APPENDIX O

SWQMP

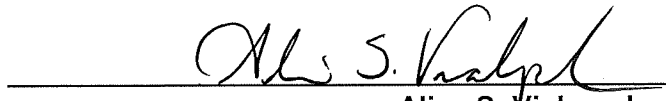
City of Escondido
PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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:



Alisa S. Vialpando, R.C.E. #47945

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DATE OF SWQMP:
December 2nd 2019
Revised:June 26, 2020

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APPROVAL DATE:

ESCONDIDO
City of Choice

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ATTACHMENTS

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- Attachment 1b: Form I-5, Categorization of Infiltration Feasibility Condition
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Attachment 7: Third Party Certification for Modular Wetland
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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

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.

R.C.E. #47945 , 12/31/2021
Engineer of Work's Signature, PE Number & Expiration Date

Alisa S. Vialpando
Print Name

Hunsaker & Associates – San Diego, Inc.
Company

05/06/2020
Date

Engineer's Seal:

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	6/26/2020	Revisions per plan check comments.

Final Design

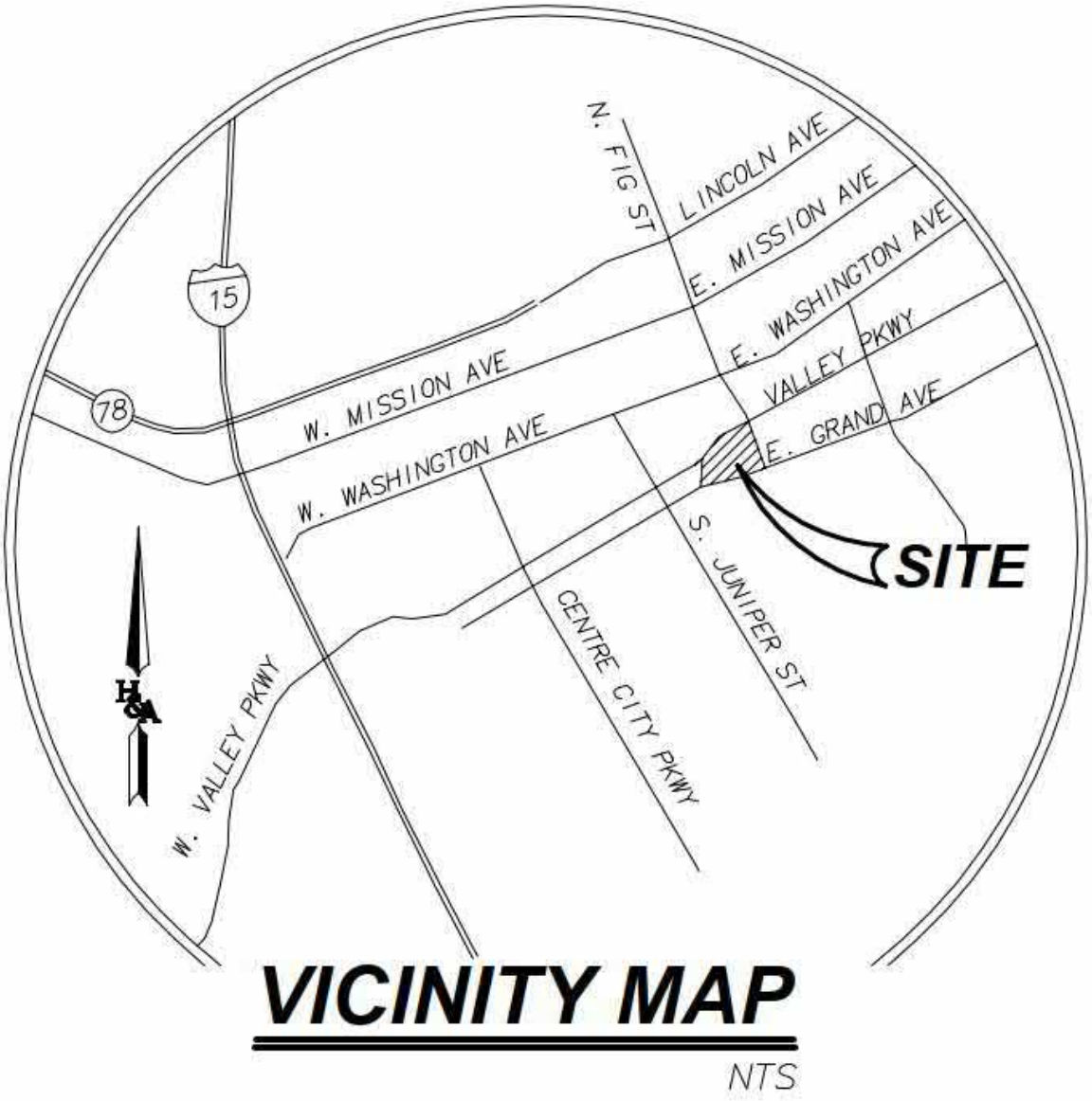
Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

Plan Changes

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

PROJECT VICINITY **MAP**

Project Name: **PALOMAR HEIGHTS**
Record ID: [Insert Record ID or Permit Application Number]



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: ☒ Carlsbad 904 ☐ San Dieguito 905
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	13.80 Acres (601128 Square Feet)
Area to be disturbed by the project (Project Area)	13.00 Acres (566318.3 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	8.16 Acres (355268.7 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	4.84 Acres (211049.6 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): ☐ New Development ☒ 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

Is the project in any of the following categories, (a) through (f)?			
Yes ☐	No ☒	(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 ☒	No ☐	(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 ☒	No ☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes ☐	No ☒	(d)	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). *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.*
Yes ☐	No ☒	(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: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

Yes ☐	No ☒	(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 ☒	No ☐	(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. *Note: See Storm Water Design Manual Section 1.4.2 for additional guidance.*

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 ft^2 (A)
The total proposed newly created or replaced impervious area is 355268.7 ft^2 (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**

Step 1.1: Storm Water Quality Management Plan requirements

Step	Answer	Progression
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete Step 1 Project Type Determination Checklist on Pages 1 and 2, and see PDP exemption information below. For further guidance, see Section 1.4 of the Storm Water Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply, including Standard Project SWQMP. **Complete Form I-1.**
	☒ PDP	Standard and PDP requirements apply, including PDP SWQMP. **SWQMP Required.**
	☐ PDP with ACP	If participating in offsite alternative compliance, **complete Step 6.3 and an ACP SWQMP.**
	☐ PDP Exemption	**Go to Step 1.2 below.**

Step 1.2: Exemption to PDP definitions

Is the project exempt from PDP definitions based on either of the following:	If so:
☐ Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Green Streets Infrastructure;	Standard Project requirements apply, AND any additional requirements specific to the type of project. City concurrence with the exemption is required. *Provide discussion and list any additional requirements below in this form.*
☐ 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.	**PDP Exempt.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:	

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).

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

Step 3.1: Description of Existing Site Condition

Current Status of the Site (select all that apply):
☒ Existing development
☐Previously graded but not built out
☐Demolition completed without new construction
☐Agricultural or other non-impervious use
☐Vacant, undeveloped/natural

Description / Additional Information:

Existing Land Cover Includes (select all that apply and provide each area on site):
☒ Vegetative Cover 1.38 Acres (60113 ft^2)
☐Non-Vegetated Pervious Areas _____Acres (_____Square Feet)
☒ Impervious Areas 12.42 Acres (541015 ft^2)

Description / Additional Information:

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):
☐NRCS Type A
☐NRCS Type B
☒ NRCS Type C
☐NRCS Type D

Approximate Depth to Groundwater (GW) (or N/A for no infiltration BMPs):
☐GW Depth < 5 feet
☐5 feet < GW Depth < 10 feet
☒ 10 feet < GW Depth < 20 feet
☐GW Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):
☐Watercourses
☐Seeps
☐Springs
☐Wetlands
☒ None
☐Other

Description / Additional Information:

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.

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%

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.

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:

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 bodies[2] 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			

[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

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 WMAA[3] 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 project area is HMP exempt (please refer to the Escondido Creek' report into the Carlsbad WQIP May 2018 Update). It is the inclusion and acceptance of the study into the WQIP that allows projects to apply the exemption.

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

[3]The 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:

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

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

Flow Control for Post-Project Runoff*

***This Section only required if hydromodification management requirements apply**
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.
Has a geomorphic assessment been performed for the receiving channel(s)? ☐No, the low flow threshold is 0.1Q2 (default low flow threshold) ☐Yes, the result is the low flow threshold is 0.1Q2 ☐Yes, the result is the low flow threshold is 0.3Q2 ☐Yes, the result is the low flow threshold is 0.5Q2 *If a geomorphic assessment has been performed, provide title, date, and preparer:* *Discussion / Additional Information: (optional)*

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.

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

Source Control BMPs

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.

Answer each category below pursuant to the following:

- "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	☒Yes	☐ No	☐ N/A
□ Direct irrigation water away from impervious surfaces □ Direct vehicle wash water away from impervious surfaces □ Other: _____ *Discussion / justification if SC-1 not implemented:*			
SC-2 Storm Drain Stenciling or Signage	☒Yes	☐ No	☐ N/A
□ Stencil or stamp storm drains with anti-dumping message □ Post signs prohibiting illegal dumping □ Other *Discussion / justification if SC-2 not implemented:*			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒Yes	☐ No	☐ N/A
□ Store materials inside a covered enclosure □ Direct runoff from downspouts and roofs away from storage areas □ Other *Discussion / justification if SC-3 not implemented:*			

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

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

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

Site Design BMPs

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.

Answer each category below pursuant to the following:

- "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	☒Yes	☐ No	☐ N/A
□ Maintain existing drainage patterns *Discussion / justification if SD-1 not implemented:*			
SD-2 Conserve Natural Areas, Soils, and Vegetation	☒Yes	☐ No	☐ N/A
□ Preserve trees (see Zoning Code Art. 55 Grading & Erosion Control; Art. 62 Landscape Regulations) □ Avoid sensitive areas such as wetlands and waterways *Discussion / justification if SD-2 not implemented:*			
SD-3 Minimize Impervious Area	☒Yes	☐ No	☐ N/A
□ Install parking and driving aisles to minimum width required to meet standards *Discussion / justification if SD-3 not implemented:*			

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

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 D*esign 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.

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.

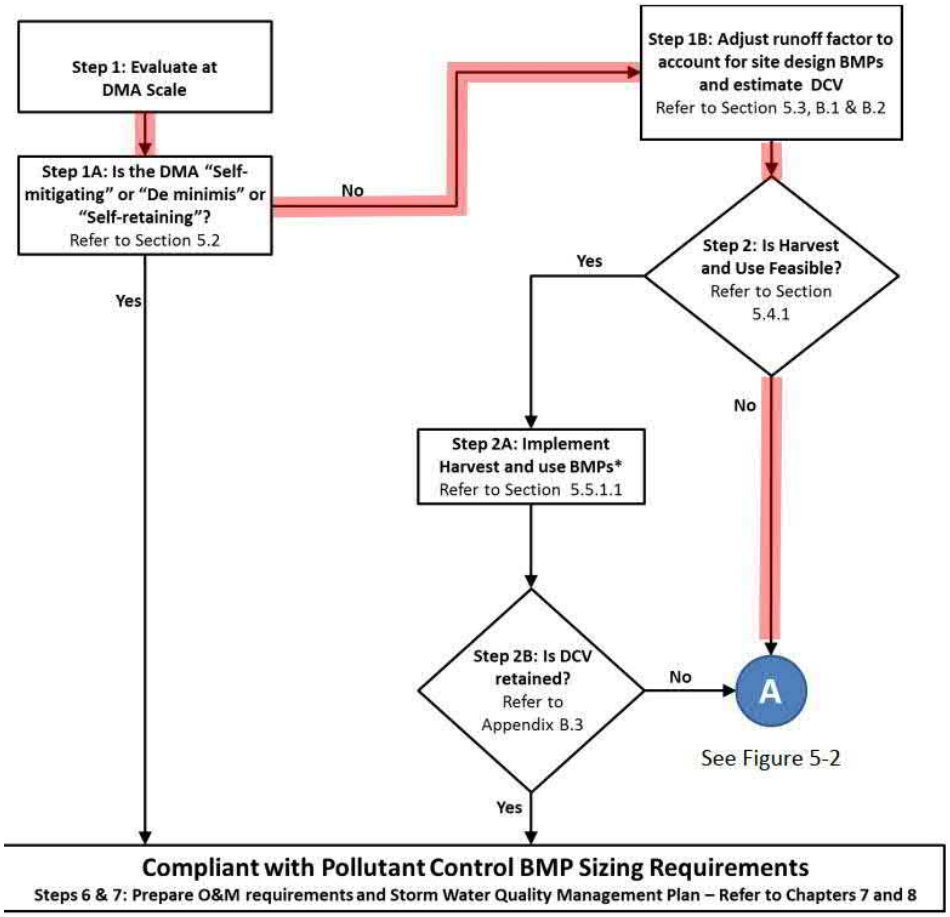
See flow chart from the City of Escondido's storm water design manual (see below).

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

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

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)

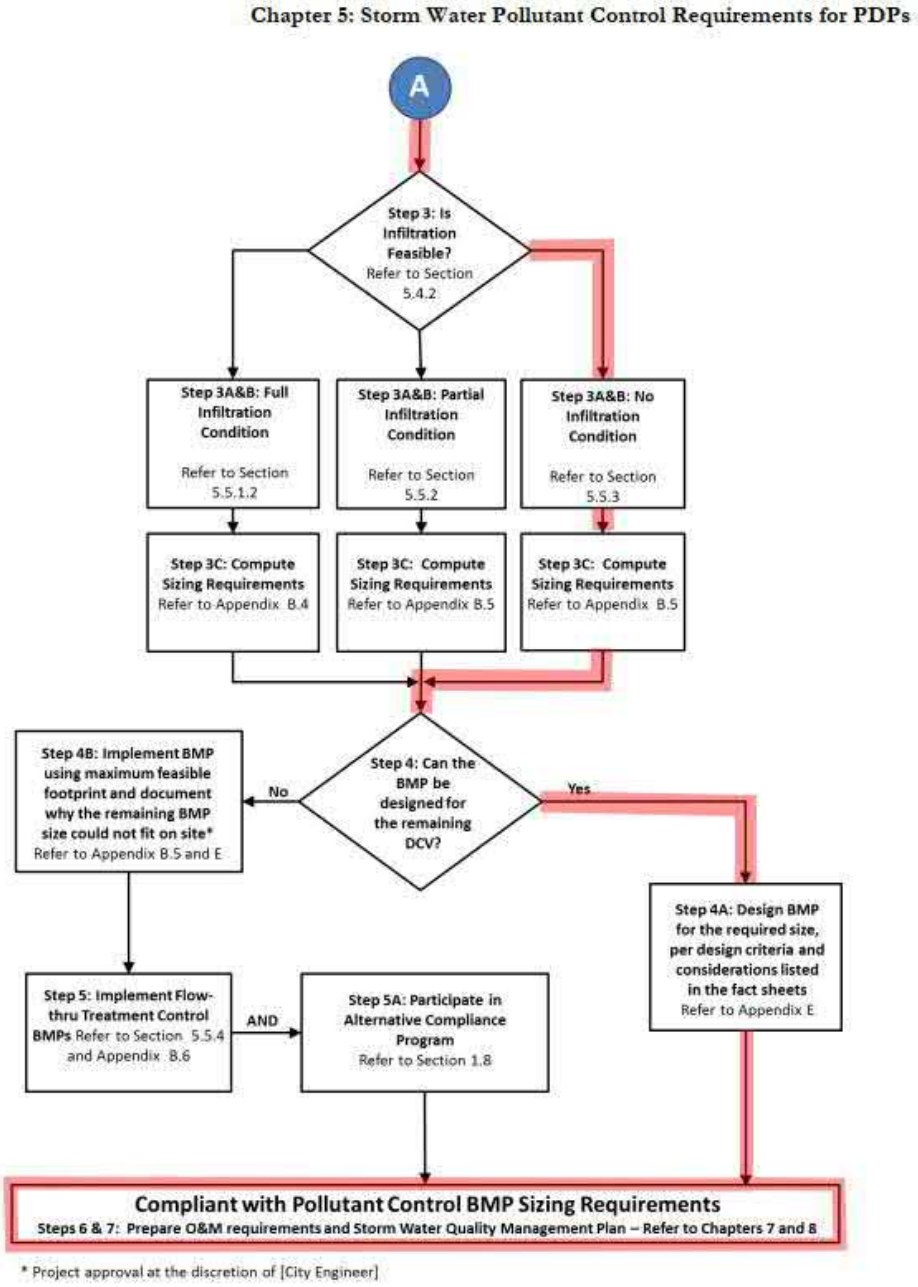


FIGURE 5-2. Storm Water Pollutant Control BMP Selection Flow Chart

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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

(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	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☐Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐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) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐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?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☒HOA ☐Property Owner ☐City ☐Other (describe)
Discussion (as needed): *(Continue on subsequent pages as necessary)*	

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? ☐Yes ☐No	Will your ACP project be completed prior to the completion of the PDP? ☐Yes ☐No
Does your ACP account for all Deficits generated by the PDP? ☐Yes ☐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)

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)	☒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.	☒Included ☐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.	☒Included ☐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.	☒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.	☒Included

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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
				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	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
				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	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
				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	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
				SQFT		SQFT	SQFT	
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
				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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
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	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00
				7940.00	1.00	6749.00	1191.00	6193.20	5054.00	1.00	4295.90	758.10	3942.12
							Weighted C =	0.78				Weighted C =	0.78

	Imp. RF	Pervious RF	% Imp	DMA 13	Fraction of Total	Imp Area	Pervious Area	Summation RF x A	DMA 14	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	57144.50	0.96	51430.05	5714.45	46858.49
ROAD/DRIVEWAY	0.90	0.10	85	5266.00	1.00	4476.10	789.90	4107.48	3340.00	1.00	2839.00	501.00	2605.20	2830.00	0.05	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	-2830.00	-0.01	0.00	-2830.00	-283.00
				5266.00	1.00	4476.10	789.90	4107.48	3340.00	1.00	2839.00	501.00	2605.20	57144.50	1.00	53835.55	3308.95	48782.89
							Weighted C =	0.78				Weighted C =	0.78				Weighted C =	0.85

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 x C x d x 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 x C x d x 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 x C x d x 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 x C x d x 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 x C x d x 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 x C x d x 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=	0.93	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.62	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=	1,164	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=	0.07	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

PALOMAR HEIGHTS
DCV CALCULATION

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

DMA 10: Design Capture Volume		Worksheet B-2.1		
	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 x C x d x 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 x C x d x A) - TCV - RCV	DCV=	184	cubic-feet

PALOMAR HEIGHTS
DCV CALCULATION

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=	1.31	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.85	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=	2,277	cubic-feet

DMA 13: 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 x C x d x A) - TCV - RCV	DCV=	192	cubic-feet

DMA 14: 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=	0.08	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=	122	cubic-feet

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.		

Provide basis:

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.		

Provide basis:

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

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.		
Provide basis: Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
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.		
Provide basis: Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result*	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** 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		

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.		

Provide basis:

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.

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.		

Provide basis:

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.

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.		
Provide basis: 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.			
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.		
Provide basis: 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.			
Part 2 Result*	If all answers from row 5-8 are yes then partial infiltration design is potentially feasible. The feasibility screening category is **Partial Infiltration.** 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.**		

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	WETLANDMEDIA 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) 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-4-19	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	Treamtent 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 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
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-4-17	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.

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.

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	Treamtent 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 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
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.

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) 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.

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	1,164	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	1,164	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=	0.93	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.62	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.11	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.17	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) 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.

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

	DMA-7-B: 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) 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.

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) 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-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) 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)

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) 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.

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) 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.

MWS-L-4-4	4' x 4'	23	0.052

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 12: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	2,277	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	2,277	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=	1.31	acres
8	using Appendix B.2)	C=	0.85	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.22	cfs
10	Treamtent Flow Rate = 1.5 X Q	Q=	0.34	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) 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.

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 13: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	192	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	192	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=	0.85	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) 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.

PALOMAR HEIGHTS

PROPRIETARY BIOFILTRATION FLOW-THRU SIZING CALCULATION

DMA 14: Flow-thru Design Flows		Worksheet B.6-1		
1	DCV	DCV	122	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	122	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=	0.08	acres
8	using Appendix B.2)	C=	0.85	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) 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.

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

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?

☒ Toilet and urinal flushing

☒ Landscape irrigation

☐ Other

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.

[Provide a summary of calculations here]

Mod. ETWU = $2.8\left[\left[\frac{(.70)(97{,}228)}{.90}\right]\right](0.015)$ = 3176 Cubic Feet

3. Calculate the DCV using worksheet B-2.1.

DCV = 12,753 Cubic Feet .25 (12,753) = 3,188 Cubic Feet

3a. Is the 36 hour demand greater than or equal to the DCV?	3b. Is the 36 hour demand greater than 0.25DCV but less than the full DCV?	3c. Is the 36 hour demand less than 0.25DCV?
☐ Yes / ☒ No ⇨ ⇩	☐ Yes / ☒ No ⇨ ⇩	☒ Yes ⇩
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.	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.	Harvest and use is considered to be infeasible.

The Harvest and Use calculations were performed for the residential DMA's only.

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.

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.		
Provide basis: Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
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.		
Provide basis: Infiltration is infeasible, so potential for water balance issues were not analyzed Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result*	If all answers to rows 1 - 4 are "Yes" a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration 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		**NO Infiltration**

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.		

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 and why it was not feasible to mitigate low infiltration rates.

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.		

Provide basis:

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.

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.		
Provide basis: 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.			
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.		
Provide basis: A study on water rights was not performed. However, infiltration is not feasible per the Geotechnical Engineer recomendation. 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.			
Part 2 Result*	If all answers from row 5-8 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration. 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.		**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

DMA 1
DMA 2
DMA 3
DMA 4
DMA 5
DMA 6
DMA 7A
DMA 7B
DMA 8
DMA 9
DMA 10
DMA 11
DMA 12
DMA 13
DMA 14

MODULAR WETLAND (OR SIMILAR)

HYDROLOGIC SOIL TYPE — C

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 BMPs (FORM I-2C IN SWQMP)

SD-1 MAINTAIN NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES

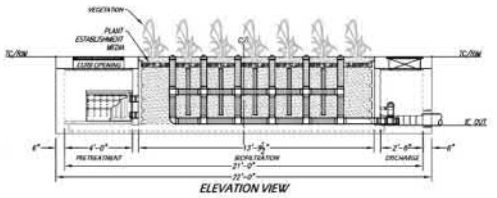
SD-2 CONSERVE NATURAL AREAS, SOILS, AND VEGETATION

SD-3 MINIMIZE IMPERVIOUS AREAS

SD-4 MINIMIZE SOIL COMPACTION

SD-6 IMPERVIOUS AREA DISPERSION

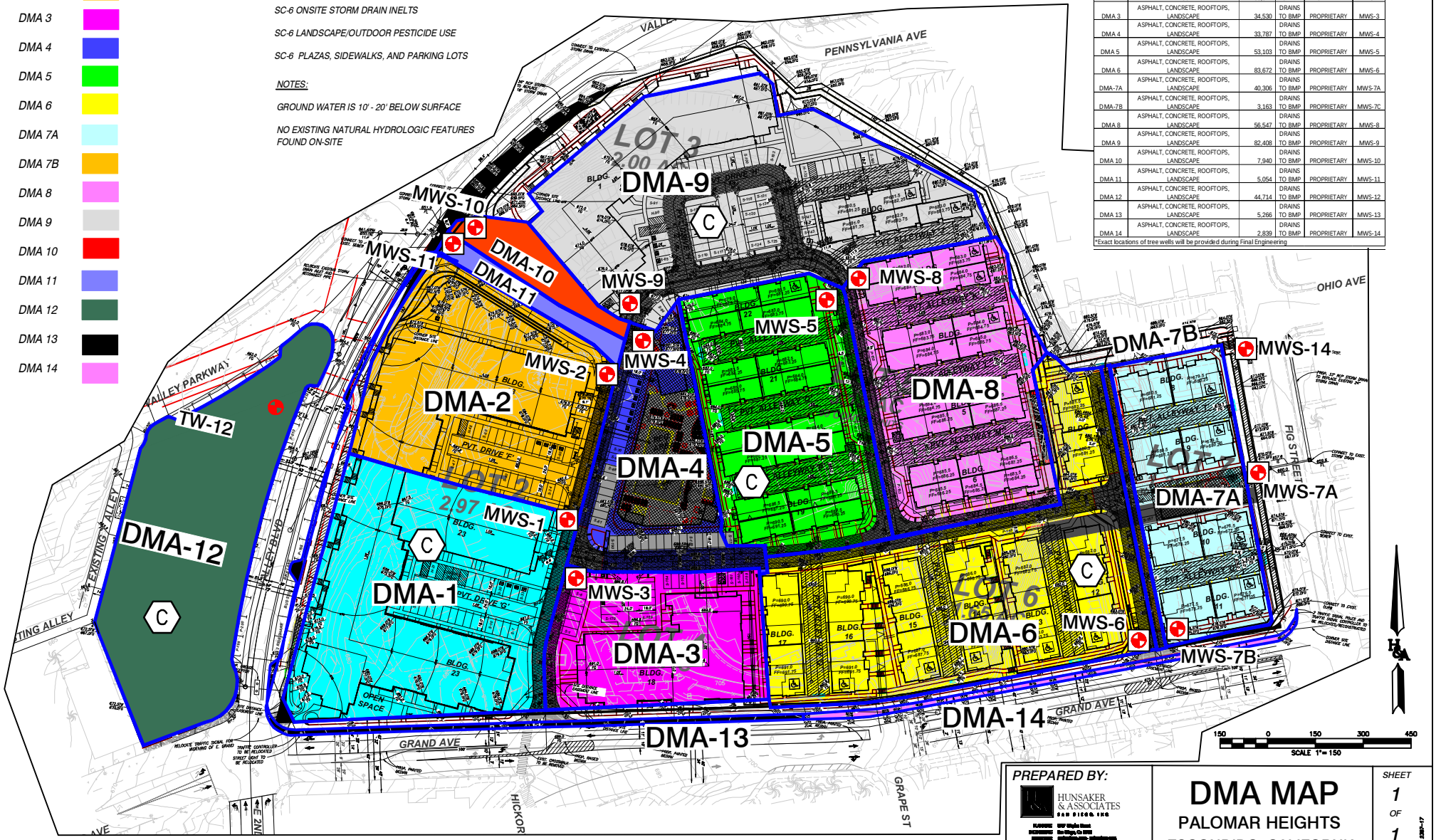
SD-7 LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES



TYPICAL MODULAR WETLAND DETAIL N.T.S.

