

**City of Escondido
PRELIMINARY
PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP**

**KING'S BARN
PL24-0091**

**137 W. VALLEY PARKWAY
ESCONDIDO, CA 92025**

**ASSESSOR'S PARCEL NUMBER(S):
229-421-26**

ENGINEER OF WORK:

SHAVGER F. REKANI, RCE 90893

PREPARED FOR:

King's Barn Real Estate Capital
2500 Sand Hill Road, Suite 320
Menlo Park, California 94025

PDP SWQMP PREPARED BY:

RICK Engineering Company
5620 Friars Road
San Diego, California 92110-2596
(619) 291-0707

**DATE OF SWQMP:
August 16, 2024**

**PLANS PREPARED BY:
RICK Engineering Company
5620 Friars Road
San Diego, California 92110-2596
(619) 291-0707**

**SWQMP APPROVED BY:
[FOR CITY STAFF ONLY]**

APPROVAL DATE:



PDP SWQMP FOR KING'S BARN

Revision Page

August 16, 2024

This PDP SWQMP presents a revision to the March 29, 2024 report pursuant to the City of Escondido plan check comments received May 13, 2024. The following text identifies the plan check comments along with the responses in bold.

Stormwater Comments – Emily Mixer (Dated 5/3/2024)

46. Source Control - Does the project propose commercial cafe/coffee shop as part of the proposed development? If so please address in the source control checklist.

Source Control checklist has been updated to add food service areas.

47. Hydromodification Management Requirements Exemption - Please check option 2 as the reason for the project being exempt from hydromodification management requirements. This is the appropriate selection.

Hydromodification management requirements checkmark updated to “No, the project will discharge runoff directly to the exempt portion of Escondido Creek as detailed in the Carlsbad Watershed WQIP (May 2018 Update). Direct discharge is defined in section 1.6 of the Escondido Storm Water Design Manual.”

48. Parking - Parking appears at grade per the plans. Please clarify.

Parking is located on the ground level of the structure. “Underground Parking” revised to “Ground Level Parking”.

50. BMP Verification Form - Please list BMPs on the structural BMP verification form.

BMP-1 listed on structural BMP verification form.

51. Proprietary Treatment Location - Please provide some clarification on the location of the proposed proprietary unit, will it be on the roof?

The proposed modular wetland system is located on the ground level inside the parking garage.

52. Trash Enclosure - Please show how trash, recycling, and organic waste will be managed and that sufficient access will be provided for waste hauler collection. Please review the city's trash enclosure guidelines for all requirements.

Trash will be collected in trash room dumpsters located on the ground level. The dumpsters are to be carted out for garbage collection. Reference Architect plan set.

53. Flow Direction - Please provide flow direction arrows on the DMA exhibit.

Flow direction arrows added to DMA exhibit.

54. Structural BMP ID # - Please call out BMP ID # on the DMA exhibit.

BMP ID# callout added.

55. SWCFMA - Please include a draft copy of the SWCFMA with basic project information filled out.

O&M Table included in attachment 3A of the PDP report. A draft copy of the SWCFMA will be provided during final engineering.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENTS

- Attachment 1: Backup for PDP Pollutant Control BMPs
 - Attachment 1a: Storm Water Pollutant Control Worksheet Calculations (Applicable worksheets)
 - Attachment 1b: Form I-8, Categorization of Infiltration Feasibility Condition
 - Attachment 1c: Form I-9, Factor of Safety and Design Infiltration Rate Worksheet
 - Attachment 1d: Drainage Management Area (DMA) Exhibit
 - Attachment 1e: Individual Structural BMP DMA Mapbook
- Attachment 2: Backup for PDP Hydromodification Control Measures
 - Attachment 2a: Flow Control Facility Design
 - Attachment 2b: Hydromodification Management Exhibit
 - Attachment 2c: Management of Critical Coarse Sediment Yield Areas
 - Attachment 2d: Geomorphic Assessment of Receiving Channels (optional)
 - Attachment 2e: Vector Control Plan (if applicable)
- Attachment 3: Structural BMP Maintenance Plan
 - Attachment 3a: Structural BMP Maintenance Thresholds and Actions
 - Attachment 3b: Draft Maintenance Agreements / Notifications (when applicable)
- Attachment 4: City of Escondido PDP Structural BMP Verification
- Attachment 5: Copy of Plan Sheets Showing Permanent Storm Water BMPs

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
USGS	US Geological Survey
WMAA	Watershed Management Area Analysis
WQIP	Water Quality Improvement Plan

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: King's Barn
Permit Number: PL24-0091

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Escondido Storm Water Design Manual, which is a design manual for compliance with the City of Escondido Municipal Code (Chapter 22, Article 2) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for storm water management.

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

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

Shavger F. Rekani

RICK Engineering Company

Company

8/16/2024

Date

Engineer's Seal:

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

SUBMITTAL RECORD

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

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	3/29/2024	Initial Submittal
2	8/16/2024	2 nd Submittal – Respond and address comments.
3		
4		

Final Design

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

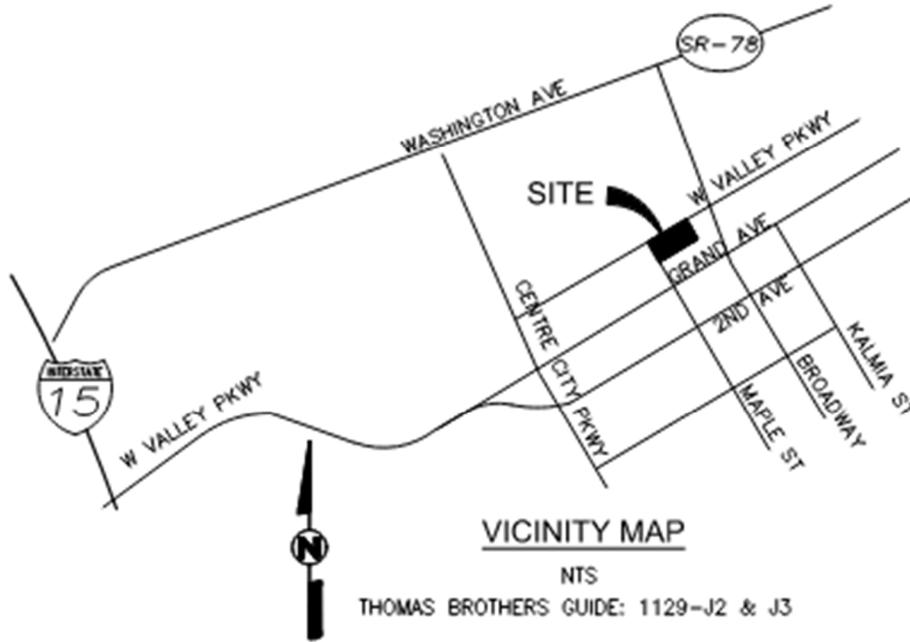
Plan Changes

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

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PROJECT VICINITY MAP

Project Name: King's Barn
Permit Number: PL24-0091



PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 1: Project type determination

Site Information Checklist for PDPs		Form I-2a
Project Summary Information		
Project Name	King's Barn	
Project Address	137 West Valley Parkway, Escondido CA 92025	
Assessor's Parcel Number(s)	229-421-26	
Permit Number	PL24-0091	
Project Watershed (Hydrologic Unit)	Select One: <input checked="" type="checkbox"/> Carlsbad 904 <input type="checkbox"/> San Dieguito 905	
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	<u>1.16</u> Acres (50,500 Square Feet)	
Area to be disturbed by the project (Project Area)	<u>1.16</u> Acres (50,500 Square Feet)	
Project Proposed Impervious Area (subset of Project Area)	1.04 Acres (45,300 Square Feet)	
Project Proposed Pervious Area (subset of Project Area)	0.12 Acres (5,200 Square Feet)	
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.		

Step 1.1: Storm Water Quality Management Plan requirements

Site Information Checklist for PDPs		Form I-2a
Step	Answer	Progression
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions?	<input type="checkbox"/> Standard Project	<u>Standard Project</u> requirements apply. Complete Form I-1.
To answer this item, complete Step 1 Project Type Determination Checklist on Pages 3 and 4, and see PDP exemption information below. For further guidance, see Section 1.4 of the Storm Water Design Manual <i>in its entirety</i> .	<input checked="" type="checkbox"/> PDP	<u>Standard and PDP</u> requirements apply, including <u>PDP SWQMP</u> . SWQMP Required.
	<input type="checkbox"/> PDP with ACP	If participating in offsite alternative compliance, complete Step 5.1 (Offsite Alternative Compliance Participation Form) and an ACP SWQMP.
	<input type="checkbox"/> PDP Exemption	Go to Step 1.2 below.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 1.2: Exemption to PDP definitions

Site Information Checklist for PDPs		Form I-2a
<p>Is the project exempt from PDP definitions based on either of the following:</p> <p><input type="checkbox"/> Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria:</p> <ul style="list-style-type: none"> (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Green Streets Infrastructure; 	<p>If so:</p> <p><u>Standard Project 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.</u></p>	
<p><input type="checkbox"/> Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the County of San Diego Green Streets Infrastructure;</p>	<p>PDP Exempt.</p>	
<p>Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:</p>		
<p> </p>		

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 1.3: Confirmation of PDP Determination

Site Information Checklist for PDPs		Form I-2a
The project is (select one): <input type="checkbox"/> New Development <input checked="" type="checkbox"/> Redevelopment ¹		
The total proposed newly created or replaced impervious area is: <u>45,300</u> ft ²		
The project meets the following categories, (a) through (f): [select all that apply]		
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(a) New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(b) Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(c) New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: <ul style="list-style-type: none"> (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). <i>Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.</i> (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(d) 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). <i>Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any</i>

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; sidewalks; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Site Information Checklist for PDPs			Form I-2a
			<p><i>other equivalent environmentally sensitive areas which have been identified by the Copermittees.</i></p> <p><i>For projects adjacent to an ESA, but not discharging to an ESA, the 2,500 square foot threshold does not apply as long as the project does not physically disturb the ESA and the ESA is upstream of the project.</i></p>
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(e)	<p>New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses:</p> <p>(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. <i>Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.</i></p> <p>(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.</p>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(f)	<p>New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction.</p> <p>Note: See Storm Water Design Manual Section 1.4.2 for additional guidance.</p>
The following is for redevelopment PDPs only:			
The area of existing (pre-project) impervious area at the project site is:		A	50,500 ft ²
The total proposed newly created or replaced impervious area is:		B	45,300 ft ²
Percent impervious surface created or replaced:		(B/A)*100	90 %
<p>The percent impervious surface created or replaced is (select one based on the above calculation):</p> <p><input type="checkbox"/> less than or equal to fifty percent (50%) – only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements</p> <p>OR</p> <p><input checked="" type="checkbox"/> greater than fifty percent (50%) – the entire project site is considered a PDP and subject to stormwater requirements</p>			

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 2: City of Escondido PDP SWQMP Site Information Checklist

Step 2.1: Description of Existing Site Condition and Drainage Patterns

Site Information Checklist for PDPs	Form I-2a
<p>Current Status of the Site (select all that apply):</p> <p><input checked="" type="checkbox"/> Existing development</p> <p><input type="checkbox"/> Previously graded but not built out</p> <p><input type="checkbox"/> Demolition completed without new construction</p> <p><input type="checkbox"/> Agricultural or other non-impervious use</p> <p><input type="checkbox"/> Vacant, undeveloped/natural</p>	
<p>Description / Additional Information:</p> <p>The current conditions of the site include an asphalt parking lot and an abandoned building.</p>	
<p>Existing Land Cover Includes (select all that apply and provide each area on site):</p> <p><input type="checkbox"/> Vegetative Cover _____ Acres (_____ Square Feet)</p> <p><input type="checkbox"/> Non-Vegetated Pervious Areas _____ Acres (_____ Square Feet)</p> <p><input checked="" type="checkbox"/> Impervious Areas <u>1.16</u> Acres (<u>50,500</u> Square Feet)</p>	
<p>Description / Additional Information:</p> <p>Areas are comprised of areas inside and outside the property boundary which amount to disturbed area for the project.</p>	
<p>Underlying Soil belongs to Hydrologic Soil Group (select all that apply):</p> <p><input type="checkbox"/> NRCS Type A</p> <p><input type="checkbox"/> NRCS Type B</p> <p><input checked="" type="checkbox"/> NRCS Type C</p> <p><input type="checkbox"/> NRCS Type D</p>	
<p>Approximate Depth to Groundwater (GW) (or N/A for no infiltration BMPs):</p> <p><input type="checkbox"/> Groundwater Depth < 5 feet</p> <p><input type="checkbox"/> 5 feet < Groundwater Depth < 10 feet</p> <p><input type="checkbox"/> 10 feet < Groundwater Depth < 20 feet</p> <p><input type="checkbox"/> Groundwater Depth > 20 feet</p> <p><i>Pending geotechnical study. Will be included in future submittal.</i></p>	
<p>Existing Natural Hydrologic Features (select all that apply):</p> <p><input type="checkbox"/> Watercourses</p> <p><input type="checkbox"/> Seeps</p> <p><input type="checkbox"/> Springs</p> <p><input type="checkbox"/> Wetlands</p> <p><input checked="" type="checkbox"/> None</p> <p><input type="checkbox"/> Other</p>	
<p>Description / Additional Information:</p> <p>There are no natural hydrologic features as the site is comprised of a surface parking lot.</p>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 2.2: Description of Existing Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a
<p>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) describe existing constructed storm water conveyance systems, if applicable; and (3) is runoff from offsite conveyed through the site? If so, describe:</p>	
<p>The existing site has a ridgeline that traverses the site in a northerly and southerly direction. Half the project site drains in the easterly direction, to an existing grate inlet along the eastern corner of the site. The remaining other half of the site drains in the northerly direction, to an existing grate inlet along the northern corner of the site. Flows are conveyed through the existing storm drain system and join with offsite drainage along West Valley Parkway. Drainage confluences at the cleanout located at the west corner of West Valley Parkway. Runoff from the site discharges to the concrete lined Escondido Creek, which ultimately flows west to the San Elijo Lagoon and discharges to the Pacific Ocean.</p>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 2.3: Description of Proposed Site Development

Site Information Checklist for PDPs		Form I-2a	
Project Description / Proposed Land Use and/or Activities:			
The project consists of the removal of an existing surface parking lot for the construction of a 5-story multipurpose building.			
List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):			
The proposed impervious features include the building rooftop and proposed sidewalk on West Valley Parkway. Runoff from the rooftop is directed to a modular wetland system, which treats flow prior to discharging to the existing conveyance system along West Valley Parkway. Runoff from the proposed sidewalk will surface flow to the adjacent curb and gutter and get collected by an existing curb inlet.			
List/describe proposed pervious features of the project (e.g., landscape areas):			
The proposed pervious features for the project include landscaped areas that surround the proposed building.			
Does the project include grading and changes to site topography?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Description / Additional Information:			
The project will consist of grading and excavation for the construction of the proposed structure.			
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	0	5,200	100%
Pervious (non-vegetated)			
Impervious	50,500	45,300	90%
<i>total</i>	50,500	50,500	Sum Existing must equal Sum Proposed

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 2.4: Description of Proposed Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a
<p>Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>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.</p> <p>Describe proposed site drainage patterns:</p>	
<p>Drainage from the proposed structure will be directed north to a proposed modular wetland system, which treats the runoff prior to discharging it from the site. Offsite drainage surrounding the project will remain and be routed in the same manner as the existing conditions – around the development through the existing storm drain conveyance system. The proposed modular wetland system will tie into the existing curb inlet north of the project site and convey flows through the existing conveyance system along West Valley Parkway. Flows confluence at the cleanout located along the west corner of West Valley Parkway. Runoff from the site discharges to the concrete lined Escondido Creek, which ultimately flows west to the San Elijo Lagoon and discharges to the Pacific Ocean.</p>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 2.6: Identification of Receiving Water and Pollutants of Concern

Site Information Checklist for PDPs			Form I-2a
Describe path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):			
The runoff from the project site will be directed to a proposed modular wetlands system, which ties into the existing storm drain conveyance system. Runoff from the site discharges to the concrete lined Escondido Creek, which ultimately flows west to the San Elijo Lagoon and discharges to the Pacific Ocean.			
List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs for the impaired water bodies:			
303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant	
Escondido Creek	DDT (Dichlorodiphenyltrichloroethane), Enterococcus, Fecal Coliform, Manganese, Phosphate, Selenium, Sulfates, Total Dissolved Solids, Total Nitrogen as N, Toxicity	Pesticides, Fecal indicator bacteria, metals/metalloids, nutrients, other inorganics, salinity, toxicity	
Pacific Ocean Shoreline	Total Coliform	Indicator Bacteria	
San Elijo Lagoon	Eutrophic, Indicator Bacteria, Sedimentation/Siltation	Nutrients, Fecal Indicator Bacteria, Sediment	
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			

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Site Information Checklist for PDPs			Form I-2a
Bacteria & Viruses			
Pesticides			

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 2.7: Hydromodification Management Requirements

Site Information Checklist for PDPs	Form I-2a
<p>Do hydromodification management requirements apply (see Section 1.6 of the Storm Water Design Manual)?</p> <p><input type="checkbox"/> Yes, hydromodification management requirements for flow control and preservation of critical coarse sediment yield areas are applicable.</p> <p><input checked="" type="checkbox"/> No, the project will discharge runoff directly to the exempt portion of Escondido Creek as detailed in the Carlsbad Watershed WQIP (May 2018 Update). Direct discharge is defined in section 1.6 of the Escondido Storm Water Design Manual.</p> <p><input type="checkbox"/> 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. Refer to HMP Exhibit in Attachment 2.</p> <p><input type="checkbox"/> 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. Refer to HMP Exhibit in Attachment 2.</p>	
<p>Description / Additional Information (to be provided if a 'No' answer has been selected above):</p>	
<p>Runoff from the site discharges to the concrete lined Escondido Creek, which ultimately flows west to the San Elijo Lagoon and discharges to the Pacific Ocean.</p>	
<p>HMP Exemption Exhibit</p> <p>Attach an HMP Exemption Exhibit that shows direct storm water runoff discharge from the project site to the HMP exempt area. Include project area, applicable underground storm drain line and/or concrete lined channels, outfall information, and exempt waterbody.</p> <p>Reference applicable drawing number(s).</p>	
<p><i>The DMA Exhibit will serve also as an HMP Exemption Exhibit. See Attachment 1D of this PDP SWQMP.</i></p>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 2.7.2: Flow Control for Post-Project Runoff

Site Information Checklist for PDPs	Form I-2a
<input checked="" type="checkbox"/> N/A - 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)? <input type="checkbox"/> No, the low flow threshold is 0.1Q2 (default low flow threshold) <input type="checkbox"/> Yes, the result is the low flow threshold is 0.1Q2 <input type="checkbox"/> Yes, the result is the low flow threshold is 0.3Q2 <input type="checkbox"/> 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)	
Select method used to determine low flow threshold: <input type="checkbox"/> Sizing Factor Method <input type="checkbox"/> US Geological Survey (USGS) Equation <input type="checkbox"/> Continuous Simulation Modeling	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 3: Source Control BMP Checklist

Source Control BMP Checklist for PDPs		Form I-2b	
<p>All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the City Storm Water Design Manual for information to implement source control BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project.</p> <p>Answer each category below pursuant to the following:</p> <ul style="list-style-type: none"> • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the City Storm Water Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided. 			
Source Control Requirement		Applied?	
4.2.1 Prevention of Illicit Discharges into the MS4	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if 4.2.1 not implemented:			
4.2.2 Storm Drain Stenciling or Signage	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if 4.2.2 not implemented:			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Discussion / justification if 4.2.3 not implemented:			
Outdoor material storage is not anticipated for the project.			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Discussion / justification if 4.2.4 not implemented:			
Outdoor material storage is not anticipated for the project.			
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if 4.2.5 not implemented:			

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Form I-2b Page 2 of 2			
Source Control Requirement	Applied?		
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
<input checked="" type="checkbox"/> Onsite storm drain inlets	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> Interior floor drains and elevator shaft sump pumps	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> Interior parking garages	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> Need for future indoor & structural pest control	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> Landscape/outdoor pesticide use	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> Pools, spas, ponds, decorative fountains, and other water features	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> Food service	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> Refuse areas	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Industrial processes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Outdoor storage of equipment or materials	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Vehicle and equipment cleaning	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Vehicle/equipment repair and maintenance	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Fuel dispensing areas	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Loading docks	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Fire sprinkler test water	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Miscellaneous drain or wash water	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Plazas, sidewalks, and parking lots	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if 4.2.6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for <u>all</u> "No" answers shown above.			
The project proposes the construction of a multi-purpose structure with ground level parking. Unselected items are not applicable to the proposed project.			

