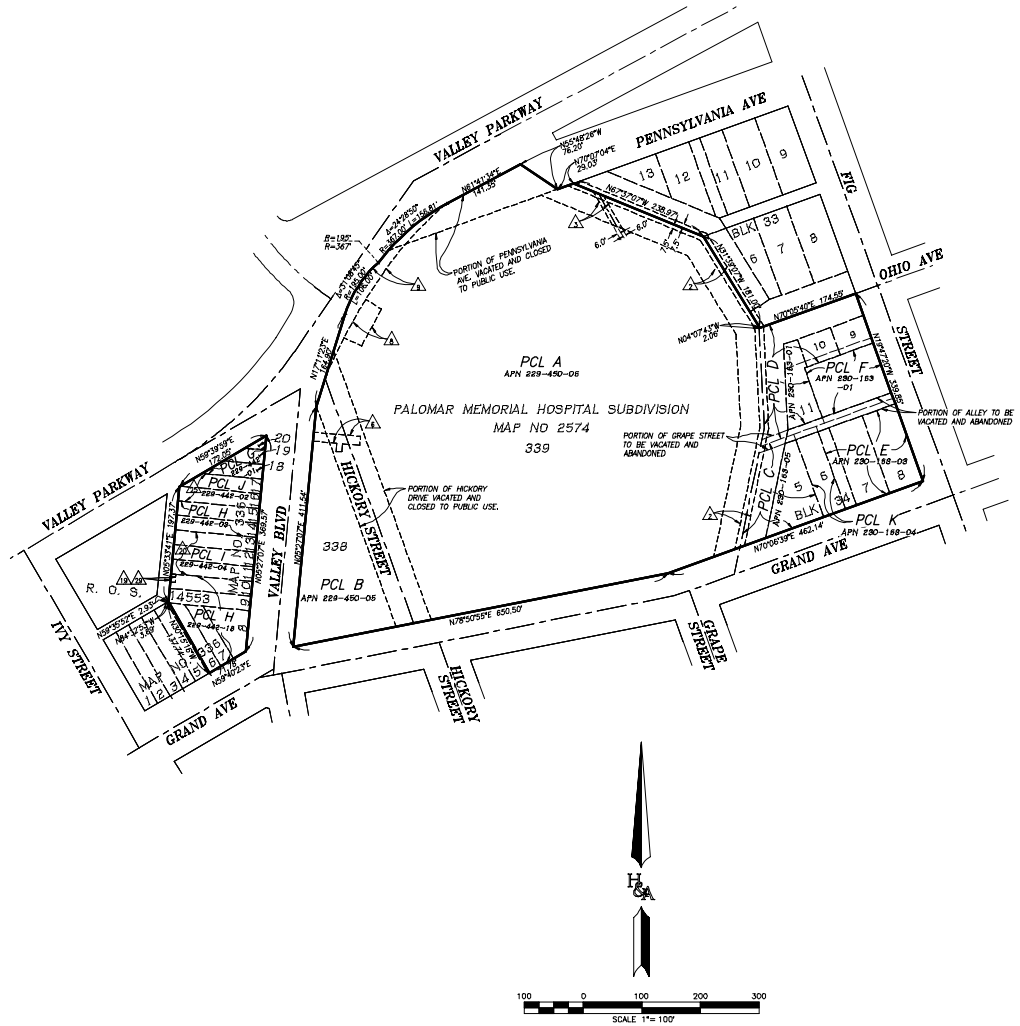
- △ THE FOLLOWING EASEMENTS RESERVED BY THE ESCONDIDO LAND & TOWN COMPANY
(SUCCEEDED BY THE CITY OF ESCONDIDO) FOR THE PIPELINES AS FOLLOWS:
IN BOOK 67, PAGE 35 OF DEEDS, AFFECTS LOT 13;
IN BOOK 67, PAGE 37 OF DEEDS, AFFECTS LOTS 11 & 12;


THE FOLLOWING MATTERS AFFECT PARCEL K:

- △ THE FOLLOWING EASEMENTS RESERVED BY THE ESCONDIDO LAND & TOWN COMPANY
(SUCCEEDED BY THE CITY OF ESCONDIDO) FOR THE PIPELINES AS FOLLOWS:
IN BOOK 116, PAGE 58 OF DEEDS, AFFECTS LOT 16;
IN BOOK 118, PAGE 320, OF DEEDS, AFFECTS LOT 17.

THE FOLLOWING MATTERS AFFECT PARCEL L:

- △ AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO
AS SET FORTH IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDED: APRIL 26, 1992 AS INSTRUMENT NO. 1992-0246179, OF OFFICIAL
RECORDS
AFFECTS: THE NORTHERLY 15.00 FEET OF THE WESTERLY 8.00 FEET OF SAID LOT 10

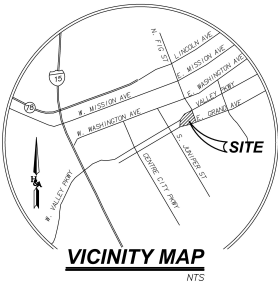


PREPARED BY:		BOUNDARY AND ENCUMBRANCES	
 HUNSAKER & ASSOCIATES PLANNERS ENGINEERS ARCHITECTS		TENTATIVE MAP PALOMAR HEIGHTS City of Escondido, California	
		SHEET 8 OF 8	

R:\14771\Pin\PALOMAR HEIGHTS- A MAP TM Sht 08.dwg[Sep-11-2019:10:26]

PRELIMINARY GRADING PLAN PALOMAR HEIGHTS

City of Escondido, California



LEGEND

EXISTING PROJECT BOUNDARY	---
PROPOSED PROJECT BOUNDARY	---
LOT NUMBER & LOT AREA	LOT 3 10.06 AC
PROPOSED LOT LINE	---
PROPOSED EASEMENT LINE	---
PROPOSED SEWER MAIN WITH MANHOLE	---○---
EXISTING SEWER MAIN WITH MANHOLE	---○---
PROPOSED WATER MAIN (6" P.V.C. UNLESS OTHERWISE NOTED)	---W---
EXISTING WATER MAIN	---W---
PROPOSED FIRE HYDRANT	---H---
EXISTING FIRE HYDRANT	---H---
PROPOSED P.V.T. ST. LIGHT	---○---
PROPOSED STORM DRAIN SYSTEM	---○---
PROPOSED CENTERLINE P.V.T. ST. ELEVATION	602.0
EXISTING CONTOURS	---
PROPOSED CONTOURS	---
PROPOSED SLOPE (2:1 MAX.)	---
LIMITS OF PROPOSED GRADING/DAYLIGHT	---
CUT/FILL LINE	---
MODULAR WETLAND	---
WATER METER	---

ABBREVIATIONS

FL	FLOW LINE	R/W	RIGHT OF WAY
TW	TOP OF WALL	PL	PROPERTY LINE
BW	BOTTOM OF WALL	GB	GRADE BREAK
TF	TOP OF FOOTING	PI	POINT OF INTERSECTION (V.C.)
FS	FINISH SURFACE	PE	PAD ELEVATION
S	SEWER	GS	GROSS SQ. FT.
W	WATER	NSF	NET SQ. FT.
RW	RECLAIMED WATER	FP	FLOOD PLAIN
SD	STORM DRAIN	VC	VERTICAL CURVE
NTS	NOT TO SCALE	MH	MANHOLE
ELEV	ELEVATION	RCP	REINFORCED CONCRETE PIPE
IE	INVERT ELEVATION		

PUBLIC UTILITIES AND DISTRICTS

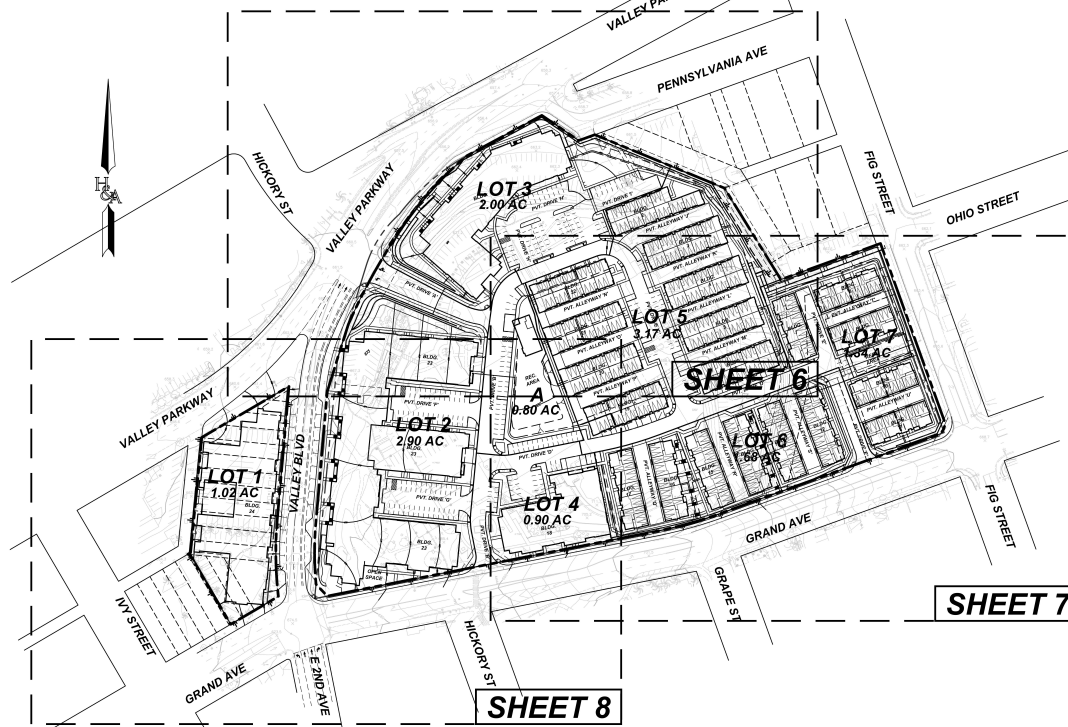
WATER	CITY OF ESCONDIDO
SEWER	CITY OF ESCONDIDO
POLICE	CITY OF ESCONDIDO
FIRE	CITY OF ESCONDIDO
GAS AND ELECTRICITY	SAN DIEGO GAS AND ELECTRIC
HIGH SCHOOL DISTRICT	ESCONDIDO UNION HIGH SCHOOL DISTRICT
ELEMENTARY SCHOOL DISTRICT	ESCONDIDO UNION ELEMENTARY SCHOOL DISTRICT

LEGAL DESCRIPTION

SEE SHEET NO. 12 FOR LEGAL DESCRIPTION.

EASEMENT NOTES

SEE SHEET NO. 12 FOR EASEMENT INFORMATION.



PROJECT SUMMARY

PROJECT SUMMARY	SF	AC
TOTAL GROSS SITE AREA	601,247	13.80
DEDICATION	5,395	0.12
VACATION	4,813	0.11
ACQUISITION	7,767	0.18
TOTAL NET PROJECT AREA	600,665	13.97
PROPOSED PRIVATE DRIVE	154,464	3.55
PROPOSED BUILDING COVERAGE	241,367	5.54
PROPOSED LANDSCAPING COVERAGE	204,834	4.88
TOTAL PROPOSED NET SITE AREA	600,665	13.97

LOTGING SUMMARY

LOT SUMMARY	SF	AC
LOT 1	46,150	1.06
LOT 2	129,549	2.97
LOT 3	87,213	2.00
LOT 4	39,130	0.90
LOT 5	137,980	3.17
LOT 6	73,176	1.68
LOT 7	60,517	1.39
LOT 8	34,771	0.80
Lot Area Total	608,486	13.97

PARKING REQUIRED

PARKING REQUIRED				
TYPE/BEDROOM	RATIO	UNITS	REQ.	
SENIOR				
1 BEDROOM	0.75	70	52.5	
2 BEDROOM	1.5	20	30	
SENIOR UNIT SUBTOTAL			82.5	
MULTI-DWELLING UNITS				
1 BEDROOM	1.5	129	193.5	
2 BEDROOM	1.75	173	302.75	
3 BEDROOM	2	118	236	
MULTI DWELLING SUBTOTAL			732.25	
Guest	0.25	420	105	
TOTAL PARKING REQ.			919.75	

PARKING PROVIDED

PARKING PROVIDED	
TYPE	SPACES
GARAGE	608
STANDARD	194
PARKING	26
COMPACT PARALLEL	1
ACCESSIBLE	11
TOTAL	891

OPEN SPACE SUMMARY

REQUIRED: 300 S.F. PER UNIT X 510 UNITS
TOTAL REQUIRED - 153,000 S.F.

PROVIDED:
PRIVATE - 37,995 S.F.
ACTIVE - 29,855 S.F.
PASSIVE - 91,478 S.F.
SLOPED - 34,844 S.F.
TOTAL - 194,170 S.F.