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	40,306	DRAINS TO BMP	PROPRIETARY	MWS-7A
DMA-7B	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	3,163	DRAINS TO BMP	PROPRIETARY	MWS-7C
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	PROPRIETARY	MWS-12
DMA 13	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	5,266	DRAINS TO BMP	PROPRIETARY	MWS-13
DMA 14	ASPHALT, CONCRETE, ROOFTOPS, LANDSCAPE	2,839	DRAINS TO BMP	PROPRIETARY	MWS-14

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



PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

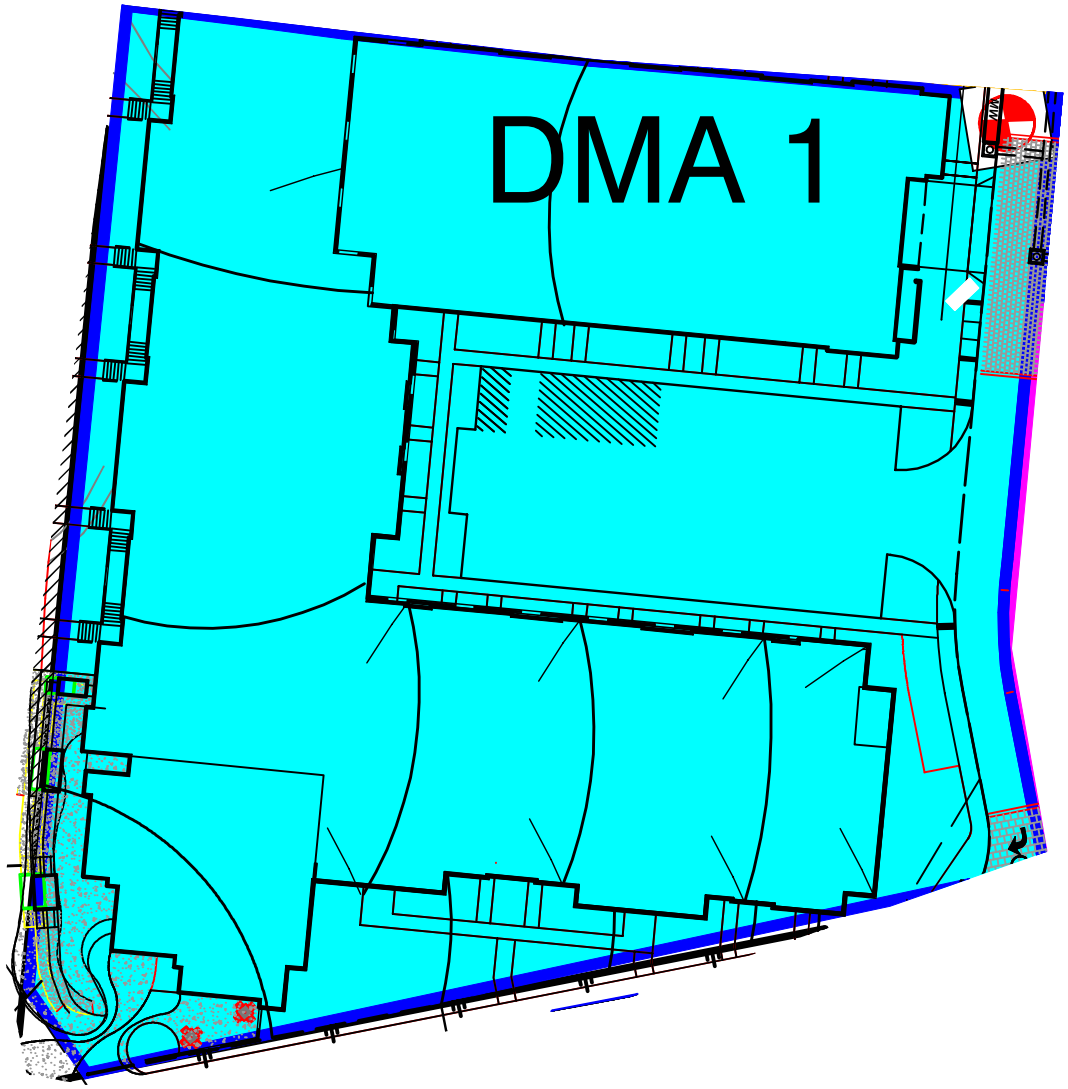
DMA MAP

PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

SHEET 1 OF 1

H.A. 5335-17



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

Modular Wetland (Equivalent)

PREPARED BY:

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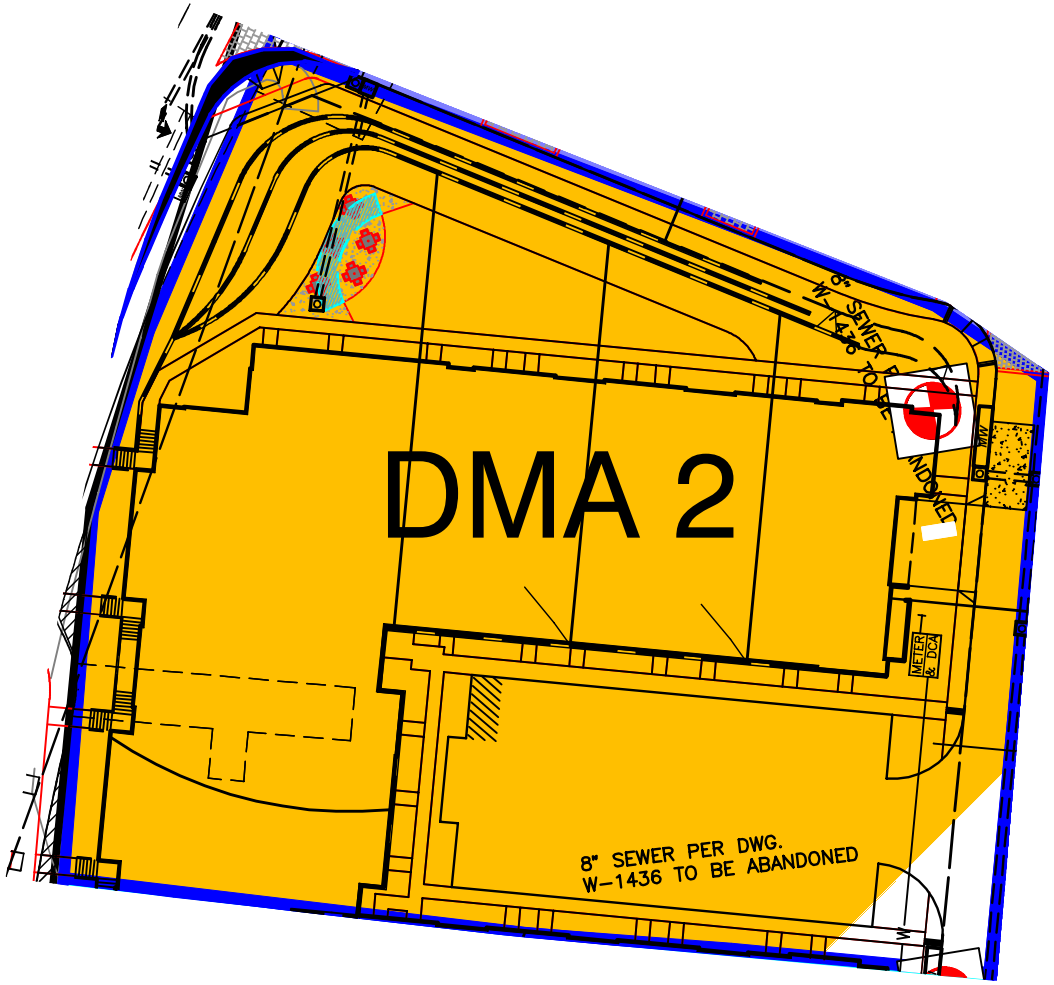
ENGINEERING San Diego, Ca. 92121
SURVEYING (858) 558-4500 FAX (858) 558-1414

DMA 1 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17



LEGEND: SEE DMA MAP

SCALE: 1" = 70'

Modular Wetland (Equivalent)

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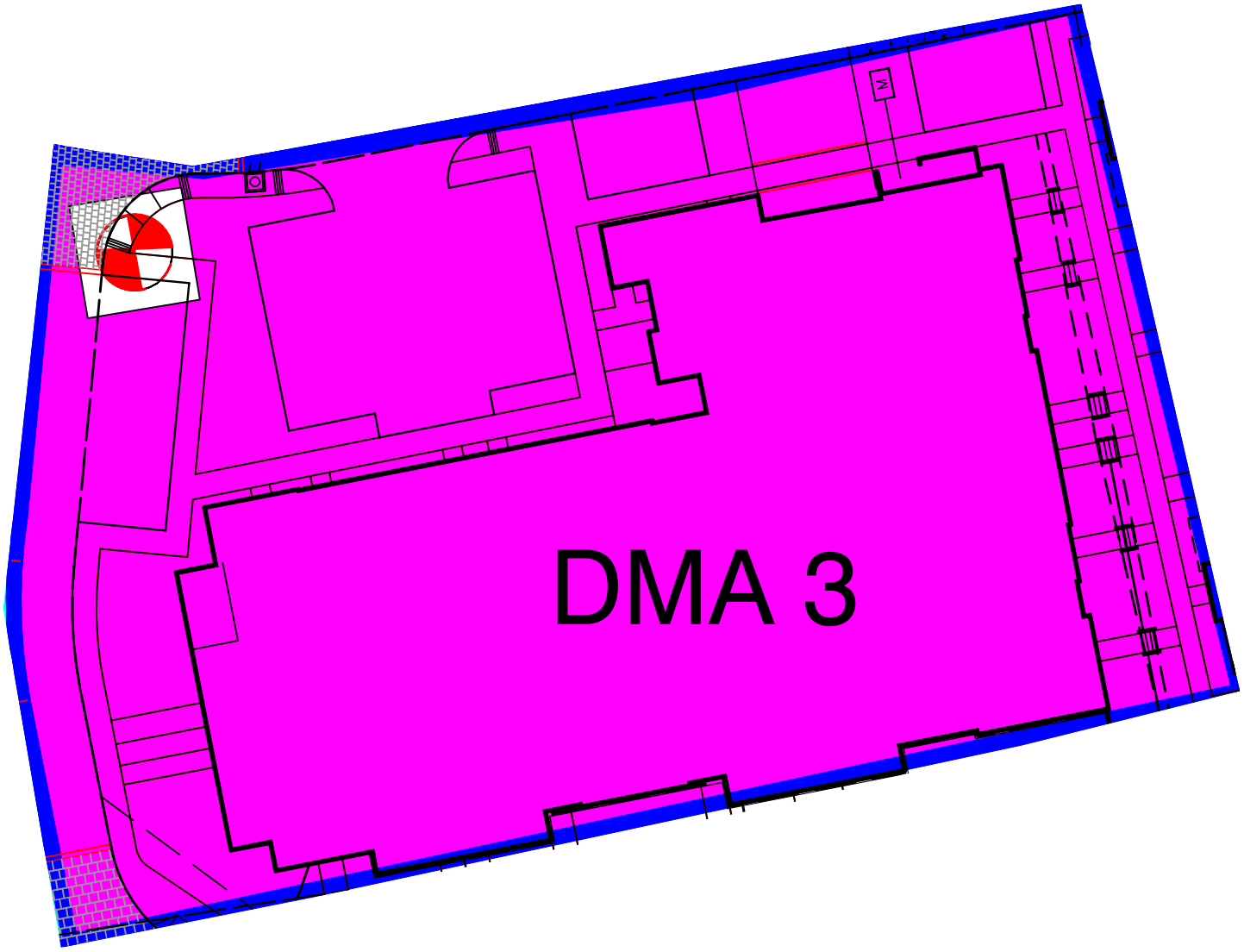
DMA 2 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17



LEGEND: SEE DMA MAP

SCALE: 1" = 70'

Modular Wetland (Equivalent)

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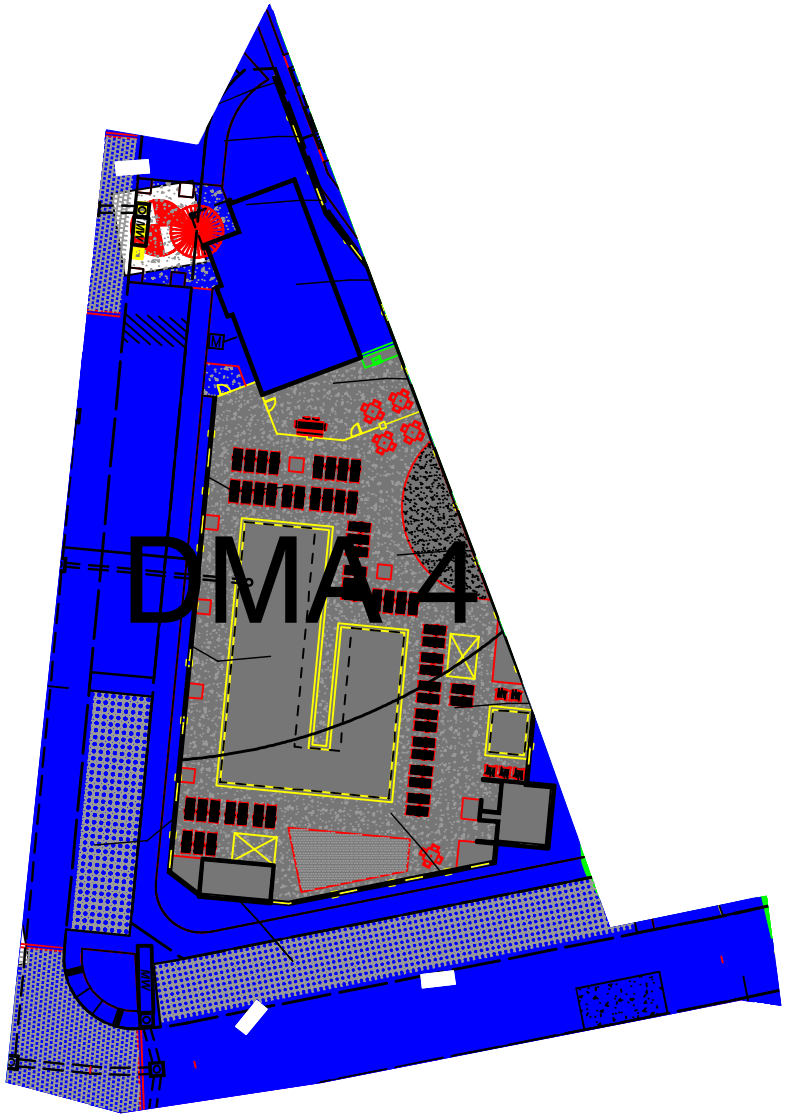
DMA 3 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17



LEGEND: SEE DMA MAP

SCALE: 1" = 70'

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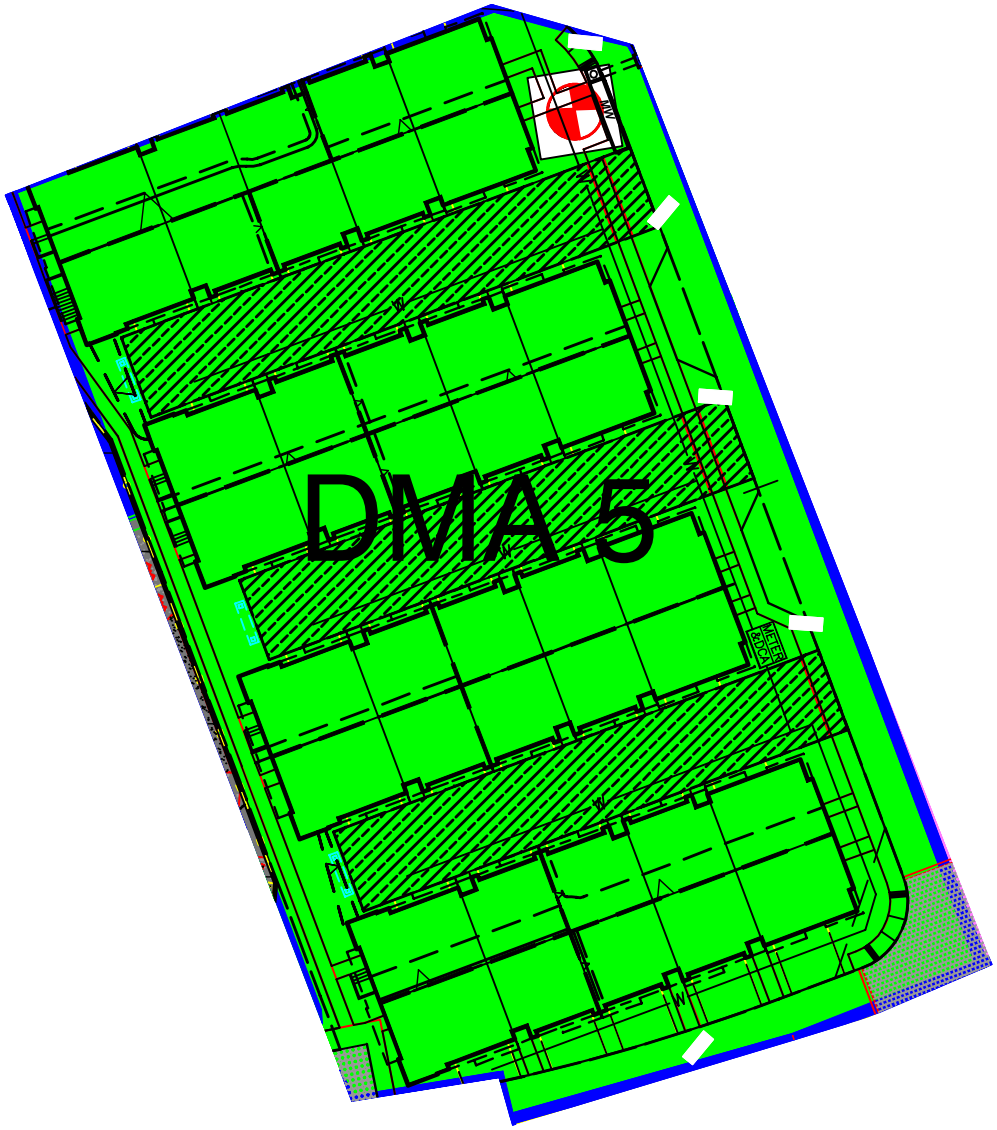
DMA 4 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17



LEGEND: SEE DMA MAP

SCALE: 1" = 70'

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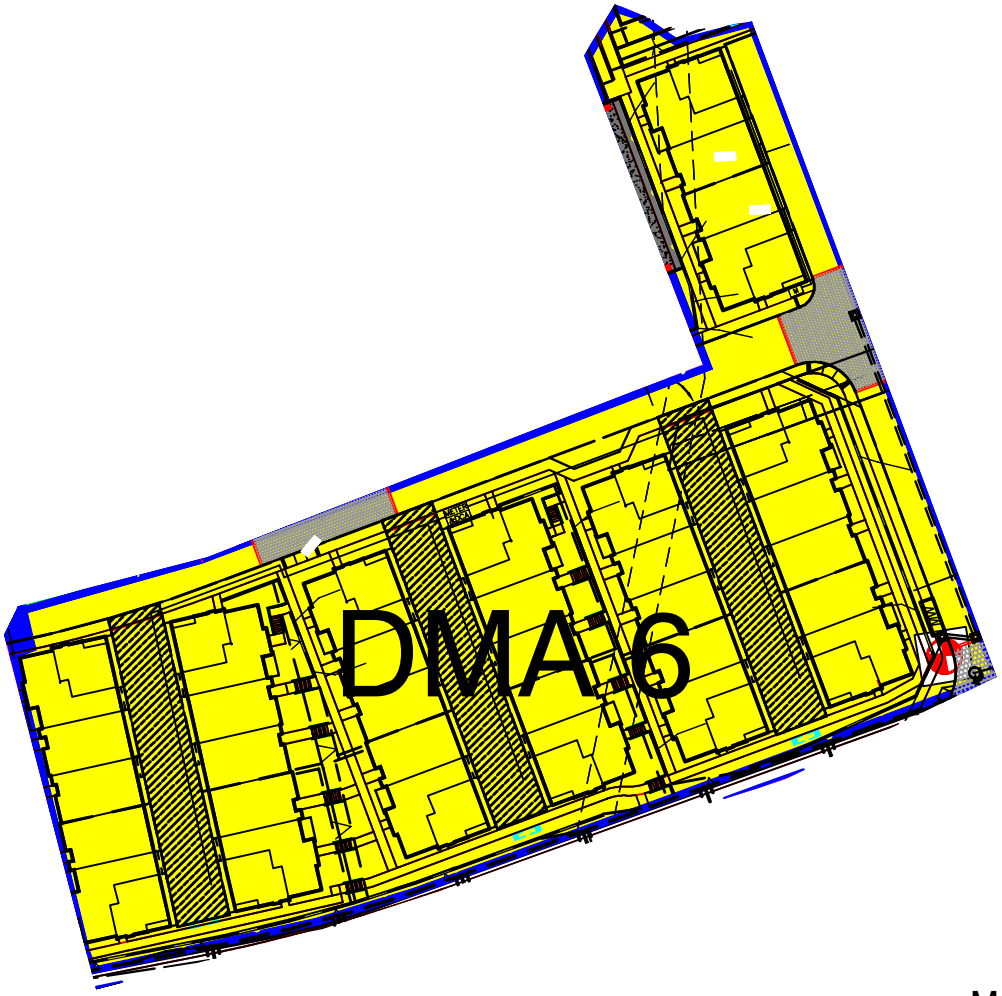
DMA 5 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17

LEGEND: SEE DMA MAP

SCALE: 1" = 70'



Modular Wetland (Equivalent)

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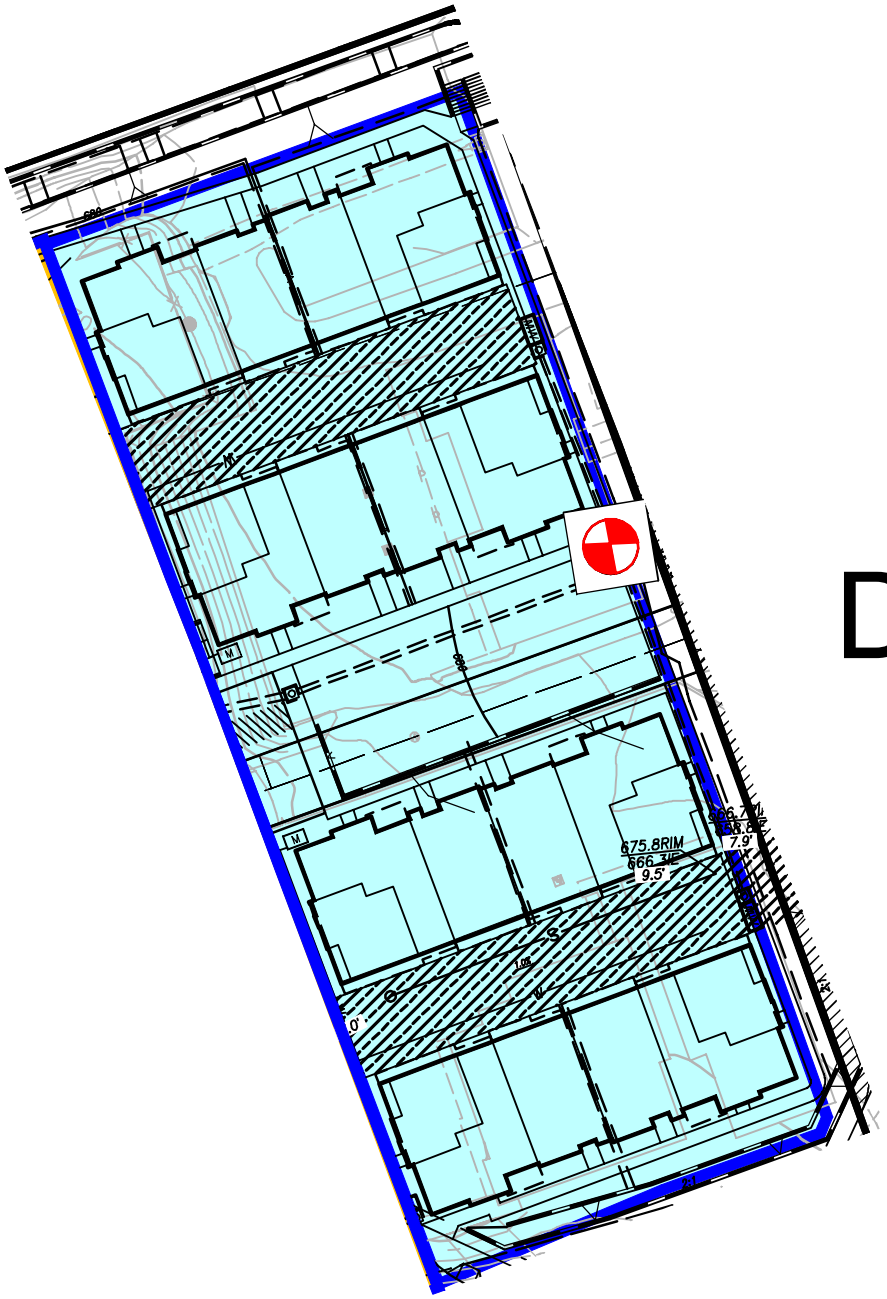
DMA 6 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17