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

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 4: Site Design BMP Checklist

Site Design BMP Checklist for PDPs		Form I-2c	
<p>All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist.</p> <p>Answer each category below pursuant to the following.</p> <ul style="list-style-type: none"> • "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided. 			
Site Design Requirement	Applied?		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Discussion / justification if 4.3.1 not implemented:			
The existing site is an asphalt parking lot with an abandoned structure. No natural drainage pathways exist on site; therefore this item is not applicable.			
1-1 Are existing natural drainage pathways and hydrologic features mapped on the site map?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
1-2 Are trees implemented? If yes, are they shown on the site map?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
1-3 Implemented trees meet the design criteria in 4.3.1 Fact Sheet (e.g. soil volume, maximum credit, etc.)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
1-4 Is tree credit volume calculated using Appendix B.2.2.1 and SD-1 Fact Sheet in Appendix E?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
4.3.2 Conserve Natural Areas, Soils, and Vegetation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Discussion / justification if 4.3.2 not implemented:			
The existing site is an asphalt parking lot with an abandoned structure. No trees, natural areas, or drainage pathways exist on site; therefore conservation of these items are not applicable.			
4.3.3 Minimize Impervious Area	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if 4.3.3 not implemented:			
4.3.4 Minimize Soil Compaction	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if 4.3.4 not implemented:			

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Form I-2c Page 2 of 2			
Site Design Requirement	Applied?		
4.3.5 Impervious Area Dispersion	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if 4.3.5 not implemented: Proposed landscaping is implemented surrounding the proposed structure.			
5-1 Is the pervious area receiving runoff from impervious area identified on the site map?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
5-2 Does the pervious area satisfy the design criteria in 4.3.5. Fact Sheet in Appendix E (e.g. maximum slope, minimum length, etc.)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
5-3 Is impervious area dispersion credit volume calculated using Appendix B.2.1.1 and 4.3.5 Fact Sheet in Appendix E?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
4.3.6 Runoff Collection	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Discussion / justification if 4.3.6 not implemented: No runoff collection is not proposed, therefore it is not applicable.			
6a-1 Are green roofs implemented in accordance with design criteria in 4.3.6A Fact Sheet? If yes, are they shown on the site map?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
6a-2 Is the green roof credit volume calculated using Appendix B.2.1.2 and 4.3.6A Fact Sheet in Appendix E?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
6b-1 Are permeable pavements implemented in accordance with design criteria in 4.3.6B Fact Sheet? If yes, are they shown on the site map?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
6b-2 Is the permeable pavement credit volume calculated using Appendix B.2.1.3 and 4.3.6B Fact Sheet in Appendix E?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
4.3.7 Landscaping with Native or Drought Tolerant Species	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if 4.3.7 not implemented: No permeable pavement or green roofs proposed.			
4.3.8 Harvesting and Using Precipitation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Discussion / justification if 4.3.8 not implemented: Harvest and use is not applicable in this project, see Form B.3-1 of this PDP SWQMP.			

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8-1 Are rain barrels implemented in accordance with design criteria in 4.3.8 Fact Sheet? If yes, are they shown on the site map?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
8-2 Is the rain barrel credit volume calculated using Appendix B.2.2.2 and 4.3.8 Fact Sheet in Appendix E?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A

Step 5: Summary of Structural BMPs

Summary of Structural BMPs	Form I-3
PDP Structural BMPs	
<p>All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the 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 manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).</p> <p>PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative to certify construction of the structural BMPs (see Section 1.12 of the manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the manual).</p> <p>Use this form 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 (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).</p>	
Description of Structural BMP Strategy	
<p>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 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.</p>	
<p>Drainage from the proposed structure will be directed north to a proposed modular wetland system, which treats the runoff prior to discharging it from the site. A Modular wetland was implemented due to the site constraints, as it provides proper water quality treatment while also conforming to the space restrictions of the project. Reference the preliminary BMP & MWS spreadsheet and MWS detail provided in Attachment 1D of this report.</p> <p>No detention analysis was conducted for this project, as it is not required as the project is . The project directly discharges into the concrete lined Escondido creek, which is hydromodification exempt, therefore detention is not required.</p> <p>(Continue on page 2 as necessary.)</p>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Form I-3 Page 2 of 3

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

(Continued from page 1)

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Form I-3 Page 3 of 3	
Structural BMP Summary Information	
(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. 1	
Construction Plan Sheet No. C2.1	
Type of structural BMP: <input type="checkbox"/> Retention by harvest and use (HU-1) <input type="checkbox"/> Retention by infiltration basin (INF-1) <input type="checkbox"/> Retention by bioretention (INF-2) <input type="checkbox"/> Retention by permeable pavement (INF-3) <input type="checkbox"/> Retention by dry wells (INF-4) <input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1) <input type="checkbox"/> Biofiltration (BF-1) <input type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2) <input checked="" type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F <input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) <input type="checkbox"/> Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) <input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) <input type="checkbox"/> Detention pond or vault for hydromodification management <input type="checkbox"/> Other (describe in discussion section below)	
Purpose: <input checked="" type="checkbox"/> Pollutant control only <input type="checkbox"/> Hydromodification control only <input type="checkbox"/> Combined pollutant control and hydromodification control <input type="checkbox"/> Pre-treatment/forebay for another structural BMP <input type="checkbox"/> Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	HOA to identify/contract third party during final engineering.
Who will be the final owner of this BMP?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input checked="" type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input type="checkbox"/> City <input type="checkbox"/> Other (describe)
Discussion (as needed):	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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Step 5.1: 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	

<p>Is your ACP in the same watershed as your PDP?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	<p>Will your ACP project be completed prior to the completion of the PDP?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
<p>Does your ACP account for all Deficits generated by the PDP?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.)</p>	<p>What is the difference between your PDP debits and ACP Credits?</p> <p>*(ACP Credits - Total PDP Debits = Total Earned Credits)</p> <p>_____</p>

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	<p>Storm Water Pollutant Control Worksheet Calculations</p> <ul style="list-style-type: none"> -Worksheet B.1-DMA Summary (Optional) -Worksheet B.2-1- DCV (Required) -Worksheet B.3-1- H&U Checklist (Required) -Worksheet B.4-1-Simple Sizing Inf. (if applicable) -Worksheet B.5-1-Biofilt. Sizing (Pollutant)(if applicable) -Worksheet B.5-2-Biofilt. Sizing (Volume) (if applicable) -Worksheet B.5-3-Biofilt. Volume Ret. (if applicable) -Worksheet B.5-4-Biofilt. Alt. Min. Footprint(if applicable) -Worksheet B.5-5-Biofilt. w/Upstream Stor. (if applicable) -Worksheet B.5-6-Biofilt. Ret. No Inf. (if applicable) -Worksheet B.5-7-Vol. Ret. Amended Soils (if applicable) -Worksheet B.6-1-Flow-Thru Design Flow (if applicable) -Form I-10-Compact Biofilt. Checklist (if applicable) -Summary Worksheet (optional) 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Worksheet B.1 (Optional) <input checked="" type="checkbox"/> Worksheet B.2-1 (Required) <input checked="" type="checkbox"/> Worksheet B.3-1 (Required) <input type="checkbox"/> Worksheet B.4-1 (if applicable) <input type="checkbox"/> Worksheet B.5-1 (if applicable) <input checked="" type="checkbox"/> Worksheet B.5-2 (if applicable) <input type="checkbox"/> Worksheet B.5-3 (if applicable) <input type="checkbox"/> Worksheet B.5-4 (if applicable) <input type="checkbox"/> Worksheet B.5-5 (if applicable) <input checked="" type="checkbox"/> Worksheet B.5-6 (if applicable) <input type="checkbox"/> Worksheet B.5-7 (if applicable) <input type="checkbox"/> Worksheet B.6-1 (if applicable) <input type="checkbox"/> Form I-10 (if applicable) <input type="checkbox"/> Summary Worksheet (optional)
Attachment 1b	<p>-Worksheet C.4-1 (Form I-8A), Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions</p> <p>-Worksheet C.4-2 (Form I-8B), Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions</p> <p>(Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted)</p> <p>Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-8.</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included because the entire project will use harvest and use BMPs <input type="checkbox"/> Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1c	<p>Form I-9, Factor of Safety and Design Infiltration Rate Worksheet (Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted)</p> <p>Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-9.</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included because the entire project will use harvest and use BMPs <input type="checkbox"/> Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1d	<p>DMA Exhibit (Required)</p> <p>See DMA Exhibit Checklist on the back of this Attachment cover sheet.</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Included
Attachment 1e	<p>Individual Structural BMP DMA Mapbook (Required)</p> <ul style="list-style-type: none"> -Place each map on 8.5"x11" paper. -Show at a minimum the DMA, Structural BMP, and any existing hydrologic features within the DMA. 	<ul style="list-style-type: none"> <input type="checkbox"/> Included

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

The DMA Exhibit must identify:

- 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)
- Flow direction arrows
- Site Design BMPs used for volume reduction credits
- Existing and proposed site drainage network and connections to drainage offsite
- Trash Enclosure(s), if available
- Roof downspouts

Additionally, it is generally best practice (and the City may require) that these additional features listed below be included on the DMA Exhibit:

- 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
- Proposed grading
- Proposed impervious features

Attachment 1A

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Worksheet B.2-1. BMP Design Capture Volume

Design Capture Volume		Worksheet B-2.1		
1	85 th percentile 24-hr storm depth from Figure B.1-1	d=	0.55	inches
2	Area tributary to BMP (s)	A=	1.16	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.86	unitless
4	Tree well volume reduction	TCV=	0	cubic-feet
5	Rain barrels volume reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x d x A) – TCV - RCV	DCV=	1,992	cubic-feet

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Worksheet B.3-1. Harvest and Use Feasibility Checklist (Form I-7)

Harvest and Use Feasibility Checklist		Worksheet B.3-1
<p>1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?</p> <p><input checked="" type="checkbox"/> Toilet and urinal flushing</p> <p><input checked="" type="checkbox"/> Landscape irrigation</p> <p><input type="checkbox"/> Other: _____</p>		
<p>2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.</p> <p>9.3 gal/person/day* 4 people = (37.2 gal/day)*1.5 days= 55.8 gal Moderate plant water use=1,470 gal/acre* 1.16 acres= 1,705.2 gal Total Demand=1,761 gallons = 235.4 cubic-feet</p>		
<p>3. Calculate the DCV using worksheet B-2.1.</p> <p>1,992 cubic-feet</p>		
<p>3a. Is the 36-hour demand greater than or equal to the DCV?</p> <p>Yes / No ⇒</p> <p>↓</p> <p>235.4 cubic-feet < 1,992 cubic-ft</p>	<p>3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV?</p> <p>Yes / No ⇒</p> <p>↓</p> <p>0.25*1,992=498 cubic-feet</p>	<p>3c. Is the 36-hour demand less than 0.25DCV?</p> <p>Yes</p> <p>↓</p>
<p>Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.</p>	<p>Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.</p>	<p>Harvest and use is considered to be infeasible.</p>

Note: 36-hour demand calculations are for feasibility analysis only. Once feasibility analysis is complete the applicant may be allowed to use a different drawdown time provided they meet the 80% annual capture standard (refer to B.4.2) and 96-hour vector control drawdown requirement.

		Project Name	King's Barn	
		BMP ID	1	
Sizing Method for Volume Retention Criteria		Worksheet B.5-2		
1	Area draining to the BMP	50500	sq. ft.	
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)	0.86		
3	85 th percentile 24-hour rainfall depth	0.55	inches	
4	Design capture volume [Line 1 x Line 2 x (Line 3/12)]	1991	cu. ft.	
Volume Retention Requirement				
5	Measured infiltration rate in the DMA Note: When mapped hydrologic soil groups are used enter 0.10 for NRCS Type D soils and for NRCS Type C soils enter 0.30 When in no infiltration condition and the actual measured infiltration rate is unknown enter 0.0 if there are geotechnical and/or groundwater hazards identified in Appendix C	0	in/hr.	
6	Factor of safety	2		
7	Reliable infiltration rate, for biofiltration BMP sizing [Line 5 / Line 6]	0	in/hr.	
8	Average annual volume reduction target (Figure B.5-2) When Line 7 > 0.01 in/hr. = Minimum (40, 166.9 x Line 7 + 6.62) When Line 7 ≤ 0.01 in/hr. = 3.5%	3.5	%	
9	Fraction of DCV to be retained (Figure B.5-3) When Line 8 > 8% = $0.000013 \times \text{Line } 8^3 - 0.000057 \times \text{Line } 8^2 + 0.0086 \times \text{Line } 8 - 0.014$ When Line 8 ≤ 8% = 0.023	0.023		
10	Target volume retention [Line 9 x Line 4]	46	cu. ft.	

		Project Name	King's Barn				
		BMP ID	1				
Volume Retention for No Infiltration Condition			Worksheet B.5-6				
1	Area draining to the biofiltration BMP		50500				sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)		0.55				
3	Effective impervious area draining to the BMP [Line 1 x Line 2]		27775				sq. ft.
4	Required area for Evapotranspiration [Line 3 x 0.03]		833				sq. ft.
5	Biofiltration BMP Footprint		48				sq. ft.
Landscape Area (must be identified on DS-3247)							
		Identification	1	2	3	4	5
6	Landscape area that meet the requirements in SD-B and SD-F Fact Sheet (sq. ft.)		800				
7	Impervious area draining to the landscape area (sq. ft.)		1200				
8	Impervious to Pervious Area ratio [Line 7/Line 6]		1.50	0.00	0.00	0.00	0.00
9	Effective Credit Area If (Line 8 > 1.5, Line 6, Line 7/1.5)		800	0	0	0	0
10	Sum of Landscape area [sum of Line 9 Id's 1 to 5]					800	sq. ft.
11	Provided footprint for evapotranspiration [Line 5 + Line 10]					848	sq. ft.
Volume Retention Performance Standard							
12	Is Line 11 ≥ Line 4?		Volume Retention Performance Standard is Met				
13	Fraction of the performance standard met through the BMP footprint and/or landscaping [Line 11/Line 4]					1.02	
14	Target Volume Retention [Line 10 from Worksheet B.5.2]					46	cu. ft.
15	Volume retention required from other site design BMPs [(1-Line 13) x Line 14]					-0.92	cu. ft.
Site Design BMP							
	Identification	Site Design Type				Credit	
16	1						cu. ft.
	2						cu. ft.
	3						cu. ft.
	4						cu. ft.
	5						cu. ft.
	Sum of volume retention benefits from other site design BMPs (e.g. trees; rain barrels etc.). [sum of Line 16 Credits for Id's 1 to 5] Provide documentation of how the site design credit is calculated in the PDP SWQMP.					0	cu. ft.
17	Is Line 16 ≥ Line 15?		Volume Retention Performance Standard is Met				

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Worksheet B.5-6: Volume Retention for No Infiltration Condition

Volume Retention for No Infiltration Condition				Worksheet B.5-6		
1	Area draining to the biofiltration BMP					sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)					
3	Effective impervious area draining to the BMP [Line 1 x Line 2]					sq. ft.
4	Required area for Evapotranspiration [Line 3 x 0.03]					sq. ft.
5	Biofiltration BMP Footprint					sq. ft.
Landscape Area (must be identified on DS-3247)						
	Identification	A	B	C	D	E
6	Landscape area that meet the requirements in SD-B and SD-F Fact Sheet (sq. ft.)					
7	Impervious area draining to the landscape area (sq. ft.)					
8	Impervious to Pervious Area ratio [Line 7/Line 6]					
9	Effective Credit Area If Line 8 >1.5, use Line 6; if not use Line 7/1.5					
10	Sum of Landscape area [sum of Lines 9A-9E]					sq. ft.
11	Provided footprint for evapotranspiration [Line 5 + Line 10]					sq. ft.
Volume Retention Performance Standard						
12	Is Line 11 \geq Line 4? If yes, then volume retention performance standard for no infiltration condition is met. If no, proceed to Line 13				<input type="checkbox"/> Yes <input type="checkbox"/> No	
13	Fraction of the performance standard met through the BMP footprint and/or landscaping [Line 11/Line 4]					
14	Target Volume Retention [Line 10 from Worksheet B.5.2]					cu. ft.
15	Volume retention required from other site design BMPs [(1-Line 13) x Line 14]					cu. ft.
Site Design BMP						
	Identification	Site Design Type			Credit	
16	A					cu. ft.
	B					cu. ft.
	C					cu. ft.
	D					cu. ft.
	E					cu. ft.
	Sum of volume retention benefits from other site design BMPs (e.g. trees; rain barrels etc.). [sum of Lines 16A-16E] Provide documentation of how the site design credit is calculated in the PDP SWQMP.					cu. ft.
17	Is Line 16 \geq Line 15? If yes, then volume retention performance standard for no infiltration condition is met. If no, implement additional site design BMPs.				<input type="checkbox"/> Yes <input type="checkbox"/> No	

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Form I-10: Compact (high rate) Biofiltration BMP Checklist