SOILS ENGINEER

GECON, INCORPORATED
6960 FLANDERS DRIVE
SAN DIEGO, CA 92121

TOPOGRAPHY

TOPO SOURCE: R.J. LUNG CO., INC. - FLOWN FEBRUARY 9, 2018
BENCHMARK: CITY OF ESCONDIDO NO. 357-A, CHISELED BOX CUT ON TOP OF CURB 20 FEET WEST OF GRAND AVE, ENTRANCE TO HOSPITAL PARKING STRUCTURE, EL. 682.86 (NGVD '29)

SHEET INDEX

SHEET	TITLE
SHEET 1	TITLE SHEET
SHEET 2	EXISTING STREET SECTIONS
SHEET 3	PROPOSED STREET SECTIONS & DETAILS
SHEET 4	DETAILS
SHEET 5	SITE CROSS SECTIONS
SHEET 6	PROJECT DESIGN
SHEET 7	PROJECT DESIGN
SHEET 8	PROJECT DESIGN
SHEET 9	PROPOSED & EXISTING UTILITIES
SHEET 10	VALLEY PARKWAY INTERSECTION DETAIL
SHEET 11	EXISTING TOPO AND CONDITIONS MAP
SHEET 12	RECORD BOUNDARY & ENCUMBRANCES

GENERAL NOTES

- TOTAL PROJECT GROSS SITE AREA: 13.80 ACRES
- TOTAL PROJECT PROPOSED NET SITE AREA: 13.97 ACRES
- NUMBER OF LOTS: 8
- NUMBER OF RESIDENTIAL LOTS: 7
- PROPOSED STREET DEDICATION AREA: 5,395 S.F.
- PROPOSED STREET VACATION AREA: 4,813 S.F.
- PROPOSED STREET ACQUISITION: 7,767 S.F.
- ASSESSOR'S PARCEL NUMBERS: 229-450-05 & 06, 230-163-01, 02, 03 & 05, 229-442-01, 02, 03, 04 & 18, 230-163-04
- EXISTING GENERAL PLAN LAND USE DESIGNATION: SPECIFIC PLAN AREA
- EXISTING ZONING SPECIFIC PLAN: DOWNTOWN SPECIFIC PLAN
- PROPOSED ZONING: DOWNTOWN SPECIFIC PLAN
- PROJECT GROSS/NET DENSITY: 36.5
- THOMAS BROTHERS COORDINATES: 1129.02 & 1130.02
- INDIVIDUAL TRASH PICKUP IS PROPOSED WITH THIS SUBDIVISION.

GENERAL DESIGN NOTES

- ALL PRIVATE STREET DESIGNS, PRIVATE STREET LIGHTS, AND FIRE HYDRANTS SHALL CONFORM TO CITY OF ESCONDIDO DESIGN STANDARDS AND/OR AS APPROVED BY THE CITY ENGINEER.
- EASEMENTS SHALL BE PER CITY ENGINEER AND PUBLIC UTILITIES AND DISTRICTS.
- CONTOUR INTERVALS: 2 AND 10 FOOT
- FINISHED GRADES ARE APPROXIMATE ONLY AND SUBJECT TO CHANGE IN FINAL DESIGN CONSISTENT WITH THE CITY'S SUBSTANTIAL CONFORMANCE POLICY.
- APPROXIMATE RAW GRADING QUANTITIES: RAW CUT: 103,000 C.Y.
RAW FILL: 103,000 C.Y.
- RAW QUANTITIES SHOWN DO NOT INCLUDE THE EFFECTS OF REMEDIAL GRADING, THE PROJECT BALANCES ON SITE AFTER TAKING SHRINKAGE AND BULKING INTO CONSIDERATION BASED ON INFORMATION PROVIDED BY SOILS ENGINEER.
- SOILS REPORT PREPARED BY:
- CUT AND FILL SLOPES SHALL NOT EXCEED 2:1.
- ALL PROPOSED LOTS SHALL BE ON A SANITARY SEWER SYSTEM.
- ALL PROPOSED SEWER AND WATER IMPROVEMENTS SHOWN ON THIS MAP SHALL BE PUBLIC WITHIN THE PROJECT BOUNDARY AND PUBLIC OUTSIDE OF THE BOUNDARY.
- THIS PROJECT IS A "MULTIPLE PHASE" SUBDIVISION. IT IS THE INTENT THAT MULTIPLE FINAL MAPS MAY BE FILED PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT. THE FINAL MAP MAY CONSIST OF ONE OR MORE MULTIPLE LOTS AS SHOWN ON THIS TENTATIVE MAP.

OWNER'S CERTIFICATE

I (WE) HEREBY CERTIFY THAT I (WE) AM (ARE) THE RECORD OWNER OF THE PROPERTY SHOWN ON THE TENTATIVE SUBDIVISION MAP AND THAT SAID MAP SHOWS ALL MY (OUR) CONTIGUOUS OWNERSHIP IN WHICH I (WE) HAVE ANY DEED OR TRUST INTEREST. I (WE) UNDERSTAND THAT MY (OUR) PROPERTY IS CONSIDERED CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, PRIVATE STREETS, UTILITY EASEMENTS, OR RAILROAD RIGHTS OF WAY.

APPLICANT/SUBDIVIDER

THE PALOMAR HEIGHTS PROJECT
2335 ENCINITAS BOULEVARD
SUITE 216
ENCINITAS, CA 92024

APPLICANT _____ DATE _____

ENGINEER



RAYMOND L. MARTIN R.C.E. 48670 DATE _____
MY REGISTRATION EXPIRES ON 6/30/20

PREPARED BY:

HUNSAKER & ASSOCIATES
SAN DIEGO, INC.
PLANNING: 9700 Wagon Street
ENGINEERING: San Diego, CA 92121
SURVEYING: PH080555-0000 PH080555-0004

NO.	REVISIONS	DATE	BY
1	1ST SUBMITTAL	06/25/19	HBA
2	2ND SUBMITTAL	09/11/19	HBA
3			
4			
5			
6			
7			
8			

PRELIMINARY GRADING PLAN

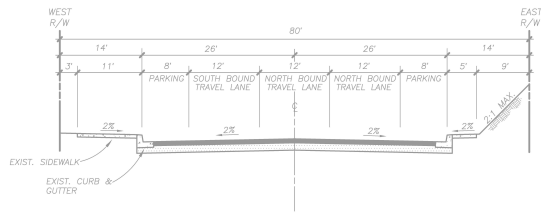
PALOMAR HEIGHTS

City of Escondido, California

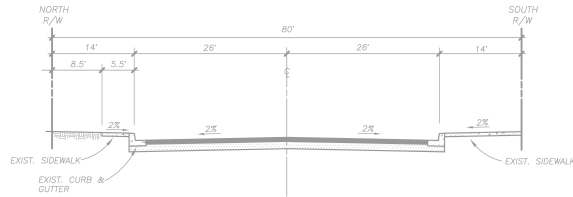
SHEET 1 OF 12

R:\14777&Pin\PALOMAR HEIGHTS- Site Plan Sht 01.dwg[Sep-11-2019:11:20]

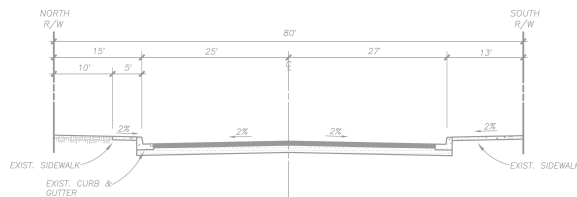
W.O. 2445-0021

**EXISTING VALLEY BOULEVARD**

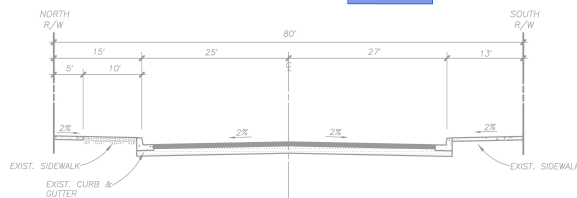
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**EXISTING GRAND AVENUE
(BTWN VALLEY BLVD AND GRAPE)**

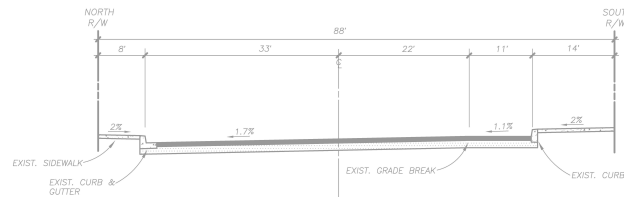
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**EXISTING GRAND AVENUE
(BTWN GRAPE AND FIG)**

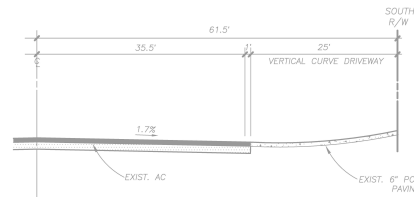
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**EXISTING GRAND AVENUE
(BTWN GRAPE AND FIG)**

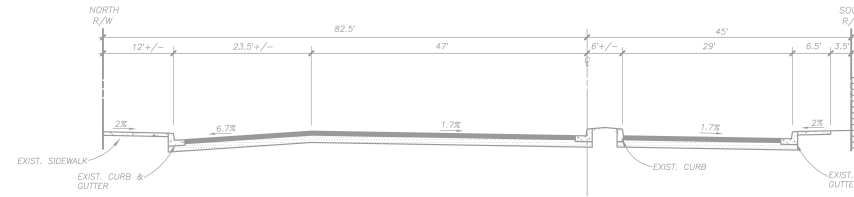
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**EXISTING VALLEY PARKWAY
(STATION 13+90 PER DWG NO. P-1941)**

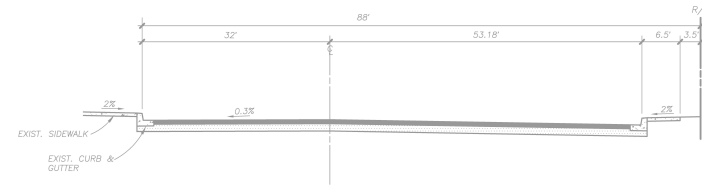
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**EXISTING VALLEY PARKWAY
(STATION 16+75.35 PER DWG NO. P-1941)**

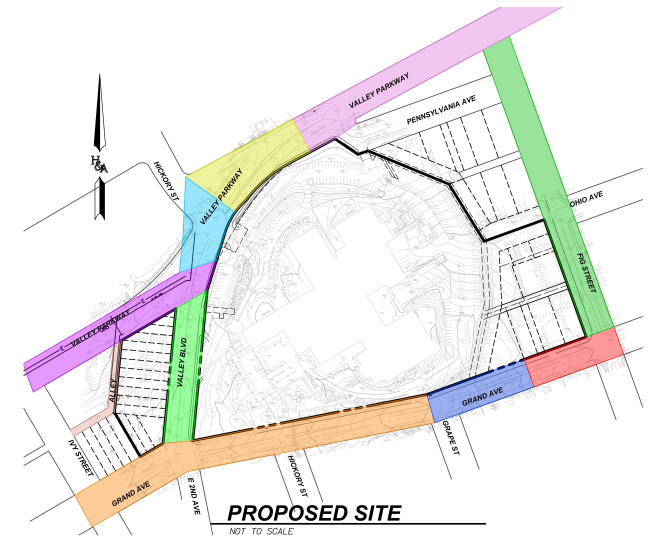
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**EXISTING VALLEY PARKWAY
(STATION 18+60 PER DWG NO. P-1941)**

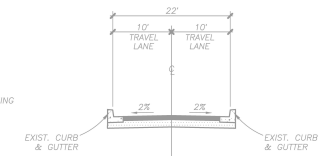
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**EXISTING E.C. VALLEY PARKWAY
(STATION 20+81.86 PER DWG NO. P-1941)**

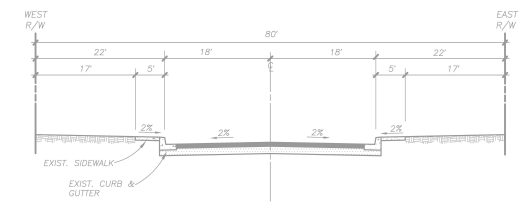
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**PROPOSED SITE**

NOT TO SCALE

**EXISTING ALLEY**

NOT TO SCALE

**EXISTING FIG STREET**

NOT TO SCALE

EXISTING STREET SECTIONS

PREPARED BY:

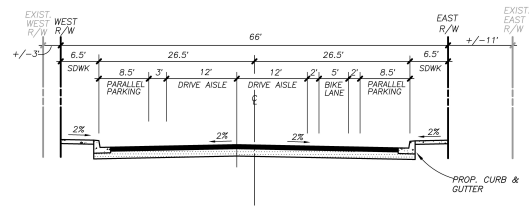
HUNSAKER & ASSOCIATES
LAND DESIGN INC.
PLANNING 9107 Wagon Street
ENGINEERING San Diego, CA 92121
SURVEYING PH0608058-4000 PH0608058-4141

**PRELIMINARY
GRADING PLAN
PALOMAR HEIGHTS**
City of Escondido, California

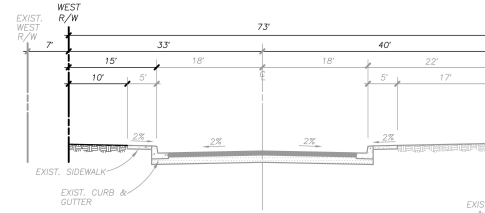
**SHEET
2
OF
12**

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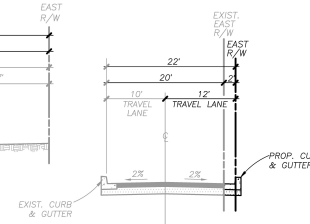
W.O. 2445-0021

**PROPOSED VALLEY BOULEVARD**

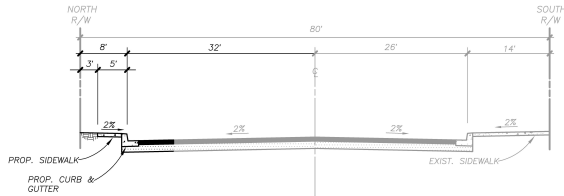
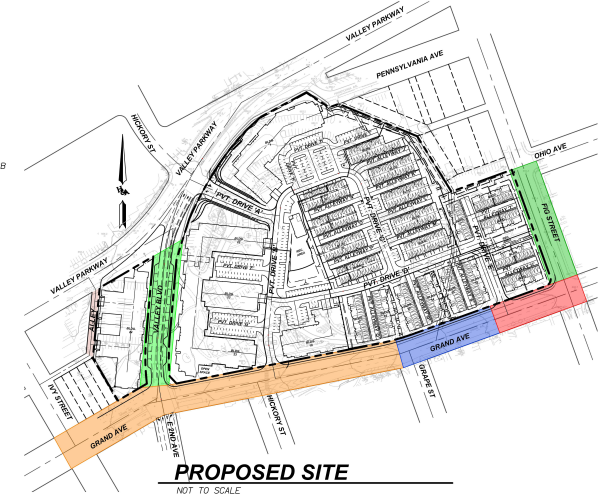
NOT TO SCALE