LEGEND: SEE DMA MAP

SCALE: 1" = 70'

DMA-7A

MODULAR WETLAND (OR SIMILAR)

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SURVEYING PH(858)558-4500 · FX(858)558-1414

DMA-7A MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

W.O. 2374-17

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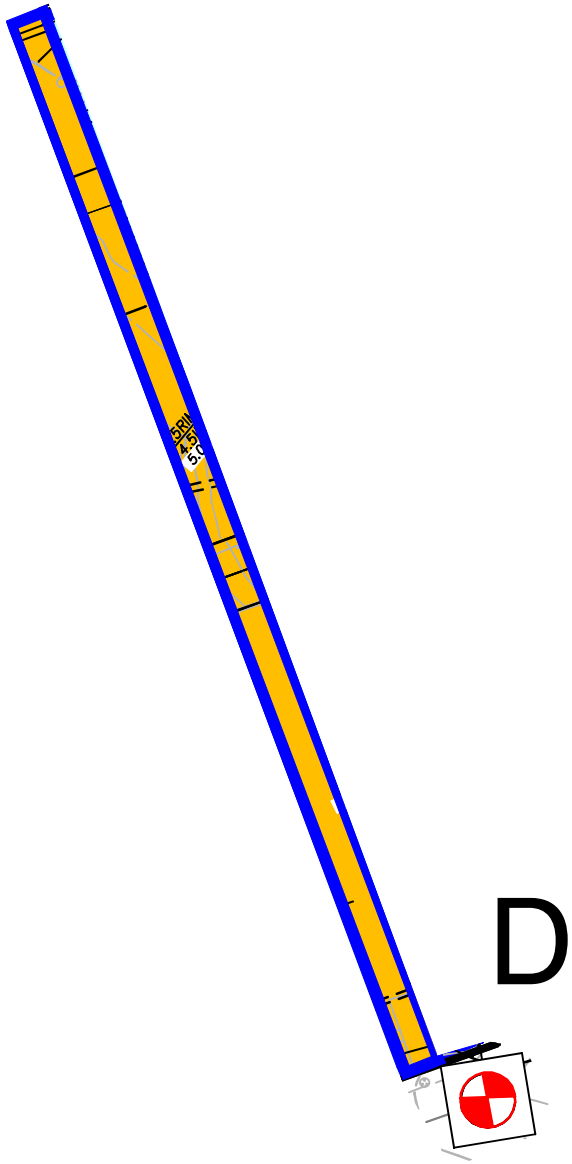

LEGEND: SEE DMA MAP

SCALE: 1" = 70'

DMA-7B

MODULAR WETLAND (OR SIMILAR)

PREPARED BY:

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DMA-7B MAPBOOK
FOR
PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

W.O. 2374-17

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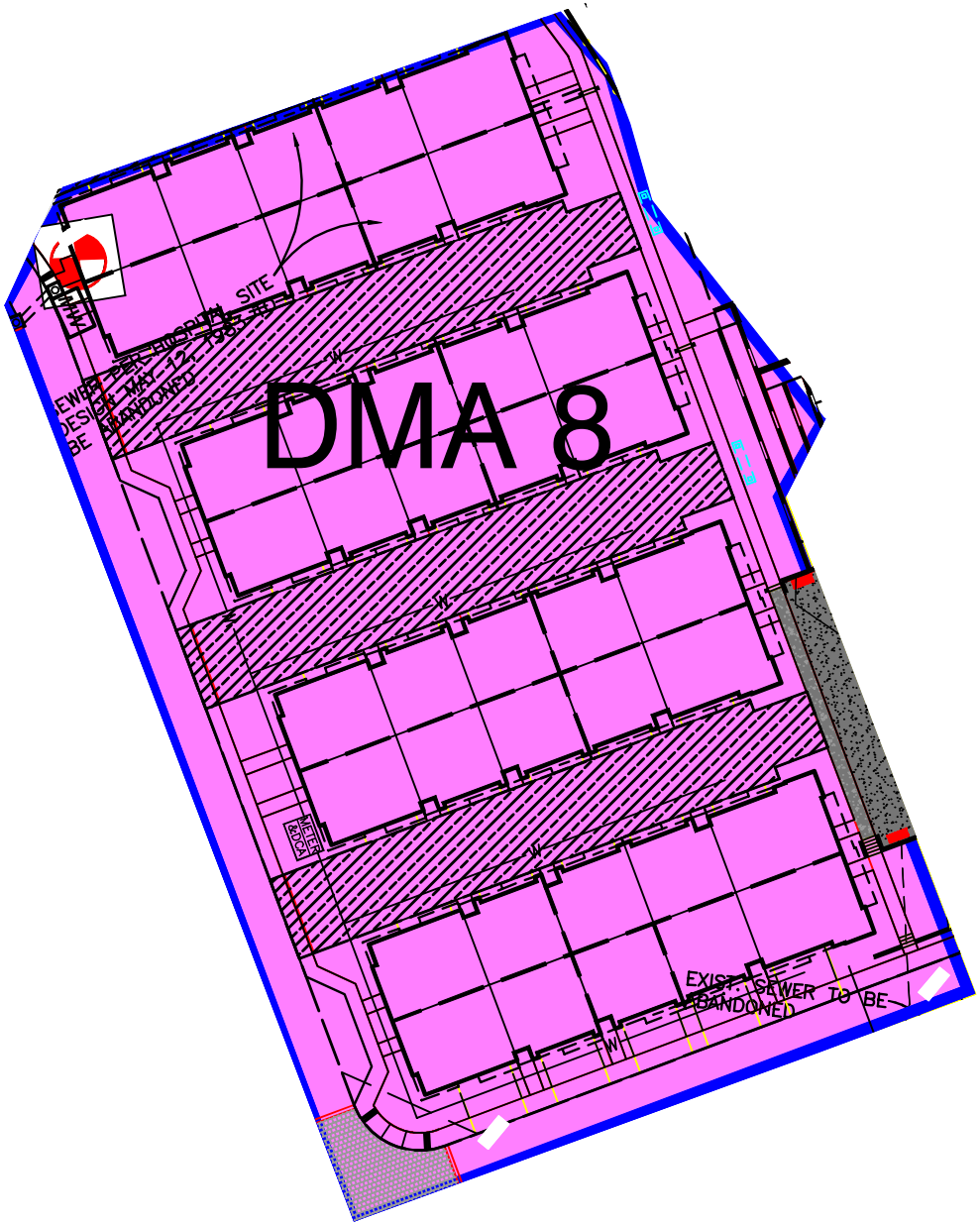


LEGEND: SEE DMA MAP

SCALE: 1" = 70'

Modular Wetland (Equivalent)

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

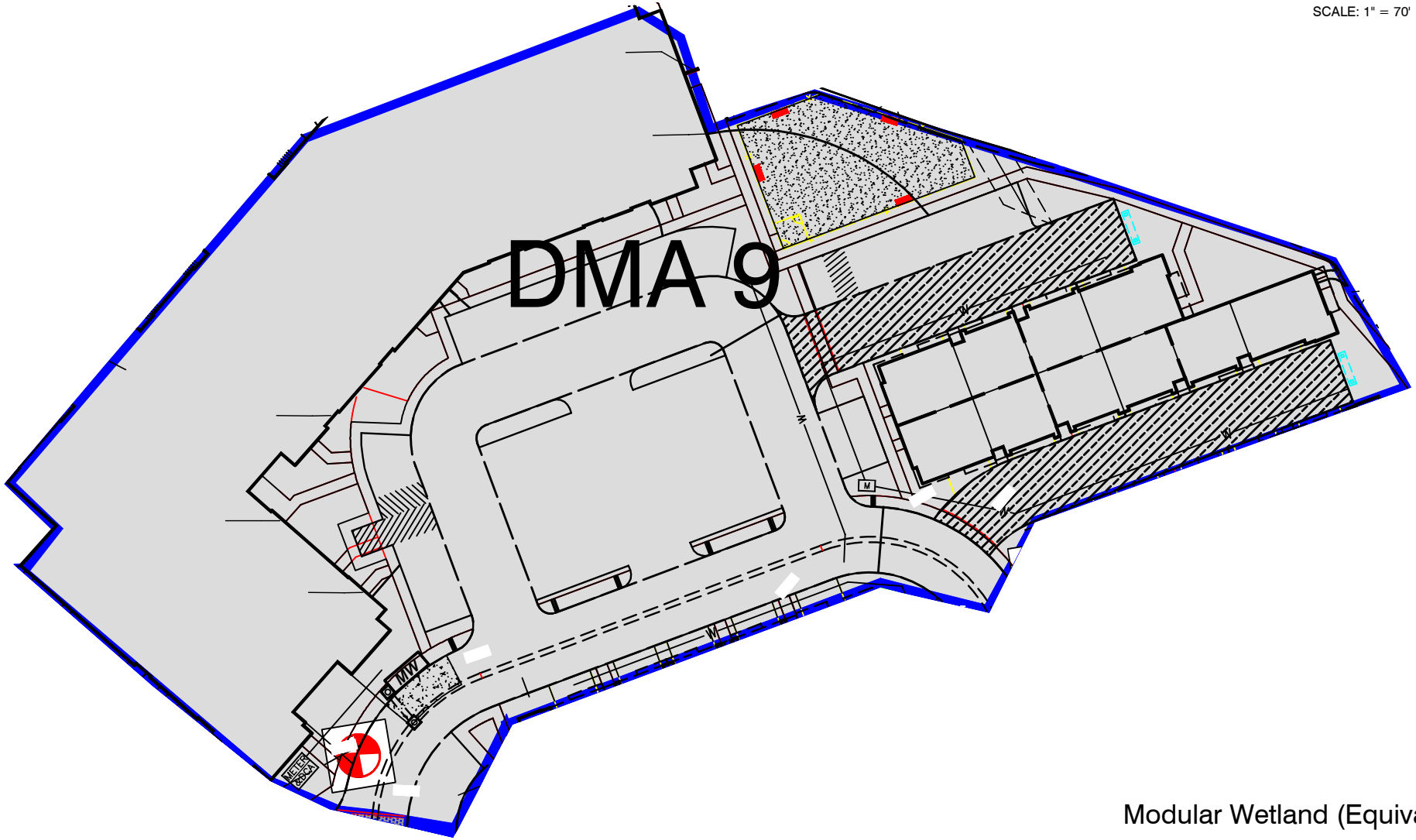
DMA 8 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17

LEGEND: SEE DMA MAP

SCALE: 1" = 70'



Modular Wetland (Equivalent)

PREPARED BY:

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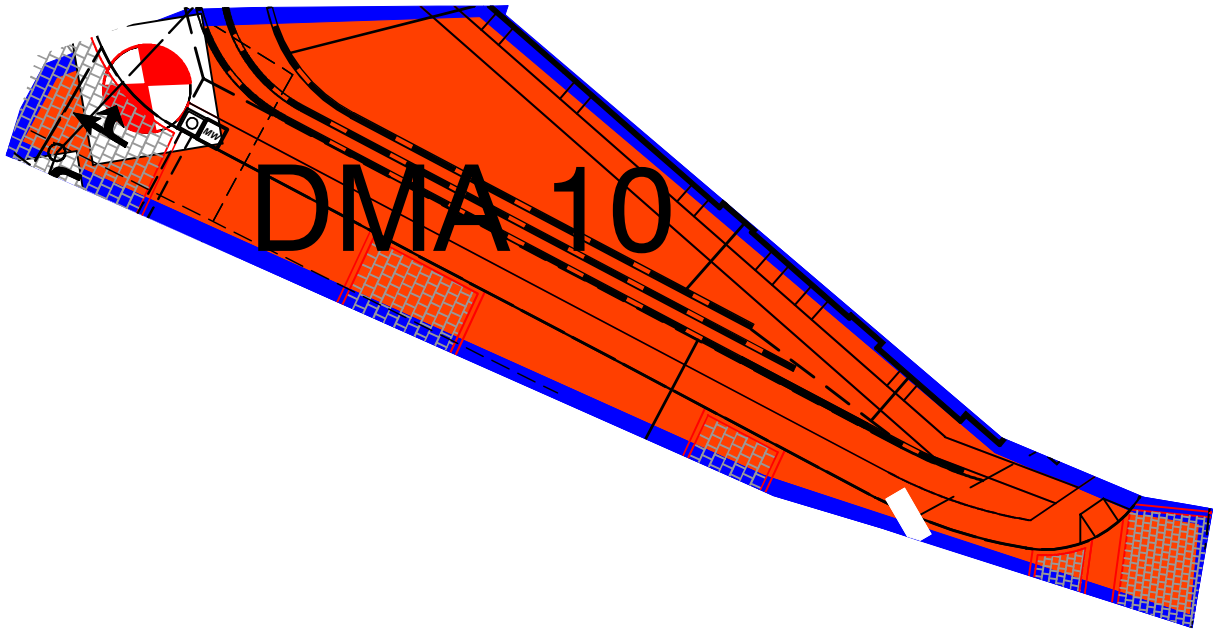
DMA 9 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17

LEGEND: SEE DMA MAP

SCALE: 1" = 70'



Modular Wetland (Equivalent)

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

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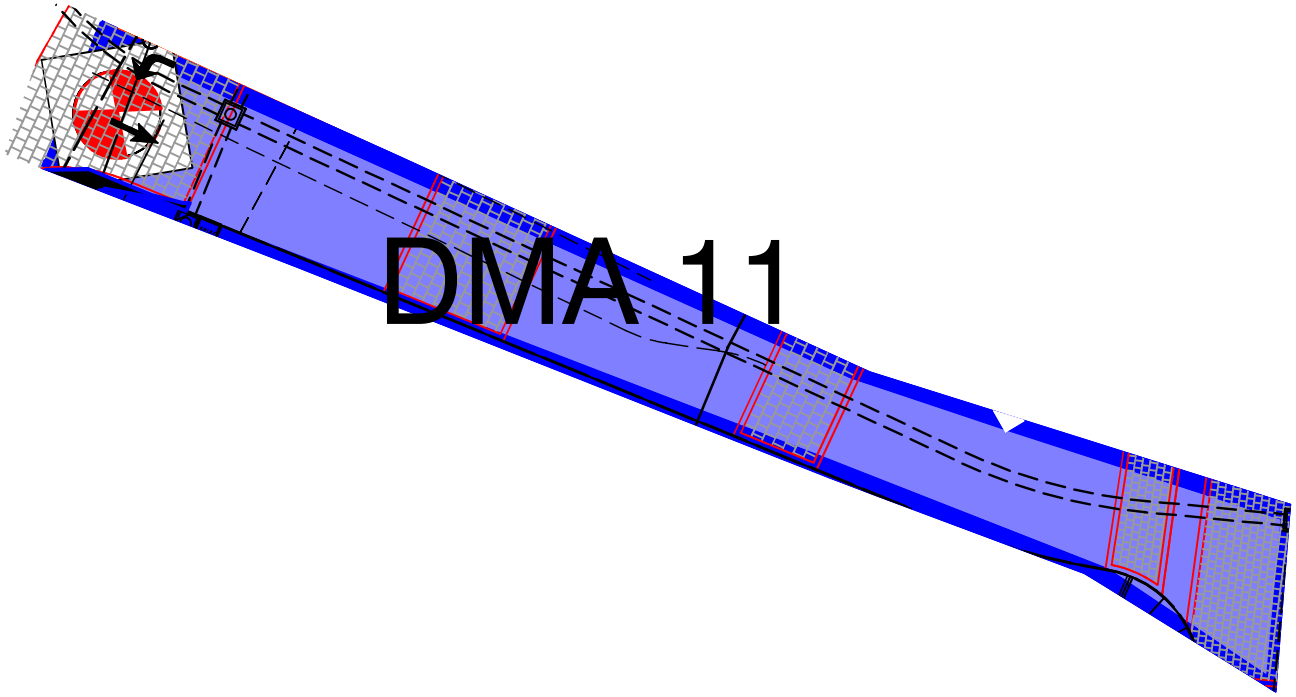
ENGINEERING San Diego, Ca. 92121
SURVEYING PH(858)558-4500 FX(858)558-4491

DMA 10 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17

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



Modular Wetland (Equivalent)

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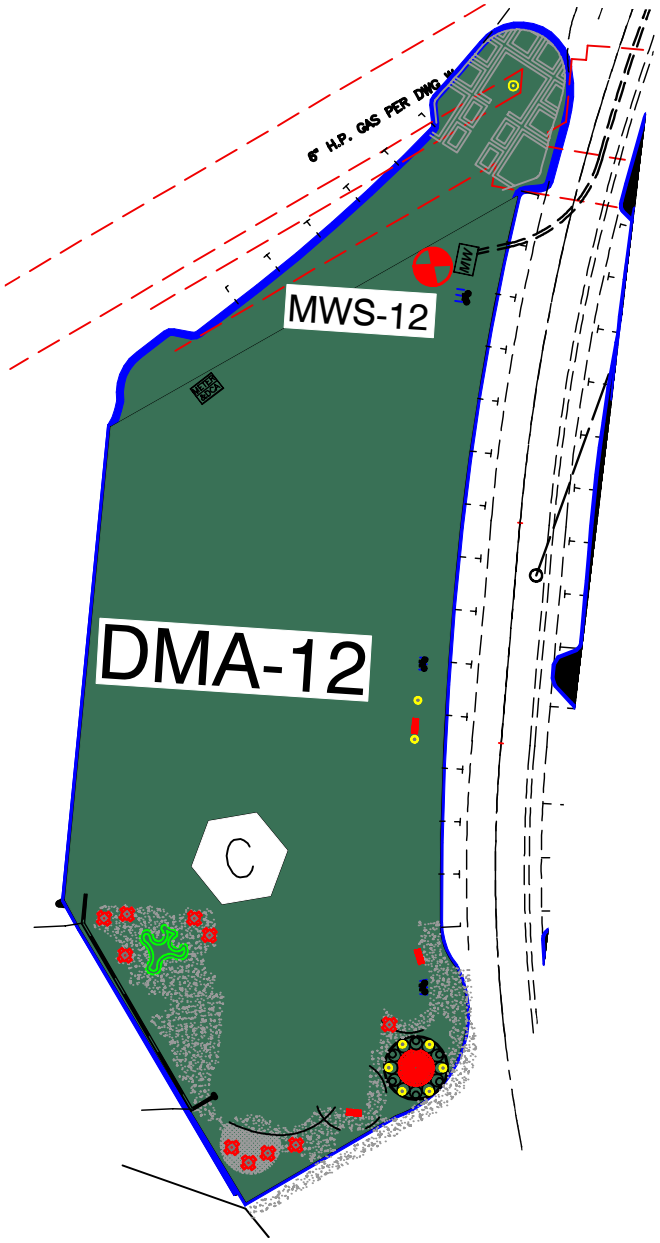
DMA 11 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17



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

Modular Wetland (Equivalent)

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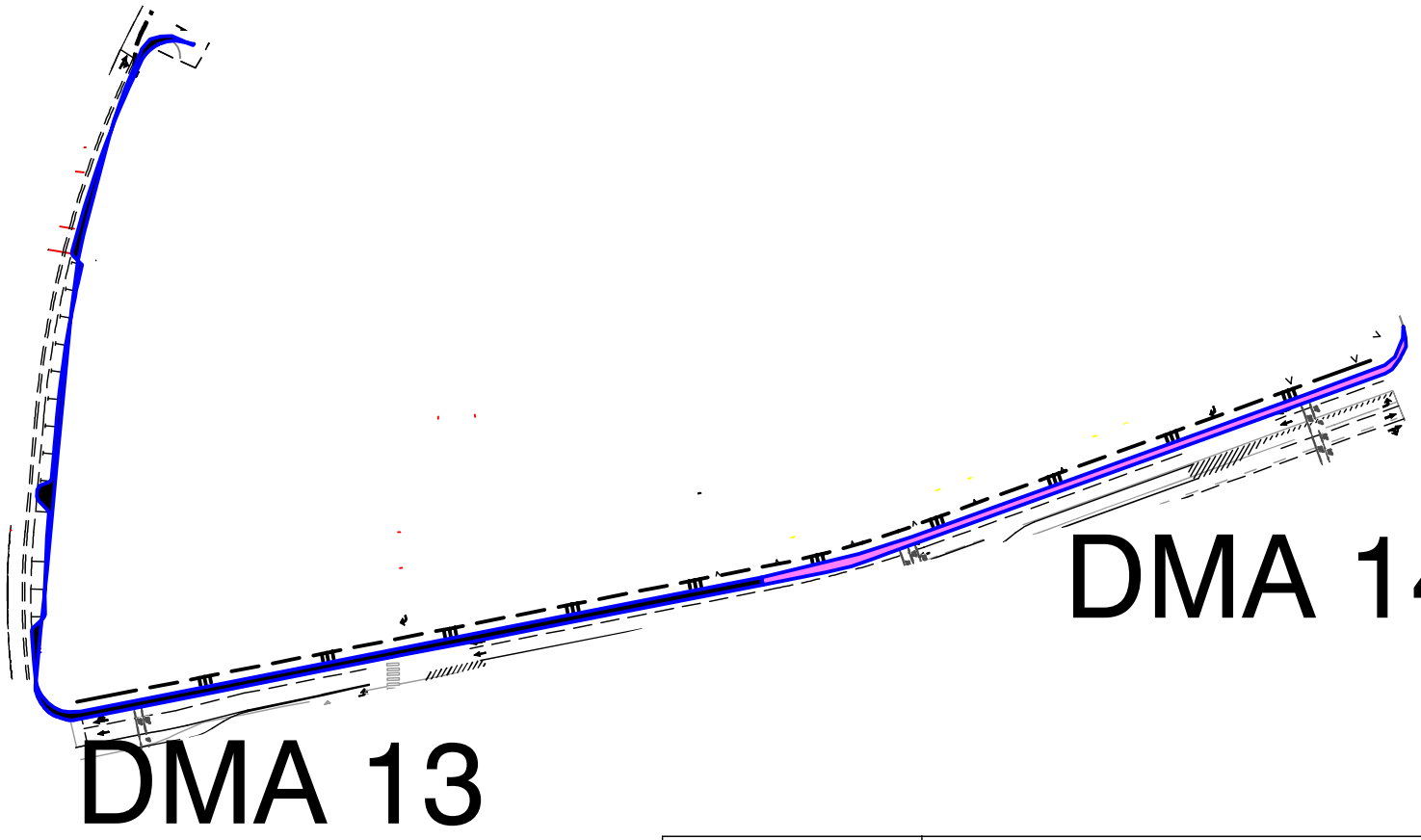
DMA 12 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17

LEGEND: SEE DMA MAP

SCALE: 1" = 70'



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ENGINEERING San Diego, Ca. 92121
SURVEYING (858) 558-4500 FAX (858) 558-1414

DMA 13 and 14 MAPBOOK FOR PALOMAR HEIGHTS

ESCONDIDO, CALIFORNIA

W.O. 2374-17

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

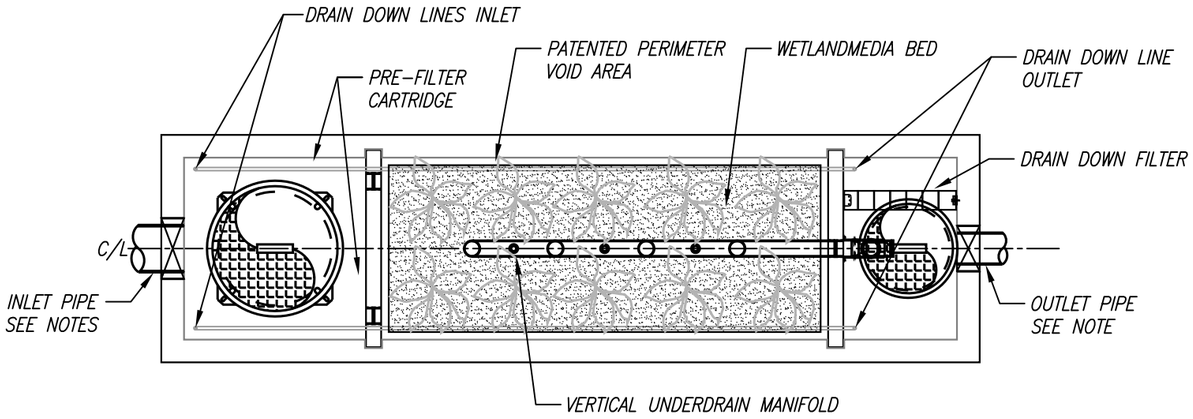
PROJECT PARAMETERS				
PIPE DATA	I.E.	MATERIAL	DIAMETER	
INLET PIPE 1				
OUTLET PIPE 1				
RIM ELEVATION				
SURFACE LOADING REQUIREMENT			PARKWAY	
FRAME & COVER	PRETREATMENT	BIOFILTRATION	DISCHARGE	
	30	OPEN MEDIA	24	
WETLANDMEDIA VOLUME (CY)				
MEDIA DELIVERED				
ORIFICE SIZE (DIA)				
MAX PICK WEIGHT (LBS)				
NOTES: *PER ENGINEER OF RECORD				

INSTALLATION NOTES

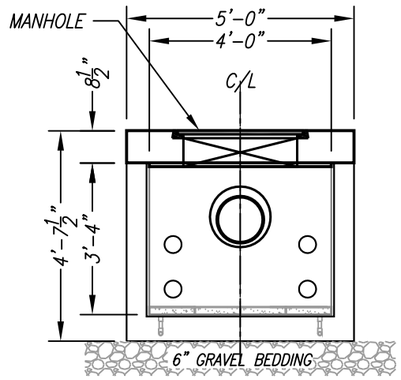
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. MANUFACTURER RECOMMENDS A MINIMUM 6"LEVEL ROCK 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

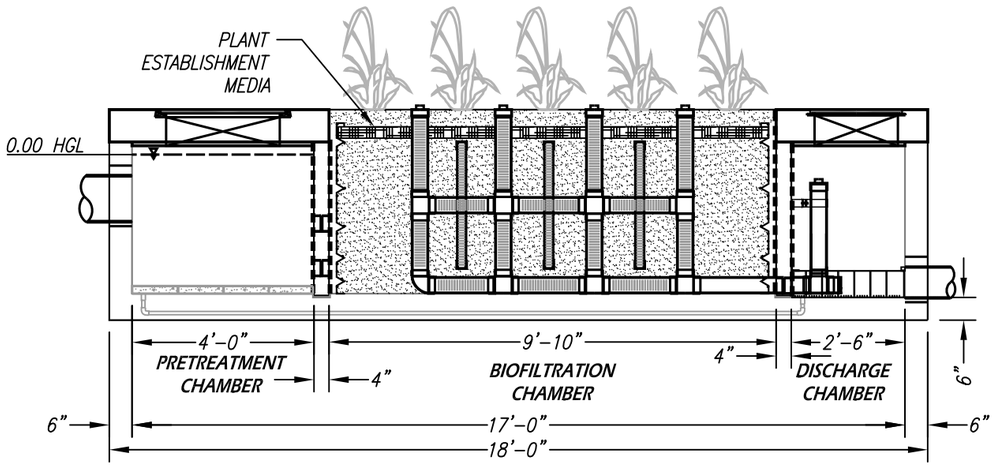
1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.