Compact (high rate) Biofiltration BMP Checklist		Form I-10
<p>Compact (high rate) biofiltration BMPs have a media filtration rate greater than 5 in/hr. and a media surface area smaller than 3% of contributing area times adjusted runoff factor. Compact biofiltration BMPs are typically proprietary BMPs that may qualify as biofiltration.</p> <p>A compact biofiltration BMP may satisfy the pollutant control requirements for a DMA onsite in some cases. This depends on the characteristics of the DMA and the performance certification/data of the BMP. If the pollutant control requirements for a DMA are met onsite, then the DMA is not required to participate in an offsite storm water alternative compliance program to meet its pollutant control obligations.</p> <p>An applicant using a compact biofiltration BMP to meet the pollutant control requirements onsite must complete Section 1 of this form and include it in the PDP SWQMP. A separate form must be completed for each DMA. In instances where the City Engineer does not agree with the applicant's determination, Section 2 of this form will be completed by the City and returned to the applicant.</p>		
<p>Section 1: Biofiltration Criteria Checklist (Appendix F)</p> <p>Refer to Part 1 of the Storm Water Standards to complete this section. When separate forms/worksheets are referenced below, the applicant must also complete these separate forms/worksheets (as applicable) and include in the PDP SWQMP. The criteria numbers below correspond to the criteria numbers in Appendix F.</p>		
Criteria	Answer	Progression
<p>Criteria 1 and 3:</p> <p>What is the infiltration condition of the DMA?</p> <p>Refer to Section 5.4.2 and Appendix C of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.</p> <p>Applicant must complete and include the following in the PDP SWQMP submittal to support the feasibility determination:</p> <ul style="list-style-type: none"> Infiltration Feasibility Condition Letter; or Worksheet C.4-1: Form I-8A and Worksheet C.4-2: Form I-8B. <p>Applicant must complete and include all applicable sizing worksheets in the SWQMP submittal</p>	<p><input type="checkbox"/> Full Infiltration Condition</p> <p><input type="checkbox"/> Partial Infiltration Condition</p> <p><input checked="" type="checkbox"/> No Infiltration Condition</p>	<p>Stop. Compact biofiltration BMP is not allowed.</p> <p>Compact biofiltration BMP is only allowed, if the target volume retention is met onsite (Refer to Table B.5-1 in Appendix B.5). Use Worksheet B.5- 2 in Appendix B.5 to estimate the target volume retention (Note: retention in this context means reduction).</p> <p>If the required volume reduction is achieved proceed to Criteria 2.</p> <p>If the required volume reduction is not achieved, compact biofiltration BMP is not allowed. Stop.</p> <p>Compact biofiltration BMP is allowed if volume retention criteria in Table B.5-1 in Appendix B.5 for the no infiltration condition is met. Compliance with this criterion must be documented in the PDP SWQMP.</p> <p>If the criteria in Table B.5-1 is met proceed to Criteria 2.</p> <p>If the criteria in Table B.5-1 is not met, compact biofiltration BMP is not allowed. Stop.</p>

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Compact (high rate) Biofiltration BMP Checklist		Form I-10
Provide basis for Criteria 1 and 3:		
Feasibility Analysis:		
Summarize findings and include either infiltration feasibility condition letter or Worksheet C.4-1: Form I-8A and Worksheet C.4-2: Form I-8B in the PDP SWQMP submittal.		
If Partial Infiltration Condition:		
Provide documentation that target volume retention is met (include Worksheet B.5-2 in the PDP SWQMP submittal). Worksheet B.5-7 in Appendix B.5 can be used to estimate volume retention benefits from landscape areas.		
If No Infiltration Condition:		
Provide documentation that the volume retention performance standard is met (include Worksheet B.5-2 in the PDP SWQMP submittal) in the PDP SWQMP submittal. Worksheet B.5-6 in Appendix B.5 can be used to document that the performance standard is met.		
Criteria	Answer	Progression
Criteria 2: Is the compact biofiltration BMP sized to meet the performance standard from the MS4 Permit? Refer to Appendix B.5 and Appendix F.2 of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	<input checked="" type="checkbox"/> Meets Flow Based Criteria	Use guidance from Appendix F.2.2 to size the compact biofiltration BMP to meet the flow based criteria. Include the calculations in the PDP SWQMP. Use parameters for sizing consistent with manufacturer guidelines and conditions of its third party certifications (i.e. a BMP certified at a loading rate of 1 gpm/sq. ft. cannot be designed using a loading rate of 1.5 gpm/sq. ft.) Proceed to Criteria 4.
	<input type="checkbox"/> Meets Volume Based Criteria	Provide documentation that the compact biofiltration BMP has a total static (i.e. non-routed) storage volume, including pore-spaces and pre-filter detention volume (Refer to Appendix B.5 for a schematic) of at least 0.75 times the portion of the DCV not reliably retained onsite. Proceed to Criteria 4.
	<input type="checkbox"/> Does not Meet either	Stop. Compact biofiltration BMP is not allowed.

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Compact (high rate) Biofiltration BMP Checklist		Form I-10
<p>Provide basis for Criteria 2: Provide documentation that the BMP meets the numeric criteria and is designed consistent with the manufacturer guidelines and conditions of its third-party certification (i.e., loading rate, etc., as applicable).</p>		
<p>See MWS & BMP Worksheet provided in Attachment 1D of this PDP SWQMP.</p>		
Criteria	Answer	Progression
<p>Criteria 4: Does the compact biofiltration BMP meet the pollutant treatment performance standard for the projects most significant pollutants of concern?</p> <p>Refer to Appendix B.6 and Appendix F.1 of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.</p>	<input checked="" type="checkbox"/> Yes, meets the TAPE certification.	<p>Provide documentation that the compact BMP has an appropriate TAPE certification for the projects most significant pollutants of concern. Proceed to Criteria 5.</p>
	<input type="checkbox"/> Yes, through other third-party documentation.	<p>Acceptance of third-party documentation is at the discretion of the City Engineer. The City engineer will consider, (a) the data submitted; (b) representativeness of the data submitted; and (c) consistency of the BMP performance claims with pollutant control objectives in Table F.1-2 and Table F.1-1 while making this determination. If a compact biofiltration BMP is not accepted, a written explanation/ reason will be provided in Section 2. Proceed to Criteria 5.</p>
	<input type="checkbox"/> No	<p>Stop. Compact biofiltration BMP is not allowed.</p>
<p>Provide basis for Criteria 4: Provide documentation that identifies the projects most significant pollutants of concern and TAPE certification or other third party documentation that shows that the compact biofiltration BMP meets the pollutant treatment performance standard for the projects most significant pollutants of concern.</p>		
<p>Modular Wetland Tape certification is provided in Attachment 3 of this PDP SWQMP.</p>		

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Compact (high rate) Biofiltration BMP Checklist		Form I-10
Criteria	Answer	Progression
Criteria 5: Is the compact biofiltration BMP designed to promote appropriate biological activity to support and maintain treatment process? Refer to Appendix F of the BMP Design Manual (Part 1 of Storm Water Standards) for guidance.	<input checked="" type="checkbox"/> Yes	Provide documentation that the compact biofiltration BMP support appropriate biological activity. Refer to Appendix F for guidance. Proceed to Criteria 6.
	<input type="checkbox"/> No	Stop. Compact biofiltration BMP is not allowed.
Provide basis for Criteria 5: Provide documentation that appropriate biological activity is supported by the compact biofiltration BMP to maintain treatment process.		
[Empty space for documentation]		
Criteria	Answer	Progression
Criteria 6: Is the compact biofiltration BMP designed with a hydraulic loading rate to prevent erosion, scour and channeling within the BMP?	<input checked="" type="checkbox"/> Yes	Provide documentation that the compact biofiltration BMP is used in a manner consistent with manufacturer guidelines and conditions of its third-party certification. Proceed to Criteria 7.
	<input type="checkbox"/> No	Stop. Compact biofiltration BMP is not allowed.
Provide basis for Criteria 6: Provide documentation that the BMP meets the numeric criteria and is designed consistent with the manufacturer guidelines and conditions of its third-party certification (i.e., maximum tributary area, maximum inflow velocities, etc., as applicable).		
[Empty space for documentation]		
Criteria	Answer	Progression

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Compact (high rate) Biofiltration BMP Checklist		Form I-10
<p>Criteria 7: Is the compact biofiltration BMP maintenance plan consistent with manufacturer guidelines and conditions of its third-party certification (i.e., maintenance activities, frequencies)?</p>	<input checked="" type="checkbox"/> Yes, and the compact BMP is privately owned, operated and not in the public right of way.	Submit a maintenance agreement that will also include a statement that the BMP will be maintained in accordance with manufacturer guidelines and conditions of third-party certification. Stop. The compact biofiltration BMP meets the required criteria.
	<input type="checkbox"/> Yes, and the BMP is either owned or operated by the City or in the public right of way.	Approval is at the discretion of the City Engineer. The city engineer will consider maintenance requirements, cost of maintenance activities, relevant previous local experience with operation and maintenance of the BMP type, ability to continue to operate the system in event that the vending company is no longer operating as a business or other relevant factors while making the determination. Stop. Consult the City Engineer for a determination.
	<input type="checkbox"/> No	Stop. Compact biofiltration BMP is not allowed.
<p>Provide basis for Criteria 7:</p> <p>Include copy of manufacturer guidelines and conditions of third-party certification in the maintenance agreement. PDP SWQMP must include a statement that the compact BMP will be maintained in accordance with manufacturer guidelines and conditions of third-party certification.</p>		
<p>Section 1: Biofiltration Criteria Checklist (Appendix F)</p>		

Attachment 1B

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Worksheet C.4-2 (Form I-8A): Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions²

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A ³
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		Project Phase:
Criteria 1: Infiltration Rate Screening		
1A	<p>Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper Type A or B and corroborated by available site soil data⁴?</p> <p><input type="checkbox"/> Yes; the DMA may feasibly support full infiltration. Answer “Yes” to Criteria 1 Result or continue to Step 1B if the applicant elects to perform infiltration testing.</p> <p><input type="checkbox"/> No; the mapped soil types are A or B but is not corroborated by available site soil data (continue to Step 1B).</p> <p><input type="checkbox"/> No; the mapped soil types are C, D, or “urban/unclassified” and is corroborated by available site soil data. Answer “No” to Criteria 1 Result.</p> <p><input type="checkbox"/> No; the mapped soil types are C, D, or “urban/unclassified” but is not corroborated by available site soil data (continue to Step 1B).</p>	
1B	<p>Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1?</p> <p><input type="checkbox"/> Yes; Continue to Step 1C.</p> <p><input type="checkbox"/> No; Skip to Step 1D.</p>	
1C	<p>Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1 greater than 0.5 inches per hour?</p> <p><input type="checkbox"/> Yes; the DMA may feasibly support full infiltration. Answer “Yes” to Criteria 1 Result.</p> <p><input type="checkbox"/> No; full infiltration is not required. Answer “No” to Criteria 1 Result.</p>	
1D	<p>Infiltration Testing Method. Is the selected infiltration testing method suitable during the design phase (see Appendix D.3)? Note: Alternative testing standards may be allowed with appropriate rationales and documentation.</p> <p><input type="checkbox"/> Yes; continue to Step 1E.</p> <p><input type="checkbox"/> No; select an appropriate infiltration testing method.</p>	

² Note that it is not required to investigate each and every criterion in the worksheet, a single “no” answer in Part 1, Part 2, Part 3, or Part 4 determines a full, partial, or no infiltration condition.

³ This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.

⁴ Available data includes site-specific sampling or observation of soil types or texture classes, such as obtained from borings or test pits necessary to support other design elements.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A ³
1E	<p>Number of Percolation/Infiltration Tests. Does the infiltration testing method performed satisfy the minimum number of tests specified in Table D.3-2?</p> <p><input type="checkbox"/> Yes; continue to Step 1F.</p> <p><input type="checkbox"/> No; conduct appropriate number of tests.</p>	
1F	<p>Factor of Safety. Is the suitable Factor of Safety selected for full infiltration design? See guidance in D.5; Tables D.5-1 and D.5-2; and Worksheet D.5-1 (Form I-9).</p> <p><input type="checkbox"/> Yes; continue to Step 1G.</p> <p><input type="checkbox"/> No; select appropriate factor of safety.</p>	
1G	<p>Full Infiltration Feasibility. Is the average measured infiltration rate divided by the Factor of Safety greater than 0.5 inches per hour?</p> <p><input type="checkbox"/> Yes; answer "Yes" to Criteria 1 Result.</p> <p><input type="checkbox"/> No; answer "No" to Criteria 1 Result.</p>	
Criteria 1 Result	<p>Is the estimated reliable infiltration rate greater than 0.5 inches per hour within the DMA where runoff can reasonably be routed to a BMP?</p> <p><input type="checkbox"/> Yes; the DMA may feasibly support full infiltration. Continue to Criteria 2.</p> <p><input type="checkbox"/> No; full infiltration is not required. Skip to Part 1 Result.</p>	
<p>Summarize infiltration testing methods, testing locations, replicates, and results and summarize estimates of reliable infiltration rates according to procedures outlined in D.5. Documentation should be included in project geotechnical report.</p>		

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A ³	
Criteria 2: Geologic/Geotechnical Screening			
2A	<p>If all questions in Step 2A are answered “Yes,” continue to Step 2B.</p> <p>For any “No” answer in Step 2A answer “No” to Criteria 2, and submit an “Infiltration Feasibility Condition Letter” that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.</p>		
2A-1	Can the proposed full infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick below the infiltrating surface?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2A-2	Can the proposed full infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2A-3	Can the proposed full infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2B	<p>When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1.</p> <p>If all questions in Step 2B are answered “Yes,” then answer “Yes” to Criteria 2 Result. If there are “No” answers continue to Step 2C.</p>		
2B-1	<p>Hydroconsolidation. Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP.</p> <p>Can full infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2B-2	<p>Expansive Soils. Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs.</p> <p>Can full infiltration BMPs be proposed within the DMA without increasing expansive soil risks?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A ³	
2B-3	<p>Liquefaction. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011 or most recent edition). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities.</p> <p>Can full infiltration BMPs be proposed within the DMA without increasing liquefaction risks?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2B-4	<p>Slope Stability. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required.</p> <p>Can full infiltration BMPs be proposed within the DMA without increasing slope stability risks?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2B-5	<p>Other Geotechnical Hazards. Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1).</p> <p>Can full infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2B-6	<p>Setbacks. Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report.</p> <p>Can full infiltration BMPs be proposed within the DMA using established setbacks from underground utilities, structures, and/or retaining walls?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A ³	
2C	<p>Mitigation Measures. Propose mitigation measures for each geologic/geotechnical hazard identified in Step 2B. Provide a discussion of geologic/geotechnical hazards that would prevent full infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures.</p> <p>Can mitigation measures be proposed to allow for full infiltration BMPs? If the question in Step 2 is answered “Yes,” then answer “Yes” to Criteria 2 Result. If the question in Step 2C is answered “No,” then answer “No” to Criteria 2 Result.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Summarize findings and basis; provide references to related reports or exhibits.			
Both units have a hydrologic soil rating of C. Group C soils are expected to have a slow infiltration rate when thoroughly wet and a slow rate of water transmission. For preliminary design purposes the potential infiltration rate for the site can be estimated to range from 0 inches/hour to 0.08 inches/hour in accordance with Table G.1-5 of the BMP Manual. Additionally, relatively impermeable granitic soils were found at or just below the planned site elevations.			
Part 1 Result – Full Infiltration Geotechnical Screening ⁵		Result	
<p>If answers to both Criteria 1 and Criteria 2 are “Yes”, a full infiltration design is potentially feasible based on Geotechnical conditions only.</p> <p>If either answer to Criteria 1 or Criteria 2 is “No”, a full infiltration design is not required.</p>		<input type="checkbox"/> Full infiltration Condition <input type="checkbox"/> Complete Part 2	

⁵ To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A ³
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		Project Phase:
Criteria 3: Infiltration Rate Screening		
3A	<p>NRCS Type C, D, or “urban/unclassified”: Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper is Type C, D, or “urban/unclassified” and corroborated by available site soil data?</p> <p><input type="checkbox"/> Yes; the site is mapped as C soils and a reliable infiltration rate of 0.15 in/hr. is used to size partial infiltration BMPS. Answer “Yes” to Criteria 3 Result.</p> <p><input type="checkbox"/> Yes; the site is mapped as D soils or “urban/unclassified” and a reliable infiltration rate of 0.05 in/hr. is used to size partial infiltration BMPS. Answer “Yes” to Criteria 3 Result.</p> <p><input type="checkbox"/> No; infiltration testing is conducted (refer to Table D.3-1), continue to Step 3B.</p>	
3B	<p>Infiltration Testing Result: Is the reliable infiltration rate (i.e. average measured infiltration rate/2) greater than 0.05 in/hr. and less than or equal to 0.5 in/hr?</p> <p><input type="checkbox"/> Yes; the site may support partial infiltration. Answer “Yes” to Criteria 3 Result.</p> <p><input type="checkbox"/> No; the reliable infiltration rate (i.e. average measured rate/2) is less than 0.05 in/hr., partial infiltration is not required. Answer “No” to Criteria 3 Result.</p>	
Criteria 3 Result	<p>Is the estimated reliable infiltration rate (i.e., average measured infiltration rate/2) greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour at any location within each DMA where runoff can reasonably be routed to a BMP?</p> <p><input type="checkbox"/> Yes; Continue to Criteria 4.</p> <p><input type="checkbox"/> No: Skip to Part 2 Result.</p>	
Summarize infiltration testing and/or mapping results (i.e. soil maps and series description used for infiltration rate).		

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A ³	
Criteria 4: Geologic/Geotechnical Screening			
4A	<p>If all questions in Step 4A are answered “Yes,” continue to Step 2B.</p> <p>For any “No” answer in Step 4A answer “No” to Criteria 4 Result, and submit an “Infiltration Feasibility Condition Letter” that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.</p>		
4A-1	Can the proposed partial infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4A-2	Can the proposed partial infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4A-3	Can the proposed partial infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4B	<p>When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1</p> <p>If all questions in Step 4B are answered “Yes,” then answer “Yes” to Criteria 4 Result. If there are any “No” answers continue to Step 4C.</p>		
4B-1	<p>Hydroconsolidation. Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP.</p> <p>Can partial infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4B-2	<p>Expansive Soils. Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs.</p> <p>Can partial infiltration BMPs be proposed within the DMA without increasing expansive soil risks?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4B-3	<p>Liquefaction. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego’s Guidelines for Geotechnical Reports (2011). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities.</p> <p>Can partial infiltration BMPs be proposed within the DMA without increasing liquefaction risks?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A ³	
4B-4	<p>Slope Stability. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required.</p> <p>Can partial infiltration BMPs be proposed within the DMA without increasing slope stability risks?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4B-5	<p>Other Geotechnical Hazards. Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1).</p> <p>Can partial infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4B-6	<p>Setbacks. Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report.</p> <p>Can partial infiltration BMPs be proposed within the DMA using recommended setbacks from underground utilities, structures, and/or retaining walls?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4C	<p>Mitigation Measures. Propose mitigation measures for each geologic/geotechnical hazard identified in Step 4B. Provide a discussion on geologic/geotechnical hazards that would prevent partial infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures.</p> <p>Can mitigation measures be proposed to allow for partial infiltration BMPs? If the question in Step 4C is answered "Yes," then answer "Yes" to Criteria 4 Result. If the question in Step 4C is answered "No," then answer "No" to Criteria 4 Result.</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Criteria 4 Result	<p>Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing the risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?</p>	<input type="checkbox"/> Yes	<input type="checkbox"/> No

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A³
Summarize findings and basis; provide references to related reports or exhibits	
Empty space for summarizing findings	
Part 2 – Partial Infiltration Geotechnical Screening Result⁶	Result
<p>If answers to both Criteria 3 and Criteria 4 are “Yes”, a partial infiltration design is potentially feasible based on geotechnical conditions only.</p> <p>If answers to either Criteria 3 or Criteria 4 is “No”, then infiltration of any volume is considered to be infeasible within the site.</p>	<p><input type="checkbox"/> Partial Infiltration Condition</p> <p><input type="checkbox"/> No Infiltration Condition</p>

⁶ To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Worksheet C.4-2: Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions⁷

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions		Worksheet C.4-2: Form I-8B ⁸
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		Project Phase:
Criteria 1: Groundwater Screening		
1A	<p>Groundwater Depth. Is the depth to seasonally high groundwater tables (normal high depth during the wet season) beneath the base of any full infiltration BMP greater than 10 feet?</p> <p><input type="checkbox"/> Yes; continue to Step 1B.</p> <p><input type="checkbox"/> No; The depth to groundwater is less than or equal to 10 feet, but site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to step 1B.</p> <p><input type="checkbox"/> No; The depth to groundwater is less than or equal to 10 feet and site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer “No” for Criteria 1 Result.</p>	
1B	<p>Contaminated Soil/Groundwater. Are proposed full infiltration BMPs at least 250 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.</p> <p><input type="checkbox"/> Yes; continue to Step 1C.</p> <p><input type="checkbox"/> No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1C.</p> <p><input type="checkbox"/> No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer “No” to Criteria 1 Result.</p>	

⁷ Note that it is not required to investigate each and every criterion in the worksheet, a single “no” answer in Part 1, Part 2, part 3, or Part 4 determines a full, partial, or no infiltration condition.