**PROPOSED FIG STREET**

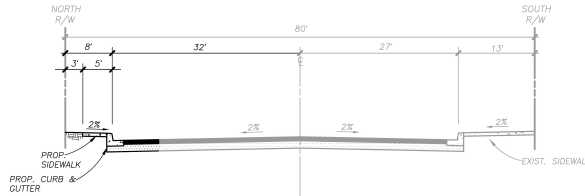
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**PROPOSED ALLEY**

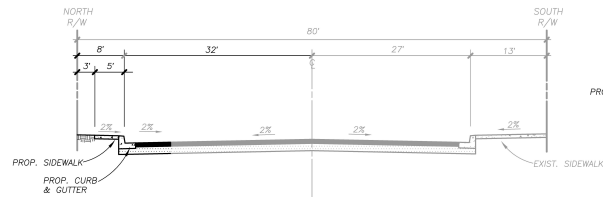
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**PROPOSED GRAND AVENUE
(BTWN VALLEY BLVD AND GRAPE)**

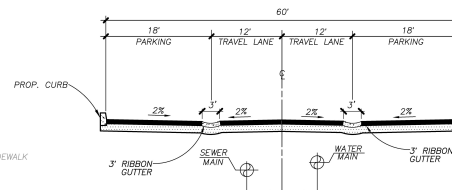
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**PROPOSED GRAND AVENUE
(BTWN GRAPE AND FIG)**

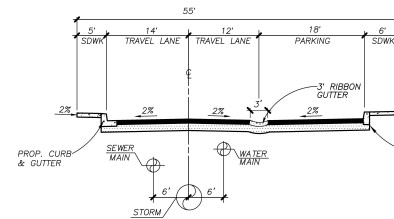
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**PROPOSED GRAND AVENUE
(BTWN GRAPE AND FIG)**

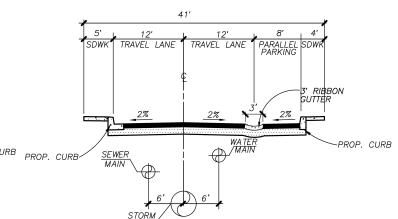
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**PROPOSED PVT. DRIVE 'F', 'G' & 'H'
AND PORTION OF PVT. DRIVE 'D'**

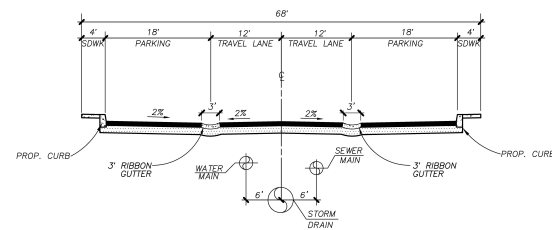
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**PROPOSED PVT. DRIVE 'B'**

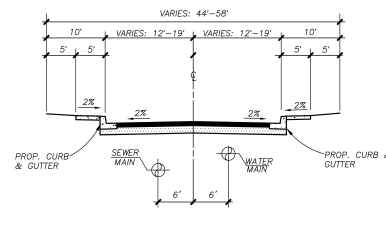
NOT TO SCALE

**PORTION OF PROPOSED PVT. DRIVE 'D'**

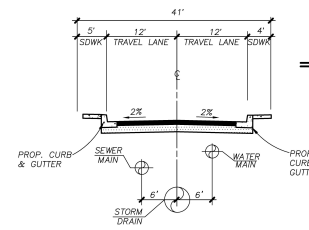
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**PROPOSED PVT. DRIVE 'C'**

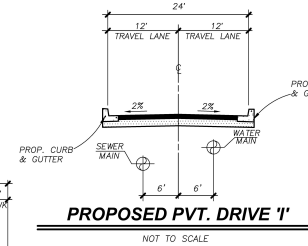
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**PROPOSED PVT. DRIVE 'A'**

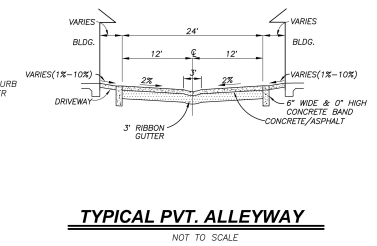
NOT TO SCALE

**PROPOSED PVT. DRIVE 'E'**

NOT TO SCALE

**PROPOSED PVT. DRIVE 'I'**

NOT TO SCALE

**TYPICAL PVT. ALLEYWAY**

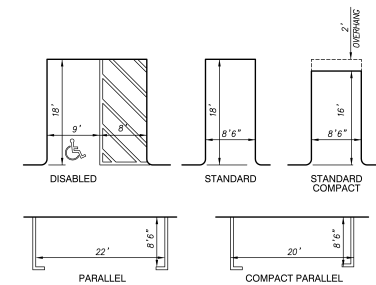
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PROPOSED STREET SECTIONS

PREPARED BY:
HUNSAKER & ASSOCIATES
LAND DESIGN INC.
PLANNING 9107 Wagon Street
ENGINEERING San Diego, CA 92121
SURVEYING PH 619-581-5500 FAX 619-581-5514

**PRELIMINARY
GRADING PLAN
PALOMAR HEIGHTS**
City of Escondido, California

SHEET
3
OF
12



TYPICAL PARKING DETAIL
NOT TO SCALE

DETAILS

PREPARED BY:



**HUNSAKER
& ASSOCIATES**
LAND DESIGN, INC.
PLANNING 9101 Wagon Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH0600558-4000 FAX060558-4114

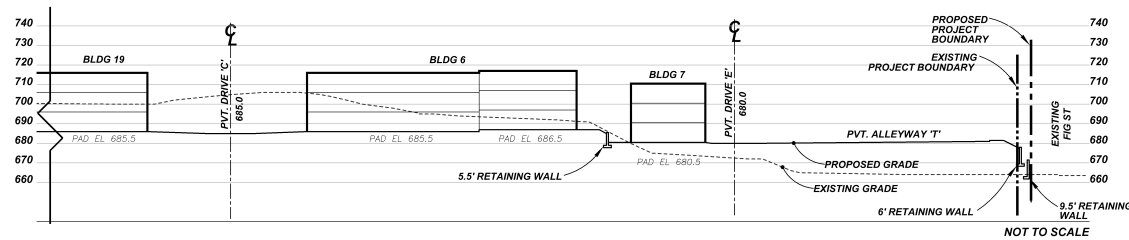
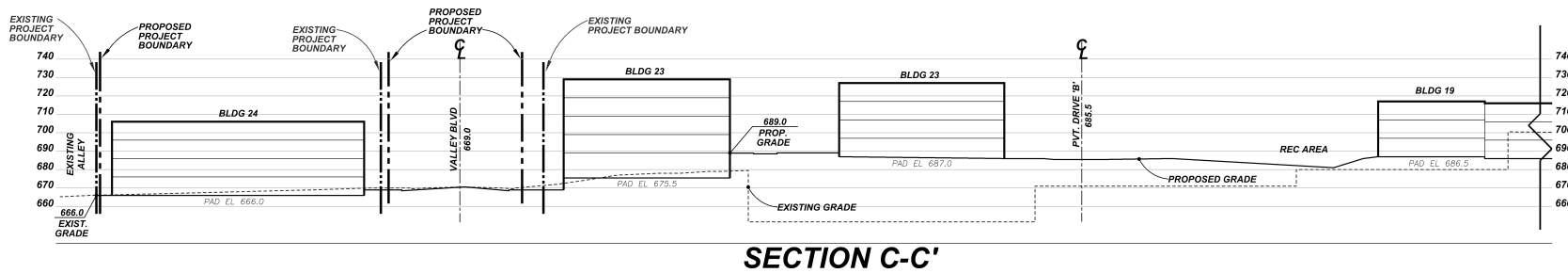
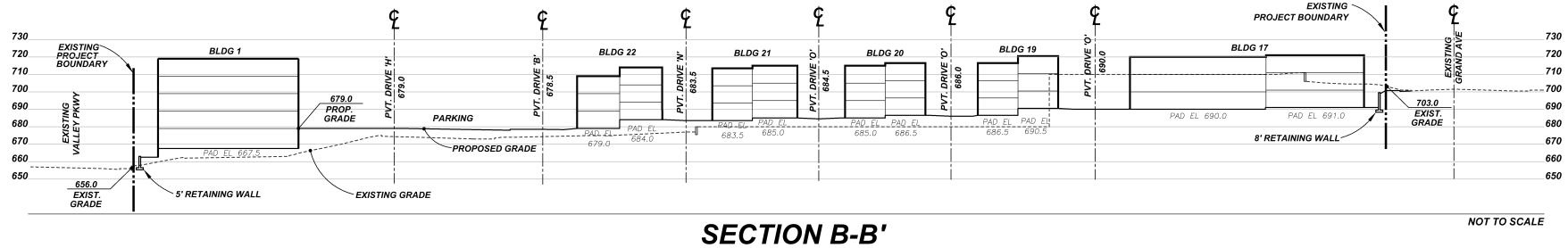
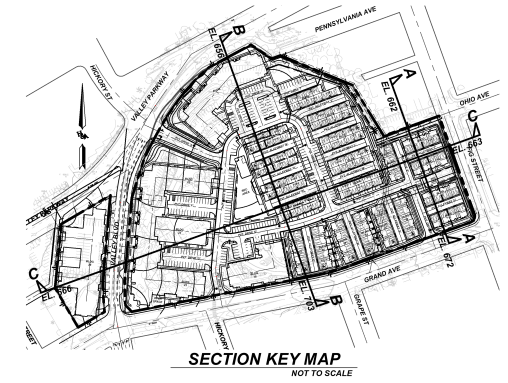
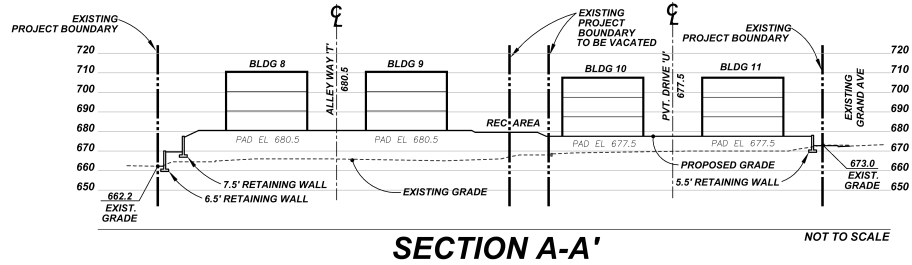
**PRELIMINARY
GRADING PLAN
PALOMAR HEIGHTS**
City of Escondido, California

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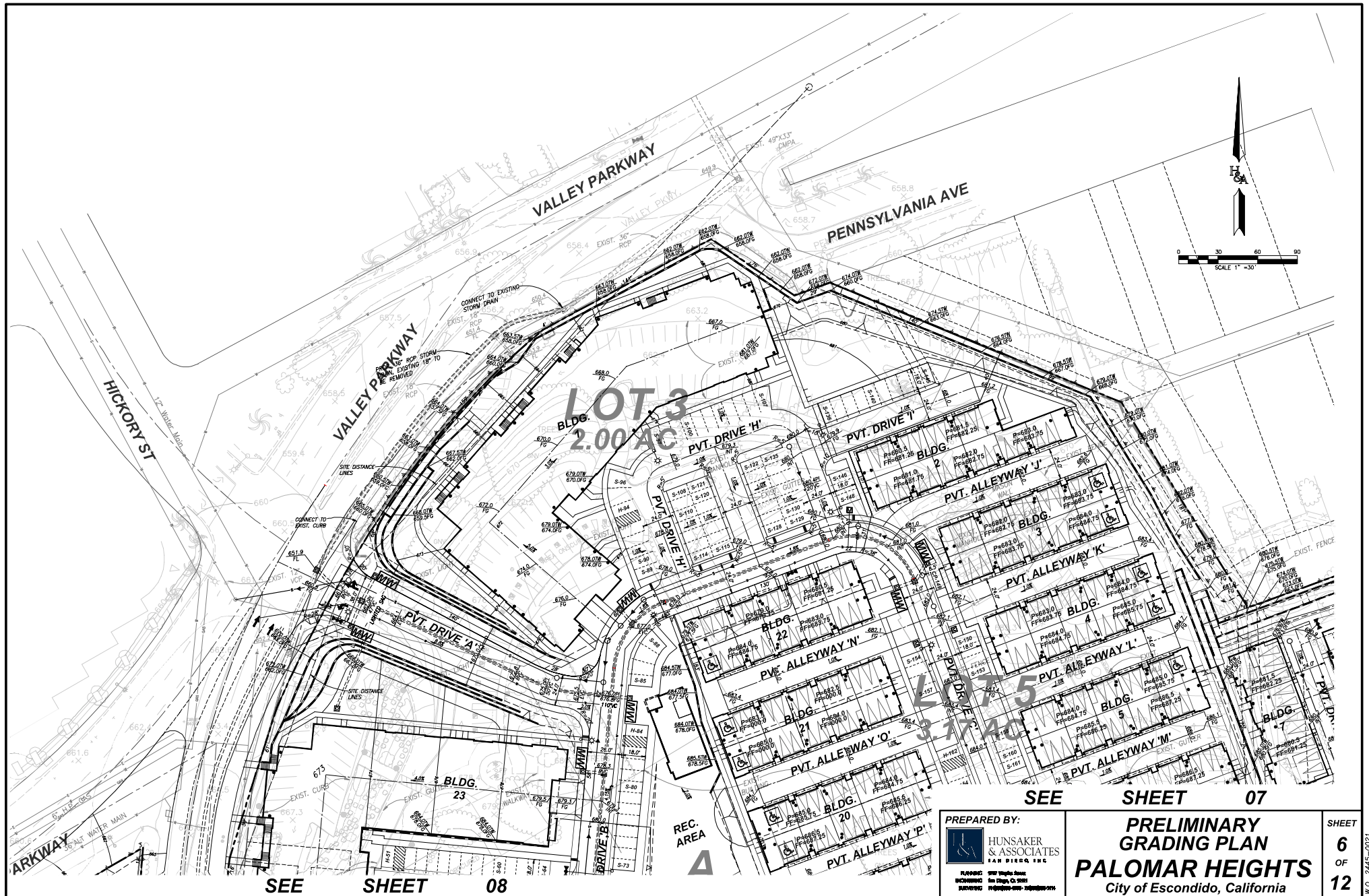
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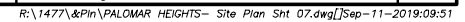