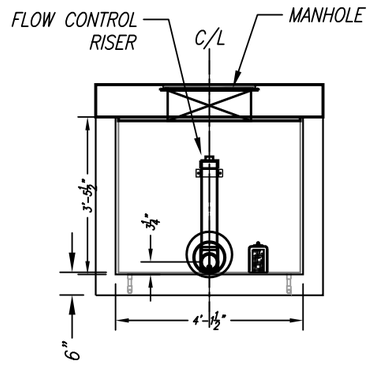
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

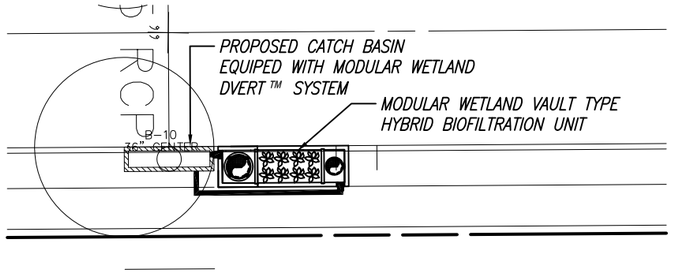
MWS UNIT DESIGN DATA	
TREATMENT CAPACITY (CFS)	0.206
OPERATING HEAD (FT)	3.4
PRETREATMENT SURFACE AREA (SF)	70.56
WETLAND LOADING RATE (GPM/MIN)	1.03

MODULAR WETLANDS

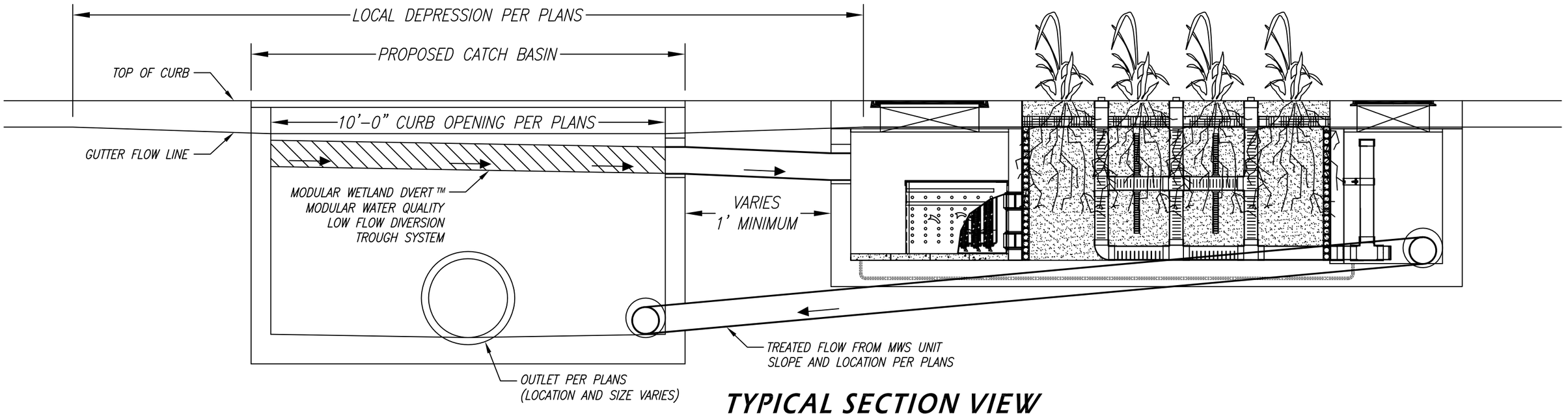
MWS-L-4-17-V

STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL

DVERT ™
MODULAR WATER QUALITY DIVERSION WEIR SYSTEM



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 CETNTER
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

	NAME	DATE
DRAWN		
EDITED		

COMMENTS:

TITLE: DVERT SYSTEM

SIZE	DWG. NO.	REV

SCALE NTS | UNITS = INCHES | SHEET 1 OF 1

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	☐Included ☐Submitted as separate stand-alone document
Attachment 2b	Hydromodification Management Exhibit (Required)	☐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.	☐Exhibit depicting onsite and/or upstream sources of critical coarse sediment as mapped in the WMAA AND, ☐Demonstration that the project effectively avoids and bypasses sources of mapped critical coarse sediment OR, ☐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.	☐Not performed ☐Included ☐Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐Included ☐Not required because BMPs will drain in less than 96 hours

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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)

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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)	☐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)	☐Included ☐Not Applicable

ATTACHMENT WILL BE PROVIDED DURING FINAL ENGINEERING.

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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).

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ATTACHMENT 4

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

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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.	

City of Escondido Storm Water Structural BMP Verification Form Page 2 of 4				
Stormwater Structural Pollutant Control & Hydromodification Control BMPs* (List all from SWQMP)				
Description/Type of Structural BMP	**Plan Sheet #**	**Structural BMP ID#**	**Maintenance Agreement Recorded Doc #**	**Revisions**
Proprietary biofiltration unit	TBD	MWS -1		
		MWS -2		
		MWS - 3		
		MWS-4		
		MWS -5		
		MWS - 6		
		MWS - 7		
		MWS - 8		
		MWS - 9		
		MWS -10		
		MWS - 11		
*All Priority Development Projects (PDPs) require a Structural BMP				

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.

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:

_____

[SEAL]

Date: _____

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: _____

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

VICINITY MAP
NTS

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)
- EXISTING WATER MAIN
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED PVT. ST. LIGHT
- PROPOSED STORM DRAIN SYSTEM — CLEANOUT, HEADWALL, RIP-RAP, CATCH BASIN/INLET
- % OF GRADE — 1.27%
- PROPOSED CENTERLINE PVT. ST. ELEVATION — 602.0
- EXISTING CONTOURS
- PROPOSED CONTOURS — 600
- PROPOSED SLOPE (2:1 MAX.)
- LIMITS OF PROPOSED GRADING/DAYLIGHT
- CUT/FILL LINE

ABBREVIATIONS

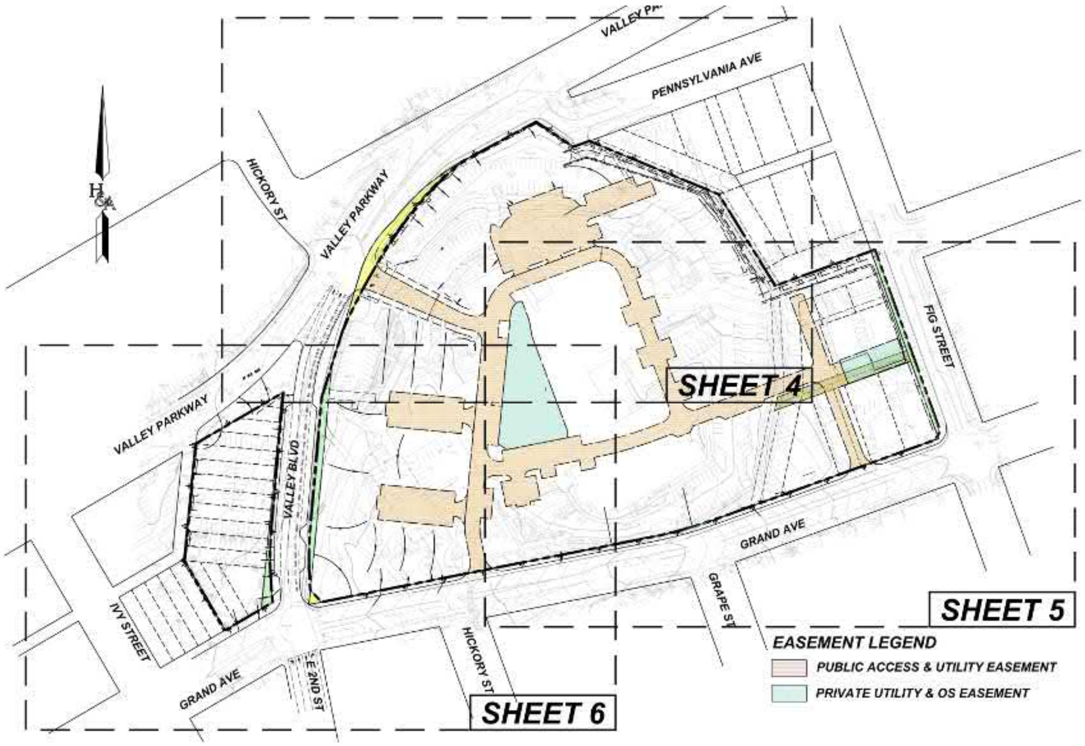
FL	FLOW LINE		
TW	TOP OF WALL	R/W	RIGHT OF WAY
BW	BOTTOM OF WALL	PL	PROPERTY LINE
TF	TOP OF FOOTING	GB	GRADE BREAK
FS	FINISH SURFACE	PI	POINT OF INTERSECTION (V.C.)
S	SEWER	P	PAD ELEVATION
W	WATER	SF	GROSS SQ. FT.
RW	RECLAIMED WATER	NSF	NET SQ. FT.
SD	STORM DRAIN	FP	FLOOD PLAIN
NTS	NOT TO SCALE	VC	VERTICAL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

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)



EASEMENT LEGEND

- PUBLIC ACCESS & UTILITY EASEMENT
- PRIVATE UTILITY & OS EASEMENT

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	7,767	0.18
TOTAL NET PROJECT AREA	600,665	13.97
PROPOSED PRIVATE DRIVE AISLES/PARKING	154,484	3.55
PROPOSED BUILDING COVERAGE	241,367	5.54
PROPOSED LANDSCAPING COVERAGE	204,814	4.88
TOTAL PROPOSED NET SITE AREA	600,665	13.97

LOTTING 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 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 20 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

GEOCON 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

1. TOTAL PROJECT GROSS SITE AREA: 13.80 ACRES
   TOTAL PROJECT PROPOSED NET SITE AREA: 13.97 ACRES
2. NUMBER OF LOTS: 8
3. NUMBER OF RESIDENTIAL LOTS: 7
4. PROPOSED STREET DEDICATION AREA: 5,395 S.F.
5. PROPOSED STREET VACATION AREA: 4,813 S.F.
6. PROPOSED STREET ACQUISITION: 7,767 S.F.
7. ASSESSOR'S PARCEL NUMBERS: 229-450-05 & 06, 230-163-01, 02, 03 & 05, 229-442-01, 02, 03, 04 & 18, 230-163-04
8. EXISTING GENERAL PLAN LAND USE DESIGNATION: SPECIFIC PLAN AREA
   PROPOSED GENERAL PLAN LAND USE DESIGNATION: SPECIFIC PLAN AREA
9. EXISTING ZONING: SPECIFIC PLAN: DOWNTOWN SPECIFIC PLAN
   PROPOSED ZONING: DOWNTOWN SPECIFIC PLAN
10. PROJECT GROSS/NET DENSITY: 36.5
11. THOMAS BROTHERS COORDINATES: 1129J2 & 1130A2
12. INDIVIDUAL TRASH PICKUP IS PROPOSED WITH THIS SUBDIVISION.

GENERAL DESIGN NOTES

1. 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
2. EASEMENTS SHALL BE PER CITY ENGINEER AND PUBLIC UTILITIES AND DISTRICTS.
3. CONTOUR INTERVALS: 2 AND 10 FOOT
4. FINISHED GRADES ARE APPROXIMATE ONLY AND SUBJECT TO CHANGE IN FINAL DESIGN CONSISTENT WITH THE CITY'S SUBSTANTIAL CONFORMANCE POLICY.
5. APPROXIMATE RAW GRADING QUANTITIES: RAW CUT: 103,500 C.Y.
   RAW FILL: 103,500 C.Y.
   RAW QUANTITIES SHOWN DO NOT INCLUDE THE EFFECTS OF REMEDIAL GRADING. THE PROJECT BALANCES ONSITE AFTER TAKING SHRINKAGE AND BULKING INTO CONSIDERATION BASED ON INFORMATION PROVIDED BY SOILS ENGINEER.
6. SOILS REPORT PREPARED BY:
7. CUT AND FILL SLOPES SHALL NOT EXCEED 2:1.
8. ALL PROPOSED LOTS SHALL BE ON A SANITARY SEWER SYSTEM.
9. ALL PROPOSED SEWER AND WATER IMPROVEMENTS SHOWN ON THIS MAP SHALL BE PUBLIC WITHIN THE PROJECT BOUNDARY AND PUBLIC OUTSIDE OF THE BOUNDARY.
10. 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.
11. A SOILS REPORT WAS PRODUCED IN COORDINATIONWITH THIS PROJECT FROM GEOCON INCORPORATED WHICH IS DATED SPETEMBER 5, 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

REGISTERED PROFESSIONAL ENGINEER RAYMOND L. MARTIN NO. 48670 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

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

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC.
PLANNING / ENGINEERING / SURVEYING

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

TENTATIVE MAP
PALOMAR HEIGHTS
City of Escondido, California

SHEET 1 OF 8

W.O. 2445-0021

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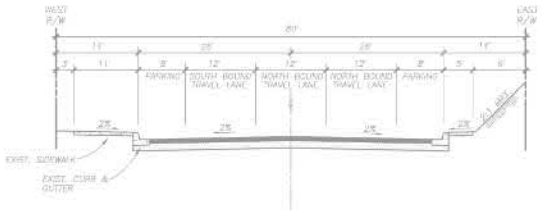
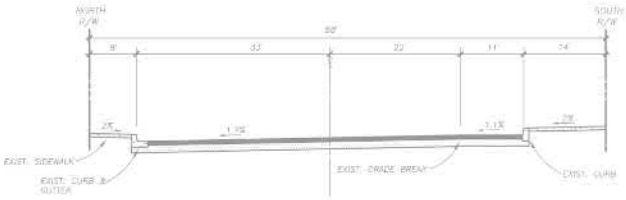


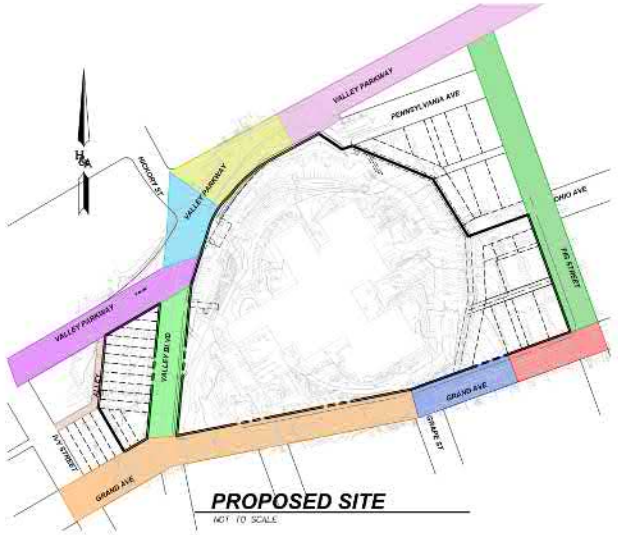
EXISTING VALLEY BOULEVARD

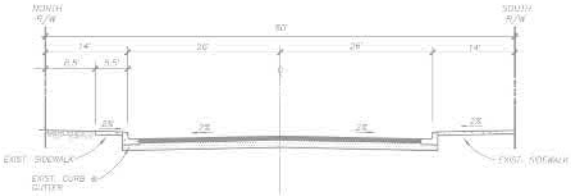
NOT TO SCALE



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

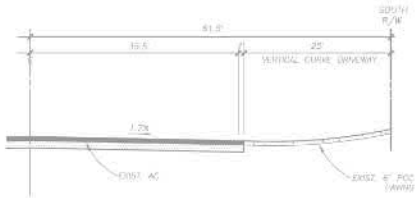
NOT TO SCALE





EXISTING GRAND AVENUE
(BTWN VALLEY BLVD AND GRAPE)

NOT TO SCALE



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(STATION 16+75.35 PER DWG NO. P-1941)

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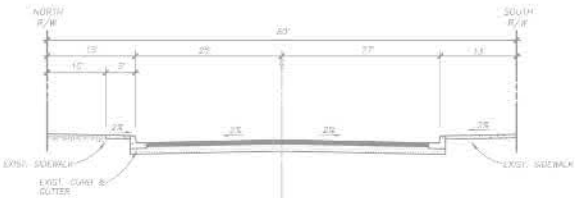
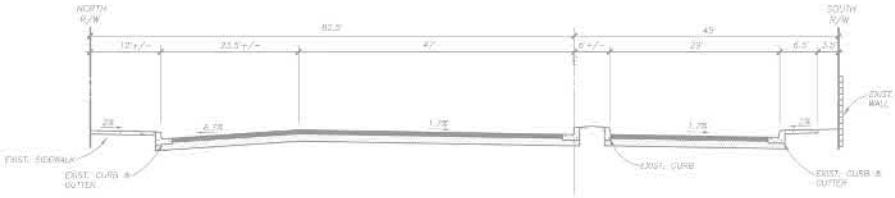


EXISTING GRAND AVENUE
(BTWN GRAPE AND FIG)

NOT TO SCALE



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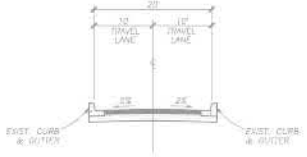

EXISTING ALLEY

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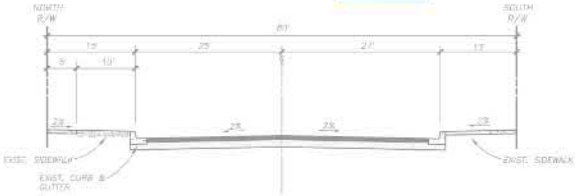

EXISTING GRAND AVENUE
(BTWN GRAPE AND FIG)

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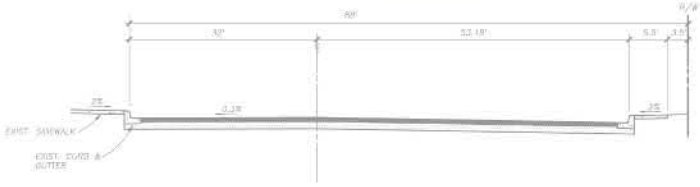
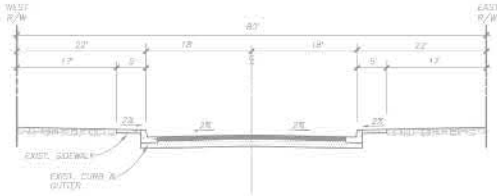


EXISTING E.C. VALLEY PARKWAY
(STATION 20+81.86 PER DWG NO. P-1941)

NOT TO SCALE



EXISTING FIG STREET

NOT TO SCALE

EXISTING STREET SECTIONS

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC.

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING (T)858.558.4500 (F)858.558.1414

TENTATIVE MAP
PALOMAR HEIGHTS

City of Escondido, California

SHEET 2 OF 8

W.O. 2445-0021

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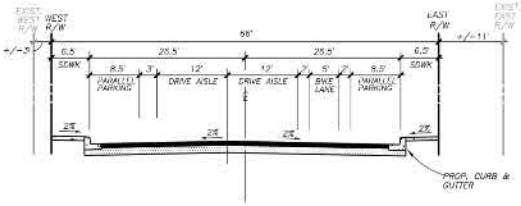

PROPOSED VALLEY BOULEVARD

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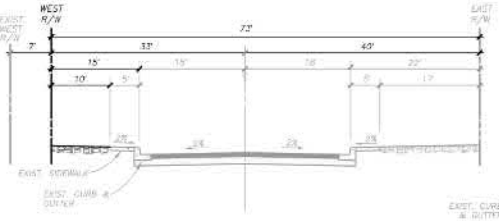

PROPOSED FIG STREET

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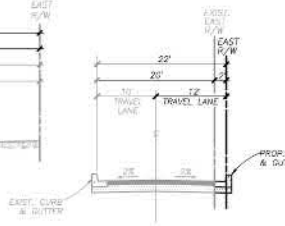

PROPOSED ALLEY

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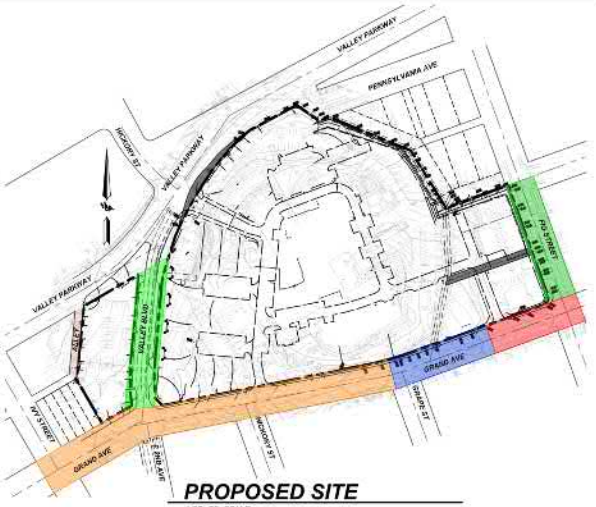

PROPOSED SITE

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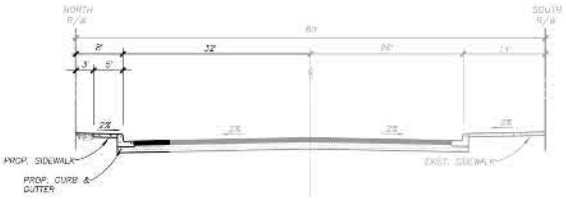
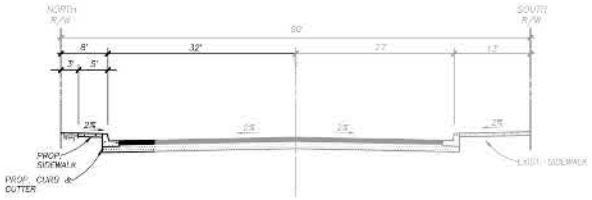


PROPOSED GRAND AVENUE
(BTWN VALLEY BLVD AND GRAPE)

NOT TO SCALE



PROPOSED GRAND AVENUE
(BTWN GRAPE AND FIG)

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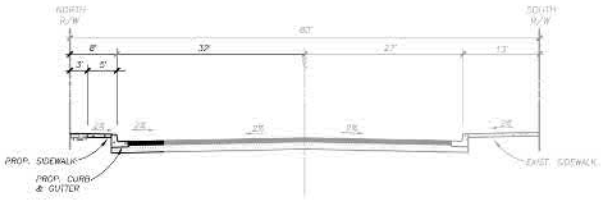

PROPOSED GRAND AVENUE
(BTWN GRAPE AND FIG)

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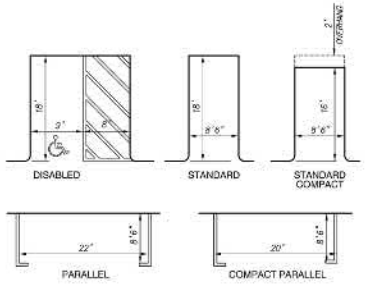

TYPICAL PARKING DETAIL

NOT TO SCALE

PROPOSED STREET SECTIONS

PREPARED BY:

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PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING (T)858.558.4500 (F)858.558.1414