⁸ This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions		Worksheet C.4-2: Form I-8B ⁸
1C	<p>Inadequate Soil Treatment Capacity. Are full infiltration BMPs proposed in DMA soils that have adequate soil treatment capacity?</p> <p>The DMA has adequate soil treatment capacity if ALL of the following criteria (detailed in C.2.2.1) for all soil layers beneath the infiltrating surface are met:</p> <ul style="list-style-type: none"> • USDA texture class is sandy loam or loam or silt loam or silt or sandy clay loam or clay loam or silty clay loam or sandy clay or silty clay or clay; and • Cation Exchange Capacity (CEC) greater than 5 milliequivalents/100g; and • Soil organic matter is greater than 1%; and • Groundwater table is equal to or greater than 10 feet beneath the base of the full infiltration BMP. <p><input type="checkbox"/> Yes; continue to Step 1D.</p> <p><input type="checkbox"/> No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1D.</p> <p><input type="checkbox"/> No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer “No” to Criteria 1 Result.</p>	
1D	<p>Other Groundwater Contamination Hazards. Are there site-specific groundwater contamination hazards not already mentioned (refer to Appendix C.2.2) that can be reasonably mitigated to support full infiltration BMPs?</p> <p><input type="checkbox"/> Yes; there are other contamination hazards identified that can be mitigated. Answer “Yes” to Criteria 1 Result.</p> <p><input type="checkbox"/> No; there are other contamination hazards identified that cannot be mitigated. Answer “No” to Criteria 1 Result.</p> <p><input type="checkbox"/> N/A; no contamination hazards are identified. Answer “Yes” to Criteria 1 Result.</p>	
Criteria 1 Result	<p>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level? See Appendix C.2.2.8 for a list of typically reasonable and typically unreasonable mitigation measures.</p> <p><input type="checkbox"/> Yes; Continue to Part 1, Criteria 2.</p> <p><input type="checkbox"/> No; Continue to Part 1 Result.</p>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions		Worksheet C.4-2: Form I-8B ⁸
Criteria 2: Water Balance Screening		
2A	<p>Ephemeral Stream Setback. Does the proposed full infiltration BMP meet both the following?</p> <ul style="list-style-type: none"> The full infiltration BMP is located at least 250 feet away from an ephemeral stream; AND The bottom surface of the full infiltration BMP is at a depth 20 feet or greater from seasonally high groundwater tables. <p><input type="checkbox"/> Yes; Answer “Yes” to Criteria 2 Result.</p> <p><input type="checkbox"/> No; Continue to Step 2B.</p>	
2B	<p>Mitigation Measures. Can site layout changes be proposed to support full infiltration BMPs?</p> <p><input type="checkbox"/> Yes; the site can be reconfigured to mitigate potential water balance issues. Answer “Yes” to Criteria 2 Result.</p> <p><input type="checkbox"/> No; the site cannot be reconfigured to mitigate potential water balance issues. Continue to Step 2C and provide discussion.</p>	
2C	<p>Additional studies. Do additional studies support full infiltration BMPs?</p> <p>In the event that water balance effects are used to reject full infiltration (anticipated to be rare), additional analysis shall be completed and documented by a qualified professional indicating the site-specific information evaluated and the technical basis for this finding.</p> <p><input type="checkbox"/> Yes; Answer “Yes” to Criteria 2 Result.</p> <p><input type="checkbox"/> No; Answer “No” to Criteria 2 Result.</p>	
Criteria 2 Result	<p>Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams?</p> <p><input type="checkbox"/> Yes; Continue to Part 1 Result.</p> <p><input type="checkbox"/> No; Continue to Part 1 Result.</p>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B ⁸
<p>Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth.</p>	
Empty space for documentation	
Part 1 – Full Infiltration Groundwater and Water Balance Screening Result ⁹	Result
<p>If answers to Criteria 1 and 2 are “Yes”, a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration based on groundwater conditions.</p> <p>If answer to Criteria 1 or Criteria 2 is “No”, infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a “full infiltration” design based on groundwater conditions. Proceed to Part 2.</p>	<p><input type="checkbox"/> Full Infiltration</p> <p><input type="checkbox"/> Complete Part 2</p>

⁹ To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B ⁸
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria	
DMA(s) Being Analyzed:	Project Phase:
Criteria 3: Groundwater Screening	
<p>Contaminated Soil/Groundwater. Are partial infiltration BMPs proposed at least 100 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. This criterion is intentionally a smaller radius than full infiltration, as the potential quantity of infiltration from partial infiltration BMPs is smaller.</p> <p><input type="checkbox"/> Yes; Answer “Yes” to Criteria 3 Result.</p> <p><input type="checkbox"/> No; However, site layout changes can be proposed to avoid contaminated soils or soils that lack adequate treatment capacity. Select “Yes” to Criteria 3 Result. It is a requirement for the SWQMP preparer to identify potential mitigation measures.</p> <p><input type="checkbox"/> No; Contaminated soils or soils that lack adequate treatment capacity cannot be avoided and partial infiltration BMPs are not feasible. Select “No” to Criteria 3 Result.</p>	
<p>Criteria 3 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level?</p> <p>Yes; Continue to Part 2, Criteria 4.</p> <p><input type="checkbox"/> No; Skip to Part 2 Result.</p>	
<p>Summarize findings and basis. Documentation should focus on mapped soil types and contaminated site locations.</p>	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B ⁸
Criteria 4: Water Balance Screening	
<p>Additional studies. In the event that water balance effects are used to reject partial infiltration (anticipated to be rare), a qualified professional must provide an analysis of the incremental effects of partial infiltration BMPs on the water balance compared to incidental infiltration under a no infiltration scenario (e.g. precipitation, irrigation, etc.).</p>	
<p>Criteria 4 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams?</p> <p><input type="checkbox"/> Yes: Continue to Part 2 Result.</p> <p><input type="checkbox"/> No: Continue to Part 2 Result.</p>	
<p>Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth</p>	
Part 2 – Partial Infiltration Groundwater and Water Balance Screening Result ¹⁰	Result
<p>If answers to Criteria 3 and Criteria 4 are “Yes”, a partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration based on groundwater and water balance conditions.</p> <p>If answer to Criteria 3 or Criteria 4 is “No”, then infiltration of any volume is considered to be infeasible within the site. The feasibility screening category is No Infiltration based on groundwater or water balance condition.</p>	<p><input type="checkbox"/> Partial Infiltration Condition</p> <p><input type="checkbox"/> No Infiltration Condition</p>

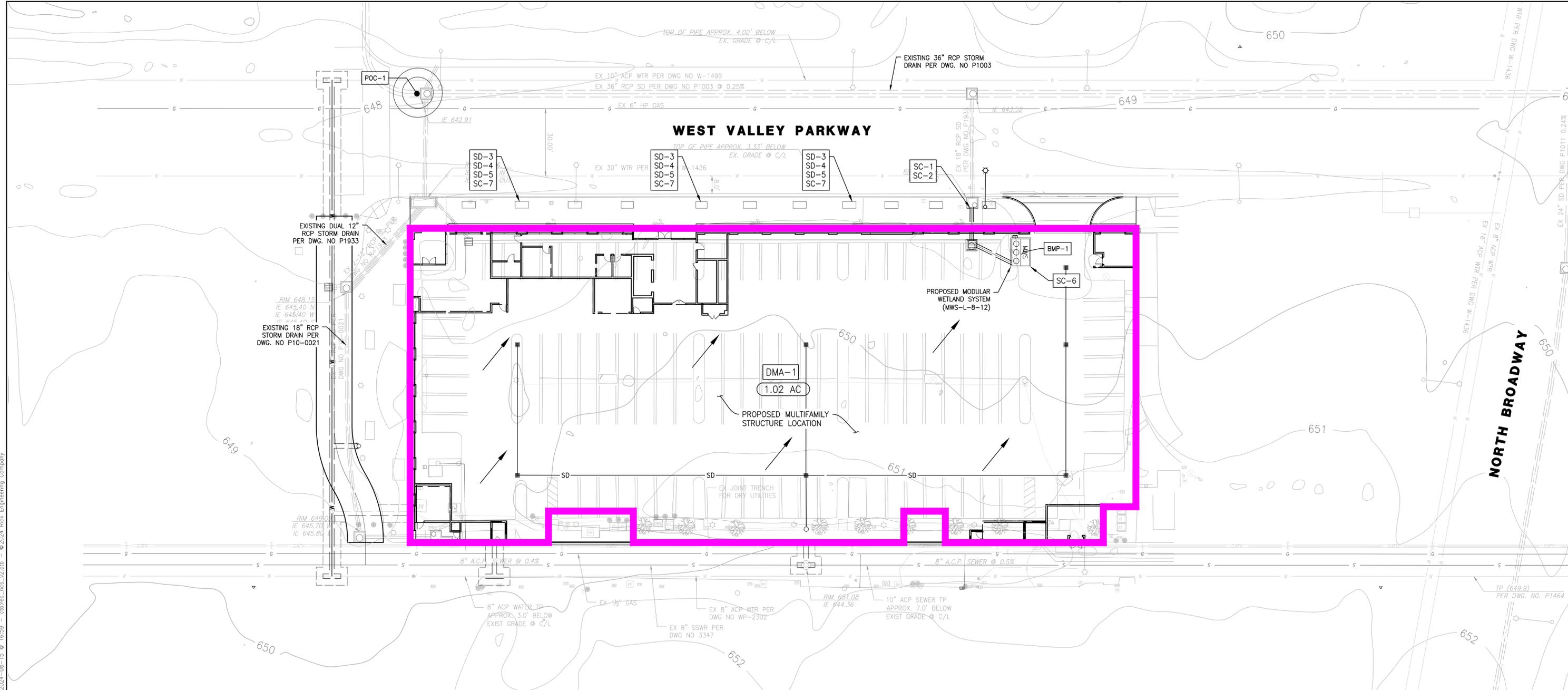
¹⁰ To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Attachment 1C

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Factor of Safety and Design Infiltration Rate Worksheet			Form I-9		
Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25		
		Predominant soil texture	0.25		
		Site soil variability	0.25		
		Depth to groundwater or impervious layer	0.25		
		Suitability Assessment Safety Factor, $S_A = \sum p$			
B	Design	Level of pretreatment/ expected sediment loads	0.5		
		Redundancy/resiliency	0.25		
		Compaction during construction	0.25		
		Design Safety Factor, $S_B = \sum p$			
Combined Safety Factor, $S_{total} = S_A \times S_B$					
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)					
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$					
Supporting Data					
Briefly describe infiltration test and provide reference to test forms:					

Attachment 1D



LEGEND

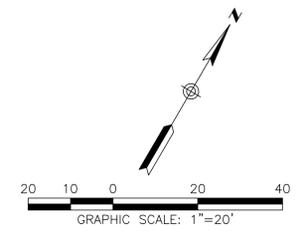
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- BMP CALLOUT
- DRAINAGE MANAGEMENT BOUNDARY
- DMA ID
- DMA AREA
- POINT OF COMPLIANCE LOCATION (POC)
- DRAINAGE FLOW ARROWS

SOURCE CONTROL BMP'S

- PREVENTION OF ILLICIT DISCHARGES INTO THE MS4
- STORM DRAIN STENCILING / SIGNAGE
- ADDITIONAL BMP'S
- MINIMIZE IMPERVIOUS AREA
- MINIMIZE SOIL COMPACTION
- IMPERVIOUS AREA DISPERSION
- LANDSCAPING WITH NATIVE / DROUGHT TOLERANT SPECIES

EXHIBIT NOTES:

1. SIZES OF THE POLLUTANT CONTROL BMP'S SHOWN ON THIS EXHIBIT ADDRESS THE PERMANENT STORM WATER QUALITY REQUIREMENTS OF THE CITY OF ESCONDIDO STORM WATER DESIGN MANUAL (BMP DESIGN MANUAL), DATED OCTOBER 2022.
2. HYDROLOGIC SOIL GROUP TYPE "C" HAVE BEEN IDENTIFIED ON SITE.
3. NO CRITICAL COARSE SEDIMENT YIELD AREAS TO BE PROTECTED IN PROXIMITY TO PROJECT.
4. 85TH PERCENTILE STORM EVENT = 0.55 IN.
5. THIS PROJECT IS CONSIDERED HMP EXEMPT AS IT DISCHARGES DIRECTLY INTO THE CONCRETE LINED ESCONDIDO CREEK.
6. THIS DMA EXHIBIT WILL BE SERVED ALSO AS AN HMP EXEMPTION EXHIBIT.



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rickengineering.com

DMA EXHIBIT
KING'S BARN

PROJECT NO: 20040 SCALE: 1"=20'
DRAWN BY: EJS DATE: 8/16/2024

\\p:\rickeng.com\projects\20040\20040_King's Barn\WaterRes\20040 - DMA_EXHIBIT.dwg - plotted by: isantos on 2024-08-15 @ 16:59 - c:\bret_rcs_v2.ctb - ©2024 Rick Engineering Company

Water Quality - Mod Wetland - BMP Sizing Calculations

DMA/BMP Name	BMP Type	Drainage Management Area (acres)	Drainage Management Area (ft ²)	% Impervious	Impervious Area (ft ²)	Pervious Area (ft ²)	Effective Impervious Area (ft ²)	Runoff Factor	85th Percentile Storm Event (in)	Design Capture Volume (c.f.)	Water Quality Intensity (in/hr)	Water Quality Flow Rate, Q (cfs)	Required Water Quality Flow Rate (cfs) 1.5*Q	Provided BMP Flow Rate (cfs)	MWS Model Name
DMA-1	Biofiltration - Mod Wetlands	1.2	50500	95%	47975	2525	43,935	0.86	0.55	1,992	0.2	0.202	0.303	0.346	MWS-L-8-12

Notes:

- The required and provided Water Quality volumes are based on the 2013 MS4 permit and the City of Santee BMP Design Manual
- Runoff Factors for pervious and impervious areas were determined from Table 0-1: " Runoff Factors for Surfaces Draining to BMPs - Pollutant Control BMPs" from the City of Santee BMP Design Manual
- The DCV multiplier was found using Section B.4.2 Percent Capture Method and Figure 0-1 Percent Capture Nomgraph from the City of Santee BMP Design Manual

SPECIFICATIONS

FLOW-BASED

The MWS Linear can be used in stand-alone applications to meet treatment flow requirements. Since the MWS Linear 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

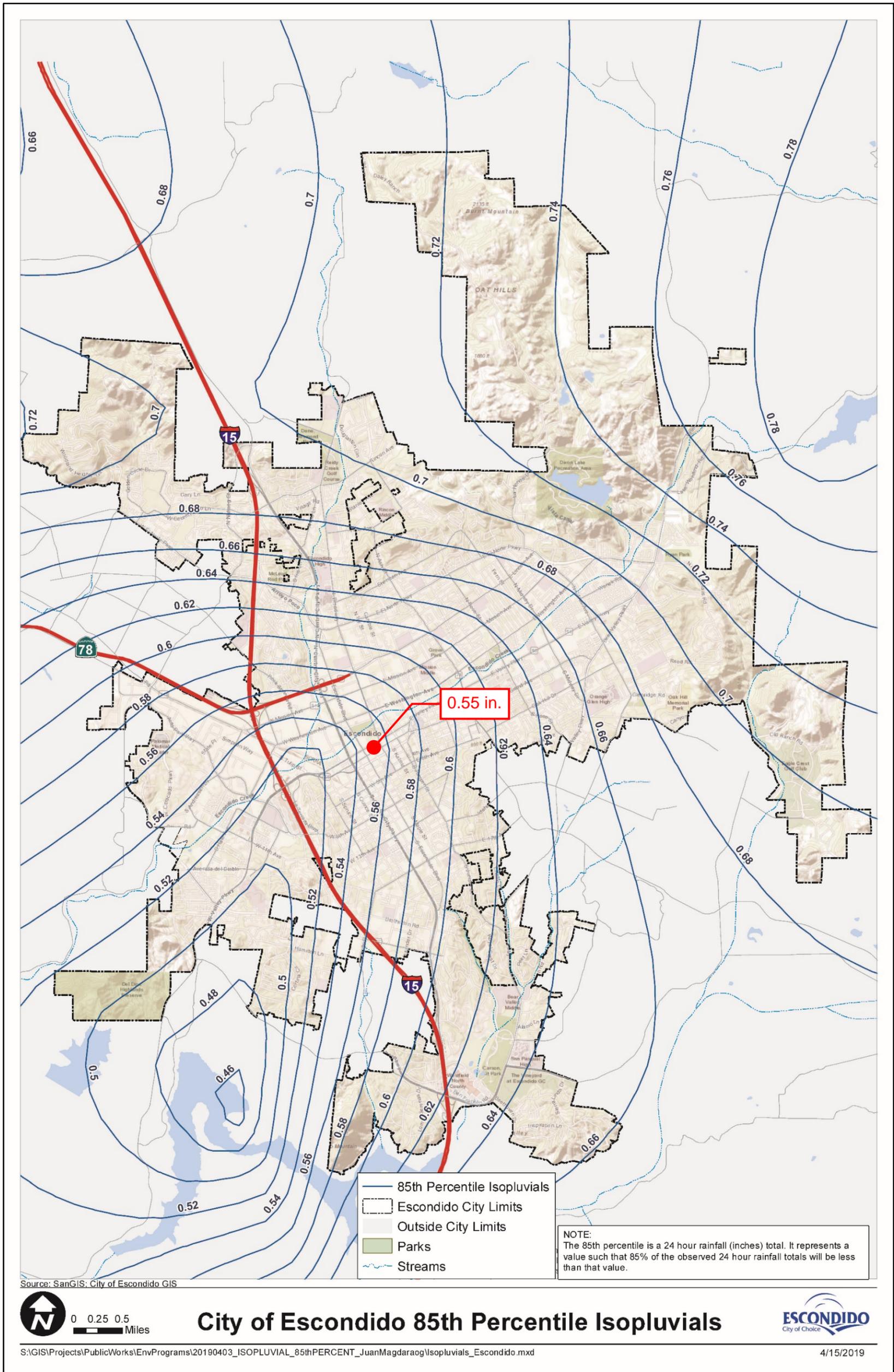


Figure B.1-1: City of Escondido 85th Percentile 24-hour Isopluvial Map

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Factor of Safety and Design Infiltration Rate Worksheet		Form I-9
The Geotechnical Engineer certifies they completed Form I-9 (see Appendix C.4.3).		
Professional Geotechnical Engineer's Printed Name:	[SEAL]	
Professional Geotechnical Engineer's Signed Name:		
Date: _____		