PREPARED BY:
 **HUNSAKER & ASSOCIATES**
 LAND DESIGN, INC.
 PLANNING 9107 Wagon Street
 ENGINEERING San Diego, CA 92121
 SURVEYING PH 619-591-5500 FAX 619-591-5514

SITE CROSS SECTIONS
PRELIMINARY
GRADING PLAN
PALOMAR HEIGHTS
 City of Escondido, California

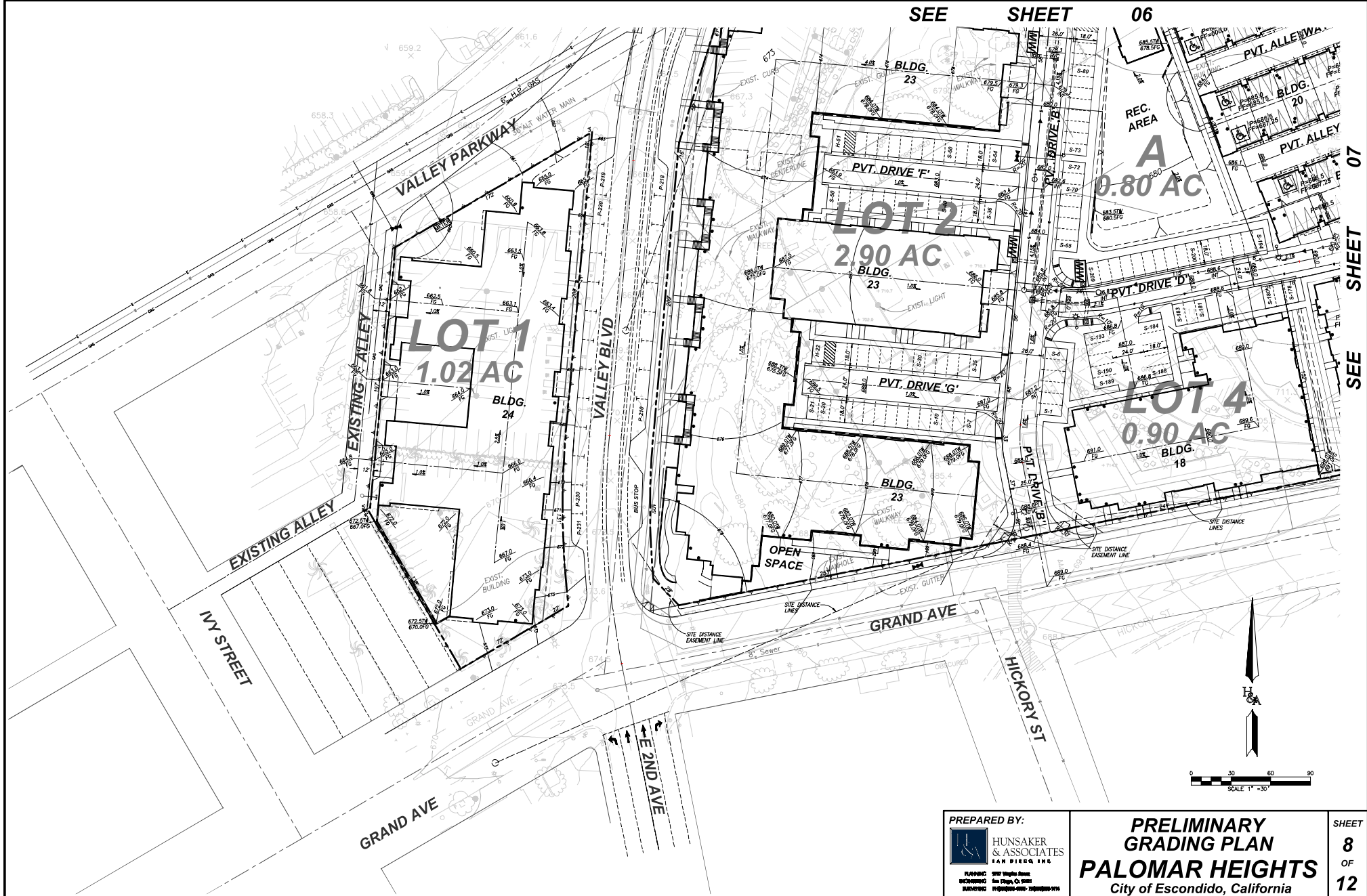
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SEE SHEET 06

SEE SHEET 07



PREPARED BY:
HUNSAKER & ASSOCIATES
P.L.L.C.
14000 N. MISSION BLVD., SUITE 200
DANFORTH, CA 92018
TEL: (760) 734-1100
WWW.HUNSAKER-ASSOCIATES.COM

**PRELIMINARY
GRADING PLAN
PALOMAR HEIGHTS**
City of Escondido, California

SHEET
8
OF
12

LEGEND

- EXIST. SEWER
- PROP. PUBLIC 8" SEWER
- EXIST. WATER
- PROP. PUBLIC 8" WATER
- EXIST. ELECTRICAL
- EXIST. GAS
- EXIST. STORM DRAIN
- PROP. 24" STORM DRAIN
- PROP. MODULAR WETLAND
- PROP. PUBLIC WATER METER
- EXIST. FIRE HYDRANT
- PROP. FIRE HYDRANT

* EXISTING ON SITE SEWER AND WATER NOT SHOWN AND TO BE ABANDONED OR REMOVED
** PIPE SIZES ARE PER LEGEND UNLESS OTHERWISE NOTED ON PLAN.



PROPOSED & EXISTING UTILITIES

PREPARED BY:
HUNSAKER & ASSOCIATES
P.A.C. 00000000
PLANNING
ENGINEERING
ARCHITECTURE

**PRELIMINARY
GRADING PLAN
PALOMAR HEIGHTS**
City of Escondido, California

SHEET
**9
OF
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W.D. 2445-0021



C.R. 36336

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VALLEY PKWY

MAP NO. 2574

PALOMAR MEMORIAL HOSPITAL SUBDIVISION

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BLOCK 33

BLOCK 338

LOCK

GRAND AVE

CITY TIE 2211-A/

EXISTING TOPO AND CONDITIONS MAP

**PRELIMINARY
GRADING PLAN
PALOMAR HEIGHTS**
City of Escondido, California

SHEET
11
OF
12

PREPARED BY:

 **HUNSAKER
& ASSOCIATES**
SAN DIEGO, INC.

PLANNING 5500 Village Street
DESIGNING San Diego, CA 92121
DRAWING 619-444-8800 • 714-444-0114

R:\1477\&Pln\PALOMAR HEIGHTS- Site Plan Sht 11.dwg[]Sep-11-2019:09:53

TITLE REFERENCE:

THIS SURVEY IS BASED ON THE COMMITMENT FOR TITLE INSURANCE ISSUED BY FINTO-CHICAGO
TITLE COMPANY AS ORDER NO. 00103570-998-501-874, EFFECTIVE DATE NOVEMBER 28, 2018

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF ESCONDIDO, IN THE COUNTY OF SAN DIEGO,
STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A: (APN 229-450-00)

BLOCK 339 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO,
STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574, FILED IN THE OFFICE OF THE COUNTY RECORDER OF
SAN DIEGO COUNTY, JUNE 1, 1940, TOGETHER WITH THAT PORTION OF HICKORY STREET ADJACENT TO SAID BLOCK
339 ON THE WEST AS VACATED AND CLOSED TO PUBLIC USE, A CERTIFIED COPY OF RESOLUTION NO. 85-209
RECORDED AUGUST 4, 1982 AS FILE NO. 1982-230658 AND RE-RECORDED AUGUST 27, 1982 AS FILE NO.
1982-230675, ALSO THAT PORTION OF GRAPE STREET AND E. PENNSYLVANIA AVENUE ADJACENT TO SAID BLOCK 339
ON THE EAST, NORTHEAST AND NORTH AS VACATED AND CLOSED TO PUBLIC USE BY ORDINANCE OF THE CITY OF
ESCONDIDO NO. 784 RECORDED MAY 29, 1967 AND BY A CERTIFIED COPY OF RESOLUTION NO. 3791 RECORDED
NOVEMBER 13, 1967 AS FILE NO. 178214.

PARCEL B: (APN 229-450-05)

BLOCK 338 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO,
STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574, FILED IN THE OFFICE OF THE COUNTY RECORDER OF
SAN DIEGO COUNTY, JUNE 1, 1940, TOGETHER WITH THAT PORTION OF HICKORY STREET ADJACENT TO SAID BLOCK
338 ON THE EAST AS VACATED AND CLOSED TO PUBLIC USE, A CERTIFIED COPY OF RESOLUTION NO. 82-208
RECORDED AUGUST 4, 1982 AS FILE NO. 1982-230658 AND RE-RECORDED AUGUST 27, 1982 AS FILE NO.
1982-230675, ACCORDING TO MAP THEREOF NO. 336, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN
DIEGO COUNTY, JULY 10, 1986.

PARCEL C: (APN 230-163-05)

LOT 5, BLOCK 34, PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO,
STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574, FILED IN THE OFFICE OF THE COUNTY RECORDER OF
SAN DIEGO COUNTY, JULY 1, 1940, TOGETHER WITH THE SOUTHERLY HALF OF THAT PORTION OF GRAPE STREET
LYING NORTHERLY OF SAID LOT 5 AS CLOSED BY ORDER OF THE CITY COUNCIL OF THE CITY OF ESCONDIDO, A
CERTIFIED COPY OF SAID ORDER BEING RECORDED MAY 29, 1967 AS FILE NO. 1967-230675, TOGETHER WITH THE
SOUTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID
LAND BY OPERATION OF LAW, TOGETHER WITH THAT PORTION OF GRAPE STREET ADJOINING THE SOUTHERLY HALF OF
THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID LAND BY OPERATION OF
LAW.

PARCEL D: (APN 230-163-01)

ALL THAT PORTION OF LOTS 9, 10, AND 11 OF BLOCK 34 AND OF THE EASTERLY ONE HALF OF GRAPE STREET
ADJOINING SAID LOT 11 ON THE WEST AS VACATED AND CLOSED TO PUBLIC USE AND A PORTION OF CHIO
AVENUE AS VACATED AND CLOSED TO PUBLIC USE IN PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF
ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574, FILED IN THE
OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 1, 1940, DESCRIBED AS A WHOLE AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHEASTERN LINE OF SAID LOT 11 WHICH IS DISTANT SOUTH 89°39'30" WEST
ALONG THE SOUTHERLY BOUNDARIES OF SAID LOTS 9, 10, AND 11 A DISTANCE OF 125.00 FEET FROM THE MOST
EASTERLY CORNER OF SAID LOT 9; THENCE ALONG SAID SOUTHEASTERN BOUNDARY OF SAID LOT 11 AND THE
SOUTHERLY PROLONGATION THEREOF SOUTH 89°39'30" WEST 125.00 FEET TO THE CENTER LINE OF THE ABOVE
MENTIONED GRAPE STREET; THENCE ALONG SAID CENTER LINE NORTH 11°02'00" EAST 19.45 FEET TO AN ANGLE
POINT THEREIN; THENCE CONTINUING ALONG SAID CENTER LINE NORTH 2°00'00" WEST 147.02 FEET, MORE OR LESS,
TO AN INTERSECTION WITH A LINE BEARING SOUTH 89°39'30" WEST FROM THE NORTHWESTERN CORNER OF SAID LOT
11; THENCE NORTH 89°39'30" EAST 40.00 FEET TO SAID NORTHWESTERN CORNER OF SAID LOT 11; THENCE ALONG
THE NORTHWESTERN LINE OF SAID LOT 11 NORTH 89°39'30" EAST 11.00 FEET TO THE MOST WESTERN CORNER OF SAID
VACATED PORTION OF CHIO AVENUE; THENCE ALONG THE NORTHERLY BOUNDARY OF SAID VACATED PORTION OF CHIO
AVENUE NORTH 47°59'40" EAST 80.00 FEET TO A POINT HEREIN DESCRIBED AS POINT OF BEGINNING; THENCE
ALONG SAID NORTHERLY BOUNDARY NORTH 47°59'40" EAST 3.50 FEET TO AN ANGLE POINT THEREIN; THENCE
CONTINUING ALONG SAID NORTHERLY BOUNDARY NORTH 47°59'40" EAST 75.00 FEET TO THE BEGINNING OF TANGENT
15.00 FOOT RADIUS CURVE CONCAVE SOUTHWESTERLY; THENCE EASTERLY AND SOUTHEASTERLY ALONG SAID CURVE
THROUGHOUT A CENTRAL ANGLE OF 89°39'30" TO THE POINT OF TANGENCY; SAID POINT OF TANGENCY BEING ALSO A
POINT IN THE WESTERN BOUNDARY OF FID STREET BOUNDING SAID LOT 9 ON THE EAST; THENCE ALONG SAID
WESTERN BOUNDARY OF SAID FID STREET, SOUTH 20°12'30" EAST 40.70 FEET TO A POINT IN SAID WESTERN
BOUNDARY DISTANT THEREIN NORTH 20°12'30" WEST 80.20 FEET FROM THE MOST EASTERLY CORNER OF SAID LOT 9;
THENCE PARALLEL WITH THE SOUTHEASTERN BOUNDARY OF SAID LOTS 9, 10, AND 11, SOUTH 89°39'30" WEST 83.00
FEET TO A POINT HEREIN DESCRIBED AS POINT "A"; THENCE CONTINUING ALONG SAID PARALLEL LINE SOUTH
69°39'30" WEST 42.00 FEET; THENCE PARALLEL WITH THE EASTERLY BOUNDARY OF SAID LOT 9, SOUTH 20°12'30"
EAST 80.20 FEET TO THE SOUTHEASTERN BOUNDARY OF SAID LOT 11 AND THE POINT OF BEGINNING TOGETHER
WITH THAT PORTION OF THE SOUTHEASTERN HALF OF EAST CHIO AVENUE AS VACATED AND CLOSED TO PUBLIC USE
BY RESOLUTION NOS. 74-211 TO THE CITY COUNCIL OF THE CITY OF ESCONDIDO RECORDED OCTOBER 21, 1974 AS
FILE NO. 1974-280073, OFFICIAL RECORDS, TOGETHER WITH THE NORTHERLY HALF OF THE ALLEY CONTIGUOUS WITH
SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID LAND BY OPERATION OF LAW, TOGETHER WITH THAT
PORTION OF GRAPE STREET ADJOINING THE NORTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH
UPON VACATION WOULD REVERT TO SAID LAND BY OPERATION OF LAW.