TENTATIVE MAP
PALOMAR HEIGHTS

City of Escondido, California

SHEET 3 OF 8

W.O. 2445-0021

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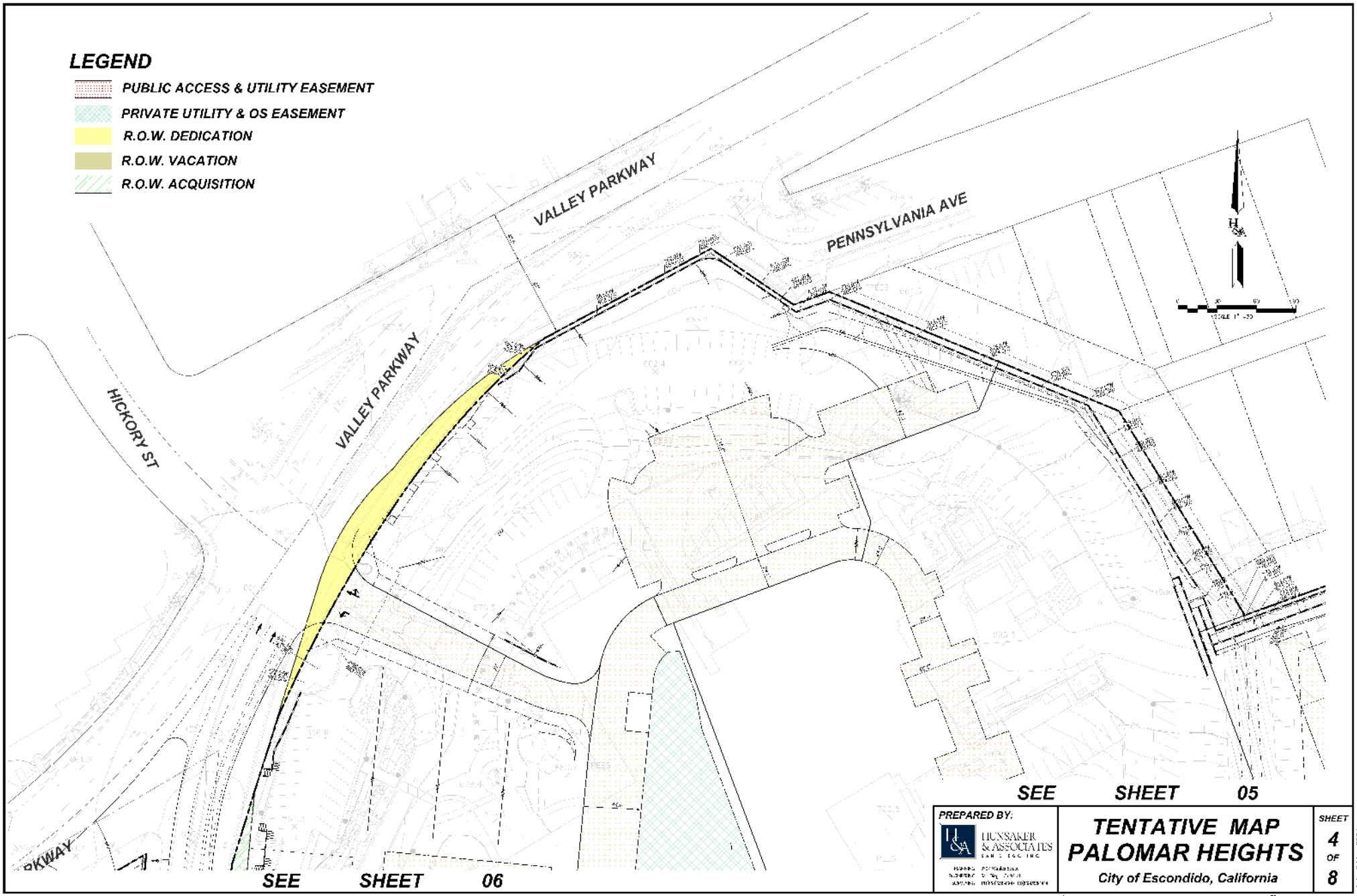
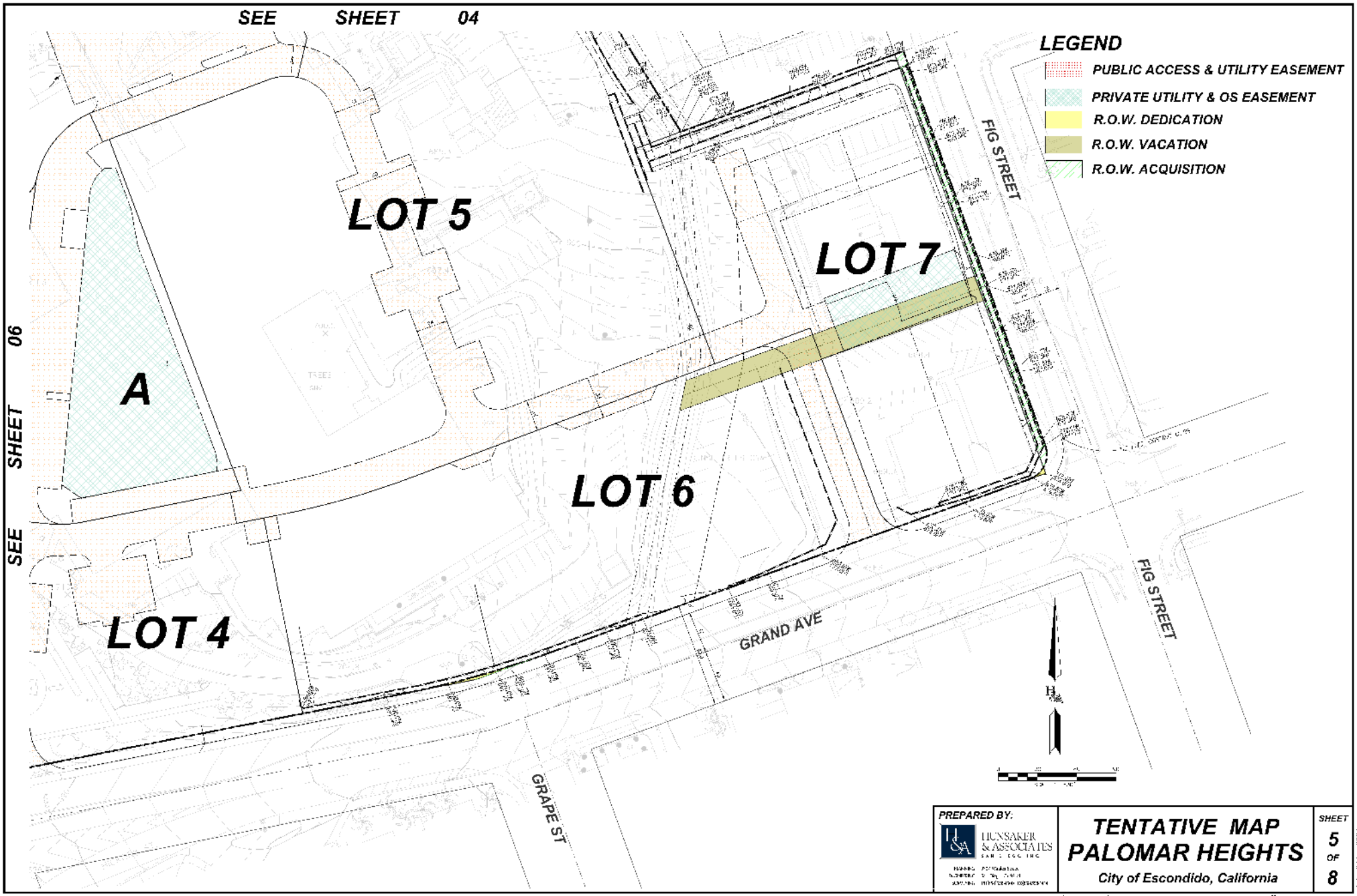


PREPARED BY:
HUNSAKER & ASSOCIATES

TENTATIVE MAP
PALOMAR HEIGHTS

City of Escondido, California

SHEET 4 OF 8

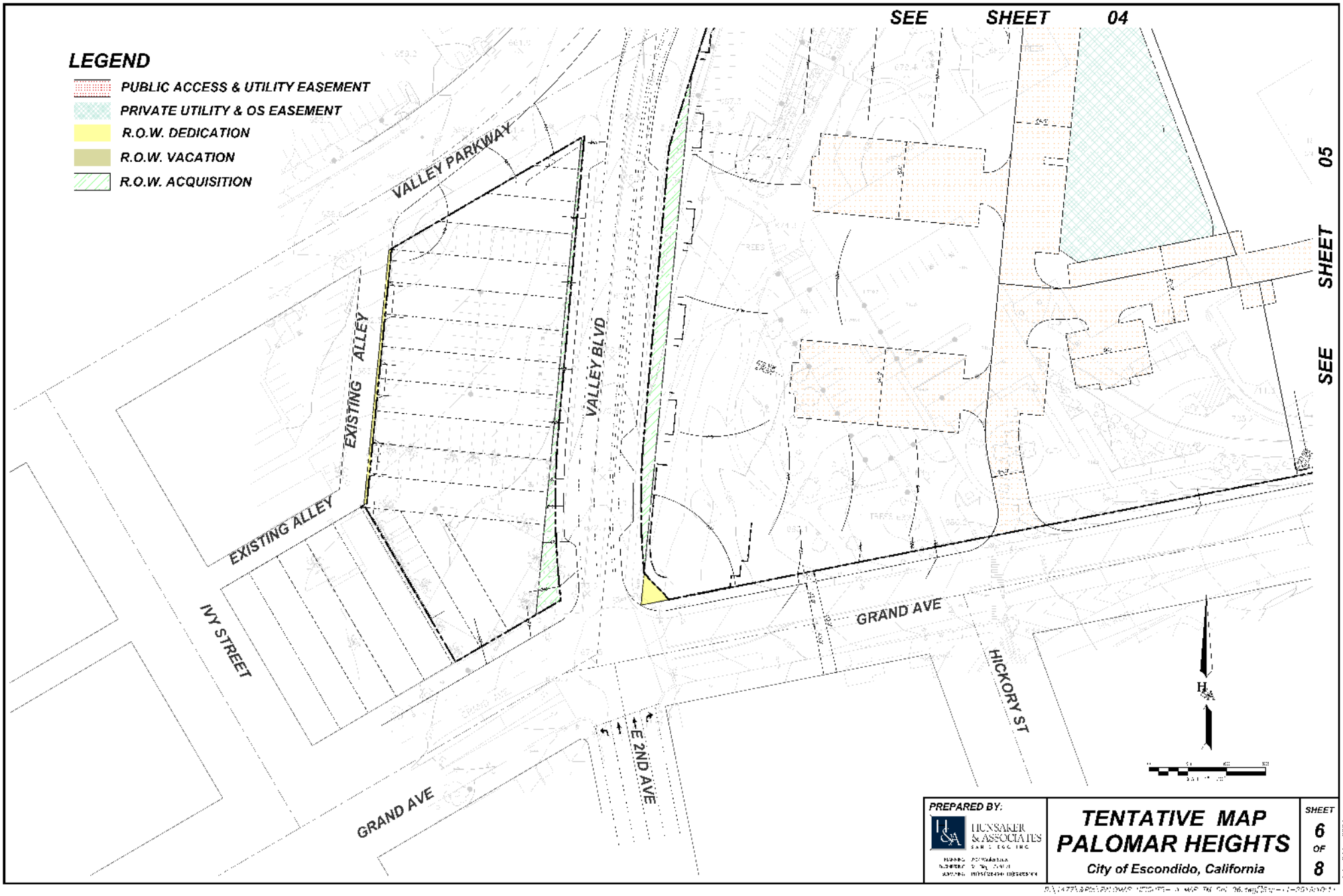


PREPARED BY:
HUNSAKER & ASSOCIATES

TENTATIVE MAP
PALOMAR HEIGHTS

City of Escondido, California

SHEET 5 OF 8

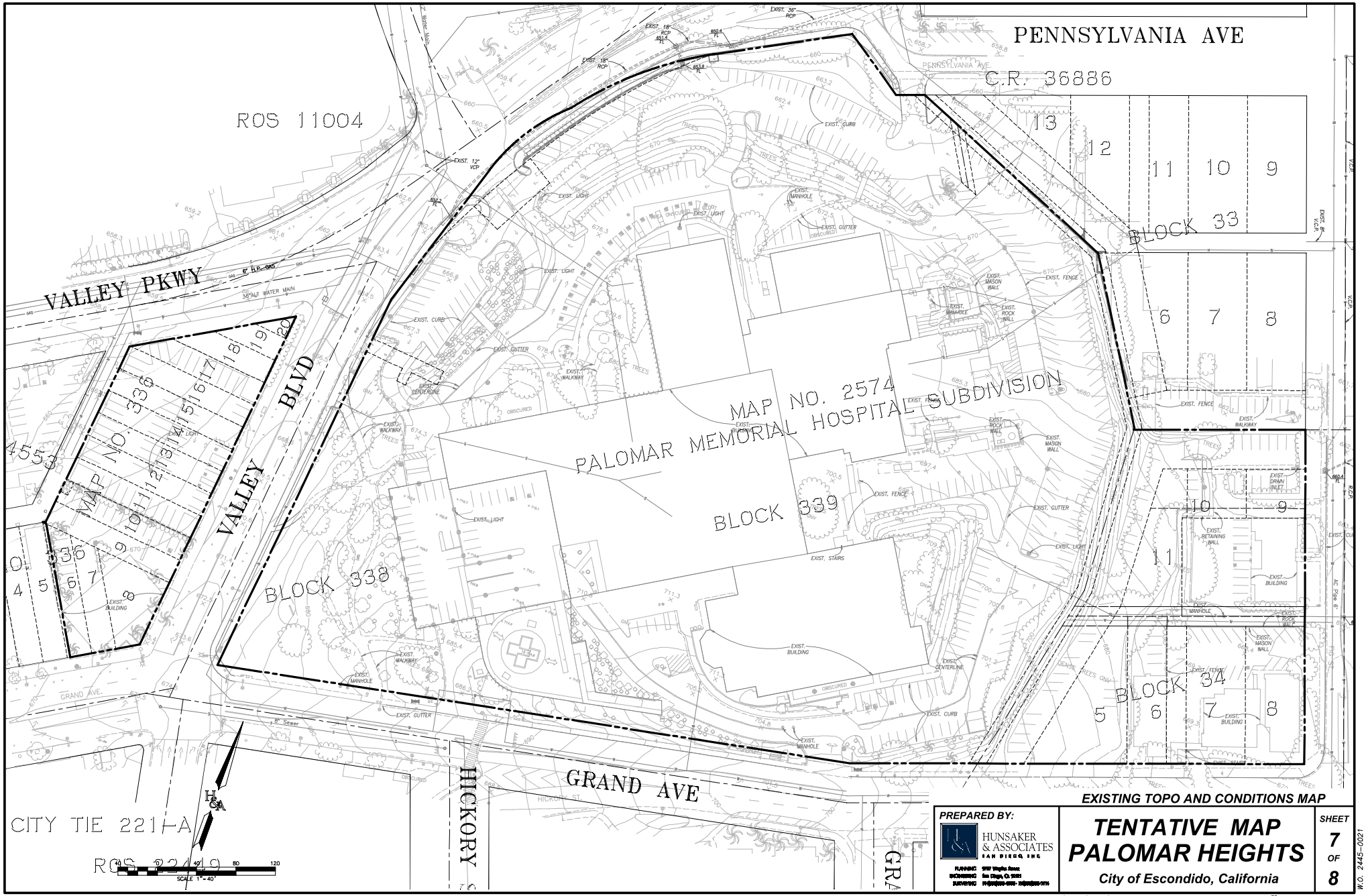


PREPARED BY:
HUNSAKER & ASSOCIATES

TENTATIVE MAP
PALOMAR HEIGHTS

City of Escondido, California

SHEET 6 OF 8



EXISTING TOPO AND CONDITIONS MAP

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING 9707 Waples Street
ENGINEERING San Diego, CA 92121
SURVEYING

TENTATIVE MAP
PALOMAR HEIGHTS
City of Escondido, California

SHEET 7 OF 8

W.O. 2445-0021

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TITLE REFERENCE:

THIS SURVEY IS BASED ON THE COMMITMENT FOR TITLE INSURANCE ISSUED BY FNTG-CHICAGO TITLE COMPANY AS ORDER NO. 00100370-996-SD1-RT4, 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: 229-450-06)

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, 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. 82-209 RECORDED AUGUST 4, 1982 AS FILE NO. 1982-239658 AND RE-RECORDED AUGUST 27, 1982 AS FILE NO. 1982-266275, 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. 764 RECORDED MAY 29, 1961 AND BY A CERTIFIED COPY OF RESOLUTION NO. 3781 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, 1940TOGETHER 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. 82-209 RECORDED AUGUST 4, 1982 AS FILE NO. 1982-239658 AND RE-RECORDED AUGUST 27, 1982 AS FILE NO. 1982-266275, 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 THE SOUTHEASTERLY HALF OF THAT PORTION OF GRAPE STREET LYING NORTHWESTERLY 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, 1961 AS FILE NO. 92029. TOGETHER WITH THE SOUTHERLY HALF OF THE ALLEY CONTINGUOUS 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 CONTINGUOUS 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 OF 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 69°39'30" WEST ALONG THE SOUTHEASTERLY 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 SOUTHEASTERLY BOUNDARY OF SAID LOT 11 AND THE SOUTHWESTERLY PROLONGATION THEREOF SOUTH 69°39'30" WEST 108.50 FEET TO THE CENTER LINE OF THE ABOVE MENTIONED GRAPE STREET; THENCE ALONG SAID CENTER LINE NORTH 17°10'00" EAST 19.45 FEET TO AN ANGLE POINT THEREIN; THENCE CONTINUING ALONG SAID CENTER LINE NORTH 3°20'00" WEST 141.02 FEET, MORE OR LESS, TO AN INTERSECTION WITH A LINE BEARING SOUTH 86°40'00" WEST FROM THE NORTHWESTERLY CORNER OF SAID LOT 11; THENCE NORTH 86°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" EAST 25.14 FEET TO THE MOST WESTERLY CORNER OF SAID VACATED PORTION OF OHIO AVENUE; THENCE ALONG THE NORTHERLY BOUNDARY OF SAID VACATED PORTION OF OHIO AVENUE NORTH 43°05'40" EAST 30.04 FEET TO A POINT HEREIN DESIGNATED AS POINT "A"; THENCE CONTINUING ALONG SAID NORTHERLY BOUNDARY NORTH 43°05'40" EAST 3.50 FEET TO AN ANGLE POINT THEREIN; THENCE CONTINUING ALONG SAID NORTHERLY BOUNDARY NORTH 69°39'30" EAST 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 90°08'00" TO THE POINT OF TANGENCY, SAID POINT OF TANGENCY BEING ALSO A POINT IN THE WESTERLY BOUNDARY OF FIG STREET BOUNDING SAID LOT 9 ON THE EAST; THENCE ALONG SAID WESTERLY BOUNDARY OF SAID FIG STREET, SOUTH 20°12'30" EAST 49.70 FEET TO A POINT IN SAID WESTERLY BOUNDARY DISTANT THEREON NORTH 20°12'30" WEST 90.20 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 83.00 FEET TO A POINT HEREIN DESIGNATED AS POINT "B"; 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 90.20 FEET TO THE SOUTHEASTERLY BOUNDARY 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. 74-211 TO THE CITY COUNCIL OF THE CITY OF ESCONDIDO RECORDED OCTOBER 21, 1974 AS FILE NO. 1974-280073, OFFICIAL RECORDS. TOGETHER WITH THE NORHERLY 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 CONTINGUOUS 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, 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 SOUTHEASTERLY CORNER OF SAID LOT 9; THENCE ALONG THE EASTERLY BOUNDARY THEREOF NORTH 20°12'30 WEST 90.20 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 90.20 FEET TO THE SOUTHERLY BOUNDARY OF LOT 11; THENCE ALONG THE SOUTHERLY BOUNDARY OF LOTS 11, 10 AND 9, NORTH 69°39'30 125.00 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:

1. 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, 1961
   RECORDING NO: 92029 OF OFFICIAL RECORDS
   AFFECTS: A PORTION OF PARCELS A, C AND D

2. 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.

3. 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: 84-070972 OF OFFICIAL RECORDS
   AFFECTS: A PORTION OF PARCELS A AND B

4. 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 20, 1989
   RECORDING NO: 89-507499 OF OFFICIAL RECORDS
   AFFECTS: A PORTION OF PARCEL A

5. 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:

19. 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 WESTERLY 8.00 FEET OF SAID LOT 10
    AFFECTS: LOTS 7 - 10 & 14, 15, PORTION 6

THE FOLLOWING MATTERS AFFECT PARCEL I:

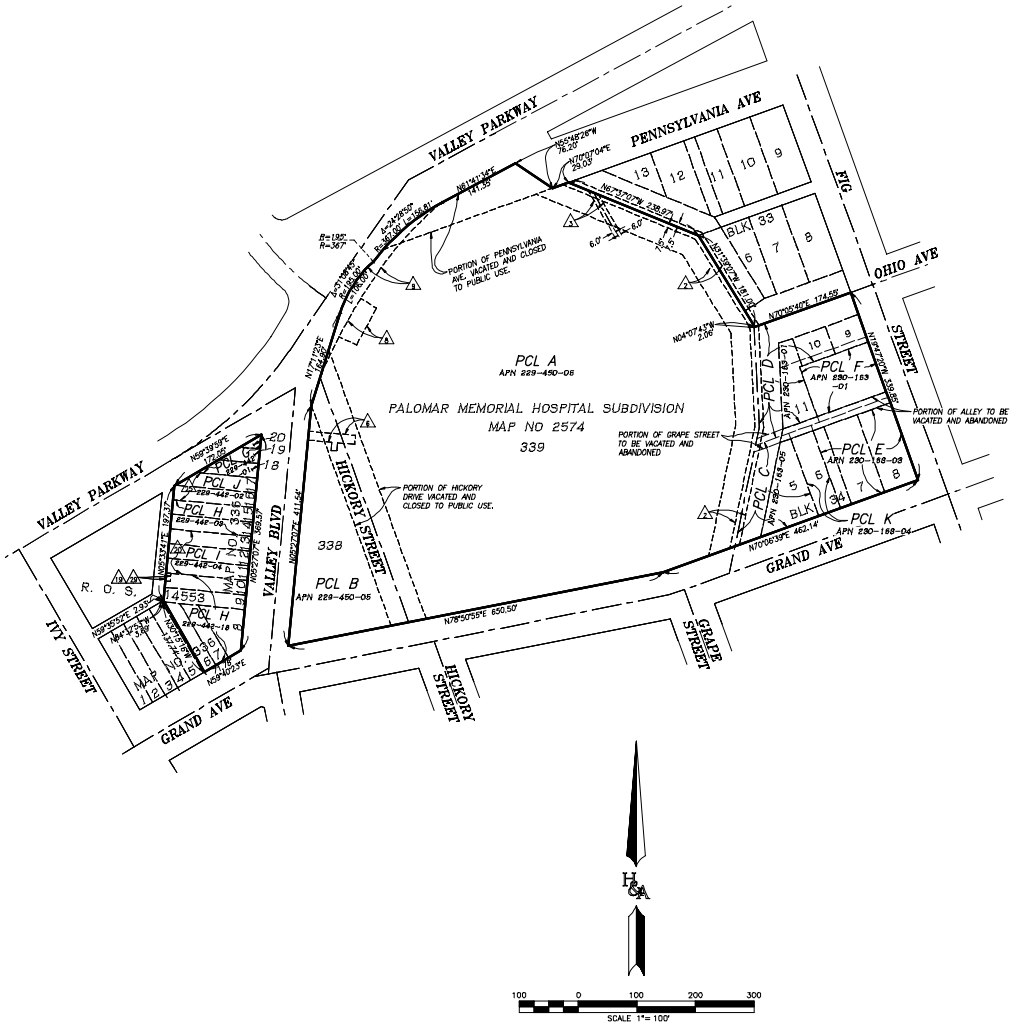
20. THE FOLLOWING EASEMENTS RESERVED BY THE ESCONDIDO LAND & TOWN COMPANY (SUCCEEDED BY THE CITY OF ESCONDIDO) FOR THE PIPELINES AS FOLLOWS:
    IN BOOK 67, PAGE 35 OF DEEDS, AFFECTS LOT 13;
    IN BOOK 67, PAGE 37 OF DEEDS, AFFECTS LOTS 11 & 12;

THE FOLLOWING MATTERS AFFECT PARCEL J:

21. 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 H:

19. 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 WESTERLY 8.00 FEET OF SAID LOT 10



BOUNDARY AND ENCUMBRANCES

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING 9707 Waples Street San Diego, CA 92121
ENGINEERING (858)558-4500 FAX(858)558-1414
SURVEYING

TENTATIVE MAP
PALOMAR HEIGHTS

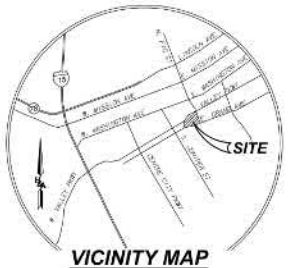
City of Escondido, California

SHEET 8 OF 8

W.O. 2445-0021

R:\1477\&Pln\PALOMAR HEIGHTS- A MAP TM Sht 08.dwg[]Sep-11-2019:10:26

PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California



VICINITY MAP
NTS

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	
PROPOSED FIRE HYDRANT	
EXISTING FIRE HYDRANT	
PROPOSED PVT. ST. LIGHT	
PROPOSED STORM DRAIN SYSTEM	CLEANOUT, HEADWALL, RIP-RAP, CATCH BASIN/INLET
% OF GRADE	1.27%
PROPOSED CENTERLINE PVT. ST. ELEVATION	832.0
EXISTING CONTOURS	
PROPOSED CONTOURS	830
PROPOSED SLOPE (2:1 MAX.)	
LIMITS OF PROPOSED GRADING/DAYLIGHT	
CUT/FILL LINE	
MODULAR WETLAND	MW
WATER METER	WM

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	P	PAD ELEVATION
S	SEWER	SF	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

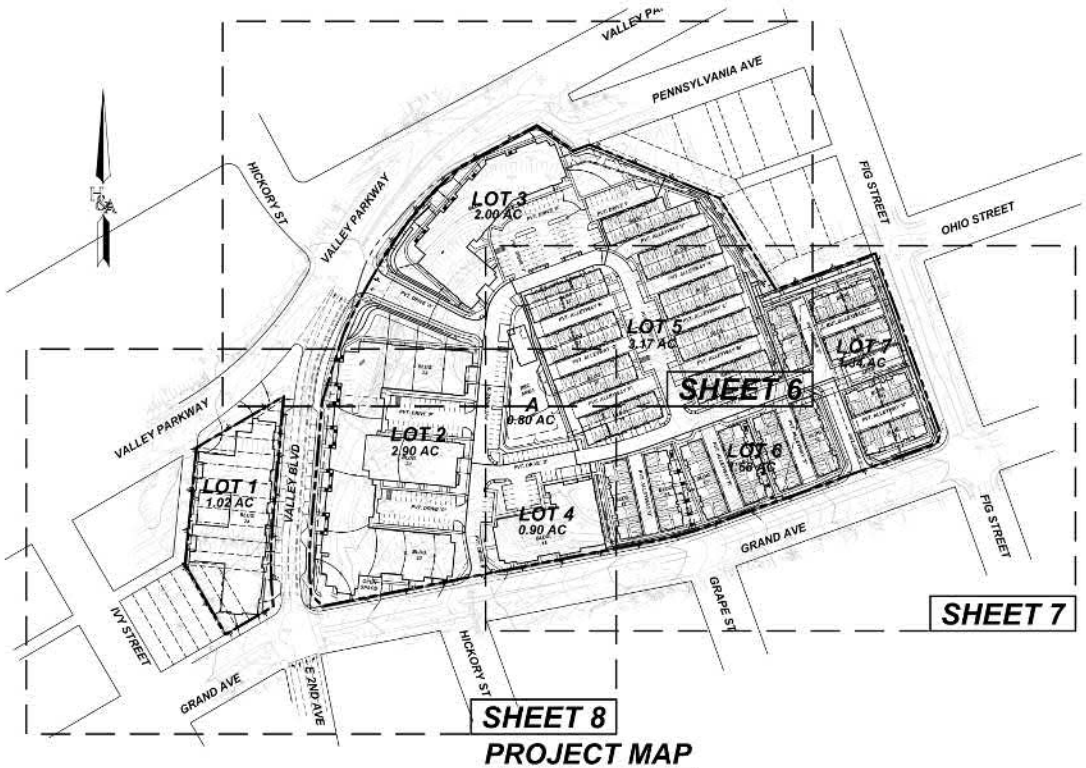
WATER.....CITY OF ESCONDIDO
SEWER.....CITY OF ESCONDIDO
POLICE.....CITY OF ESCONDIDO
FIRE.....CITY OF ESCONDIDO
GAS AND ELECTRICITY.....SAN DIEGO GAS AND ELECTRIC
HIGH SCHOOL DISTRICT.....ESCONDIDO UNION HIGH SCHOOL DISTRICT
ELEMENTARY SCHOOL DISTRICT.....ESCONDIDO UNION ELEMENTARY SCHOOL DISTRICT

LEGAL DESCRIPTION

SEE SHEET NO. 12 FOR LEGAL DESCRIPTION.