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENT 2

BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

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

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 2a	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the Storm Water Design Manual	<input type="checkbox"/> Included <input type="checkbox"/> Submitted as separate stand-alone document
Attachment 2b	Hydromodification Management Exhibit (Required)	<input type="checkbox"/> Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2c	Management of Critical Coarse Sediment Yield Areas See Section 6.2 and Appendix H of the Storm Water Design Manual.	<input checked="" type="checkbox"/> Exhibit depicting onsite and/or upstream sources of critical coarse sediment as mapped in the WMAA AND, <input type="checkbox"/> Demonstration that the project effectively avoids and bypasses sources of mapped critical coarse sediment OR, <input type="checkbox"/> Demonstration that the downstream system is not sensitive to preservation of Coarse Sediment Supply (Form I-11). <input type="checkbox"/> Demonstration that project does not generate a net impact on the receiving water.
Attachment 2d	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the Storm Water Design Manual.	<input checked="" type="checkbox"/> Not performed <input type="checkbox"/> Included <input type="checkbox"/> Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not required because BMPs will drain in less than 96 hours

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

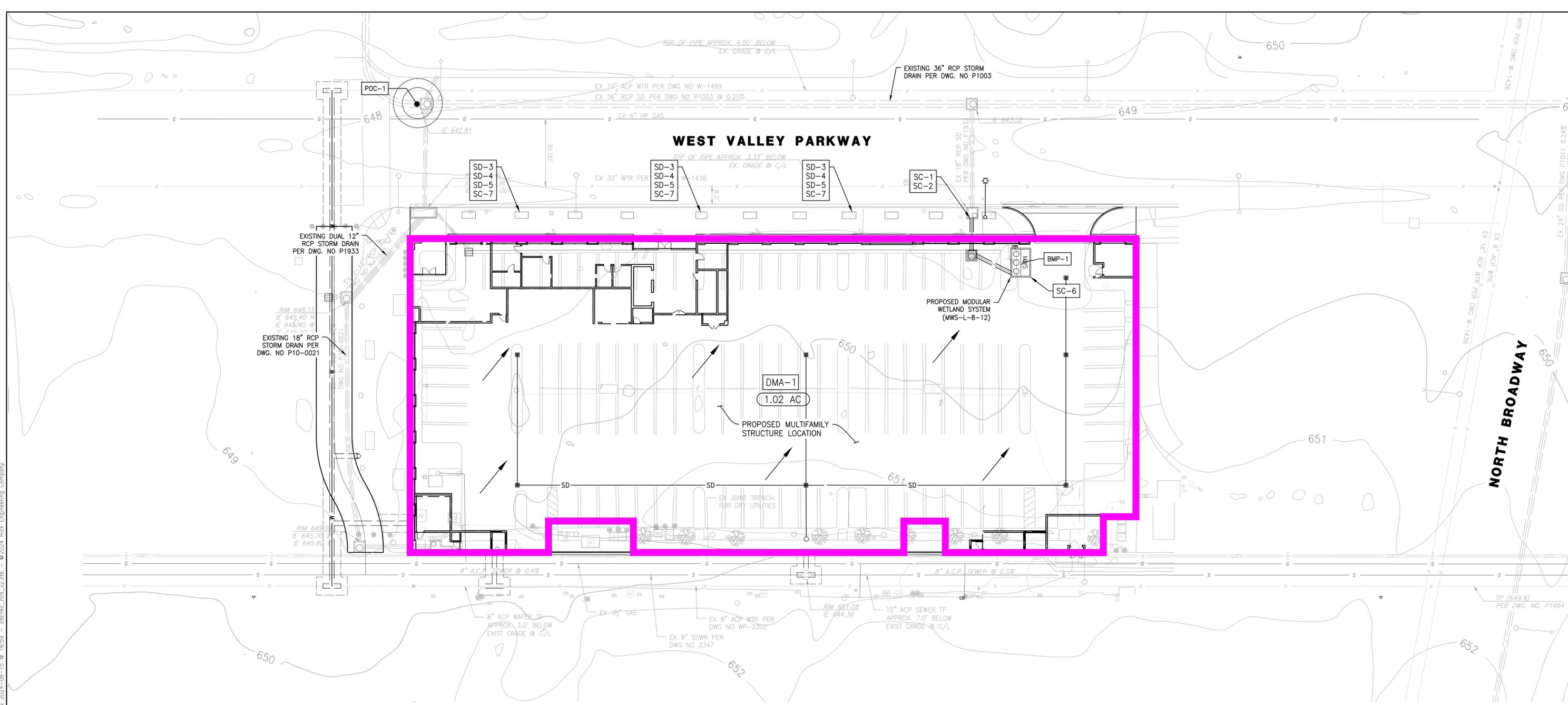
Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

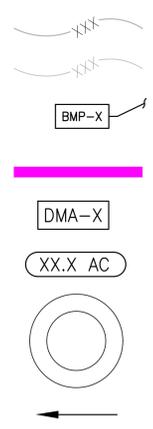
- Underlying hydrologic soil group
- Approximate depth to groundwater
- Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- Critical coarse sediment yield areas to be protected
- Existing topography
- Existing and proposed site drainage network and connections to drainage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

THIS PROJECT IS HYDROMODIFICATION EXEMPT. THE BMP EXHIBIT IS PROVIDED FOR REFERENCE ONLY, AS A HYDROMODIFICATION EXEMPTION EXHIBIT.

Attachment 2B



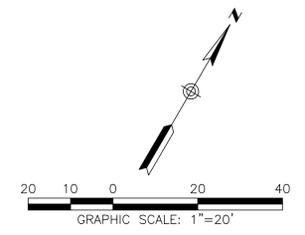
- LEGEND**
- EXISTING MAJOR CONTOUR
 - EXISTING MINOR CONTOUR
 - BMP CALLOUT
 - DRAINAGE MANAGEMENT BOUNDARY
 - DMA ID
 - DMA AREA
 - POINT OF COMPLIANCE LOCATION (POC)
 - DRAINAGE FLOW ARROWS



- SOURCE CONTROL BMP'S**
- PREVENTION OF ILLICIT DISCHARGES INTO THE MS4
 - STORM DRAIN STENCILING / SIGNAGE
 - ADDITIONAL BMP'S
 - MINIMIZE IMPERVIOUS AREA
 - MINIMIZE SOIL COMPACTION
 - IMPERVIOUS AREA DISPERSION
 - LANDSCAPING WITH NATIVE / DROUGHT TOLERANT SPECIES

- SC-1
- SC-2
- SC-6
- SD-3
- SD-4
- SD-5
- SC-7

- EXHIBIT NOTES:**
1. SIZES OF THE POLLUTANT CONTROL BMP'S SHOWN ON THIS EXHIBIT ADDRESS THE PERMANENT STORM WATER QUALITY REQUIREMENTS OF THE CITY OF ESCONDIDO STORM WATER DESIGN MANUAL (BMP DESIGN MANUAL), DATED OCTOBER 2022.
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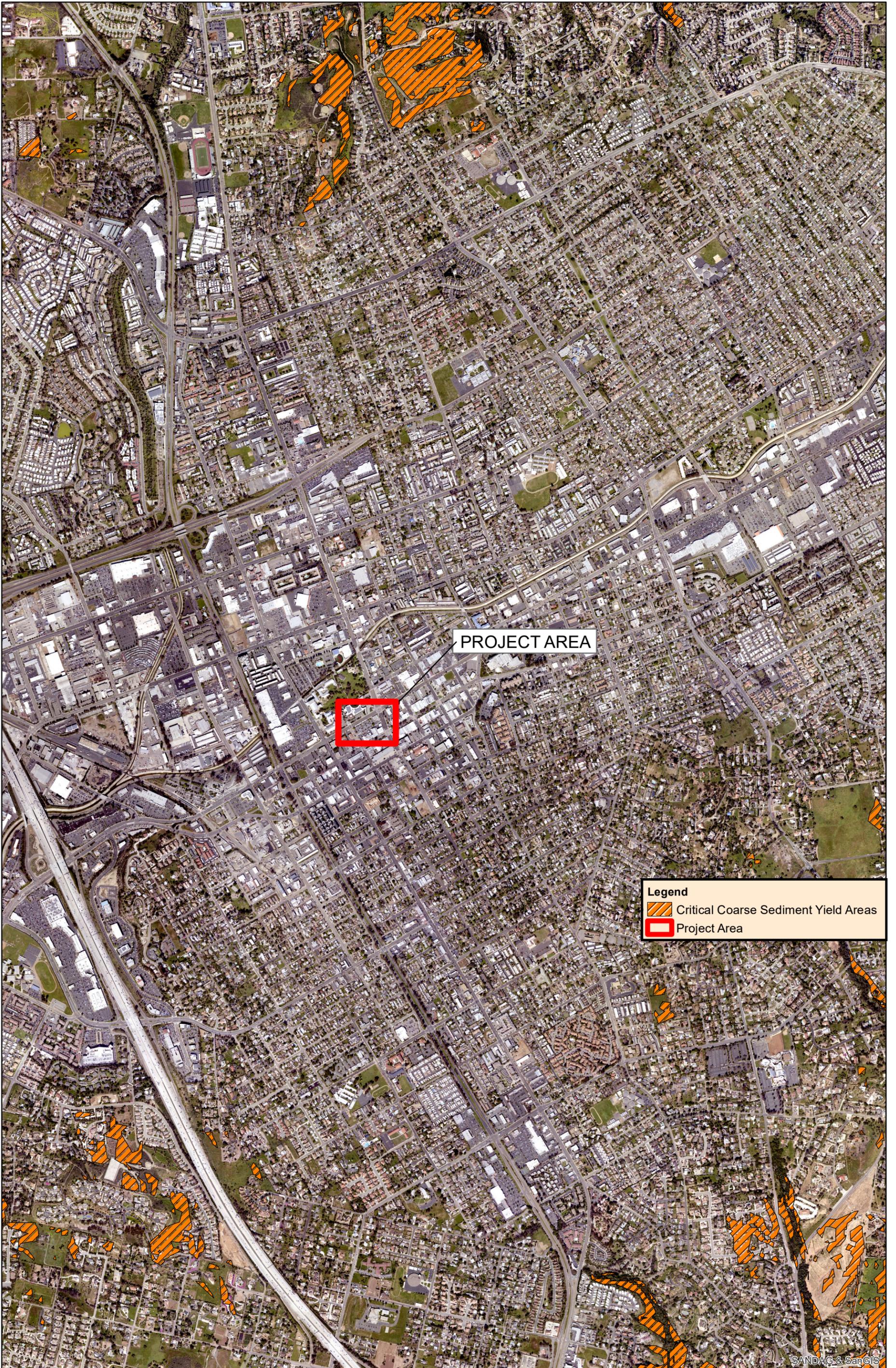
5620 FRIARS ROAD
SAN DIEGO, CA 92110
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rickengineering.com

DMA EXHIBIT
KING'S BARN

PROJECT NO: 20040 SCALE: 1"=20'
DRAWN BY: EJS DATE: 8/16/2024

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Attachment 2C



PROJECT AREA

Legend

-  Critical Coarse Sediment Yield Areas
-  Project Area

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PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Downstream Systems Requirements for Preservation of Coarse Sediment Supply		Form I-11	
When it has been determined that potential critical coarse sediment yield areas exist within the project site, the next step is to determine whether downstream systems would be sensitive to reduction of coarse sediment yield from the project site. Use this form to document the evaluation of downstream systems requirements for preservation of coarse sediment supply.			
Project Name:			
Project Tracking Number / Permit Application Number:			
1	Will the project discharge runoff to a hardened MS4 system (pipe or lined channel) or an un-lined channel?	Hardened MS4 system	Go to 2
		Un-lined channel	Go to 4
2	Will the hardened MS4 system convey sediment (e.g., a concrete-lined channel with steep slope and cleansing velocity) or sink sediment (e.g., flat slopes, constrictions, treatment BMPs, or ponds with restricted outlets within the system will trap sediment and not allow conveyance of coarse sediment from the project site to an un-lined system).	Convey	Go to 3
		Sink	Go to 7
3	What kind of receiving water will the hardened MS4 system convey the sediment to?	Un-lined channel	Go to 4
		Lake Reservoir Bay	Go to 7
		Lagoon Ocean	Go to 6
4	Is the un-lined channel impacted by deposition of sediment? This condition must be documented by the local agency.	Yes	Go to 7
		No	Go to 5
5	End – Preserve coarse sediment supply to protect un-lined channels from accelerated erosion due to reduction of coarse sediment yield from the project site unless further investigation determines the sediment is not critical to the receiving stream. Sediment that is critical to receiving streams is the sediment that is a significant source of bed material to the receiving stream (bed sediment supply) (see Section 6.2.3 and Appendix H.2 of the manual).		
6	End – Provide management measures for preservation of coarse sediment supply (protect beach sand supply).		
7	End – Downstream system does not warrant preservation of coarse sediment supply, no measures for protection of critical coarse sediment yield areas onsite are necessary. Use the space below to describe the basis for this finding for the project.		

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENT 3

Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

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

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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

Attachment 3a must identify:

- Specific maintenance indicators and actions for proposed structural BMP(s). This must be based on Section 7.7 and Appendix E 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).

SWMDCMA WILL BE PROVIDED IN FINAL ENGINEERING.

Attachment 3B

SITE DESIGN, SOURCE CONTROL AND POLLUTANT CONTROL BMP OPERATION & MAINTENANCE PROCEDURE DETAILS						
STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL NO.:						
O&M RESPONSIBLE PARTY DESIGNEE:						
BMP DESCRIPTION		INSPECTION FREQUENCY	MAINTENANCE FREQUENCY	MAINTENANCE METHOD	INCLUDED IN O&M MANUAL	SHEET NUMBER(S)
SITE DESIGN	LANDSCAPED AREAS	MONTHLY (NOTE: INSPECTOR SHALL CHECK FOR THE FOLLOWING MAINTENANCE INDICATORS: EROSION IN THE FORM OF RILLS OR GULLIES, PONDING WATER, BARE AREAS, BURROWS, MOUNDS, AND TRASH.)	1. AS DETERMINED BY INSPECTION; AND 2. ON OR BEFORE SEPTEMBER 30TH.	1. FILL AND COMPACT AREAS OF RUTS, RILLS, OR GULLIES; 2. RE-SEED AND/OR PLANT SLOPES AND AREAS OF EXPOSED SOILS; AND 3. ROUTINE MOWING AND TRIMMING AND TRASH REMOVAL.	YES	
	EFFECTIVE IRRIGATION SYSTEM	MONTHLY	WHEN BROKEN SPRINKLER HEADS, RAIN SHUTOFF DEVICES, AND FLOW REDUCERS ARE OBSERVED; OR RUNNING SPRINKLERS IN RAIN ARE OBSERVED.	REPAIR OR REPLACE THE BROKEN AND/OR MALFUNCTIONING PARTS OF IRRIGATION SYSTEM.	YES	
SOURCE CONTROL	PREVENTIVE STENCILING AND SIGNAGE	ANNUALLY	WHEN FULLY OR PARTIALLY ERASED SIGNS ARE OBSERVED; WHEN DUMPING OF TRASH ARE OBSERVED AT PUBLIC ACCESS POINTS, BUILDING ENTRANCES, PUBLIC PARKS, ETC.	1. REPLACE OR REPAINT THE STENCILS AND SIGNAGE SO THAT THEY ARE LEGIBLE; AND 2. MAKE SURE THAT THEY ARE PLACED AT ALL REQUIRED LOCATIONS (I.E.- ALL INLETS).	YES	
STRUCTURAL BMP	MODULAR WETLAND SYSTEM	1. MINIMUM TWICE A YEAR (ON OR BEFORE SEPTEMBER 15TH AND FOLLOWING THE RAINY SEASON AFTER MAY 1ST); AND 2. AFTER EACH "SIGNIFICANT RAIN EVENT"	AS NEEDED BASED ON INSPECTION FINDINGS	1. ROUTINE MAINTENANCE TO REMOVE THE ACCUMULATED MATERIALS IN THE SCREENING FILTER, SEPARATION CHAMBER, AND PERIMETER FILTER (BIOMEDIA GREEN) AND REPLACE FILTER MEDIA PERFORMED BY A QUALIFIED SERVICE PROVIDER PER MANUFACTUER'S GUIDELINES AND CONDITIONS DEFINED IN THE WASHINGTON ECOLOGY T.A.P.E. CERTIFICATION. 2. IF INSPECTION INDICATES INTERNAL COMPONENTS ARE DAMAGED, ADDITIONAL NON-ROUTINE MAINTENANCE WILL BE REQUIRED TO REPAIR OR REPLACE DAMAGED PARTS AS APPLICABLE.	YES	

NOTES:

- REFER TO THE "PRIORITY DEVELOPMENT PROJECT (PDP) STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) SUMMIT AVENUE", DATED OCTOBER 27, 2022 OR ANY REVISIONS THEREOF FOR MORE SPECIFIC INFORMATION.
- A SIGNIFICANT RAIN EVENT CONSIDERED WHENEVER THE NATIONAL WEATHER SERVICE REPORTS 0.50" OF RAIN IN 48 HOURS FOR THE LOCAL COMMUNITY.
- DURING THE FIRST YEAR OF NORMAL OPERATION, ALL BMPS SHOULD BE INSPECTED ONCE BEFORE AUGUST 31 AND THEN MONTHLY FROM SEPTEMBER THROUGH MAY. THE MINIMUM INSPECTION AND MAINTENANCE FREQUENCY SHOULD BE DETERMINED BASED ON THE RESULTS OF THE FIRST YEAR INSPECTIONS.