PARCEL E: (APN 230-163-03)

LOTS 7 AND 8 AND THE EASTERLY 20 FEET OF LOT 6, OF BLOCK 34 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION,
IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2574,
FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY ON JULY 1, 1940, TOGETHER WITH THE
SOUTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID
LAND BY OPERATION OF LAW.

PARCEL F: (APN 230-163-02)

ALL THAT PORTION OF LOTS 9, 10 AND 11 OF BLOCK 34 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE
CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF 2574, FILED IN
THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 1, 1940, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEASTERN CORNER OF SAID LOT 9; THENCE ALONG THE EASTERLY BOUNDARY THEREOF
NORTH 20°12'30" WEST 80.20 FEET; THENCE PARALLEL WITH THE SOUTHERLY BOUNDARY OF SAID LOT 9, 10 AND 11,
SOUTH 69°39'30" WEST 125.00 FEET; THENCE PARALLEL WITH THE EASTERLY BOUNDARY OF SAID LOT 9, SOUTH
20°12'30" EAST 80.20 FEET TO THE SOUTHERLY BOUNDARY OF LOT 11; THENCE ALONG THE SOUTHERLY BOUNDARY
OF LOTS 11, 10 AND 9, NORTH 89°39'30" EAST 125.00 FEET TO THE POINT OF BEGINNING, TOGETHER WITH THE
NORTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID
LAND BY OPERATION OF LAW.

PARCEL G: (APN 229-442-01)

LOTS 18, 19 AND 20 IN BOOK 64 OF ESCONDIDO, CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF
CALIFORNIA, ACCORDING TO MAP THEREOF NO. 336, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO
COUNTY, JULY 10, 1986.

PARCEL H: (APN 229-442-01 & 18)

LOTS 8, 7, 6, 9, 10, 14 AND 15 EXCEPT THE WEST 3 FEET OF SAID LOT 6, IN BLOCK 64 OF ESCONDIDO, IN THE
CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 336, FILED
IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 10, 1986.

PARCEL I: (APN 229-442-04)

LOTS 11, 12 AND 13 IN BLOCK 64 OF THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA,
ACCORDING TO MAP THEREOF NO. 336, ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY,
JULY 10, 1986.

PARCEL J: (APN 229-442-02)

LOTS 16 AND 17 IN BLOCK 64 IN THE CITY OF ESCONDIDO, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA,
ACCORDING TO MAP THEREOF NO. 336, ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY.

PARCEL K: (APN 230-163-04)

LOT 6 IN BLOCK 34 OF PALOMAR MEMORIAL HOSPITAL SUBDIVISION, IN THE CITY OF ESCONDIDO, COUNTY OF SAN
DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP NO. 2574, FILED IN THE OFFICE OF THE COUNTY RECORDER OF
SAN DIEGO COUNTY, JULY 1, 1940, EXCEPTING THEREFROM THE EASTERLY 20 FEET THEREOF, TOGETHER WITH THE
SOUTHERLY HALF OF THE ALLEY CONTIGUOUS WITH SAID PARCEL WHICH UPON VACATION WOULD REVERT TO SAID
LAND BY OPERATION OF LAW.

ENCUMBRANCES:

THE FOLLOWING MATTERS AFFECT PARCELS A, B, C AND D:

- EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO
AS RESERVED IN A DOCUMENT:
PURPOSE: THE CONSTRUCTION, OPERATION AND MAINTENANCE OF PUBLIC UTILITIES
RECORDING DATE: MAY 29, 1967
RECORDING NO.: 82029 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCELS A, C AND D
- EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO
AS RESERVED IN A DOCUMENT:
PURPOSE: TO ERECT, CONSTRUCTION, REPLACE, MAINTAIN, AND USE OF POLES, WIRES
AND INCIDENTAL PURPOSES
FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY
RECORDING DATE: NOVEMBER 13, 1967
RECORDING NO.: 178214 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCEL A.
- EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO,
AS GRANTED IN A DOCUMENT:
GRANTED TO: THE CITY OF ESCONDIDO
PURPOSE: TO CONSTRUCT, MAINTAIN AND OPERATE UNDERGROUND WATER PIPE LINES
AND APPURTENANCES THERETO
RECORDING DATE: FEBRUARY 28, 1984
RECORDING NO.: 89-507498 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCELS A AND B
- EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO,
AS GRANTED IN A DOCUMENT:
GRANTED TO: CITY OF ESCONDIDO
PURPOSE: PUBLIC STREET
RECORDING DATE: SEPTEMBER 20, 1989
RECORDING NO.: 89-507874 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCEL A.
- EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO,
AS GRANTED IN A DOCUMENT:
GRANTED TO: CITY OF ESCONDIDO
PURPOSE: PUBLIC STREET
RECORDING DATE: SEPTEMBER 20, 1989
RECORDING NO.: 89-507874 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCEL A.

THE FOLLOWING MATTERS AFFECT PARCEL H:

- AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO
AS SET FORTH IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDED: APRIL 28, 1992 AS INSTRUMENT NO. 1992-0248179, OF OFFICIAL
RECORDS
AFFECTS: THE NORTHERLY 13.00 FEET OF THE NORTHERLY 8.00 FEET OF SAID LOT 10
AFFECTS: LOTS 7 - 10 & 14, 15, PORTION 6

THE FOLLOWING MATTERS AFFECT PARCEL I:

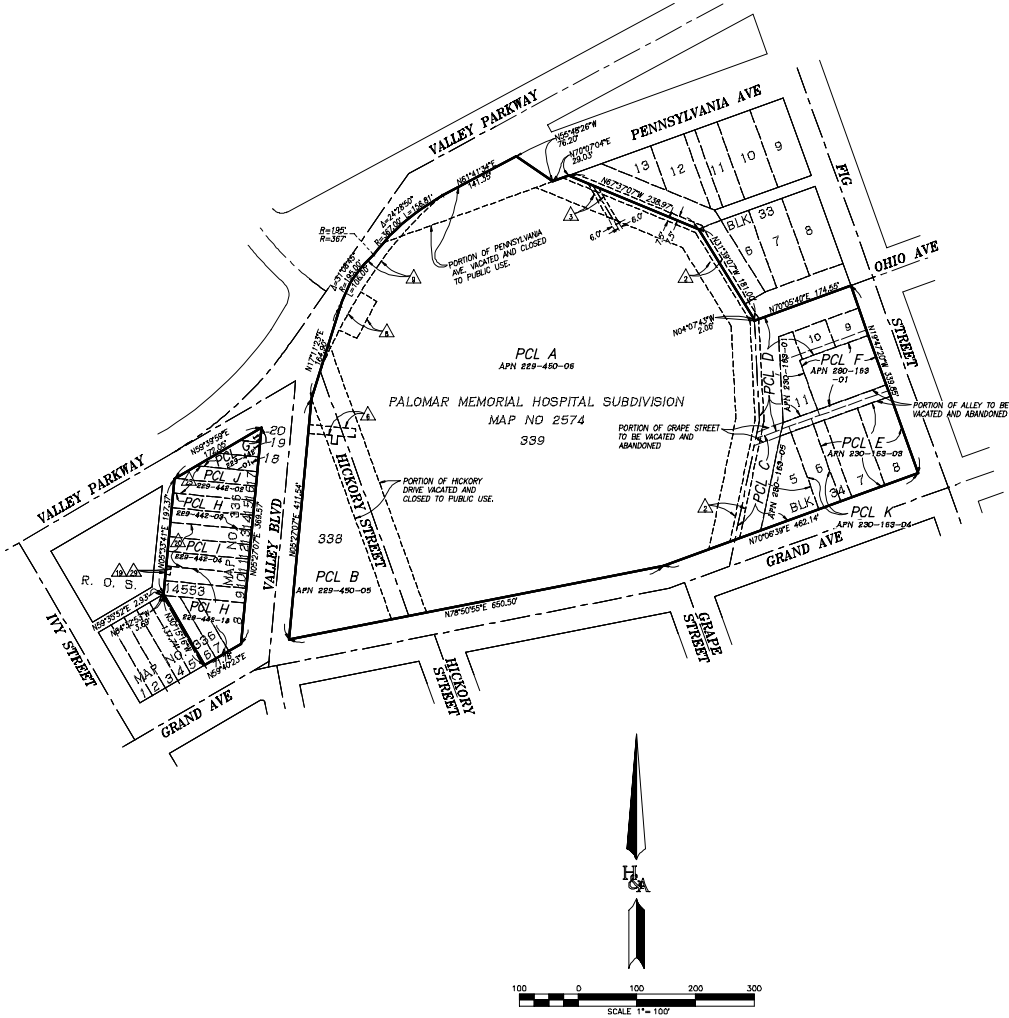
- THE FOLLOWING EASEMENTS RESERVED BY THE ESCONDIDO LAND & TOWN COMPANY
(SUCCEEDED BY THE CITY OF ESCONDIDO) FOR THE PIPELINES AS FOLLOWS:
IN BOOK 67, PAGE 35 OF DEEDS, AFFECTS LOT 13;
IN BOOK 67, PAGE 37 OF DEEDS, AFFECTS LOTS 11 & 12;

THE FOLLOWING MATTERS AFFECT PARCEL J:


- THE FOLLOWING EASEMENTS RESERVED BY THE ESCONDIDO LAND & TOWN COMPANY
(SUCCEEDED BY THE CITY OF ESCONDIDO) FOR THE PIPELINES AS FOLLOWS:
IN BOOK 118, PAGE 58 OF DEEDS, AFFECTS LOT 16;
IN BOOK 118, PAGE 320, OF DEEDS, AFFECTS LOT 17.

THE FOLLOWING MATTERS AFFECT PARCEL K:

- AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO
AS SET FORTH IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDED: APRIL 28, 1992 AS INSTRUMENT NO. 1992-0248179, OF OFFICIAL
RECORDS
AFFECTS: THE NORTHERLY 13.00 FEET OF THE NORTHERLY 8.00 FEET OF SAID LOT 10



BOUNDARY AND ENCUMBRANCES

PREPARED BY:  HUNSAKER & ASSOCIATES INCORPORATED 10000 HUNSAKER DRIVE SAN DIEGO, CA 92121 (619) 444-1111	PRELIMINARY GRADING PLAN PALOMAR HEIGHTS City of Escondido, California	SHEET 12 OF 12

R:\1477\&Pin\PALOMAR HEIGHTS- Site Plan Sht 12.dwg[Sep-11-2019:09:52

ATTACHMENT 6

**Copy of Hydromodification Management Applicability Evaluation:
Escondido Creek**

Date: January 8th, 2018

**Prepared by: Geosyntec, Chang Consultants,
Moffat & Nichol**

Hydromodification Management Applicability Evaluation: Escondido Creek



January 8, 2018

Prepared for:



Prepared by:



moffatt & nichol

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ATTACHMENT C	EROSION POTENTIAL
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Executive Summary

The San Diego Regional Water Quality Control Board (SDRWQCB) reissued a municipal storm water National Pollutant Discharge Elimination System Permit in 2013 (Municipal Separate Storm Sewer Systems [MS4] Permit) that covers the San Diego region, including the Carlsbad watershed management area (WMA). The Regional MS4 Permit requires each WMA within the San Diego Region to develop a Water Quality Improvement Plan (WQIP), which provides Copermittees an option to perform a regional Watershed Management Area Analysis (WMAA) to develop watershed-specific requirements for structural best management practice (BMP) implementation for Priority Development Projects (PDPs). Within this provision is the opportunity to identify areas within the WMA where it is appropriate to allow for exemptions from hydromodification management requirements in addition to those already allowed for PDPs by the Regional MS4 Permit. A regional WMAA was prepared in 2015 on behalf of the San Diego Copermittees that included technical evaluations of the five major river reaches included in the Final Hydromodification Management Plan (Brown and Caldwell, 2011). These evaluations were conducted to determine if it is still appropriate to carry forward hydromodification management exemptions in the respective WQIPs (San Diego County Copermittees, 2015). Escondido Creek (Creek) was not analyzed in the regional WMAA, so a separate effort was undertaken and is documented in this report (the Study).

Using a geographic information system (GIS), watershed data compiled and developed in the regional WMAA, and additional evaluation metrics and analyses, the main stem of Escondido Creek was evaluated to determine if hydromodification management controls are applicable for PDPs discharging directly to the creek. The Study extents of Escondido Creek were evaluated from the non-hardened, natural Creek main stem beginning from the end of the concrete channel at the western Escondido City limit (i.e., Harmony Grove Road; upper study limit) to the confluence with the San Elijo Lagoon (lower study limit). The evaluations, using regional WMAA data, consisted of Southern California Coastal Water Research Project (SCCWRP) field assessments, sediment transport analyses, flow control and coarse sediment supply analyses, and an evaluation of impacts to the San Elijo Lagoon. These analyses comprise the Study described in this report and in the attachments.

Based on the findings of the Study, requiring hydromodification controls for PDPs discharging directly to the main stem of Escondido Creek does not confer a protective benefit to the Creek because it does not appear susceptible to hydromodification, i.e., the Creek is not anticipated to experience accelerated, unnatural erosion from direct stormwater discharges from PDPs. The exemption also does not interfere with the planned restoration of the San Elijo Lagoon. Therefore, it is recommended that PDPs directly discharging stormwater runoff to the study reach be exempt from hydromodification management requirements. The study reach recommended for exemption is from the end of the concrete channel approximately coincident with the Harmony Grove Road crossing to the junction with San Elijo Lagoon and includes the concrete-lined portion of Escondido Creek running through the City of Escondido as it forms a contiguous non-susceptible conveyance to the watershed outlet.