EASEMENT NOTES

SEE SHEET NO. 12 FOR EASEMENT INFORMATION.



PROJECT MAP
SCALE: 1"=100'

GENERAL NOTES

1. TOTAL PROJECT GROSS SITE AREA: 13.80 ACRES
   TOTAL PROJECT PROPOSED NET SITE AREA: 13.97 ACRES
2. NUMBER OF LOTS: 8
3. NUMBER OF RESIDENTIAL LOTS: 7
4. PROPOSED STREET DEDICATION AREA: 5,395 S.F.
5. PROPOSED STREET VACATION AREA: 4,813 S.F.
6. PROPOSED STREET ACQUISITION: 7,767 S.F.
7. ASSESSOR'S PARCEL NUMBERS: 229-450-05 & 06, 230-163-01, 02, 03 & 05, 229-442-01, 02, 03, 04 & 18, 230-163-04
8. EXISTING GENERAL PLAN LAND USE DESIGNATION: SPECIFIC PLAN AREA
   PROPOSED GENERAL PLAN LAND USE DESIGNATION: SPECIFIC PLAN AREA
9. EXISTING ZONING: SPECIFIC PLAN: DOWNTOWN SPECIFIC PLAN
   PROPOSED ZONING: DOWNTOWN SPECIFIC PLAN
10. PROJECT GROSS/NET DENSITY: 16.5
11. THOMAS BROTHERS COORDINATES: 1128-J2 & 1130-A2
12. INDIVIDUAL TRASH PICKUP IS PROPOSED WITH THIS SUBDIVISION.

GENERAL DESIGN NOTES

1. 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.
2. EASEMENTS SHALL BE PER CITY ENGINEER AND PUBLIC UTILITIES AND DISTRICTS.
3. CONTOUR INTERVALS 2 AND 10 FOOT.
4. FINISHED GRADES ARE APPROXIMATE ONLY AND SUBJECT TO CHANGE IN FINAL DESIGN CONSISTENT WITH THE CITY'S SUBSTANTIAL CONFORMANCE POLICY.
5. 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 ONSITE AFTER TAKING SHRINKAGE AND BULKING INTO CONSIDERATION BASED ON INFORMATION PROVIDED BY SOILS ENGINEER.
6. SOILS REPORT PREPARED BY:
7. CUT AND FILL SLOPES SHALL NOT EXCEED 2:1.
8. ALL PROPOSED LOTS SHALL BE ON A SANITARY SEWER SYSTEM.
9. ALL PROPOSED SEWER AND WATER IMPROVEMENTS SHOWN ON THIS MAP SHALL BE PUBLIC WITHIN THE PROJECT BOUNDARY AND PUBLIC OUTSIDE OF THE BOUNDARY.
10. THIS PROJECT IS A "MULTIPLE FINASE" 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
2235 ENCINITAS BOULEVARD
SUITE 216
ENCINITAS, CA 92024

APPLICANT DATE

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	608,665	13.97
PROPOSED PRIVATE DRIVE AISLES/PARKING	154,464	3.55
PROPOSED BUILDING COVERAGE	241,367	5.54
PROPOSED LANDSCAPING COVERAGE	204,834	4.88
TOTAL PROPOSED NET SITE AREA	608,665	13.97

LOTTING SUMMARY

LOT SUMMARY	SF	AC
LOT 1	46,150	1.06
LOT 2	128,548	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	60,617	1.39
LOT A	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	839
STANDARD	194
PARALLEL	20
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 = 91,476 S.F.
SLOPED = 34,844 S.F.
TOTAL = 124,170 S.F.

ENGINEER

RAYMOND L. MARTIN R.C.E. 48670 DATE
MY REGISTRATION EXPIRES ON 8/30/20

SOILS ENGINEER

GEOCON 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 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

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING (858)558-4500 FAX (858)558-1414

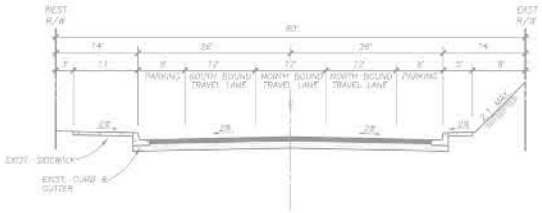
NO.	REVISIONS	DATE	BY
1	1ST SUBMITTAL	06/25/19	HBA
2	2ND SUBMITTAL	09/11/19	HBA
3			
4			
5			
6			
7			
8			

PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California

SHEET 1 OF 12

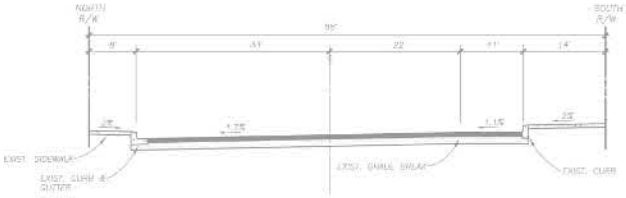
W.O. 2445-0021

R:\1477\8Plh\PALOMAR HEIGHTS- Site Plan Sht 01.dwg[]Sep-11-2019:11:20



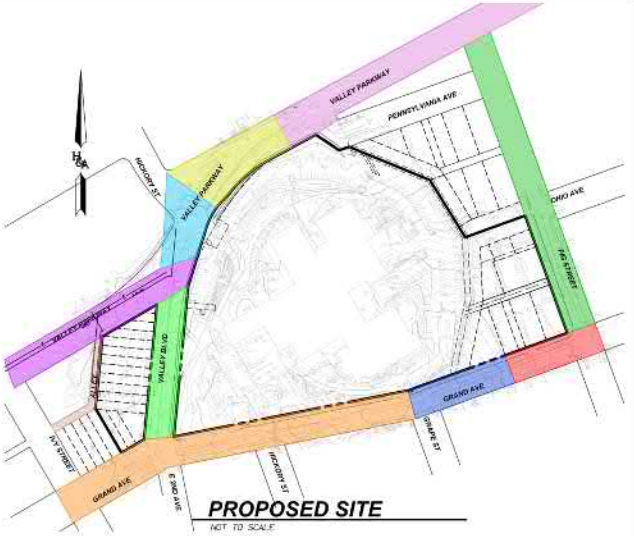
EXISTING VALLEY BOULEVARD

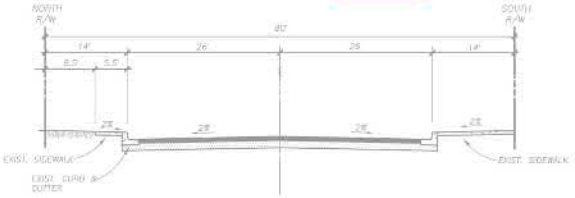
NOT TO SCALE



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

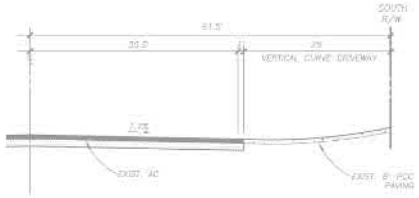
NOT TO SCALE





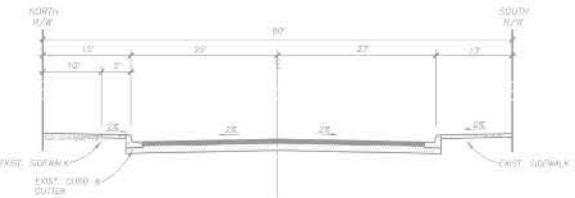
EXISTING GRAND AVENUE
(BTWN VALLEY BLVD AND GRAPE)

NOT TO SCALE



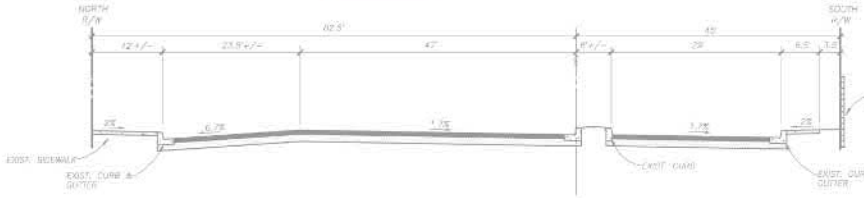
EXISTING VALLEY PARKWAY
(STATION 16+75.35 PER DWG NO. P-1941)

NOT TO SCALE



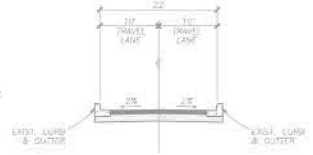
EXISTING GRAND AVENUE
(BTWN GRAPE AND FIG)

NOT TO SCALE



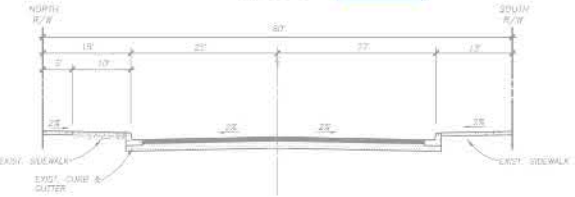
EXISTING VALLEY PARKWAY
(STATION 18+60 PER DWG NO. P-1941)

NOT TO SCALE



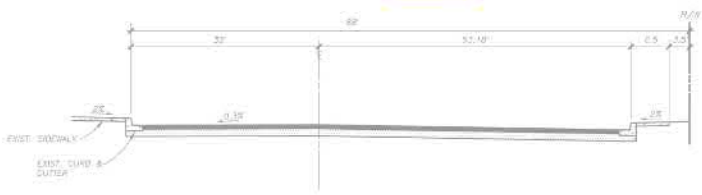
EXISTING ALLEY

NOT TO SCALE



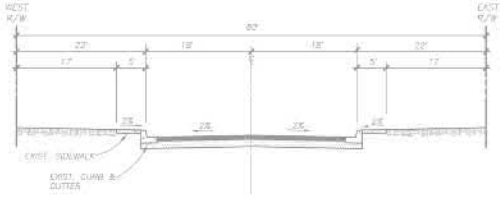
EXISTING GRAND AVENUE
(BTWN GRAPE AND FIG)

NOT TO SCALE



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

NOT TO SCALE



EXISTING FIG STREET

NOT TO SCALE

EXISTING STREET SECTIONS

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PLANNING 9707 Waples Street
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SURVEYING (858)558-4500 FAX(858)558-1414

PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California

SHEET 2 OF 12

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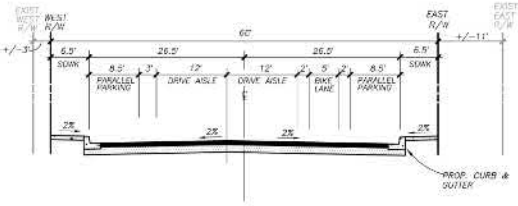
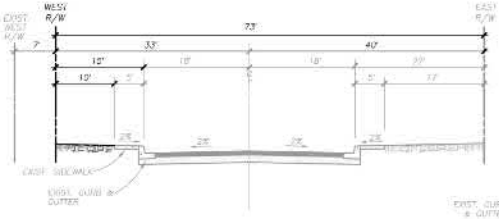


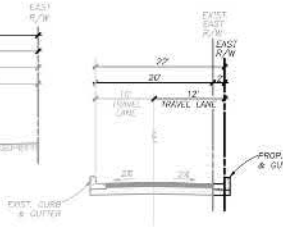
PROPOSED VALLEY BOULEVARD

NOT TO SCALE



PROPOSED FIG STREET

NOT TO SCALE



PROPOSED ALLEY

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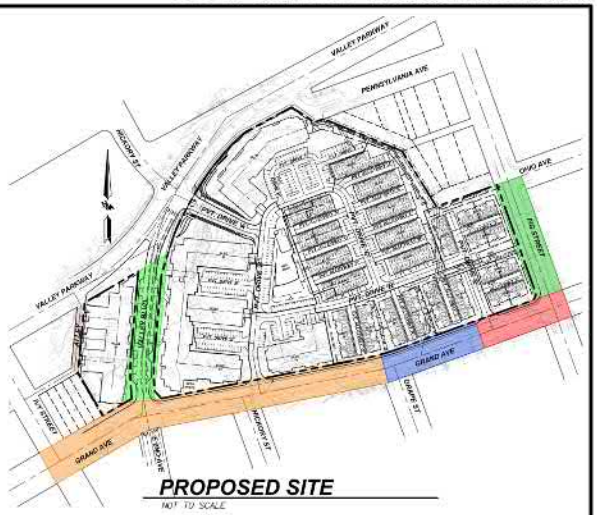
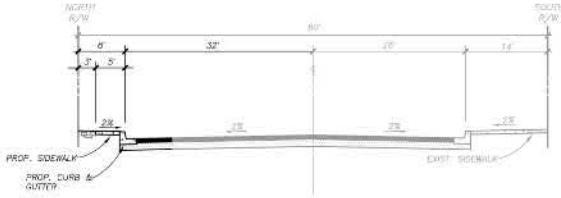


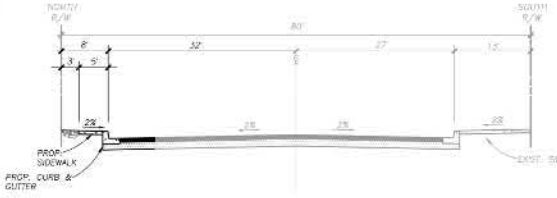
PROPOSED SITE

NOT TO SCALE



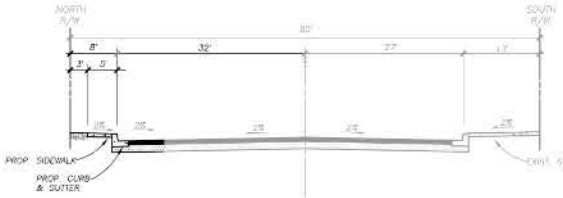
PROPOSED GRAND AVENUE
(BTWN VALLEY BLVD AND GRAPE)

NOT TO SCALE



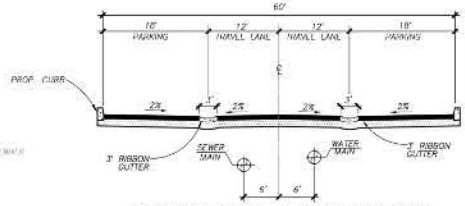
PROPOSED GRAND AVENUE
(BTWN GRAPE AND FIG)

NOT TO SCALE



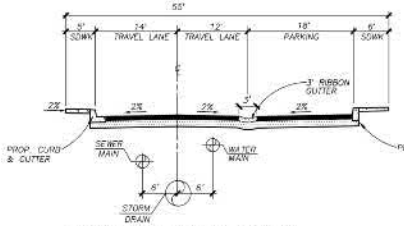
PROPOSED GRAND AVENUE
(BTWN GRAPE AND FIG)

NOT TO SCALE



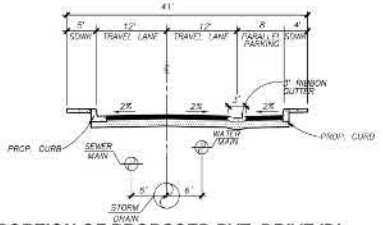
PROPOSED PVT. DRIVE 'F', 'G' &'H'
AND PORTION OF PVT. DRIVE 'D'

NOT TO SCALE



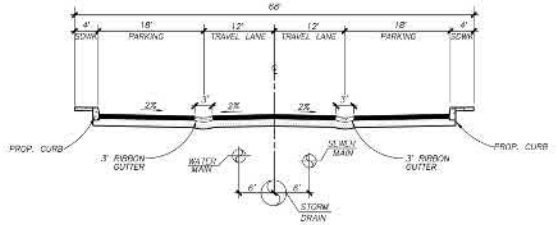
PROPOSED PVT. DRIVE 'B'

NOT TO SCALE



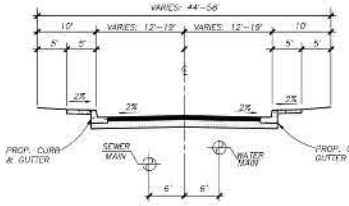
PORTION OF PROPOSED PVT. DRIVE 'D'

NOT TO SCALE



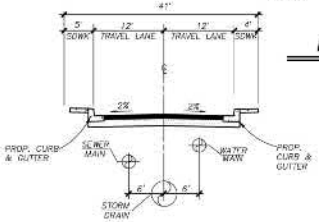
PROPOSED PVT. DRIVE 'C'

NOT TO SCALE



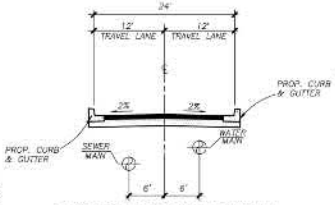
PROPOSED PVT. DRIVE 'A'

NOT TO SCALE



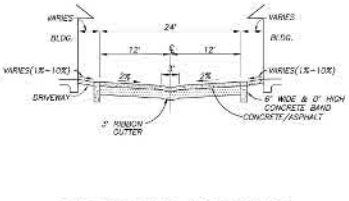
PROPOSED PVT. DRIVE 'E'

NOT TO SCALE



PROPOSED PVT. DRIVE 'I'

NOT TO SCALE



TYPICAL PVT. ALLEYWAY

NOT TO SCALE

PROPOSED STREET SECTIONS

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PRELIMINARY GRADING PLAN

PALOMAR HEIGHTS

City of Escondido, California

SHEET 3 OF 12

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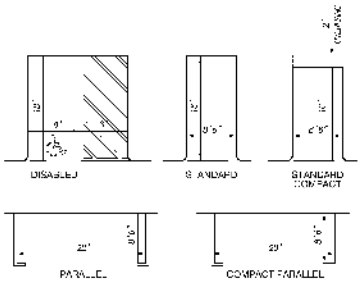


TYPICAL PARKING DETAIL

NOT TO SCALE

DETAILS

PREPARED BY:

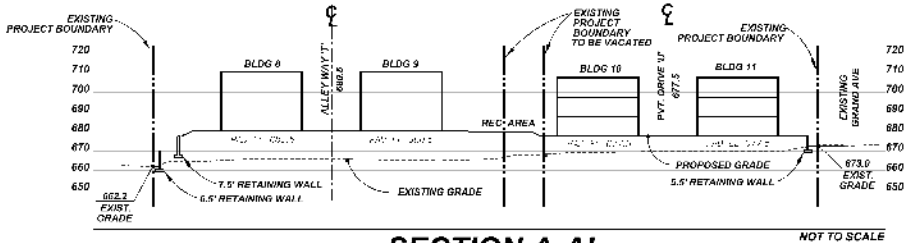
HUNSAKER & ASSOCIATES

PRELIMINARY GRADING PLAN

PALOMAR HEIGHTS

City of Escondido, California

SHEET 4 OF 12



SECTION A-A'

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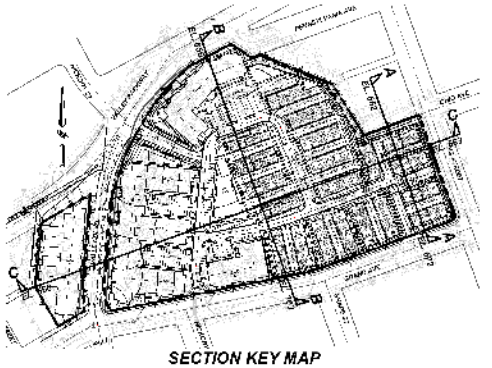
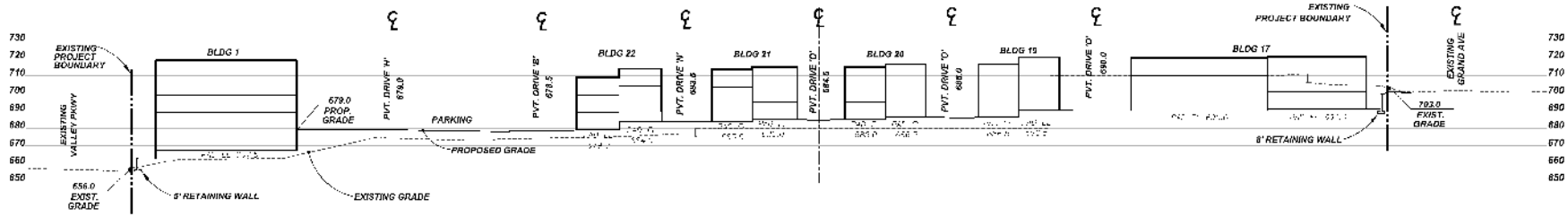


SECTION KEY MAP

NOT TO SCALE



SECTION B-B'

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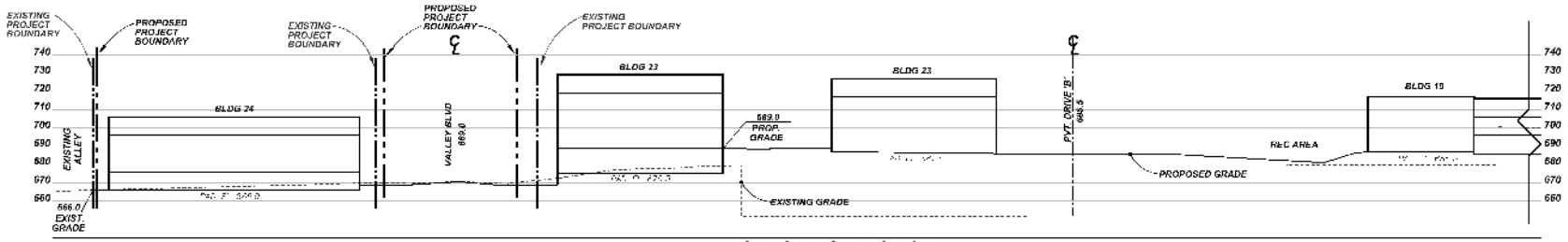
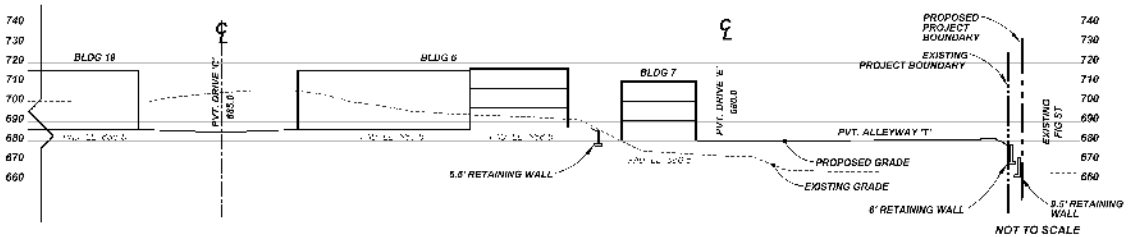


SECTION C-C'