Modular Wetlands[®] Linear Operation & Maintenance Manual



MODULAR WETLANDS® LINEAR OPERATION & MAINTENANCE MANUAL

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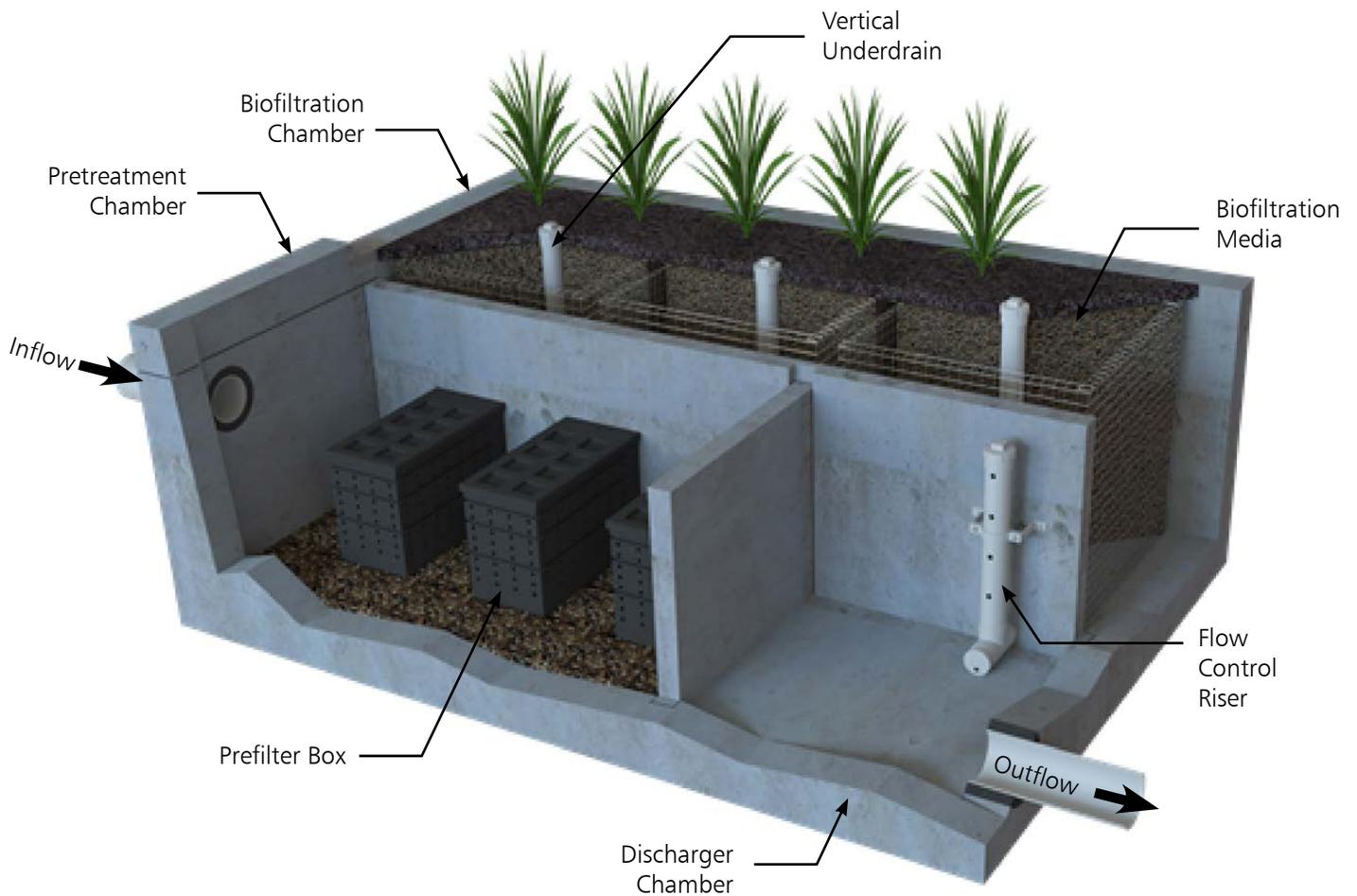
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OVERVIEW

The Modular Wetlands® Linear Biofilter is designed to remove high levels of trash, debris, sediments, nutrients, metals, and hydrocarbons. Its simple design allows for quick and easy installation. The system is housed in a standard precast structure and can be installed at various depths to meet site-specific conditions.

INTRODUCTION

This is the Modular Wetlands Linear Biofilter operation and maintenance manual. Before starting, read the instructions and equipment lists closely. It is important to follow all necessary safety procedures associated with state and local regulations. Some steps required confined space entry. Please contact Contech for more information on pre-authorized third party contractors who can provide installation services in your area. For a list of service providers in your area please visit: www.conteches.com/maintenance.



INSTRUCTIONS

INSPECTION SUMMARY

Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess the site specific loading conditions. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years to ensure appropriate maintenance is provided.

- Inspect pre-treatment, biofiltration, and discharge chambers an average of once every six to twelve months. Varies based on site specific and local conditions.
- Average inspection time is approximately 15 minutes. Always ensure appropriate safety protocol and procedures are followed.

The following is a list of equipment required to allow for simple and effective inspection of the Modular Wetlands Linear:

- Modular Wetlands Linear Inspection Form
- Flashlight
- Manhole hook or appropriate tools to remove access hatches and covers
- Appropriate traffic control signage and procedures
- Measuring pole and/or tape measure
- Protective clothing and eye protection
- 7/16" open or closed ended wrench
- Large permanent black marker (initial inspections only - first year)

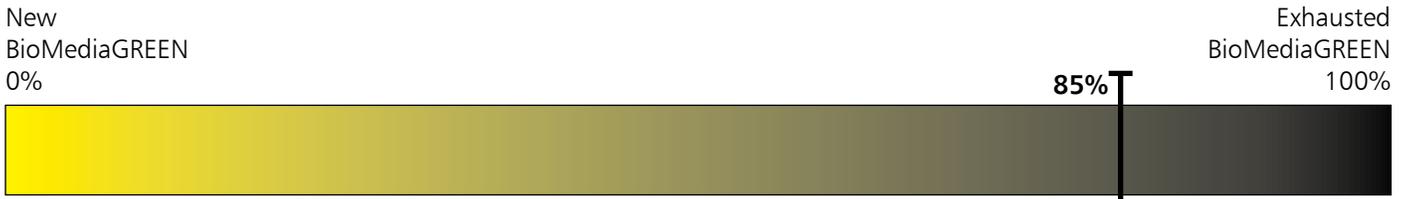
Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine inspections of the system

INSPECTION AND MAINTENANCE NOTES

1. Following maintenance and/or inspection, it is recommended that 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 not require irrigation after initial establishment.

INSPECTION PROCESS

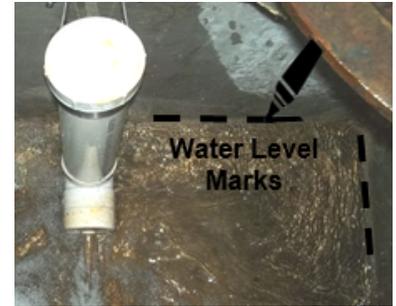
1. Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other information (see inspection form).
2. Observe the inside of the system through the access covers. If minimal light is available and vision into the unit is impaired, utilize a flashlight to see inside the system and all of its chambers.
3. Look for any out of the ordinary obstructions in the inflow pipe, pre-treatment chamber, biofiltration chamber, discharge chamber or outflow pipe. Write down any observations on the inspection form.
4. Through observation and/or digital photographs, estimate the amount of trash, debris accumulated in the pre-treatment chamber. Utilizing a tape measure or measuring stick, estimate the amount of sediment in this chamber. Record this depth on the inspection form.
5. Through visual observation, inspect the condition of the pre-filter cartridges. Look for excessive build-up of sediment on the cartridges, any build-up on the tops of the cartridges, or clogging of the holes. Record this information on the inspection form. The prefilter cartridges can be further inspected by removing the cartridge tops and assessing the color of the BioMediaGREEN filter cubes (requires entry into pre-treatment chamber - see notes previous notes regarding confined space entry). Record the color of the material. New material is a light green color. As the media becomes clogged, it will turn darker in color, eventually becoming dark brown or black. The closer to black the media is the higher percentage that the media is exhausted and is in need of replacement.



6. The biofiltration chamber is generally maintenance-free due to the system's advanced pre-treatment chamber. For units which have open planters with vegetation, it is recommended that the vegetation be inspected. Look for any plants that are dead or showing signs of disease or other negative stressors. Record the general health of the plants on the inspection form and indicate through visual observation or digital photographs if trimming of the vegetation is required.
7. The discharge chamber houses the orifice control structure, drain down filter (only in California - older models), and is connected to the outflow pipe. It is important to check to ensure the orifice is in proper operating conditions and free of any obstructions. It is also important to assess the condition of the drain down filter media which utilizes a block form of the BioMediaGREEN. Assess in the same manner as the cubes in the pre-filter cartridge as mentioned above. Generally, the discharge chamber will be clean and free of debris. Inspect the water marks on the side walls. If possible, inspect the discharge chamber during a rain event to assess the amount of flow leaving the system while it is at 100% capacity (pre-treatment chamber water level at peak HGL - top of bypass weir). The water level of the flowing water should be compared to the watermark level on the side walls, which is an indicator of the highest discharge rate the system achieved when initially installed. Record on the form if there is any difference in level from the watermark in inches.

NOTE: During the first few storms, the water level in the outflow chamber should be observed and a 6" long horizontal watermark line drawn (using a large permanent marker) at the water level in the discharge chamber while the system is operating at 100% capacity. The diagram below illustrates where the line should be drawn. This line is a reference point for future inspections of the system.

Water level in the discharge chamber is a function of flow rate and pipe size. Observation of the water level during the first few months of operation can be used as a benchmark level for future inspections. The initial mark and all future observations shall be made when the system is at 100% capacity (water level at maximum level in the pre-treatment chamber). If future water levels are below this mark when the system is at 100% capacity, this is an indicator that maintenance to the pre-filter cartridges may be needed.



8. Finalize the inspection report for analysis by the maintenance manager to determine if maintenance is required.

MAINTENANCE INDICATORS

Based upon the observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components or cartridges
- Obstructions in the system or its inlet and/or outlet pipes
- Excessive accumulation of floatables in the pretreatment chamber in which the length and width of the chamber is fully impacted more than 18". See photo below.
- Excessive accumulation of sediment in the pretreatment chamber of more than 6" in depth.
- Excessive accumulation of sediment on the BioMediaGREEN media housed within the pretreatment cartridges. The following chart shows photos of the condition of the BioMediaGREEN contained within the pre-filter cartridges. When media is more than 85% clogged, replacement is required.
- Excessive accumulation of sediment on the BioMediaGREEN media housed within the pretreatment cartridges. When media is more than 85% clogged, replacement is required. The darker the BioMediaGREEN, the more clogged it is and in need of replacement.



INSPECTION PROCESS

- Excessive accumulation of sediment on the BioMediaGREEN media housed within the drain down filter (California only - older models). The following photos show the condition of the BioMediaGREEN contained within the drain down filter. When media is more than 85% clogged, replacement is required.



- Overgrown vegetation.



- Water level in the discharge chamber during 100% operating capacity (pretreatment chamber water level at max height) is lower than the water mark by 20%.

MAINTENANCE SUMMARY

The time has come to maintain your Modular Wetlands® Linear. All necessary pre-maintenance steps must be carried out before maintenance occurs. Once traffic control has been set up per local and state regulations and access covers have been safely opened, the maintenance process can begin. It should be noted that some maintenance activities require confined space entry. All confined space requirements must be strictly followed before entry into the system. In addition, the following is recommended:

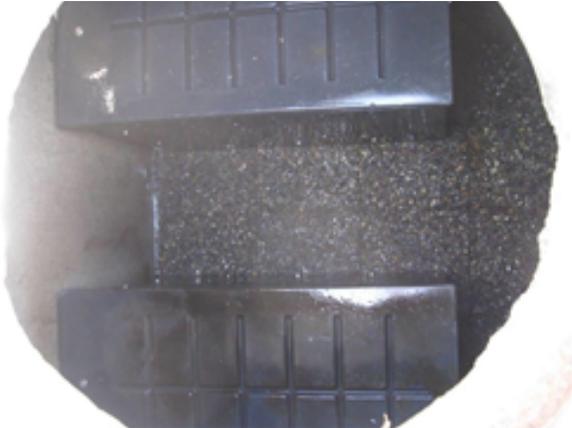
- Prepare the maintenance form by writing in the necessary information including project name, location, date & time, unit number and other info (see maintenance form).
- Set up all appropriate safety and cleaning equipment.
- Ensure traffic control is set up and properly positioned.
- Prepared pre-checks (OSHA, safety, confined space entry) are performed.

The following is a list of equipment to required for maintenance of the Modular Wetlands® Linear:

- Modular Wetlands Linear Maintenance Form
- Manhole hook or appropriate tools to access hatches and covers
- Protective clothing, flashlight, and eye protection
- 7/16" open or closed ended wrench
- Vacuum assisted truck with pressure washer
- Replacement BioMediaGREEN for pre-filter cartridges if required (order from one of Contech's Maintenance Team members at <https://www.conteches.com/maintenance>).

MAINTENANCE | PRETREATMENT CHAMBER

- 1. Remove access cover over pre-treatment chamber and position vacuum truck accordingly.
- 2. With a pressure washer, spray down pollutants accumulated on walls and pre-filter cartridges.
- 3. Vacuum out pre-treatment chamber and remove all accumulated pollutants including trash, debris, and sediments. Be sure to vacuum the floor until the pervious pavers are visible and clean.
- 4. If pre-filter cartridges require media replacement, continue to step 5. If not, replace access cover and move to step 11.



MAINTENANCE | PREFILTER CARTRIDGES

5. After successfully cleaning out the pre-treatment chamber (previous page) enter the pre-treatment chamber.
6. Unscrew the two bolts (circles shown below) holding the lid on each cartridge filter and remove lid.



7. Place the vacuum hose over each individual media filter to suck out filter media.



8. Once filter media has been sucked out, use a pressure washer to spray down the inside of the cartridge and it's media cages. Remove cleaned media cages and place to the side. Once removed, the vacuum hose can be inserted into the cartridge to vacuum out any remaining material near the bottom of the cartridge.
9. Reinstall media cages and fill with new media from the manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase. Utilize the manufacture-provided refilling tray and place on top of the cartridge. Fill the tray with new bulk media and shake down into place. Using your hands, lightly compact the media into each filter cage. Once the cages are full, remove the refilling tray and replace the cartridge top, ensuring bolts are properly tightened.



10. Exit the pre-treatment chamber. Replace access hatch or manhole cover.

MAINTENANCE | BIOFILTRATION CHAMBER

11. In general, the biofiltration chamber is maintenance-free with the exception of maintaining the vegetation. The Modular Wetlands Linear utilizes vegetation similar to surrounding landscape areas, therefore trim vegetation to match surrounding vegetation. If any plants have died, replace them with new ones.



12. Each vertical under drain on the biofiltration chamber has a removable (threaded cap) that can be taken off to check any blockages or root growth. Once removed, a jetting attachment can be used to clean out the under drain and orifice riser.
13. As with all biofilter systems, at some point the biofiltration media (WetlandMedia) will need to be replaced. Either because of physical clogging or sorptive exhaustion of the media ion exchange capacity (to remove dissolved metals and phosphorous). The general life of this media is 10 to 20 years based on site specific conditions and pollutant loading. Utilize the vacuum truck to vacuum out the media by placing the hose into the chamber. Once all the media is removed use the power washer to spray down all the netting on the outer metal cage. Inspect the netting for any damage or holes. If the netting is damaged it can be repaired or replaced with guidance by the manufacturer.
14. Contact one of Contech's Maintenance Team members at <https://www.conteches.com/maintenance> to order new WetlandMedia. The quantity of media needed can be determined by providing the model number and unit depth. Media will be provided in super sacks for easy installation. Each sack will weigh between 1000 and 2000 lbs. A lifting apparatus (backhoe, boom truck, or other) is recommended to position the super sack over the biofiltration chamber. Fill the media cages up to the same level as the old media. Replant with vegetation.



MAINTENANCE | DISCHARGE CHAMBER

15. Remove access hatch or manhole cover over discharge chamber.
16. Enter chamber to gain access to the drain down filter. Unlock the locking mechanism and lift up drain down filter housing to remove used BioMediaGREEN filter block as shown below. *NOTE: Drain down filter is only found on units installed in California prior to 2023. If no drain down filter is present, skip steps 16 and 17.*



17. Insert a new BioMediaGREEN filter block and lock drain down filter housing back in place.
18. Replace access hatch or manhole cover over discharge chamber.



Inspection Report Modular Wetlands Linear

Project Name _____

For Office Use Only
(Reviewed By) _____
(Date) _____ Office personnel to complete section to the left.

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 _____

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: _____



Cleaning and Maintenance Report Modular Wetlands Linear

Project Name _____

For Office Use Only

(Reviewed By) _____

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

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 _____

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:



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SUPPORT

DRAWINGS AND SPECIFICATIONS ARE AVAILABLE AT WWW.CONTECHES.COM

Modular Wetlands Maintenance Guide 1/2023



January 2024

**GENERAL USE LEVEL DESIGNATION FOR BASIC (TSS)
METALS AND PHOSPHORUS TREATMENT**

For

**Contech Engineered Solutions, LLC (Contech) Modular Wetlands
Linear**

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 Modular Wetlands Linear Stormwater Treatment System for Basic, Phosphorus, and Metals treatment
 - Sized at a hydraulic loading rate of:
 - 1 gallon per minute (gpm) per square foot (sq ft) of Wetland Cell Surface Area
 - Prefilter box (approved at either 22 inches or 33 inches tall)
 - 3.0 gpm/sq ft of prefilter box surface area for moderate pollutant loading rates (low to medium density residential basins).
 - 2.1 gpm/sq ft of prefilter box surface area for high pollutant loading rates (commercial and industrial basins).
2. Ecology approves the Modular Wetlands Linear Stormwater Treatment System units for Basic, Phosphorus, and Metals 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 water quality treatment design 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 water quality treatment design flow rate as calculated using one of the three methods described in Chapter 2.7.6 of the Stormwater Management Manual for Eastern Washington (SWMMEW) or local manual.
 - Entire State: For treatment installed downstream of detention, the water quality treatment design flow rate is the full 2-year release rate of the detention facility.
3. These use level designations have no expiration date but may be amended or revoked 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 Modular Wetlands Linear Stormwater Treatment System units, in accordance with Contech's applicable manuals and documents and the Ecology Decision.
- 2) Each site plan must undergo Contech review and approval before site installation. This ensures that site grading and slope are appropriate for use of a Modular Wetlands Linear Stormwater Treatment System unit.
- 3) Modular Wetlands Linear Stormwater Treatment System media shall conform to the specifications submitted to and approved by Ecology.
- 4) The applicant tested the Modular Wetlands Linear 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 Modular Wetlands Linear 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 stormwater treatment technology.
 - Typically, Contech designs 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 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 the 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 Modular Wetlands Linear Stormwater Treatment System units shall not cause or contribute to water quality standards violations in receiving waters.

Applicant: Contech Engineered Solutions, LLC

Applicant's Address: 11815 NE Glenn Widing Dr.
Portland, OR 97220

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

Applicant's Use Level Request:

- General Use Level Designation as a Basic, Metals, 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 Modular Wetlands Linear is capable of removing a minimum of 80-percent of TSS from stormwater with influent concentrations between 100 and 200 mg/L.
- The Modular Wetlands Linear 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 Modular Wetlands Linear is capable of removing a minimum 30-percent of dissolved copper from stormwater with influent concentrations between 0.005 and 0.020 mg/L.
- The Modular Wetlands Linear is capable of removing a minimum 60-percent of dissolved zinc from stormwater with influent concentrations between 0.02 and 0.30 mg/L.