ATTACHMENT 6

Maintenance Guidelines for Modular Wetland System - Linear

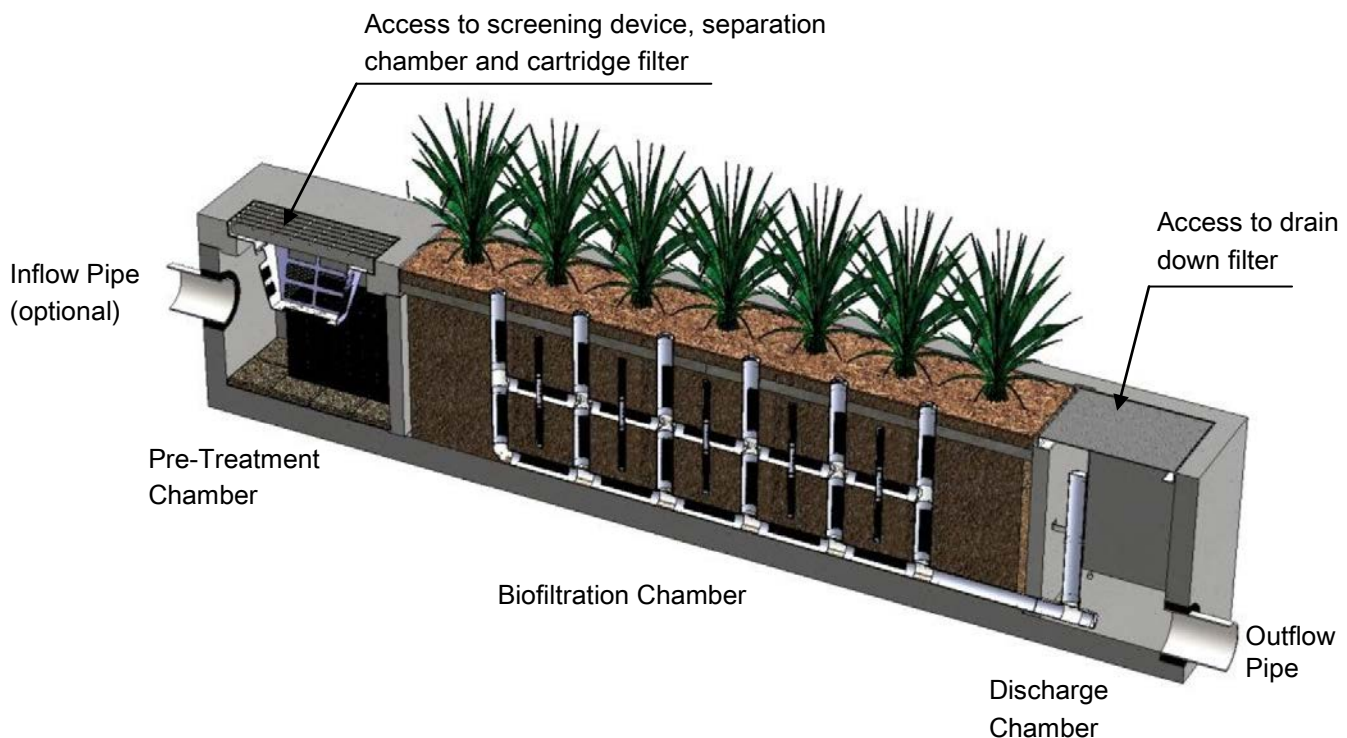
Prepared by: Bioclean

Maintenance Guidelines for Modular Wetland System - Linear

Maintenance Summary

- Remove Trash from Screening Device – average maintenance interval is 6 to 12 months.
 - *(5 minute average service time).*
- Remove Sediment from Separation Chamber – average maintenance interval is 12 to 24 months.
 - *(10 minute average service time).*
- Replace Cartridge Filter Media – average maintenance interval 12 to 24 months.
 - *(10-15 minute per cartridge average service time).*
- Replace Drain Down Filter Media – average maintenance interval is 12 to 24 months.
 - *(5 minute average service time).*
- Trim Vegetation – average maintenance interval is 6 to 12 months.
 - *(Service time varies).*

System Diagram



Maintenance Procedures

Screening Device

1. Remove grate or manhole cover to gain access to the screening device in the Pre-Treatment Chamber. Vault type units do not have screening device. Maintenance can be performed without entry.
2. Remove all pollutants collected by the screening device. Removal can be done manually or with the use of a vacuum truck. The hose of the vacuum truck will not damage the screening device.
3. Screening device can easily be removed from the Pre-Treatment Chamber to gain access to separation chamber and media filters below. Replace grate or manhole cover when completed.

Separation Chamber

1. Perform maintenance procedures of screening device listed above before maintaining the separation chamber.
2. With a pressure washer spray down pollutants accumulated on walls and cartridge filters.
3. Vacuum out Separation Chamber and remove all accumulated pollutants. Replace screening device, grate or manhole cover when completed.

Cartridge Filters

1. Perform maintenance procedures on screening device and separation chamber before maintaining cartridge filters.
2. Enter separation chamber.
3. Unscrew the two bolts holding the lid on each cartridge filter and remove lid.
4. Remove each of 4 to 8 media cages holding the media in place.
5. Spray down the cartridge filter to remove any accumulated pollutants.
6. Vacuum out old media and accumulated pollutants.
7. Reinstall media cages and fill with new media from manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase.
8. Replace the lid and tighten down bolts. Replace screening device, grate or manhole cover when completed.

Drain Down Filter

1. Remove hatch or manhole cover over discharge chamber and enter chamber.
2. Unlock and lift drain down filter housing and remove old media block. Replace with new media block. Lower drain down filter housing and lock into place.
3. Exit chamber and replace hatch or manhole cover.

Maintenance Notes

1. Following maintenance and/or inspection, it is recommended the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.
3. Transport all debris, trash, organics and sediments to approved facility for disposal in accordance with local and state requirements.
4. Entry into chambers may require confined space training based on state and local regulations.
5. No fertilizer shall be used in the Biofiltration Chamber.
6. Irrigation should be provided as recommended by manufacturer and/or landscape architect. Amount of irrigation required is dependent on plant species. Some plants may require irrigation.

Maintenance Procedure Illustration

Screening Device

The screening device is located directly under the manhole or grate over the Pre-Treatment Chamber. It's mounted directly underneath for easy access and cleaning. Device can be cleaned by hand or with a vacuum truck.



Separation Chamber

The separation chamber is located directly beneath the screening device. It can be quickly cleaned using a vacuum truck or by hand. A pressure washer is useful to assist in the cleaning process.



Cartridge Filters

The cartridge filters are located in the Pre-Treatment chamber connected to the wall adjacent to the biofiltration chamber. The cartridges have removable tops to access the individual media filters. Once the cartridge is open media can be easily removed and replaced by hand or a vacuum truck.



Drain Down Filter

The drain down filter is located in the Discharge Chamber. The drain filter unlocks from the wall mount and hinges up. Remove filter block and replace with new block.



Trim Vegetation

Vegetation should be maintained in the same manner as surrounding vegetation and trimmed as needed. No fertilizer shall be used on the plants. Irrigation per the recommendation of the manufacturer and or landscape architect. Different types of vegetation requires different amounts of irrigation.



Inspection Form



Bio Clean

P. 855-566-3938

F. 760-433-3176

E. Info@BioCleanEnvironmental.com



A Forterra Company

Inspection Report Modular Wetlands System

Project Name _____

Project Address _____ (city) (Zip Code)

Owner / Management Company _____

Contact _____

Phone () -

Inspector Name _____

Date ____ / ____ / ____ Time ____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____

Additional Notes _____

For Office Use Only

(Reviewed By)

(Date)
Office personnel to complete section to the left.

Inspection Checklist

Modular Wetland System Type (Curb, Grate or UG Vault): _____ Size (22', 14' or etc.): _____

Structural Integrity:	Yes	No	Comments
Damage to pre-treatment access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Damage to discharge chamber access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Does the MWS unit show signs of structural deterioration (cracks in the wall, damage to frame)?			
Is the inlet/outlet pipe or drain down pipe damaged or otherwise not functioning properly?			
Working Condition:			
Is there evidence of illicit discharge or excessive oil, grease, or other automobile fluids entering and clogging the unit?			
Is there standing water in inappropriate areas after a dry period?			
Is the filter insert (if applicable) at capacity and/or is there an accumulation of debris/trash on the shelf system?			
Does the depth of sediment/trash/debris suggest a blockage of the inflow pipe, bypass or cartridge filter? If yes, specify which one in the comments section. Note depth of accumulation in in pre-treatment chamber.			Depth:
Does the cartridge filter media need replacement in pre-treatment chamber and/or discharge chamber?			Chamber:
Any signs of improper functioning in the discharge chamber? Note issues in comments section.			
Other Inspection Items:			
Is there an accumulation of sediment/trash/debris in the wetland media (if applicable)?			
Is it evident that the plants are alive and healthy (if applicable)? Please note Plant Information below.			
Is there a septic or foul odor coming from inside the system?			

Waste:	Yes	No
Sediment / Silt / Clay		
Trash / Bags / Bottles		
Green Waste / Leaves / Foliage		

Recommended Maintenance	
No Cleaning Needed	
Schedule Maintenance as Planned	
Needs Immediate Maintenance	

Plant Information	
Damage to Plants	
Plant Replacement	
Plant Trimming	

Additional Notes: _____

Maintenance Report



Bio Clean

P. 855-566-3938

F. 760-433-3176

E. Info@BioCleanEnvironmental.com

Cleaning and Maintenance Report Modular Wetlands System

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____

Phone () -

Inspector Name _____

Date ____ / ____ / ____ Time ____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint

☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____

Additional Notes _____

For Office Use Only

(Reviewed By)

(Date)
Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Manufacturer / Description / Sizing	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Total Debris Accumulation	Condition of Media 25/50/75/100 (will be changed @ 75%)	Operational Per Manufactures' Specifications (If not, why?)
	Lat:	MWS Catch Basins						
	Long:							
		MWS Sedimentation Basin						
		Media Filter Condition						
		Plant Condition						
		Drain Down Media Condition						
		Discharge Chamber Condition						
		Drain Down Pipe Condition						
		Inlet and Outlet Pipe Condition						

Comments:

ATTACHMENT 7

Third Party Certification for Modular Wetland Linear

Prepared by:

Washington State Department of Ecology



July 2017

GENERAL USE LEVEL DESIGNATION FOR BASIC, ENHANCED, AND PHOSPHORUS TREATMENT

For the

MWS-Linear Modular Wetland

Ecology's Decision:

Based on Modular Wetland Systems, Inc. application submissions, including the Technical Evaluation Report, dated April 1, 2014, Ecology hereby issues the following use level designation:

1. General use level designation (GULD) for the MWS-Linear Modular Wetland Stormwater Treatment System for Basic treatment
 - Sized at a hydraulic loading rate of 1 gallon per minute (gpm) per square foot (sq ft) of wetland cell surface area. For moderate pollutant loading rates (low to medium density residential basins), size the Prefilters at 3.0 gpm/sq ft of cartridge surface area. For high loading rates (commercial and industrial basins), size the Prefilters at 2.1 gpm/sq ft of cartridge surface area.
2. General use level designation (GULD) for the MWS-Linear Modular Wetland Stormwater Treatment System for Phosphorus treatment
 - Sized at a hydraulic loading rate of 1 gallon per minute (gpm) per square foot (sq ft) of wetland cell surface area. For moderate pollutant loading rates (low to medium density residential basins), size the Prefilters at 3.0 gpm/sq ft of cartridge surface area. For high loading rates (commercial and industrial basins), size the Prefilters at 2.1 gpm/sq ft of cartridge surface area.
3. General use level designation (GULD) for the MWS-Linear Modular Wetland Stormwater Treatment System for Enhanced treatment
 - Sized at a hydraulic loading rate of 1 gallon per minute (gpm) per square foot (sq ft) of wetland cell surface area. For moderate pollutant loading rates (low to medium density residential basins), size the Prefilters at 3.0 gpm/sq ft of cartridge surface area. For high loading rates (commercial and industrial basins), size the Prefilters at 2.1 gpm/sq ft of cartridge surface area.

4. Ecology approves the MWS - Linear Modular Wetland Stormwater Treatment System units for Basic, Phosphorus, and Enhanced treatment at the hydraulic loading rate listed above. Designers shall calculate the water quality design flow rates using the following procedures:

- Western Washington: For treatment installed upstream of detention or retention, the water quality design flow rate is the peak 15-minute flow rate as calculated using the latest version of the Western Washington Hydrology Model or other Ecology-approved continuous runoff model.
- Eastern Washington: For treatment installed upstream of detention or retention, the water quality design flow rate is the peak 15-minute flow rate as calculated using one of the three methods described in Chapter 2.2.5 of the Stormwater Management Manual for Eastern Washington (SWMM EW) or local manual.
- Entire State: For treatment installed downstream of detention, the water quality design flow rate is the full 2-year release rate of the detention facility.

5. These use level designations have no expiration date but may be revoked or amended by Ecology, and are subject to the conditions specified below.