NOT TO SCALE

SITE CROSS SECTIONS

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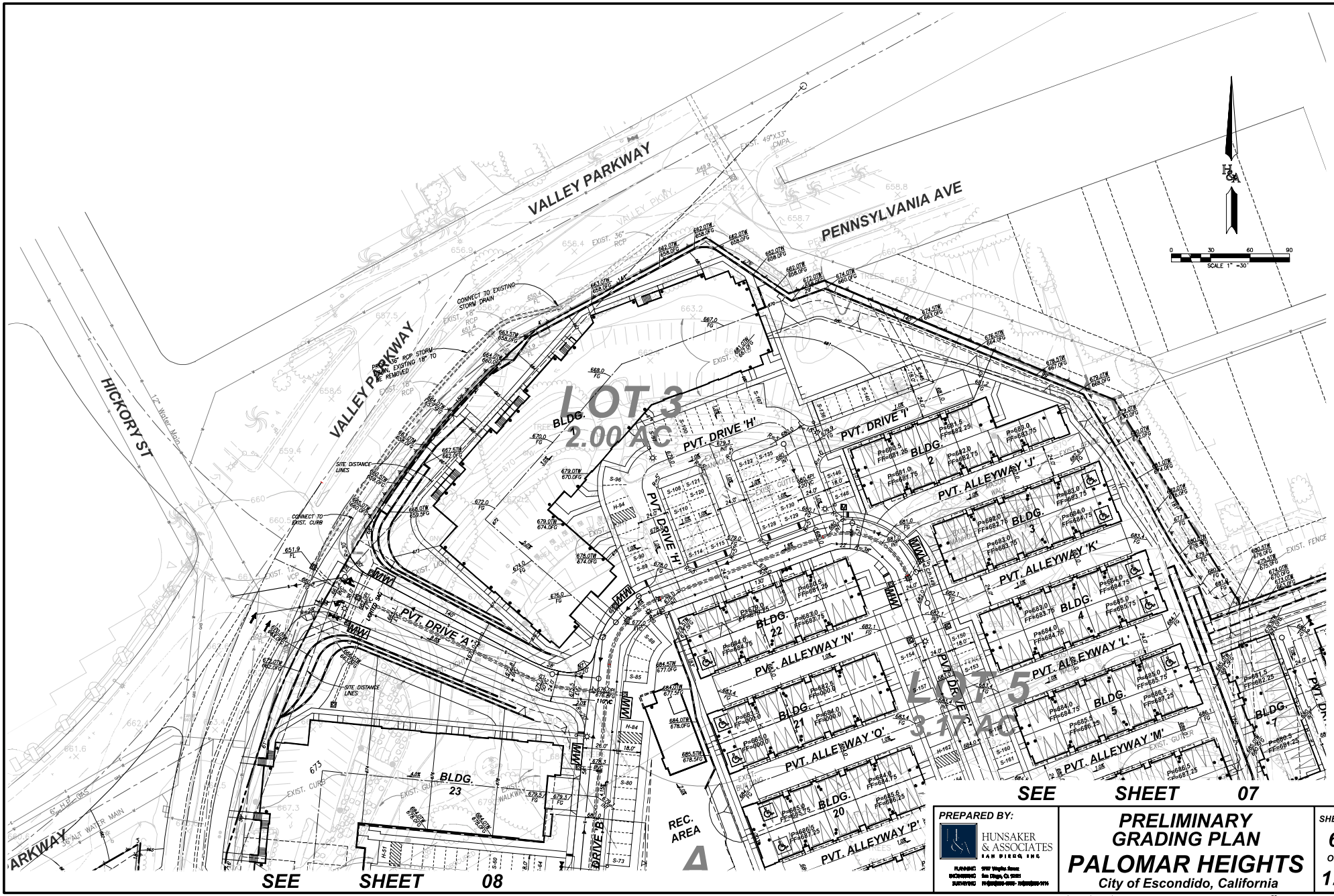
PRELIMINARY GRADING PLAN

PALOMAR HEIGHTS

City of Escondido, California

SHEET 5 OF 12



PREPARED BY:
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PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California

SHEET 6 OF 12

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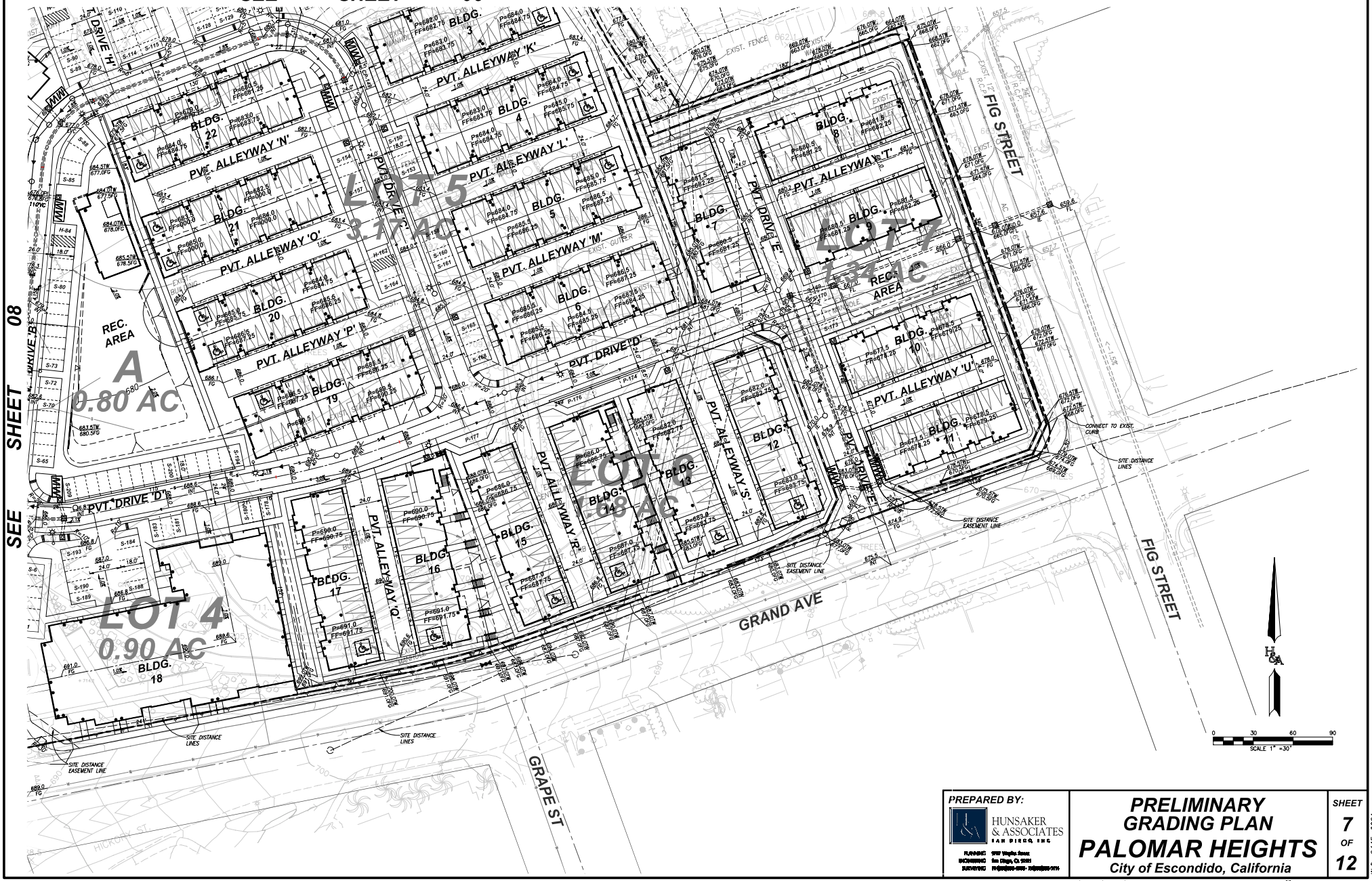

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PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California

SHEET 7 OF 12

W.O. 2445-0021

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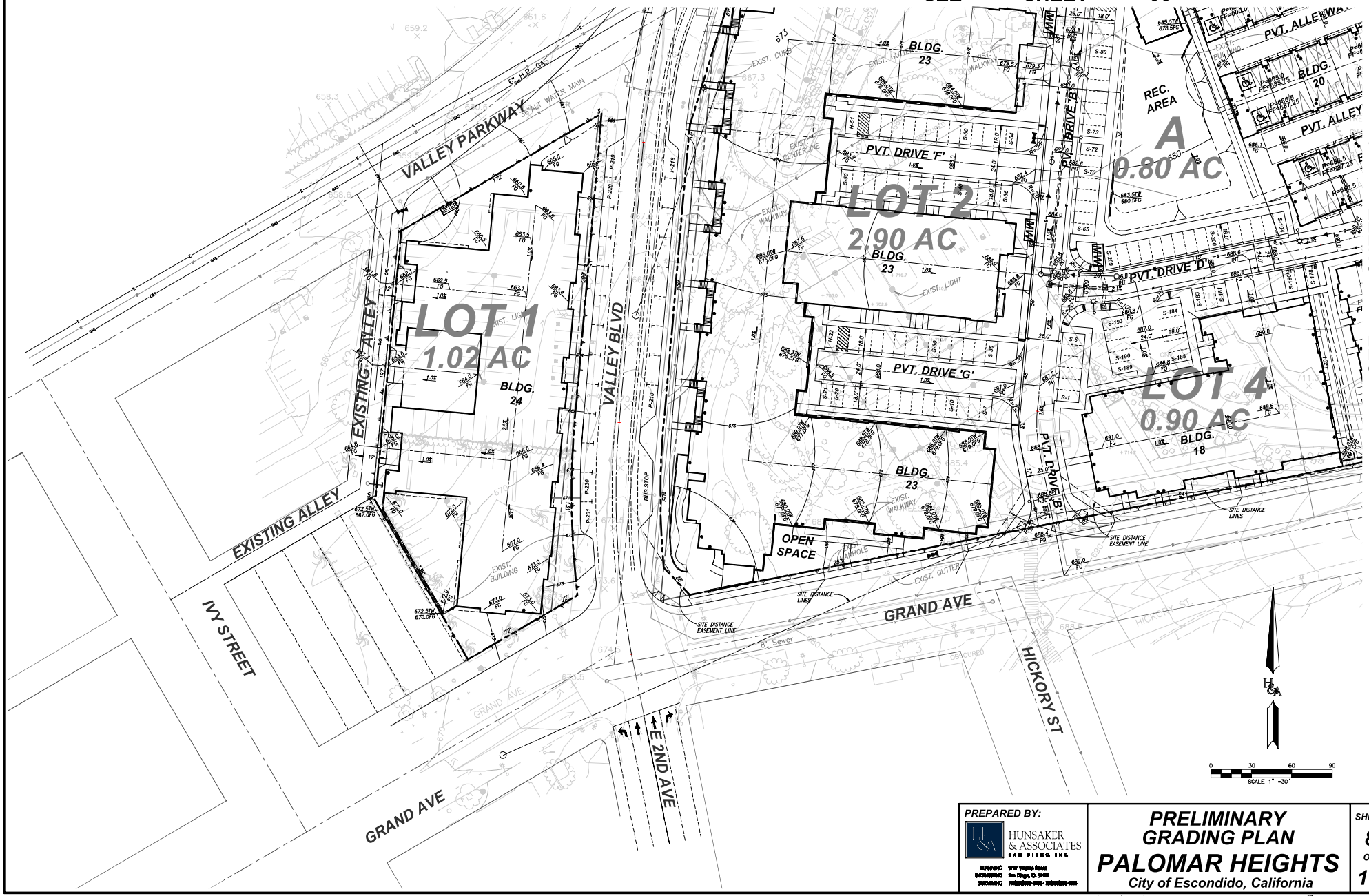

PREPARED BY:
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PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California

SHEET 8 OF 12

W.O. 2445-0021

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PROPOSED & EXISTING UTILITIES

PREPARED BY:
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PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California

SHEET 9 OF 12

W.O. 2445-0021

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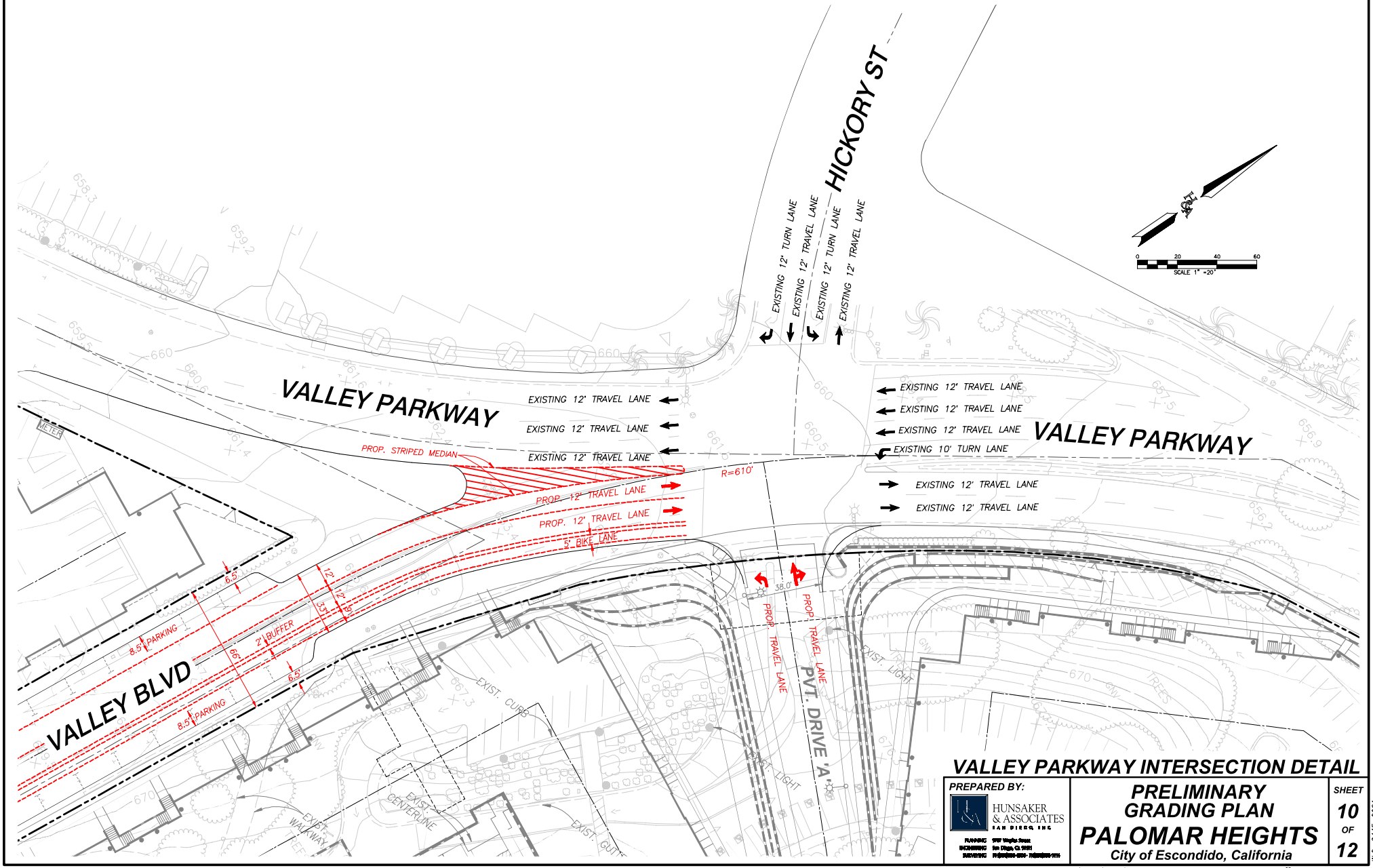

VALLEY PARKWAY INTERSECTION DETAIL

PREPARED BY:
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PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California

SHEET 10 OF 12

W.O. 2445-0021

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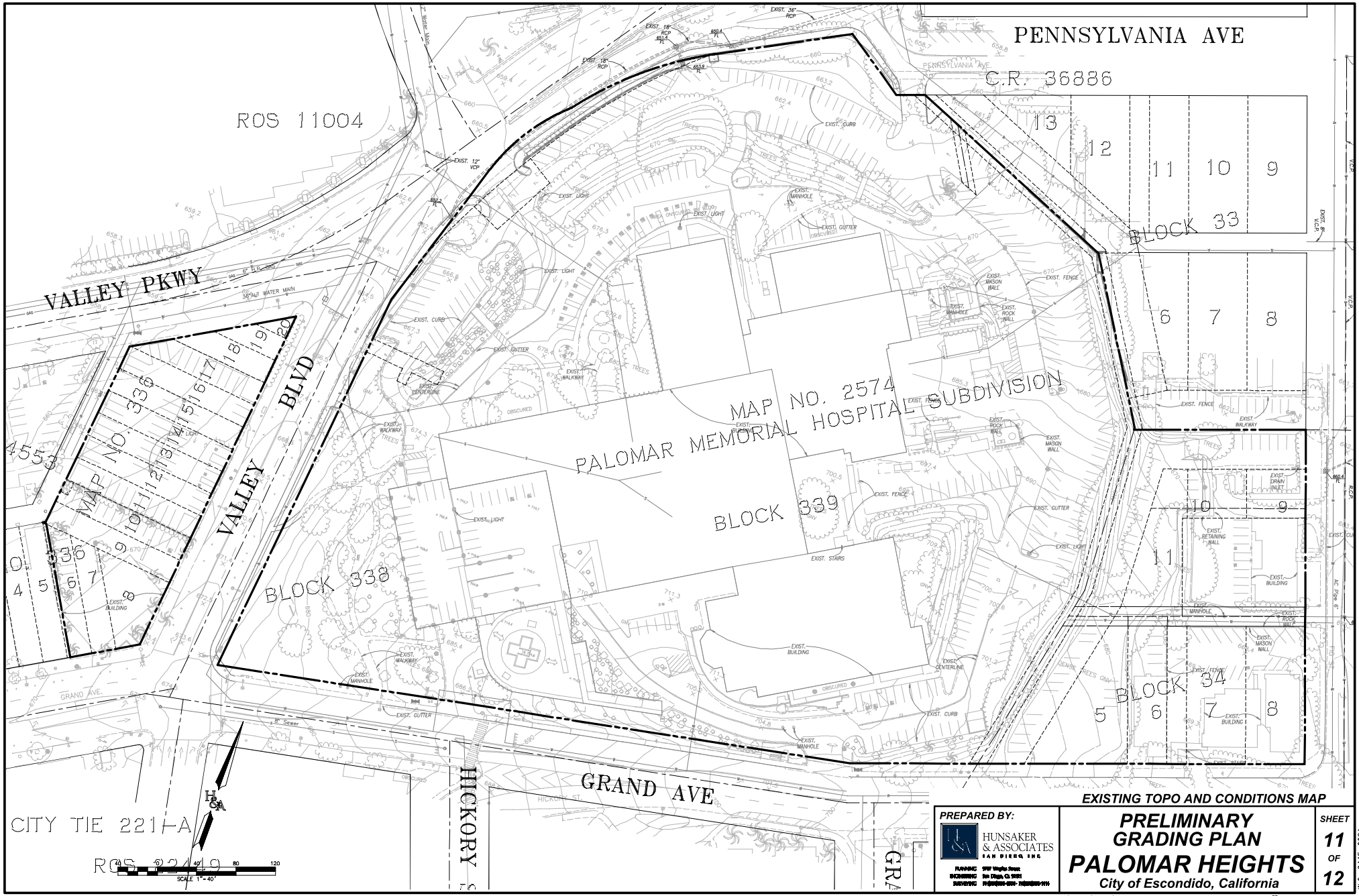

EXISTING TOPO AND CONDITIONS MAP

PREPARED BY:
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PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California

SHEET 11 OF 12

W.O. 2445-0021

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TITLE REFERENCE:

THIS SURVEY IS BASED ON THE COMMITMENT FOR TITLE INSURANCE ISSUED BY FNTG-CHICAGO TITLE COMPANY AS ORDER NO. 00100370-996-SD1-RT4, 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: 229-450-06)

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, 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. 82-209 RECORDED AUGUST 4, 1982 AS FILE NO. 1982-239658 AND RE-RECORDED AUGUST 27, 1982 AS FILE NO. 1982-266275, 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. 764 RECORDED MAY 29, 1961 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. 82-209 RECORDED AUGUST 4, 1982 AS FILE NO. 1982-239658 AND RE-RECORDED AUGUST 27, 1982 AS FILE NO. 1982-266275, 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 THE SOUTHEASTERLY HALF OF THAT PORTION OF GRAPE STREET LYING NORTHWESTERLY 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, 1961 AS FILE NO. 92029. TOGETHER WITH THE SOUTHERLY HALF OF THE ALLEY CONTINGUOUS 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 CONTINGUOUS 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 OF 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 69°39'30" WEST ALONG THE SOUTHEASTERLY 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 SOUTHEASTERLY BOUNDARY OF SAID LOT 11 AND THE SOUTHWESTERLY PROLONGATION THEREOF SOUTH 69°39'30" WEST 108.50 FEET TO THE CENTER LINE OF THE ABOVE MENTIONED GRAPE STREET; THENCE ALONG SAID CENTER LINE NORTH 17°17'00" EAST 19.45 FEET TO AN ANGLE POINT THEREIN; THENCE CONTINUING ALONG SAID CENTER LINE NORTH 3°20'00" WEST 141.02 FEET, MORE OR LESS, TO AN INTERSECTION WITH A LINE BEARING SOUTH 86°40'00" WEST FROM THE NORTHWESTERLY CORNER OF SAID LOT 11; THENCE NORTH 86°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" EAST 25.14 FEET TO THE MOST WESTERLY CORNER OF SAID VACATED PORTION OF OHIO AVENUE; THENCE ALONG THE NORTHERLY BOUNDARY OF SAID VACATED PORTION OF OHIO AVENUE NORTH 43°05'40" EAST 30.04 FEET TO A POINT HEREIN DESIGNATED AS POINT "A"; THENCE CONTINUING ALONG SAID NORTHERLY BOUNDARY NORTH 43°05'40" EAST 3.50 FEET TO AN ANGLE POINT THEREIN; THENCE CONTINUING ALONG SAID NORTHERLY BOUNDARY NORTH 69°39'30" EAST 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 90°08'00" TO THE POINT OF TANGENCY, SAID POINT OF TANGENCY BEING ALSO A POINT IN THE WESTERLY BOUNDARY OF SAID FIG STREET BOUNDING SAID LOT 9 IN THE EAST; THENCE ALONG SAID WESTERLY BOUNDARY OF SAID FIG STREET, SOUTH 20°12'30" EAST 49.70 FEET TO A POINT IN SAID WESTERLY BOUNDARY DISTANT THEREON NORTH 20°12'30" WEST 90.20 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 83.00 FEET TO A POINT HEREIN DESIGNATED AS POINT "B"; 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 90.20 FEET TO THE SOUTHEASTERLY BOUNDARY 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. 74-211 TO THE CITY COUNCIL OF THE CITY OF ESCONDIDO RECORDED OCTOBER 21, 1974 AS FILE NO. 1974-280073, OFFICIAL RECORDS. TOGETHER WITH THE NORHERLY 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 CONTINGUOUS 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, 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 SOUTHEASTERLY CORNER OF SAID LOT 9; THENCE ALONG THE EASTERLY BOUNDARY THEREOF NORTH 20°12.30' WEST 90.20 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 90.20 FEET TO THE SOUTHERLY BOUNDARY OF LOT 11; THENCE ALONG THE SOUTHERLY BOUNDARY OF LOTS 11, 10 AND 9, NORTH 69°39.30' 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:

2 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, 1961
RECORDING NO: 92029 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCELS A, C AND D

3 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.