Ecology's Recommendations:

- Contech has shown Ecology, through laboratory and field-testing, that the Modular Wetlands Linear Stormwater Treatment System filter system is capable of attaining Ecology's Basic, Phosphorus, and Metals treatment goals.

Findings of Fact:

Laboratory Testing

The Modular Wetlands Linear Stormwater Treatment System 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. Contech 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. Contech should use these data to establish required maintenance cycles.
2. Contech should collect pre-treatment chamber sediment depth data for the first year of operation for all installations in the Northwest. Contech will use these data to create a correlation between sediment depth and pre-filter clogging.

Technology Description:

Download at <https://www.conteches.com/modular-wetlands>

Contact Information:

Applicant: Jeremiah Lehman
 Contech Engineered Solutions, LLC
 11815 NE Glenn Widing Dr.
 Portland, OR 97220
Jeremiah.Lehman@ContechES.com

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

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

Ecology: Douglas C. Howie, P.E.
 Department of Ecology
 Water Quality Program
 (360) 870-0983
douglas.howie@ecy.wa.gov

Revision History

Date	Revision
June 2011	Original use-level-designation document
September 2012	Revised dates for TER and expiration
January 2013	Modified Design Storm Description, added Revision Table, added maintenance discussion, modified format in accordance with Ecology standard
December 2013	Updated name of Applicant
April 2014	Approved GULD designation for Basic, Phosphorus, and Enhanced treatment
December 2015	Updated GULD to document the acceptance of MWS – Linear Modular Wetland installations with or without the inclusion of plants
July 2017	Revised Manufacturer Contact Information (name, address, and email)
December 2019	Revised Manufacturer Contact Address
July 2021	Added additional prefilter sized at 33 inches
August 2021	Changed “Prefilter” to “Prefilter box”
November 2022	Changed Contacts to Contech ES
January 2024	Revised Dissolved Metals (Enhanced) to Metals

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENT 4

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

This is the cover sheet for Attachment 4.

City of Escondido Storm Water Structural BMP Verification Form Page 1 of 3	
Project Summary Information	
Project Name	King's Barn
Permit Number (e.g., grading/improvement plan number)	PL24-0091
Project Address	137 West Valley Parkway, Escondido CA 92025
Assessor's Parcel Number(s) (APN(s))	229-421-26
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	
Address	
Email Address	
Phone Number	
Engineer of Work	
Engineer's Phone Number	
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	
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.	

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

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

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

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

Please sign your name and seal.

Professional Engineer's Printed Name:

Professional Engineer's Signed Name:

Date: _____

[SEAL]

PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Storm Water BMPs, Source Control, and Site Design BMPs

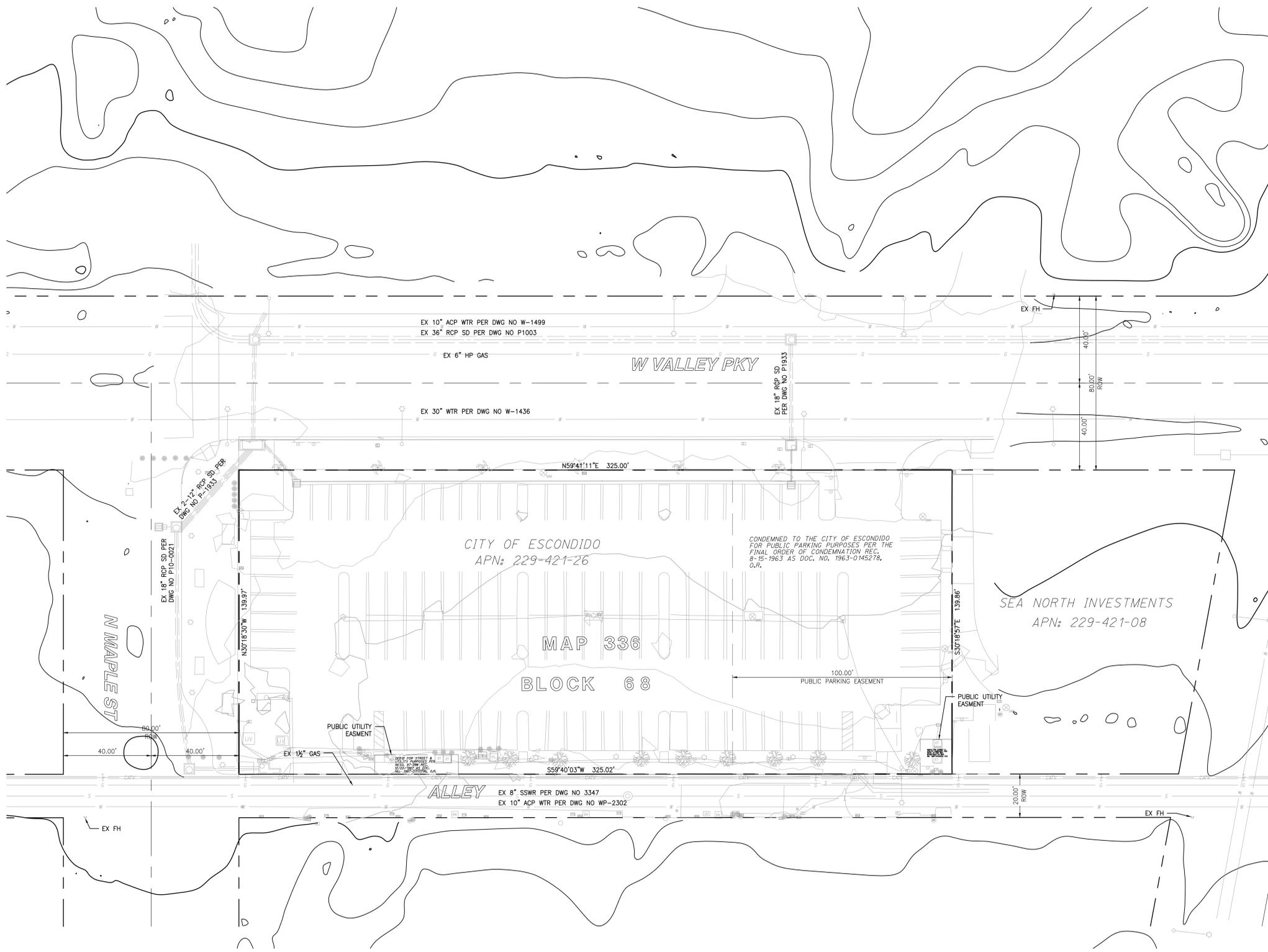
This is the cover sheet for Attachment 5.

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 5 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 3 and 4 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.**



LEGEND

	EXISTING	PROPOSED
TRACT BOUNDARY	---	---
PROPERTY LINE	---	---
RIGHT-OF-WAY	---	---
CENTERLINE	---	---
CURB	---	---
CURB & GUTTER	---	---
FENCE-GENERAL USE	---	---
FENCE-CHAINLINK	---	---
FENCE-MISC	---	---
FENCE-WOOD	---	---
DAYLIGHT LINE	---	---
EASEMENT	---	---
FLOWLINE	---	---
RETAINING WALL	---	---
SLOPE	---	---
CONTOURS	---	---
WATER LINE	W	W
FIRE SERVICE	FS	FS
SANITARY SEWER LINE	S	S
FORCE MAIN	FM	FM
STORM DRAIN LINE	SD	SD
GAS LINE	G	G
ELECTRIC LINE	E	E
OVERHEAD WIRES	OHE	OHE
FIBER OPTICS	FO	FO
TELEPHONE	T	T
TELEPHONE OVERHEAD	OHT	OHT
JOINT TRENCH	JT	JT
TYPICAL LATERALS	---	---
WATER METER	---	---
GAS METER	---	---
ELECTRIC METER	---	---
ELECTRIC BOX	---	---
PULL BOX	---	---
CABLE RISER BOX	---	---
TELEPHONE RISER BOX	---	---
ELECTRIC VAULT	---	---
PAC BELL BOX	---	---
SIGNAL CONTROL BOX	---	---
EXISTING MANHOLE	---	---
STORM DRAIN MANHOLE	---	---
STORM DRAIN INLET	---	---
BLOWOFF VALVE	---	---
FIRE HYDRANT	---	---
WATER VALVE	---	---
AC PAVING	---	---
CONCRETE	---	---

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 1:
LOTS 21 THROUGH 24 INCLUSIVE IN BLOCK 68 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 2:
LOTS 25 AND 26 IN BLOCK 68 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 3:
LOTS 27 AND 28 IN BLOCK 68 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 4:
LOTS 29 THROUGH 33 INCLUSIVE IN BLOCK 68 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.

ASSESSORS PARCEL NUMBER

APN: 229-421-26

SOURCE OF TOPOGRAPHY

EXISTING TOPOGRAPHY CONTOURS GENERATED USING FIELD SURVEY DATA COLLECTED BY RICK ENGINEERING COMPANY SURVEY DEPARTMENT IN MARCH, 2024.

OUTSIDE THE PROJECT AREA FIELD SURVEY DATA IS SUPPLEMENTED WITH PUBLICLY AVAILABLE (SANGIS) 1FT CONTOURS

BASIS OF BEARINGS

THE BASIS OF BEARINGS AND COORDINATES IS THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), ZONE 6 NAD 83, BASED UPON THE GRID BEARING BETWEEN GPS STATIONS 1006 AND 2119, AND IS DETERMINED BY GPS MEASUREMENTS TAKEN ON 3/14/2024 PER RECORD OF SURVEY 14236.

I.E. GPS STATION 1006 TO 2119: S59°34'28"W

BENCHMARK

THE BENCHMARK IS THE SQUARE CHISEL MARK ON TOP OF CURB INLET, ON THE SOUTHEAST CORNER OF GRAND AVENUE AND BROADWAY STREET, PER CITY OF ESCONDIDO BM #485A.

ELEVATION: 653.87 MSL NGVD29 DATUM

SITE AREA

GROSS LAND AREA = 1.044± ACRES, MORE OR LESS

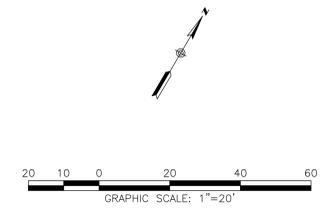
FLOOD ZONE

OTHER AREAS ZONE "X" PER FLOOD INSURANCE RATE MAP PANEL NO. 1077 OF 2375 AS SHOWN ON SAN DIEGO COUNTY, CALIFORNIA INDEX SHEET 06073010775 DATED MAY 16, 2012 (AREAS DETERMINED TO BE OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN).

EXISTING UTILITY NOTE

EXISTING UNDERGROUND UTILITIES SHOWN ON THIS SHEET ARE DETERMINED BY OBSERVED SURFACE UTILITY EVIDENCE AND UTILITY MARKINGS.

THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREIN ARE APPROXIMATE. LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED



KINGSBARN REALTY CAPITAL

CLIENT: KINGSBARN REALTY CAPITAL

RICK ENGINEERING COMPANY

5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707

San Diego • Riverside • Santa Clarita
Orange • San Luis Obispo • Sacramento
Tucson • Phoenix • Denver • Las Vegas
rickengineering.com

NOT FOR CONSTRUCTION

KINGSBARN ESCONDIDO
137 WEST VALLEY PARKWAY
ESCONDIDO, CA 92025

REV	DATE	ISSUE
1	04/01/24	Entitlement Set

EXISTING CONDITIONS AND MAPPING CONSTRAINTS

PROJECT #: J-20040
DATE: 8/13/2024

ENTITLEMENT SET

C1.0

NOT FOR
CONSTRUCTION

KINGSBARN
ESCONDIDO
137 WEST VALLEY PARKWAY
ESCONDIDO, CA 92025

DEMOLITION LEGEND

EXISTING IMPROVEMENTS

EX WATER	— W —
EX SEWER	— S —
EX GAS	— G —
EX ELECTRIC	— E —
EX OVERHEAD ELECTRIC	— OH —
EX CONTOUR	340 X (344.7±)
EX BUILDING	[Hatched Box]
EX SPOT ELEVATION	347
PROPERTY/RIGHT-OF-WAY LINE	— — — — —
EX WALL	— — — — —

ITEM	SYMBOL
DEMO EX AC STRUCTURE (BLDG)	[Hatched Box]
DEMO EX AC PAVING	[Horizontal Lines]
DEMO EX CONCRETE PAVING	[Stippled Box]
DEMO EX PAVERS	[Diagonal Lines]
SAWCUT LINE	— — — — —
EXISTING CONTOUR	347
PROPERTY/ROW LINE	— — — — —
DEMO CURB/GUTTER	[Dashed Line]

PROTECTION NOTES

- ① PROTECT EX STORM DRAIN STRUCTURE
- ② PROTECT EX STORM DRAIN
- ③ PROTECT EX DRY UTILITY

DEMOLITION NOTES

- ① REMOVE STREET LIGHT AND SALVAGE TO THE CITY OF ESCONDIDO PUBLIC WORKS YARD
- ② REMOVE BIKE RACK
- ③ REMOVE EX TREE
- ④ REMOVE & REPLACE EX TREE PER PROPOSED LANDSCAPE PLAN
- ⑤ REMOVE EX IRRIGATION
- ⑥ REMOVE EX BOLLARD
- ⑦ REMOVE EX SIGN
- ⑧ REMOVE EX WATER METER
- ⑨ DEMO EX CURB
- ⑩ DEMO EX CURB & GUTTER
- ⑪ DEMO EX CATCH BASIN
- ⑫ DEMO STORM DRAIN
- ⑬ CUT AND CAP EX STORM DRAIN LINE

EXISTING UTILITY NOTE/DISCLAIMER

PRIVATE ENGINEER'S NOTE TO CONTRACTOR

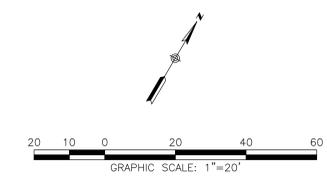
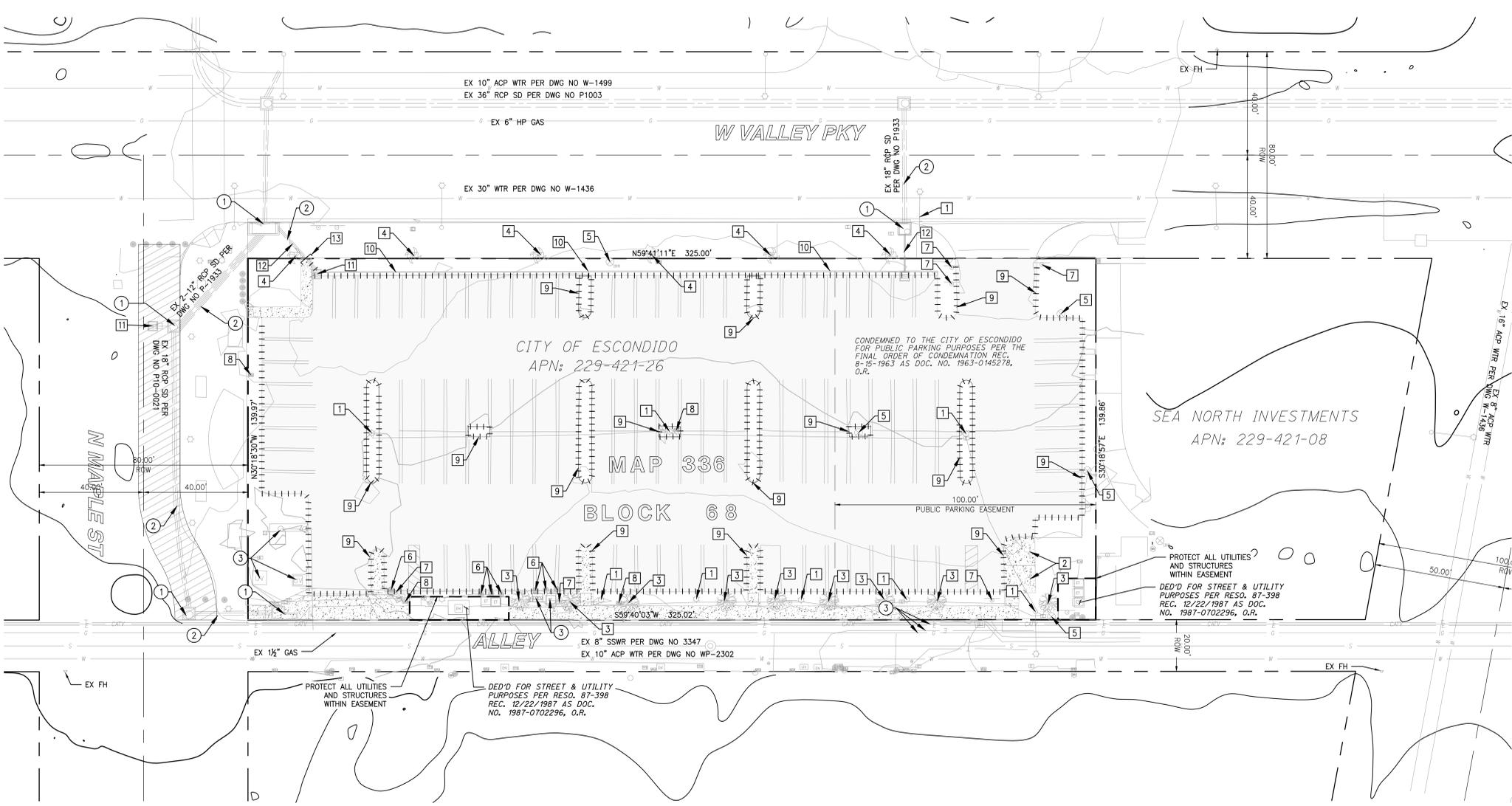
THE EXISTENCE AND LOCATIONS OF UTILITY PIPES, CONDUITS, STRUCTURES, POLES, WIRES, OR ANY OTHER FACILITIES SHOWN ON THESE DRAWINGS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS AND ARE INDICATED HEREON WITH THEIR APPROXIMATE LOCATION(S). THE ENGINEER OF WORK MAKES NO GUARANTEES OR WARRANTIES THAT THE UTILITIES SHOWN COMPRISE ALL UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE LOCATION OF ALL UTILITIES, WHETHER SHOWN ON THESE PLANS OR NOT, PRIOR TO START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF WORK OF ANY DISCREPANCIES. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE SITE AND BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES AND/OR ANY ASSOCIATED APPURTENANCES RESULTING DIRECTLY OR INDIRECTLY FROM THEIR OPERATIONS, WHETHER OR NOT SUCH FACILITIES ARE SHOWN ON THESE PLANS.

THE CONTRACTOR, BY ACCEPTING THESE PLANS AND/OR PROCEEDING WITH THE IMPROVEMENTS HEREON, AGREES TO ASSUME SOLE LIABILITY AND HOLD THE ENGINEER OF WORK HARMLESS FOR ANY DAMAGES RESULTING FROM OR TO THE EXISTING UTILITIES.