Ecology's Conditions of Use:

Applicants shall comply with the following conditions:

1. Design, assemble, install, operate, and maintain the MWS – Linear Modular Wetland Stormwater Treatment System units, in accordance with Modular Wetland Systems, Inc. applicable manuals and documents and the Ecology Decision.
2. Each site plan must undergo Modular Wetland Systems, Inc. review and approval before site installation. This ensures that site grading and slope are appropriate for use of a MWS – Linear Modular Wetland Stormwater Treatment System unit.
3. MWS – Linear Modular Wetland Stormwater Treatment System media shall conform to the specifications submitted to, and approved by, Ecology.
4. The applicant tested the MWS – Linear Modular Wetland Stormwater Treatment System with an external bypass weir. This weir limited the depth of water flowing through the media, and therefore the active treatment area, to below the root zone of the plants. This GULD applies to MWS – Linear Modular Wetland Stormwater Treatment Systems whether plants are included in the final product or not.
5. Maintenance: The required maintenance interval for stormwater treatment devices is often dependent upon the degree of pollutant loading from a particular drainage basin. Therefore, Ecology does not endorse or recommend a “one size fits all” maintenance cycle for a particular model/size of manufactured filter treatment device.
 - Typically, Modular Wetland Systems, Inc. designs MWS - Linear Modular Wetland systems for a target prefilter media life of 6 to 12 months.
 - Indications of the need for maintenance include effluent flow decreasing to below the design flow rate or decrease in treatment below required levels.
 - Owners/operators must inspect MWS - Linear Modular Wetland systems for a minimum of twelve months from the start of post-construction operation to determine site-specific

maintenance schedules and requirements. You must conduct inspections monthly during the wet season, and every other month during the dry season. (According to the SWMMWW, the wet season in western Washington is October 1 to April 30. According to SWMMEW, the wet season in eastern Washington is October 1 to June 30). After the first year of operation, owners/operators must conduct inspections based on the findings during the first year of inspections.

- Conduct inspections by qualified personnel, follow manufacturer's guidelines, and use methods capable of determining either a decrease in treated effluent flowrate and/or a decrease in pollutant removal ability.
- When inspections are performed, the following findings typically serve as maintenance triggers:
 - Standing water remains in the vault between rain events, or
 - Bypass occurs during storms smaller than the design storm.
 - If excessive floatables (trash and debris) are present (but no standing water or excessive sedimentation), perform a minor maintenance consisting of gross solids removal, not prefilter media replacement.
 - Additional data collection will be used to create a correlation between pretreatment chamber sediment depth and pre-filter clogging (see *Issues to be Addressed by the Company* section below)

6. Discharges from the MWS - Linear Modular Wetland Stormwater Treatment System units shall not cause or contribute to water quality standards violations in receiving waters.

Applicant: Modular Wetland Systems, Inc.
Applicant's Address: P.O. Box 869
Oceanside, CA 92054

Application Documents:

- *Original Application for Conditional Use Level Designation*, Modular Wetland System, Linear Stormwater Filtration System Modular Wetland Systems, Inc., January 2011
- *Quality Assurance Project Plan: Modular Wetland system – Linear Treatment System performance Monitoring Project*, draft, January 2011.
- *Revised Application for Conditional Use Level Designation*, Modular Wetland System, Linear Stormwater Filtration System Modular Wetland Systems, Inc., May 2011
- *Memorandum: Modular Wetland System-Linear GULD Application Supplementary Data*, April 2014
- *Technical Evaluation Report: Modular Wetland System Stormwater Treatment System Performance Monitoring*, April 2014.

Applicant's Use Level Request:

General use level designation as a Basic, Enhanced, and Phosphorus treatment device in accordance with Ecology's Guidance for Evaluating Emerging Stormwater Treatment Technologies Technology Assessment Protocol – Ecology (TAPE) January 2011 Revision.

Applicant's Performance Claims:

- The MWS – Linear Modular wetland is capable of removing a minimum of 80-percent of TSS from stormwater with influent concentrations between 100 and 200 mg/l.
- The MWS – Linear Modular wetland is capable of removing a minimum of 50-percent of Total Phosphorus from stormwater with influent concentrations between 0.1 and 0.5 mg/l.
- The MWS – Linear Modular wetland is capable of removing a minimum of 30-percent of dissolved Copper from stormwater with influent concentrations between 0.005 and 0.020 mg/l.
- The MWS – Linear Modular wetland is capable of removing a minimum of 60-percent of dissolved Zinc from stormwater with influent concentrations between 0.02 and 0.30 mg/l.

Ecology Recommendations:

- Modular Wetland Systems, Inc. has shown Ecology, through laboratory and field-testing, that the MWS - Linear Modular Wetland Stormwater Treatment System filter system is capable of attaining Ecology's Basic, Total phosphorus, and Enhanced treatment goals.

Findings of Fact:Laboratory Testing

The MWS-Linear Modular wetland has the:

- Capability to remove 99 percent of total suspended solids (using Sil-Co-Sil 106) in a quarter-scale model with influent concentrations of 270 mg/L.
- Capability to remove 91 percent of total suspended solids (using Sil-Co-Sil 106) in laboratory conditions with influent concentrations of 84.6 mg/L at a flow rate of 3.0 gpm per square foot of media.
- Capability to remove 93 percent of dissolved Copper in a quarter-scale model with influent concentrations of 0.757 mg/L.
- Capability to remove 79 percent of dissolved Copper in laboratory conditions with influent concentrations of 0.567 mg/L at a flow rate of 3.0 gpm per square foot of media.
- Capability to remove 80.5-percent of dissolved Zinc in a quarter-scale model with influent concentrations of 0.95 mg/L at a flow rate of 3.0 gpm per square foot of media.
- Capability to remove 78-percent of dissolved Zinc in laboratory conditions with influent concentrations of 0.75 mg/L at a flow rate of 3.0 gpm per square foot of media.

Field Testing

- Modular Wetland Systems, Inc. conducted monitoring of an MWS-Linear (Model # MWS-L-4-13) from April 2012 through May 2013, at a transportation maintenance facility in Portland, Oregon. The manufacturer collected flow-weighted composite samples of the system's influent and effluent during 28 separate storm events. The system treated approximately 75 percent of the runoff from 53.5 inches of rainfall during the monitoring period. The applicant sized the system at 1 gpm/sq ft. (wetland media) and 3gpm/sq ft. (prefilter).
- Influent TSS concentrations for qualifying sampled storm events ranged from 20 to 339 mg/L. Average TSS removal for influent concentrations greater than 100 mg/L (n=7) averaged 85 percent. For influent concentrations in the range of 20-100 mg/L (n=18), the upper 95 percent confidence interval about the mean effluent concentration was 12.8 mg/L.
- Total phosphorus removal for 17 events with influent TP concentrations in the range of 0.1 to 0.5 mg/L averaged 65 percent. A bootstrap estimate of the lower 95 percent confidence limit (LCL95) of the mean total phosphorus reduction was 58 percent.
- The lower 95 percent confidence limit of the mean percent removal was 60.5 percent for dissolved zinc for influent concentrations in the range of 0.02 to 0.3 mg/L (n=11). The lower 95 percent confidence limit of the mean percent removal was 32.5 percent for dissolved copper for influent concentrations in the range of 0.005 to 0.02 mg/L (n=14) at flow rates up to 28 gpm (design flow rate 41 gpm). Laboratory test data augmented the data set, showing dissolved copper removal at the design flow rate of 41 gpm (93 percent reduction in influent dissolved copper of 0.757 mg/L).

Issues to be addressed by the Company:

1. Modular Wetland Systems, Inc. should collect maintenance and inspection data for the first year on all installations in the Northwest in order to assess standard maintenance requirements for various land uses in the region. Modular Wetland Systems, Inc. should use these data to establish required maintenance cycles.
2. Modular Wetland Systems, Inc. should collect pre-treatment chamber sediment depth data for the first year of operation for all installations in the Northwest. Modular Wetland Systems, Inc. will use these data to create a correlation between sediment depth and pre-filter clogging.

Technology Description:

Download at <http://www.modularwetlands.com/>

Contact Information:

Applicant: Zach Kent
BioClean A Forterra Company.
398 Vi9a El Centro
Oceanside, CA 92058
zach.kent@forterrabp.com

Applicant website: <http://www.modularwetlands.com/>

Ecology web link: <http://www.ecy.wa.gov/programs/wg/stormwater/newtech/index.html>

Ecology: Douglas C. Howie, P.E.
Department of Ecology
Water Quality Program
(360) 407-6444
douglas.howie@ecy.wa.gov

Revision History

Date	Revision
June 2011	Original use-level-designation document
September 2012	Revised dates for TER and expiration
January 2013	Modified Design Storm Description, added Revision Table, added maintenance discussion, modified format in accordance with Ecology standard
December 2013	Updated name of Applicant
April 2014	Approved GULD designation for Basic, Phosphorus, and Enhanced treatment
December 2015	Updated GULD to document the acceptance of MWS-Linear Modular Wetland installations with or without the inclusion of plants
July 2017	Revised Manufacturer Contact Information (name, address, and email)

ATTACHMENT 8

**Geotechnical Investigation - Palomar Heights Escondido,
California**

Date: April 17, 2018

Prepared by: Geocon Inc.

GEOTECHNICAL INVESTIGATION

PALOMAR HEIGHTS ESCONDIDO, CALIFORNIA



GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

**INTEGRAL PARTNERS FUNDING, LLC
ENCINITAS, CALIFORNIA**

**APRIL 17, 2018
PROJECT NO. G2109-11-02**

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APPENDIX A

FIELD INVESTIGATION

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APPENDIX B

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APPENDIX C

GEOTECHNICAL INFORMATION FROM PREVIOUS 1999 DAMES & MOORE REPORT

APPENDIX D

RECOMMENDED GRADING SPECIFICATIONS

LIST OF REFERENCES

- 7.16.2 In the case of basement walls or building walls retaining landscaping areas, a waterproofing system should be used on the wall and joints, and a Miradrain drainage panel (or similar) should be placed over the waterproofing. A perforated drainpipe of schedule 40 or better should be installed at the base of the wall below the floor slab and drained to an appropriate discharge area. Accordion-type pipe is not acceptable. The project architect or civil engineer should provide detailed specifications on the plans for all waterproofing and drainage.
- 7.16.3 Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks, and detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.
- 7.16.4 Landscaping planters adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. We recommend that area drains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes be used. In addition, where landscaping is planned adjacent to the pavement, we recommend construction of a cutoff wall along the edge of the pavement that extends at least 6 inches below the bottom of the base material.

7.17 Storm Water Management

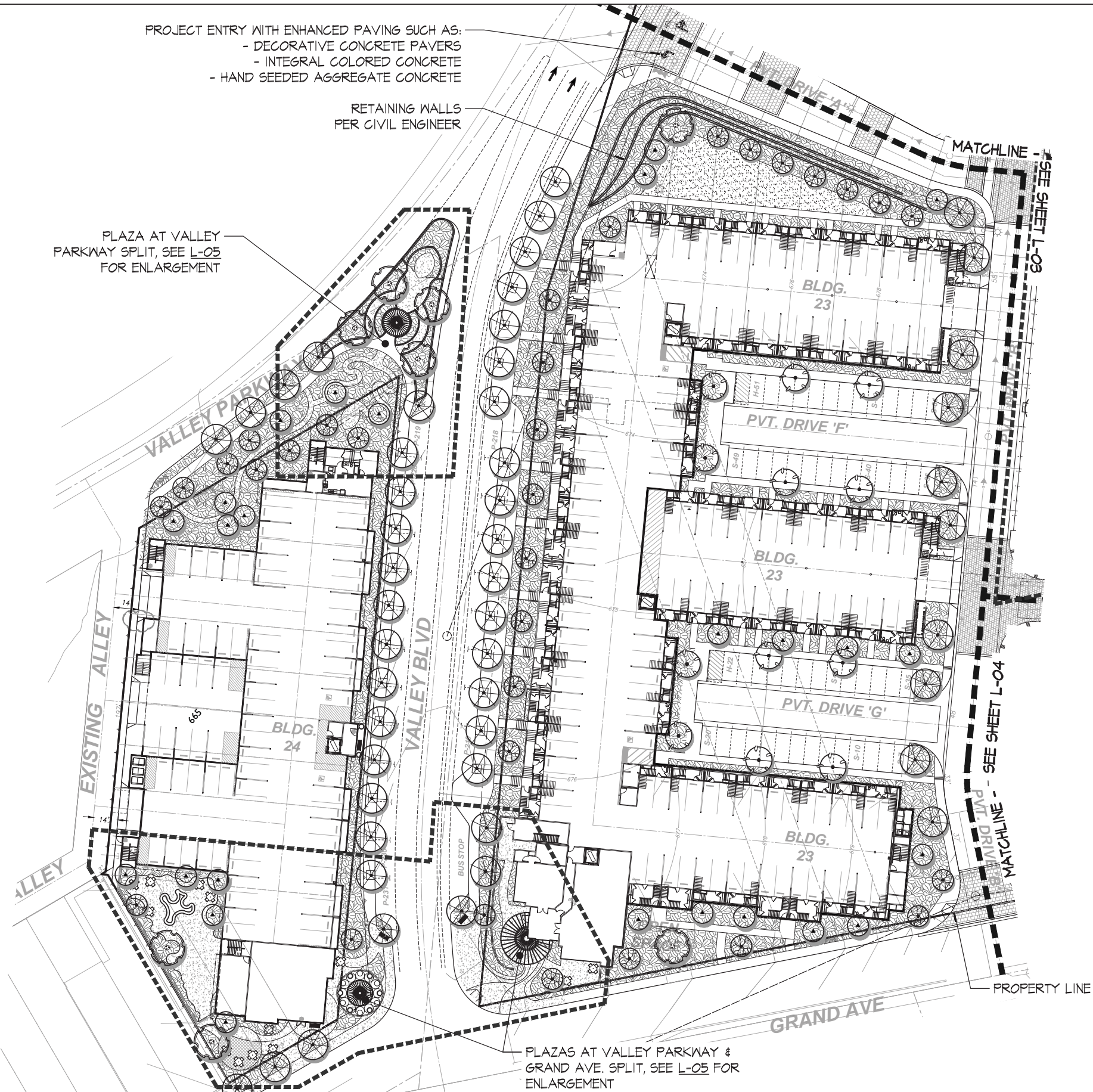
- 7.17.1 Storm water management devices may be incorporated into the future development of the property in accordance with the *2016 Escondido Storm Water Design Manual*. If not properly constructed, there is a potential for distress to improvements and properties located hydrologically down gradient or adjacent to these devices. Factors such as the amount of water to be detained, its residence time, and soil permeability have an important effect on seepage transmission and the potential adverse impacts that may occur if the storm water management features are not properly designed and constructed. We have not performed a hydrogeological study at the site. If infiltration of storm water runoff occurs, downstream properties may be subjected to seeps, springs, slope instability, raised groundwater, movement of foundations and slabs, or other undesirable impacts as a result of water infiltration.
- 7.17.2 The United States Department of Agriculture (USDA), Natural Resources Conservation Services, possesses general information regarding the existing soil conditions for areas within the United States. The USDA website also provides the Hydrologic Soil Group. Table 7.17.1 presents the descriptions of the hydrologic soil groups. 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