5 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: 84-070972 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCELS A AND B

6 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 20, 1989
RECORDING NO: 89-507498 OF OFFICIAL RECORDS
AFFECTS: A PORTION OF PARCEL A

8 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:

19 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 WESTERLY 8.00 FEET OF SAID LOT 10 AFFECTS: LOTS 7 - 10 & 14, 15, PORTION 6

THE FOLLOWING MATTERS AFFECT PARCEL I:

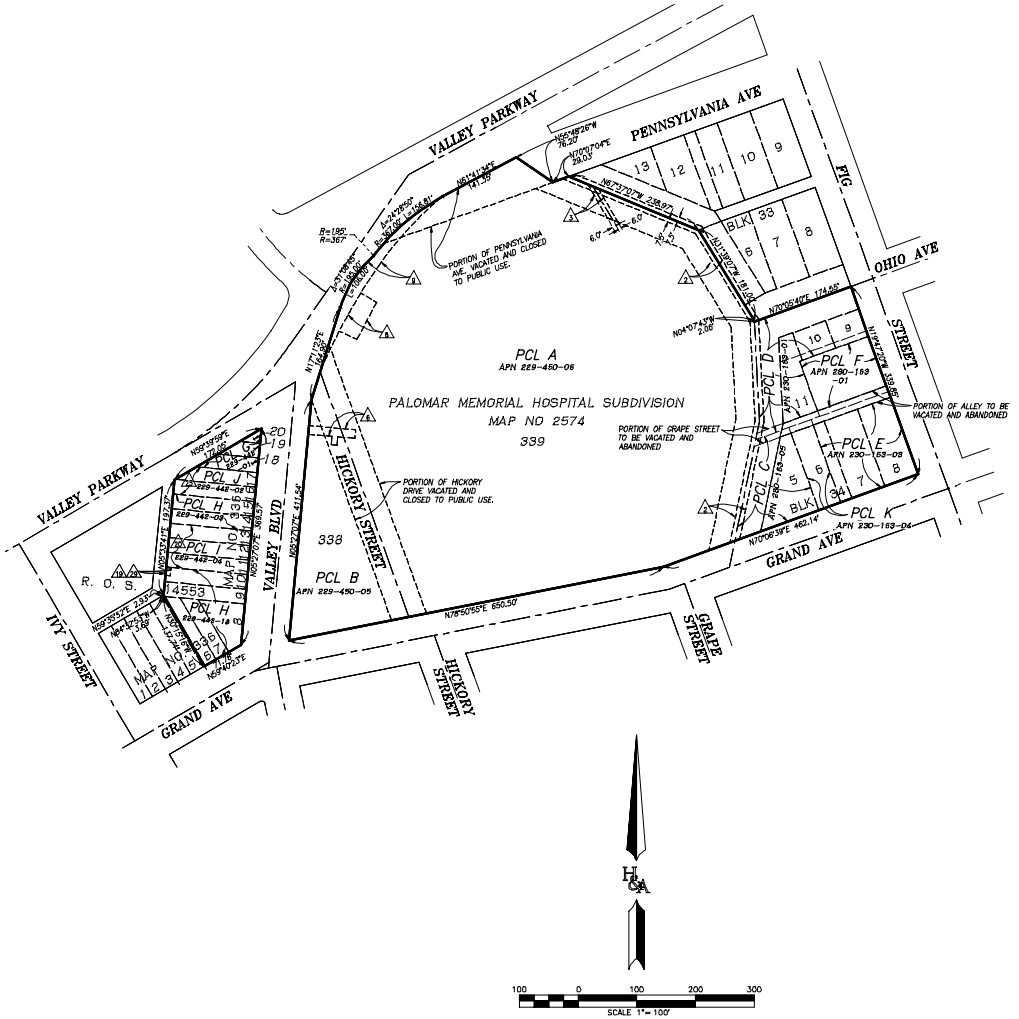
20 THE FOLLOWING EASEMENTS RESERVED BY THE ESCONDIDO LAND & TOWN COMPANY (SUCCEEDED BY THE CITY OF ESCONDIDO) FOR THE PIPELINES AS FOLLOWS:
IN BOOK 67, PAGE 35 OF DEEDS, AFFECTS LOT 13;
IN BOOK 67, PAGE 37 OF DEEDS, AFFECTS LOTS 11 & 12;

THE FOLLOWING MATTERS AFFECT PARCEL J:

20 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 H:

19 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 WESTERLY 8.00 FEET OF SAID LOT 10



BOUNDARY AND ENCUMBRANCES

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING 9707 Waples Street
ENGINEERING San Diego, CA 92121
SURVEYING (858)558-4500 FAX(858)558-1414

PRELIMINARY GRADING PLAN
PALOMAR HEIGHTS
City of Escondido, California

SHEET 12 OF 12

W.O. 2445-0021

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

ATTACHMENT 6

Copy of Hydromodification Management Applicability Evaluation:

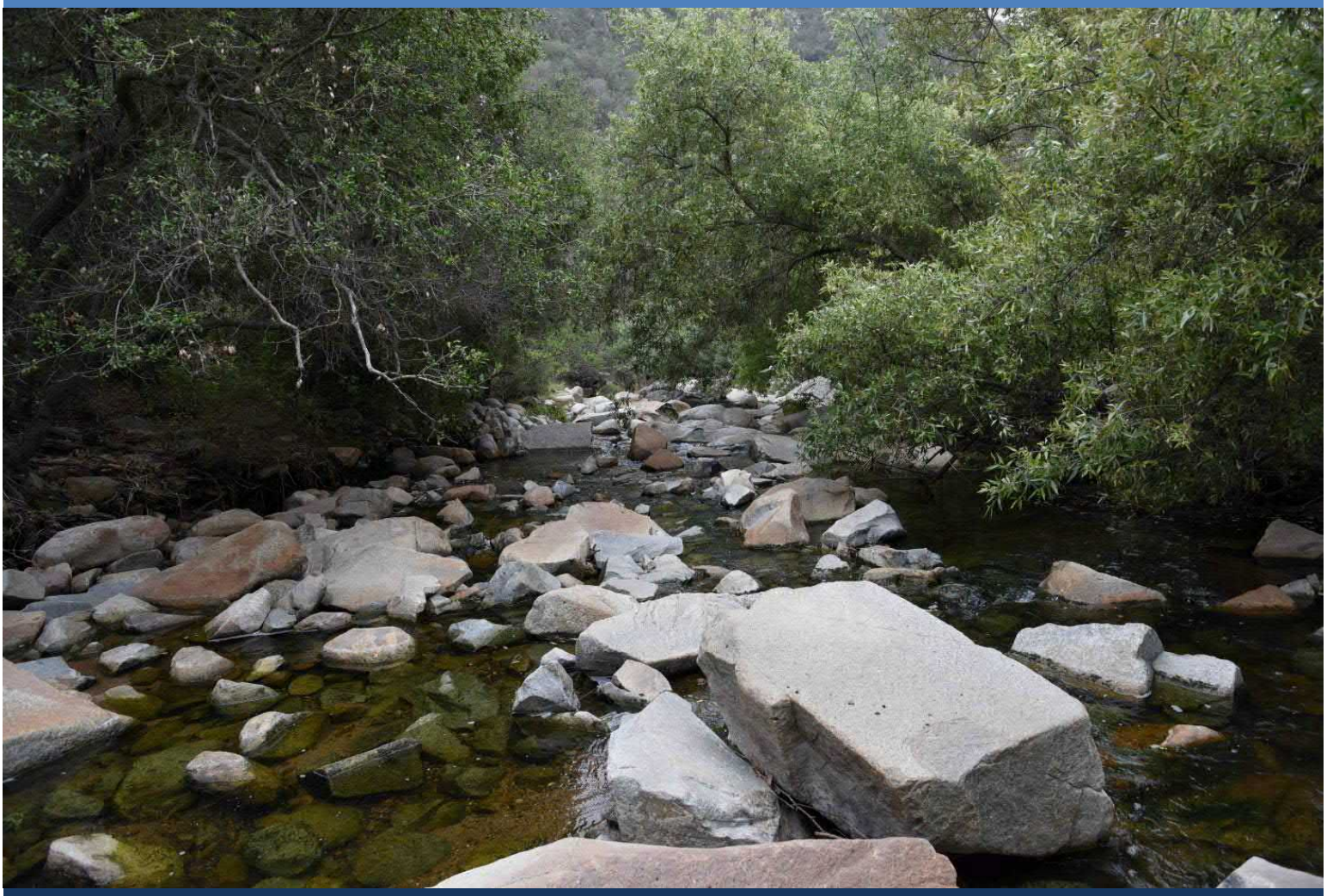
Escondido Creek

Date: January 8th, 2018

Prepared by: Geosyntec, Chang Consultants,

Moffat & Nichol

Hydromodification Management Applicability Evaluation: Escondido Creek



January 8, 2018

Prepared for:

ESCONDIDO
City of Choice

Prepared by:

Geosyntec consultants

ChangConsultants
Civil Engineering • Hydrology • Hydraulics • Sedimentation

moffatt & nichol

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ATTACHMENT C EROSION POTENTIAL
ATTACHMENT D SAN ELIJO LAGOON EVALUATION

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. Theses 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

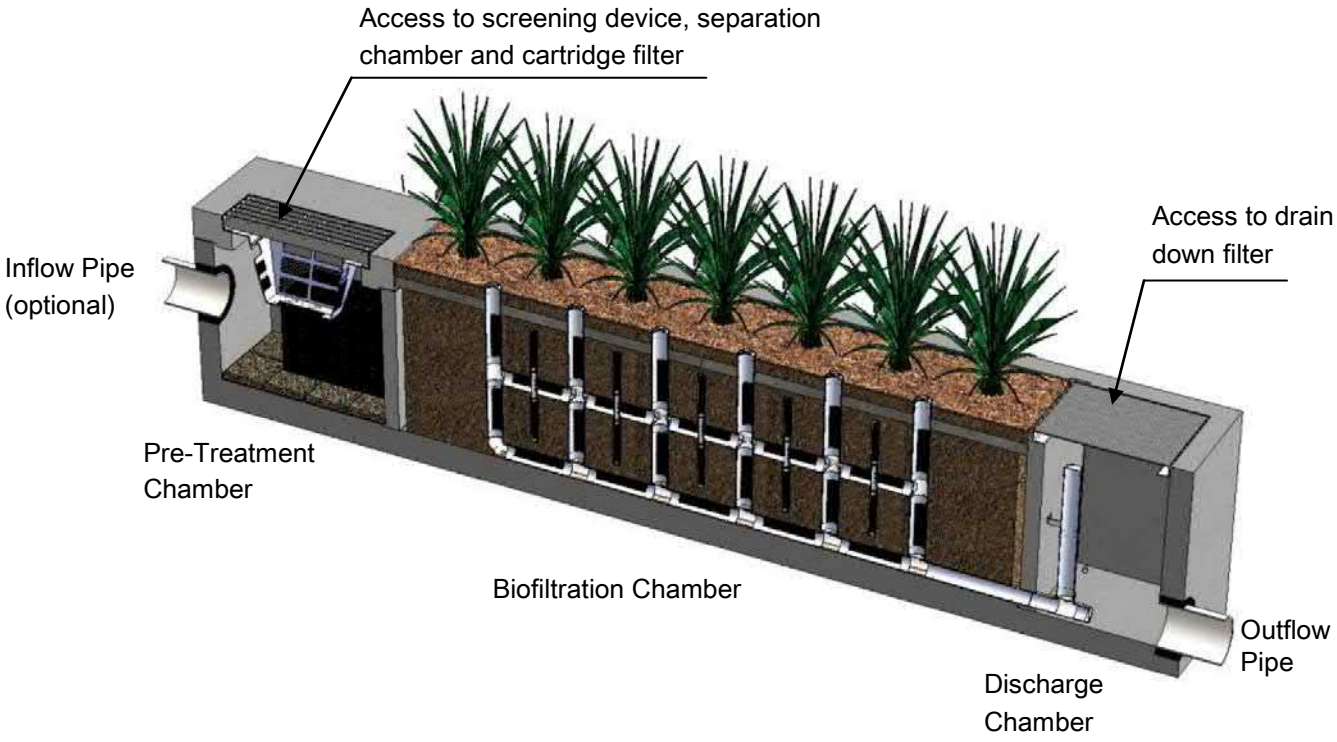
Prepared by: Bioclean

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.

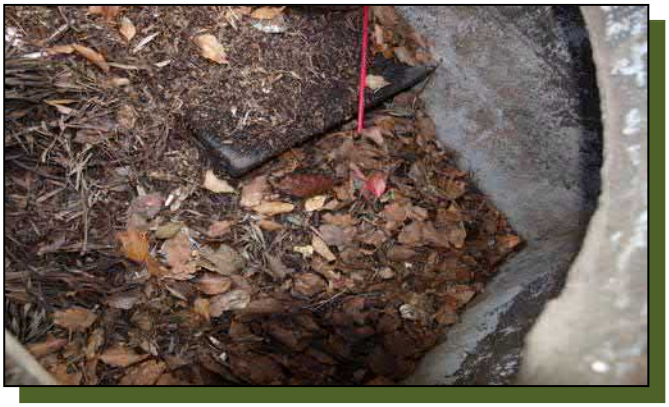
Maintenance Procedure Illustration

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.

Bio Clean
A Forterra Company

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

Bio Clean
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: _____

398 Via El Centro, Oceanside, CA 92058 P. 855-566-3938 F. 760.433.3176

Bio Clean
A Forterra Company

Maintenance Report

Bio Clean
P. 855-566-3938
F. 760-433-3176
E. Info@BioCleanEnvironmental.com

Bio Clean
A Forterra Company

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: Long:	MWS Catch Basins						
		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:

398 Via El Centro, Oceanside, CA 92058 P. 855-566-3938 F. 760.433.3176

ATTACHMENT 7

Third Party Certification for Modular Wetland Linear

Prepared by:

Washington State Department of Ecology

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 (SWMMEW) 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:	*PO. 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:

<u>Laboratory Testing</u>

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:

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

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

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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

Preapared by: Geocon Inc.

GEOTECHNICAL INVESTIGATION

PALOMAR HEIGHTS
ESCONDIDO, CALIFORNIA

PREPARED FOR

INTEGRAL PARTNERS FUNDING, LLC
ENCINITAS, CALIFORNIA

ENVIRONMENTAL
MATERIALS

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

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APPENDIX D
RECOMMENDED GRADING SPECIFICATIONS

LIST OF REFERENCES

7.16.2 In the case of basement walls or building walls retaining landscaping areas, a water-proofing 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.

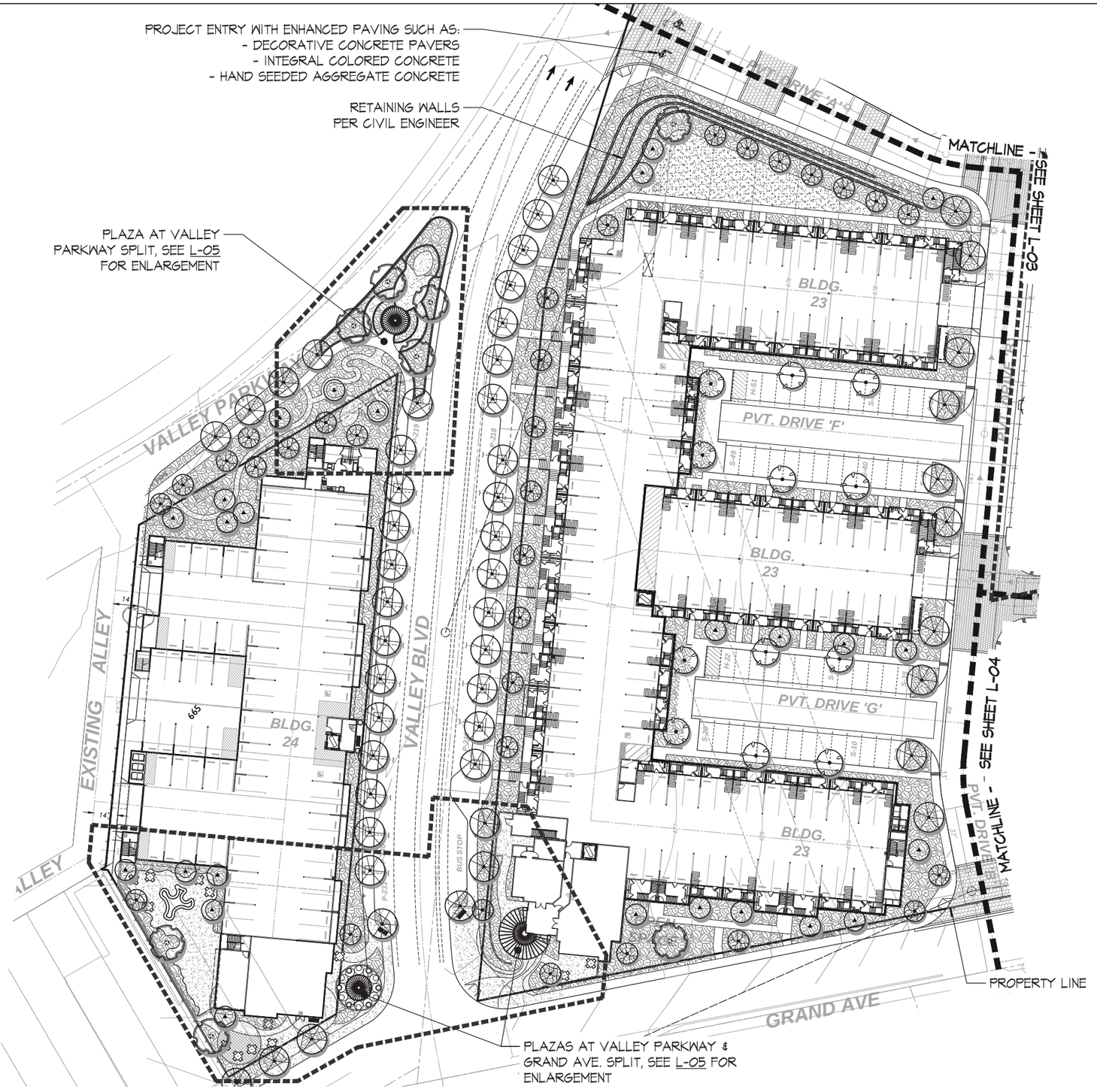
7.17.2 The United States Department of Agriculture (USDA), Natural Resources Conservation Services, possesses general information regarding the existing soil conditions for areas within the United States. The USDA website also provides the Hydrologic Soil Group. Table 7.17.1 presents the descriptions 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 Archtecture & Planning



PLANTING LEGEND

TREES

SYMBOL/QTY.	BOTANICAL	COMMON NAME	SIZE	WUCOLS
	RECREATION AREA PALMS SUCH AS:			
	SYAGRUS ROMANZOFFIANUM	QUEEN PALM	15' BTH	M
	EVERGREEN SITE TREES SUCH AS:			
	LOPHOSTEMON CONFERTUS	BRISBANE BOX	24" BOX	L
	METROSIDEROS EXCELSUS	NEW ZEALAND CHRISTMAS TREE	24" BOX	L
	PODOCARPUS GRACILIOR	FERN PINE	24" BOX	M
	LARGE FOCAL TREE SUCH AS:			
	KOELREUTARIA PANICULATA	GOLDEN RAIN TREE	36" BOX	L
	PARKING LOT/STREET TREES SUCH AS:			
	RHUS LANCEA	AFRICAN SUMAC	24" BOX	L
	TIPUANA TIPU	TIPU TREE	24" BOX	M
	VERTICAL ACCENT SHRUB			
	PODOCARPUS M. 'MAKI'	SHRUBBY YEW PINE	15 GAL.	L
	PRUNUS 'BRIGHT & TIGHT'	CAROLINA CHERRY (COLUMNAR)	15 GAL.	M
	SITE TREES SUCH AS:			
	ARBUTUS UNEDO	STRAWBERRY TREE	15 GAL.	L
	QUERCUS AGRIFOLIA	COAST LIVE OAK	15 GAL.	L
	RHUS LANCEA	AFRICAN SUMAC	15 GAL.	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	WUCOLS
	AEONIUM 'SUNBURST'	SUNBURST AEONIUM	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 PAW	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 PLUM	5 GAL.	M
	DIANELLA CAERULEA 'CASSA BLUE'	CASSA BLUE	1 GAL.	L
	DIETES BICOLOR	FORTNIGHT LILY	5 GAL.	M
	ECHEVERIA 'AFTERGLOW'	AFTERGLOW 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	WUCOLS
BOUGAINVILLEA 'SAN DIEGO RED'	BOUGAINVILLEA	15 GAL.	L
DISTICTUS BUCCINATORIA	BLOOD RED TRUMPET VINE	15 GAL.	M
WALLS (OVER 5')			
FICUS PUMILA	CREEPING FIG	5 GAL. @ 5' O.C.	L

GROUNDCOVER

SYMBOL	BOTANICAL	COMMON NAME	SIZE	WUCOLS
	FLAT LANDSCAPE AREAS			
	CAREX TUMULICOLA	BERKELY SEDGE	FLATS @ 12" O.C.	L
	GAZANIA SPP.	GAZANIA		
	MYOPORUM P. 'PUTAH CREEK'	CREEPING MYOPORUM		
	TURF	TIFWAY BERMUDA	SOD	H

30 15 0 30 60 90
SCALE: 1"=30'-0"

L-02

SEPTEMBER 11, 2019
GMP JOB# 19-030

PALOMAR HEIGHTS: ESCONDIDO, CA

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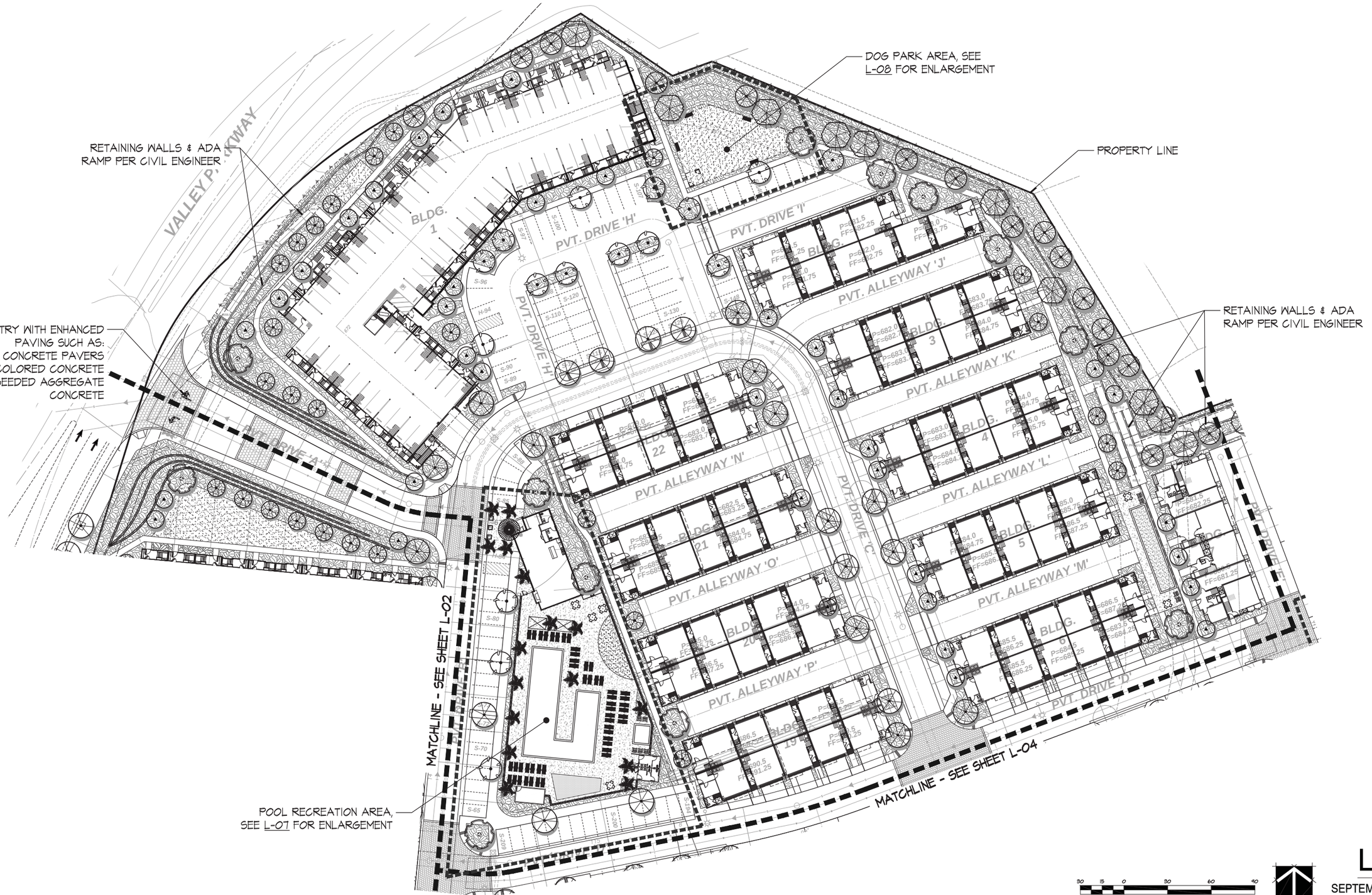

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L-03

SEPTEMBER 11, 2019
GMP JOB# 19-030

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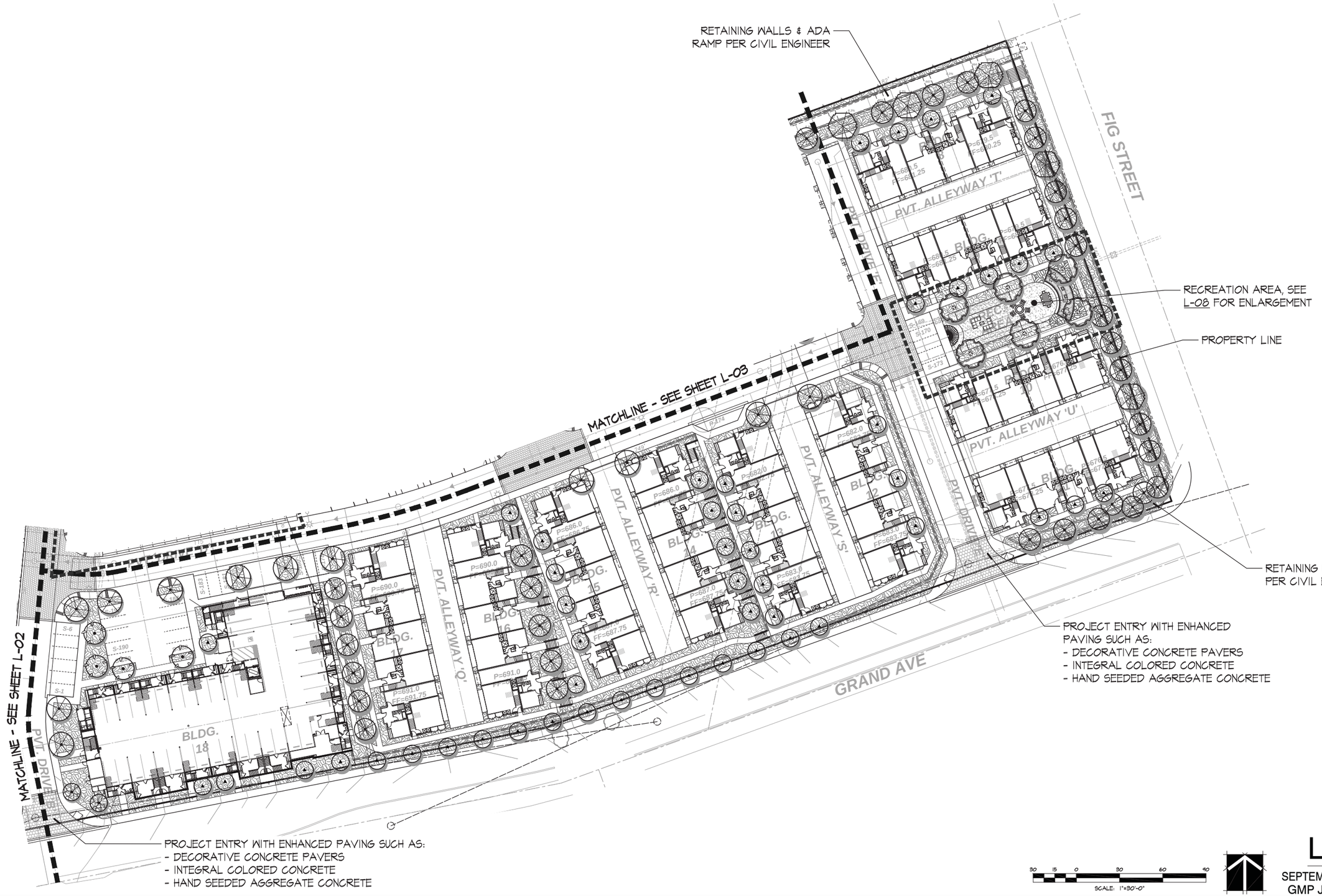

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L-04

SEPTEMBER 11, 2019
GMP JOB# 19-030

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