ATTACHMENT 8

Landscape/Site Plan

Prepared by:

GMP Landscape Architecture & Planning

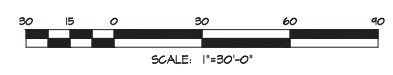


PLANTING LEGEND				
TREES				
SYMBOL/QTY.	BOTANICAL	COMMON NAME	SIZE	MULCH
	RECREATION AREA PALMS SUCH AS: SYAGRUS ROMANZOFFIANUM	QUEEN PALM	15' BTH	M
	EVERGREEN SITE TREES SUCH AS: LOPHOSTEMON CONFERTUS METROSIDEROS EXCELSUS PODOCARPUS GRACILIOR	BRISBANE BOX NEW ZEALAND CHRISTMAS TREE FERN PINE	24" BOX 24" BOX 24" BOX	L L M
	LARGE FOCAL TREE SUCH AS: KOELREUTARIA PANICULATA	GOLDEN RAIN TREE	36" BOX	L
	PARKING LOT/STREET TREES SUCH AS: RHUS LANCEA TIJUNA TIJU	AFRICAN SUMAC TIJU TREE	24" BOX 24" BOX	L M
	VERTICAL ACCENT SHRUB PODOCARPUS M. 'MAKI' PRUNUS 'BRIGHT & TIGHT'	SHRUBBY YEW PINE CAROLINA CHERRY (COLUMNAR)	15 GAL. 15 GAL.	L M
	SITE TREES SUCH AS: ARBUTUS UNEDO QUERCUS AGRIFOLIA RHUS LANCEA	STRAWBERRY TREE COAST LIVE OAK AFRICAN SUMAC	15 GAL. 15 GAL. 15 GAL.	L L L
NOTE: - ALL TREES WITH 6' OF ANY WALK, CURB, DRIVE, BUILDING, UTILITY OR HARDSCAPE ELEMENT SHALL RECEIVE 10' OF 24" DEEP MIN. ROOT BARRIER UNLESS OTHERWISE INDICATED ON THE PLANS.				

SHRUBS				
SYMBOL	BOTANICAL	COMMON NAME	SIZE	MULCH
	AEONIU 'SUNBURST'	SUNBURST AEONIU	1 GAL.	L
	AGAPANTHUS AFRICANUS	LILY OF THE NILE	1 GAL.	M
	AGAVE ATTENUATA	FOXTAIL AGAVE	5/15 GAL.	L
	AGAVE VILMORIANA	OCTOPUS AGAVE	5/15 GAL.	L
	ALOE ARBORESCENS	TREE ALOE	5 GAL.	L
	ALOE BAINESII	TREE ALOE	24" BOX	L
	ALOE STRIATA	CORAL ALOE	1 GAL.	L
	ANIGOZANTHOS 'BUSH GOLD'	KANGAROO PAM	1 GAL.	L
	BOUGAINVILLEA SPP.	BOUGAINVILLEA	5 GAL.	L
	CALLISTEMON 'LITTLE JOHN'	LITTLE JOHN BOTTLE BRUSH	5 GAL.	L
	CARISSA 'BOXWOOD BEAUTY'	BOXWOOD BEAUTY NATAL FLUM	5 GAL.	M
	DIANELLA CAERULEA 'CASSA BLUE'	CASSA BLUE	1 GAL.	L
	DIETES BICOLOR	FORTNIGHT LILY	5 GAL.	M
	ECHEVERIA 'AFTERSLOW'	AFTERSLOW ECHEVERIA	1 GAL.	L
	FESTUCA 'ELIJAH BLUE'	ELIJAH BLUE FESCUE	1 GAL.	L
	HESPERALOE PARVIFOLIA	RED YUCCA	5 GAL.	L
	LAVANDULA DENTATA	FRENCH LAVENDER	1 GAL.	L
	LIGUSTRUM JAPONICA 'TEXANUM'	TEXAS PRIVET	15 GAL.	M
	LOROPETALUM CHINENSE	RUBY CHINESE FRINGE FLOWER	5 GAL.	M
	PHILODENDRON 'XANADU'	XANADU PHILODENDRON	5 GAL.	M
	PHORMIUM T. 'ATROPURPUREA'	RED NEW ZEALAND FLAX	15 GAL.	M
	PITTOSPORUM T. 'VARIEGATA'	VARIEGATED MOCK ORANGE	5 GAL.	L
	RHAPHIOLEPIS U. MINOR	YEDDO HAWTHORN	5 GAL.	M
	SALVIA 'HOT LIPS'	HOT LIPS SAGE	5 GAL.	L
	STRELITZIA REGINAE	BIRD OF PARADISE	5/15 GAL.	M
	WESTRINGIA FRUITICOSA	COAST ROSEMARY	5 GAL.	L
NOTE: - ALL SHRUB AREAS SHALL RECIEVE 3" LAYER OF BARK MULCH.				

VINES			
BOTANICAL	COMMON NAME	SIZE	MULCH
BOUGAINVILLEA 'SAN DIEGO RED'	BOUGAINVILLEA	15 GAL.	L
DISTICTUS BUCINATORIA	BLOOD RED TRUMPET VINE	15 GAL.	M
WALLS (OVER 5')			
FICUS PUMILA	CREEPING FIG	5 GAL. @ 5' O.C.	L

GROUND COVER			
SYMBOL	BOTANICAL	COMMON NAME	SIZE
	FLAT LANDSCAPE AREAS CAREX TUMULIGOLA GAZANIA SPP. MYOPORIUM P. 'PUTAH CREEK'		BERKELY SEDGE GAZANIA CREEPING MYOPORIUM
	TURF	TIFWAY BERMUDA	SOD



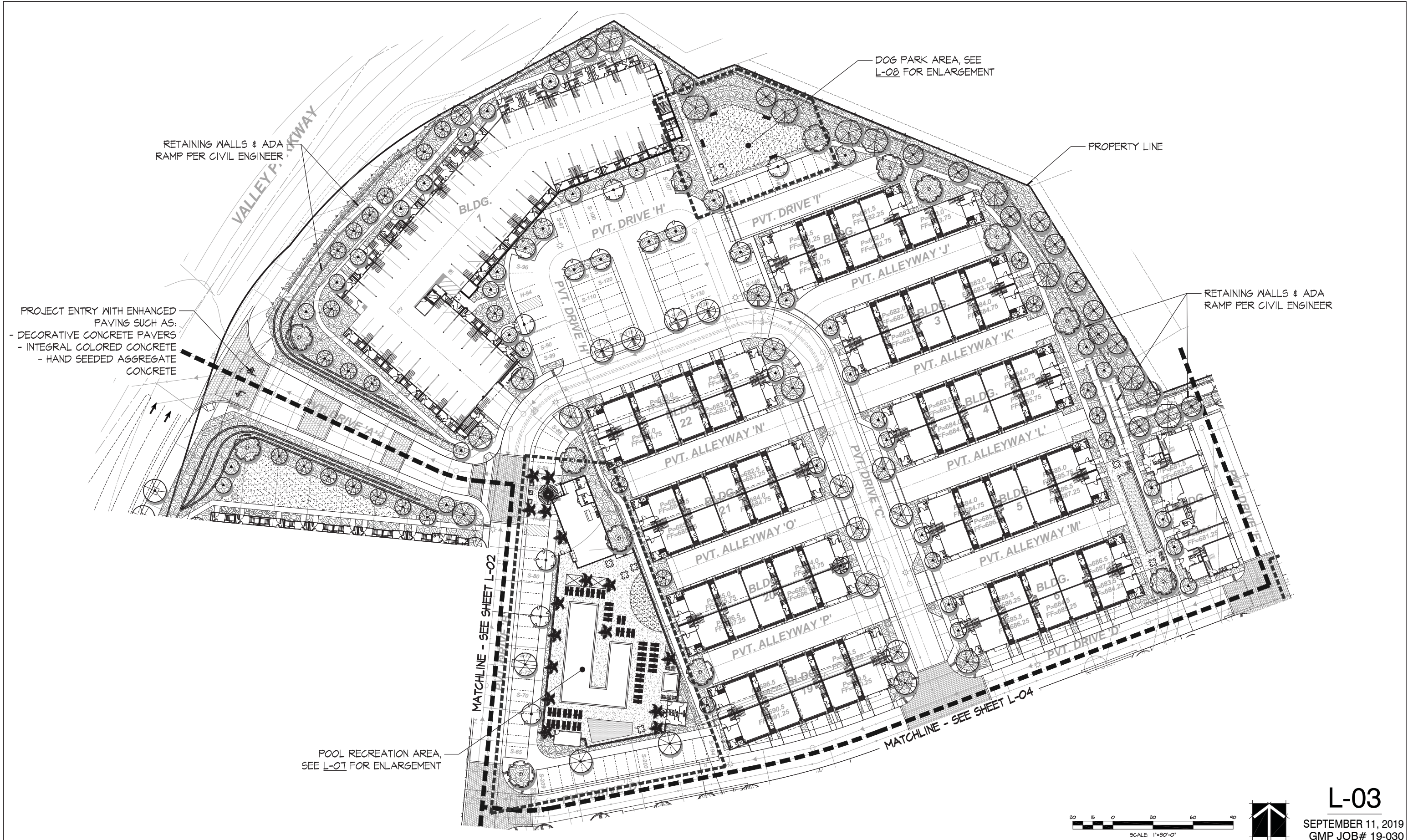
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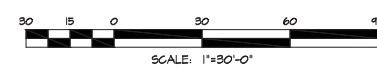
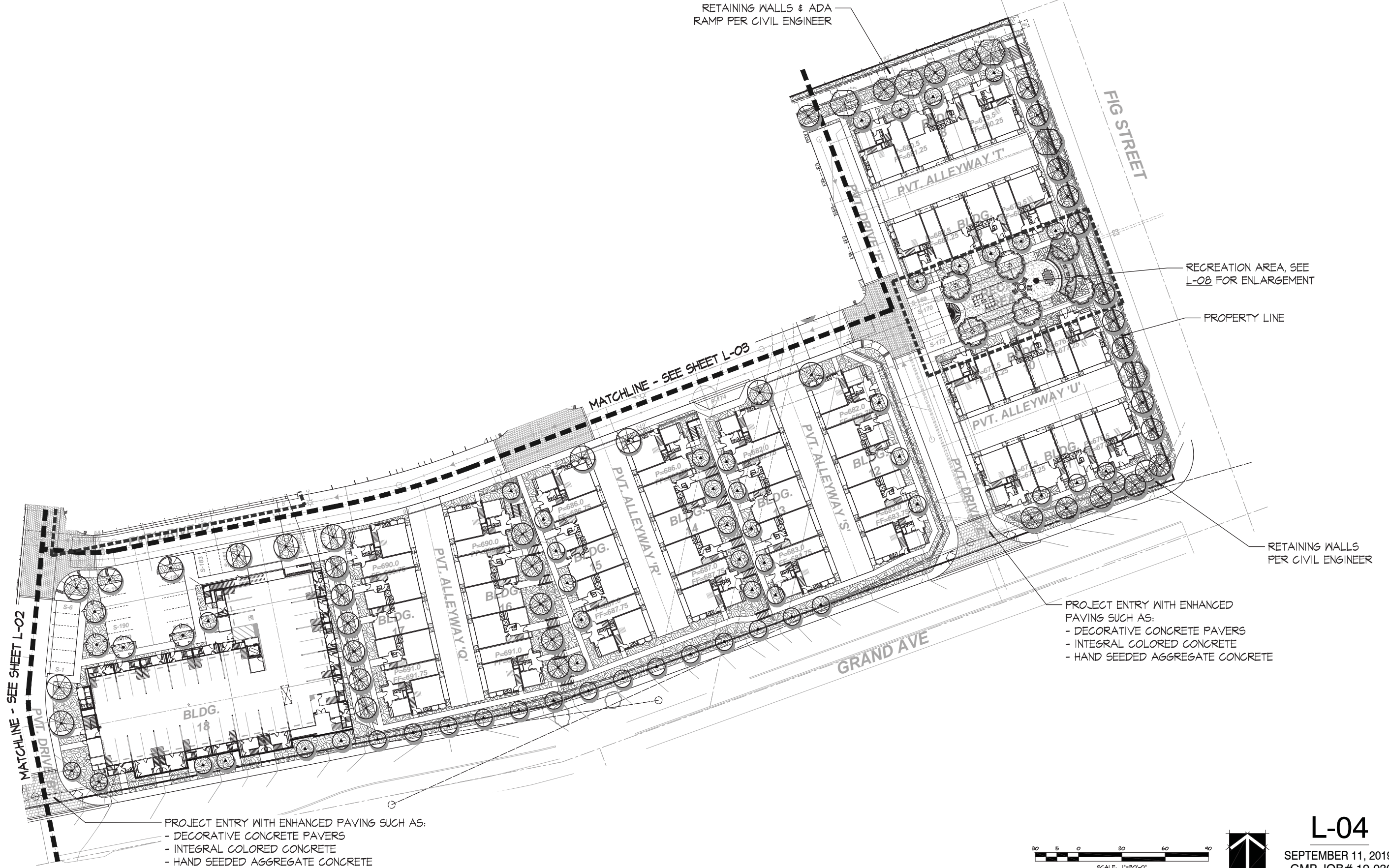
SEPTEMBER 11, 2019
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CONCEPT PLAN

SKYLINE November 26, 2019