"DIG ALERT NOTICE"
SECTION 4216 OF THE CALIFORNIA GOVERNMENT CODE REQUIRES THAT A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIG ALERT I.D. NUMBER, CALL UNDERGROUND SERVICE ALERT AT 8-1-1 AT LEAST TWO WORKING DAYS BEFORE YOU DIG.

NOTES

- 1. ALL TREES WITHIN PRIVATE PARCEL ARE TO BE REMOVED. EXISTING STREET TREES IN THE RIGHT-OF-WAY ARE TO BE REMOVED AND REPLACED PER THE LANDSCAPE PLANS. ALL SITE FEATURES IN RIGHT-OF-WAY TO BE PROTECTED DURING CONSTRUCTION.
- 2. ALL STRUCTURES AND HARDSCAPE WITHIN THE PRIVATE PARCEL ARE TO BE DEMOLISHED. PRIVATE PARCEL IS TO BE CLEARED TO FACILITATE CONSTRUCTION ACTIVITIES AS DICTATED ON THE FORTHCOMING PROJECT CITY OF ESCONDIDO MINISTERIAL PERMITS.
- 3. ALL ELECTRIC LINES TO BE REMOVED IN ACCORDANCE WITH APPROVED SDG&E DEVELOPMENT GUIDELINES/PLANS.



DIGALERT



CALL BEFORE YOU DIG
1-800-227-2600
2 WORKING DAY
NOTICE REQUIRED

1	04/01/24	Entitlement Set
REV	DATE	ISSUE

DEMOLITION PLAN

PROJECT #: J-20040
DATE:
8/13/2024

ENTITLEMENT SET

LEGEND	
EXISTING	PROPOSED
TRACT BOUNDARY	---
PROPERTY LINE	---
RIGHT-OF-WAY	---
CENTERLINE	---
CURB	---
CURB & GUTTER	---
FENCE-GENERAL USE	---
FENCE-CHAINLINK	---
FENCE-MISC	---
FENCE-WOOD	---
DAYLIGHT LINE	---
EASEMENT	---
FLOWLINE	---
RETAINING WALL	---
SLOPE	---
CONTOURS	---
WATER LINE	W
FIRE SERVICE	FS
SANITARY SEWER LINE	S
FORCE MAIN	FM
STORM DRAIN LINE	SD
GAS LINE	G
ELECTRIC LINE	E
OVERHEAD WIRES	OHE
FIBER OPTICS	FO
TELEPHONE	T
TELEPHONE OVERHEAD	OHT
JOINT TRENCH	JT
TYPICAL LATERALS	XX
WATER METER	WM
GAS METER	GM
ELECTRIC METER	EM
ELECTRIC BOX	EB
PULL BOX	PB
CABLE RISER BOX	CR
TELEPHONE RISER BOX	TR
ELECTRIC VAULT	EV
PAC BELL BOX	PBB
SIGNAL CONTROL BOX	SCB
EXISTING MANHOLE	EMH
STORM DRAIN MANHOLE	SDMH
STORM DRAIN INLET	SDI
BLOWOFF VALVE	BOV
FIRE HYDRANT	FH
WATER VALVE	WV
AC PAVING	AC
CONCRETE	CON

IMPROVEMENT NOTES

- CONSTRUCT 6" CURB AND GUTTER
- CONSTRUCT 6" CURB ONLY
- CONSTRUCT CROSS GUTTER
- A/C PAVING
- CONCRETE PAVING
- DECORATIVE CONCRETE SIDEWALK PER LANDSCAPE PLAN
- INSTALL CATCH BASIN
- INSTALL STORM DRAIN PIPE
- INSTALL CONTECH-MODULAR WETLAND UNIT
- CONNECT TO EX STORM DRAIN MANHOLE
- INSTALL STORM DRAIN MANHOLE
- PROTECT EX CURB AND GUTTER
- PARKING LOT STRIPING
- ADA PARKING STRIPING
- TRAFFIC RATED SURFACING PER LANDSCAPE PLANS
- TRENCH REPAIR & STREET OVERLAY
- STEM WALL PER STRUCTURAL PLANS

GENERAL NOTES

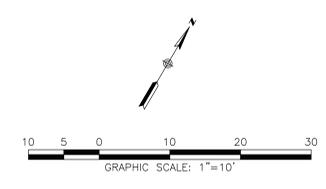
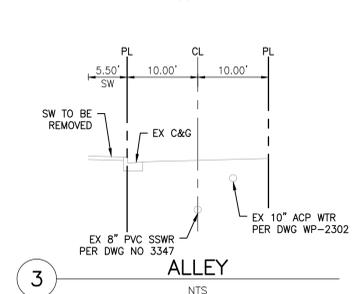
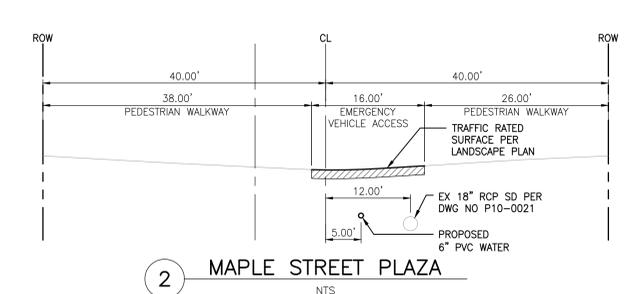
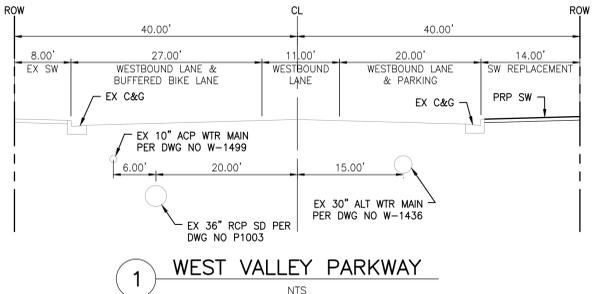
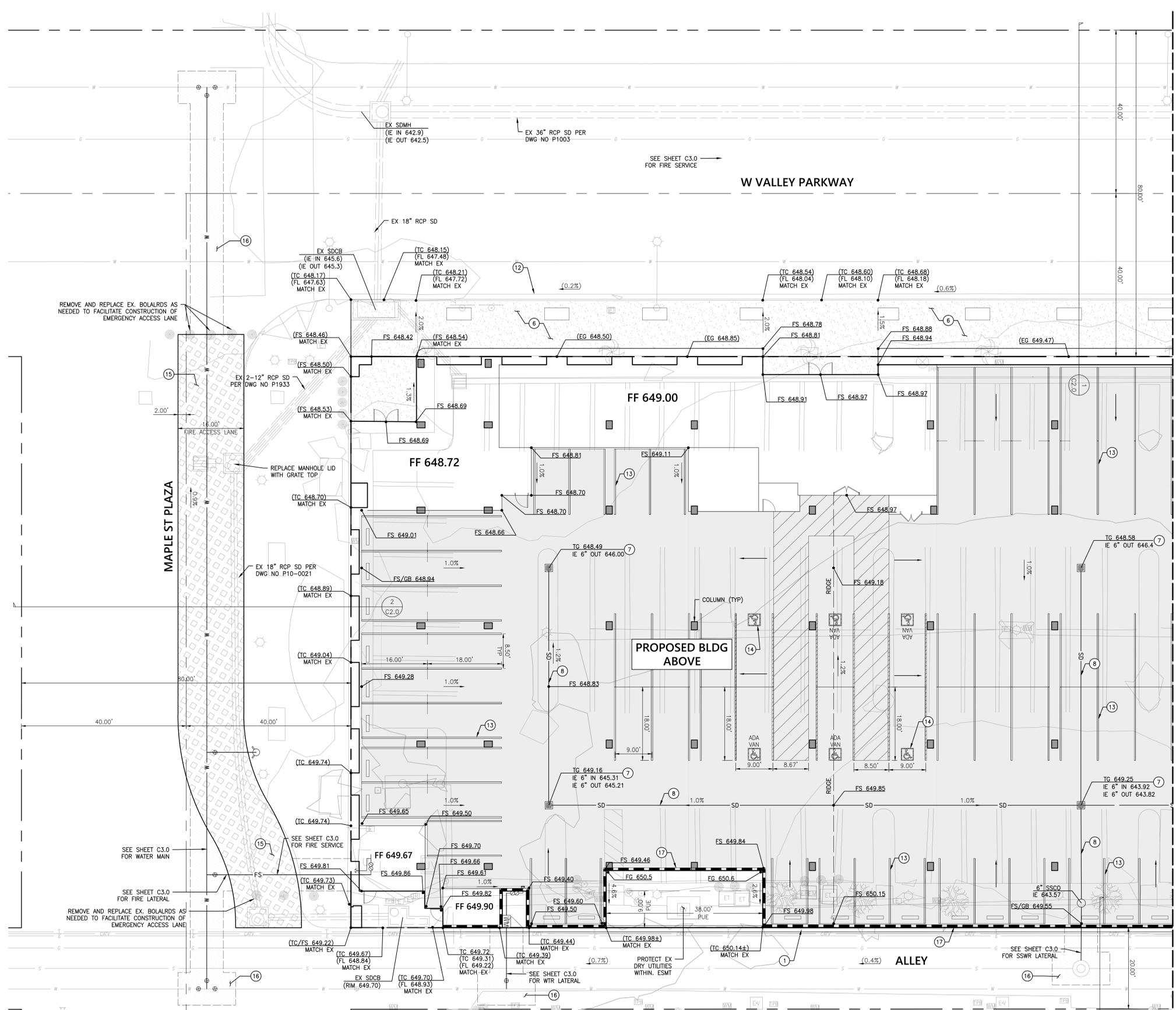
- RIGHT OF WAY IMPROVEMENTS SHOWN ON THIS SHEET PER FUTURE PUBLIC IMPROVEMENT PLAN
- ONSITE IMPROVEMENTS SHOWN ON THIS SHEET PER FUTURE BUILDING PERMIT
- SIZING OF THE BMP AND STORM DRAIN SYSTEM IS PRELIMINARY. FINAL SIZE TO BE DETERMINED BY THE DRAINAGE REPORT AND PDPSPWMP.
- ALL CONSTRUCTION DETAILS SHOWN ON THIS SHEET ARE PRELIMINARY.
- PROPOSED ONSITE STORM DRAIN SHALL BE PRIVATE.
- SOILS REPORT TITLED "REPORT OF PRELIMINARY GEOTECHNICAL INVESTIGATION PROPOSED MIXED USE DEVELOPMENT 137 WEST VALLEY PARKWAY ESCONDIDO, CA" PREPARED BY CHRISTIAN WHEELER ENGINEERING.
- PLEASE REFER TO THE ARCHITECTURAL PLANS FOR DRAINAGE DESIGN WITHIN THE BUILDING ENVELOPE.
- STREET PAVERS IN THE MAPLE STREET PLAZA SHALL BE REPLACED AND REINSTALLED IN ALL AREAS DISTURBED AND THEIR INSTALLATION SHALL EXTEND INTO AREAS WHERE STREET FURNITURE AND ARCHITECTURAL FEATURES HAVE BEEN REMOVED OR RELOCATED. PAVERS IN AREAS DESIGNATED AS FIRE ACCESS SHALL BE INSTALLED TO MEET FIRE DEPARTMENT VEHICLE LOADING REQUIREMENTS TO THE SATISFACTION OF THE FIRE MARSHALL AND CITY ENGINEER.

EARTHWORK SUMMARY

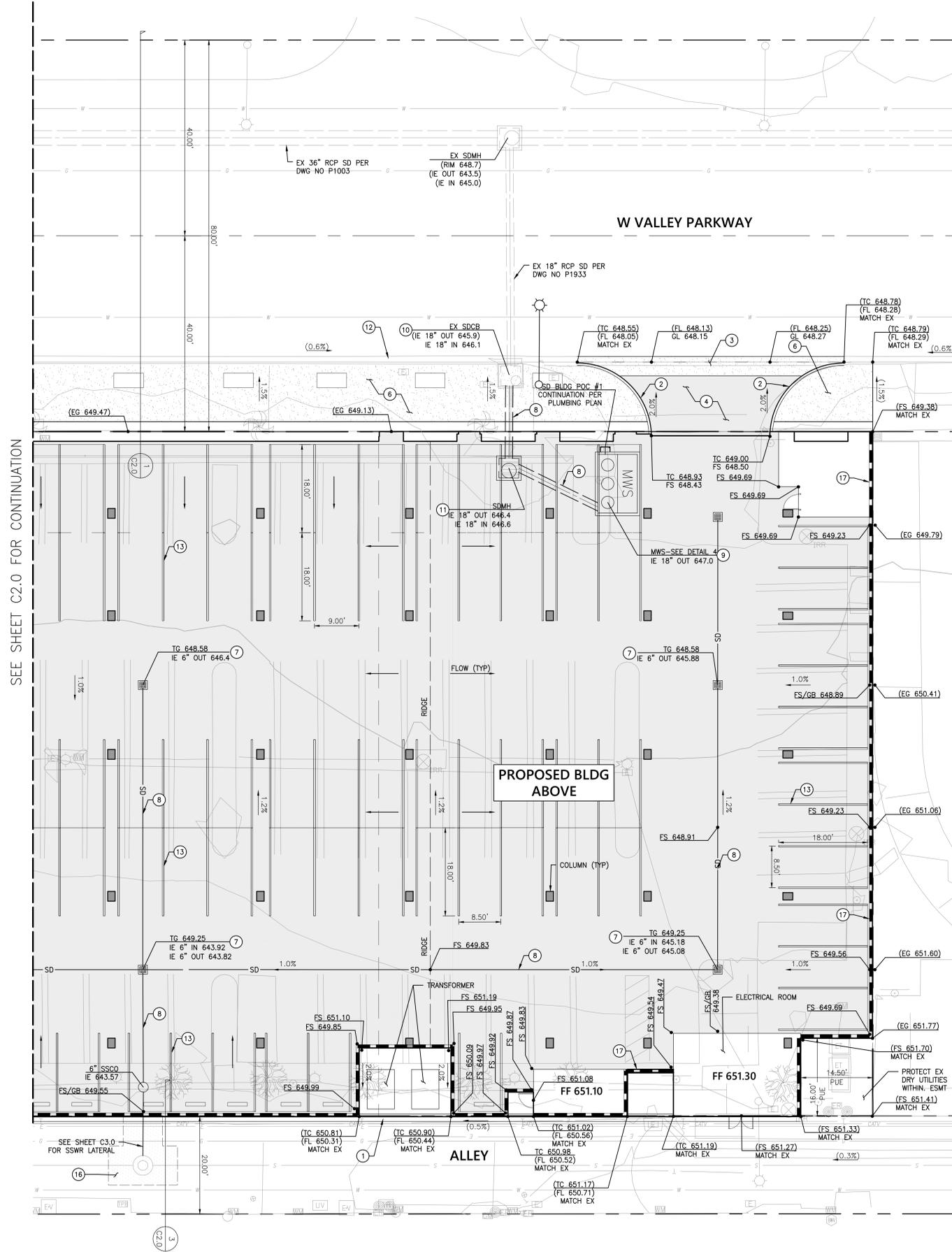
CUT	1,400 CY
FILL	0 CY
NET	(1,400 CY)
DISTURBANCE AREA: 1.04 AC	

- EARTHWORK VOLUMES REFLECT TOPOGRAPHIC CONDITIONS DESCRIBED IN THE TOPOGRAPHIC SOURCE NOTES ON SHEET C1.0

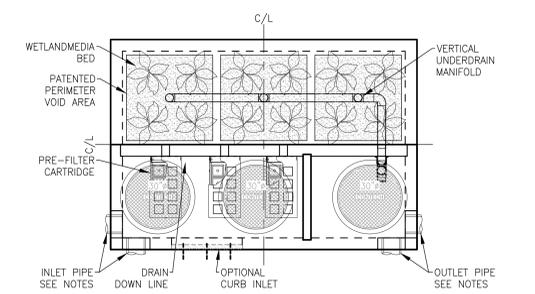
SEE SHEET C2.1 FOR CONTINUATION



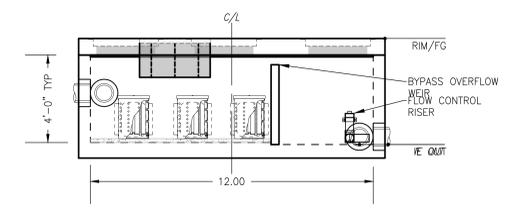
DIGALERT
CALL BEFORE YOU DIG
1-800-227-2600
2 WORKING DAY NOTICE REQUIRED



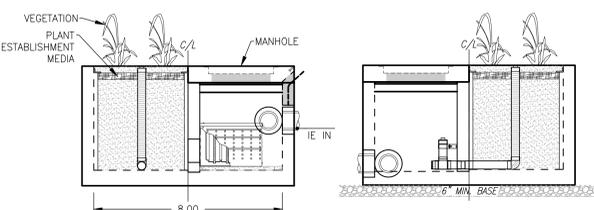
SEE SHEET C2.0 FOR CONTINUATION



PLAN VIEW



FRONT VIEW



LEFT VIEW

RIGHT VIEW

BMP 1
MODULAR WETLANDS 8-12

	EXISTING	PROPOSED
TRACT BOUNDARY	---	---
PROPERTY LINE	---	---
RIGHT-OF-WAY	---	---
CENTERLINE	---	---
CURB	---	---
CURB & GUTTER	---	---
FENCE-GENERAL USE	---	---
FENCE-CHAINLINK	---	---
FENCE-MISC	---	---
FENCE-WOOD	---	---
DAYLIGHT LINE	---	---
EASEMENT	---	---
FLOWLINE	---	---
RETAINING WALL	---	---
SLOPE	---	---
CONTOURS	---	---
WATER LINE	W	W
FIRE SERVICE	FS	FS
SANITARY SEWER LINE	S	S
FORCE MAIN	FM	FM
STORM DRAIN LINE	SD	SD
GAS LINE	G	G
ELECTRIC LINE	E	E
OVERHEAD WIRES	OHE	OHE
FIBER OPTICS	FO	FO
TELEPHONE	T	T
TELEPHONE OVERHEAD	OHT	OHT
JOINT TRENCH	JT	JT
TYPICAL LATERALS	---	---
WATER METER	WM	WM
GAS METER	GM	GM
ELECTRIC METER	EM	EM
ELECTRIC BOX	EB	EB
PULL BOX	PB	PB
CABLE RISER BOX	CR	CR
TELEPHONE RISER BOX	TR	TR
ELECTRIC VAULT	EV	EV
PAC BELL BOX	PBB	PBB
SIGNAL CONTROL BOX	SCB	SCB
EXISTING MANHOLE	EMH	EMH
STORM DRAIN MANHOLE	SDMH	SDMH
STORM DRAIN INLET	SDI	SDI
BLOWOFF VALVE	BOV	BOV
FIRE HYDRANT	FH	FH
WATER VALVE	WV	WV
AC PAVING	AC	AC
CONCRETE	C	C

IMPROVEMENT NOTES

- CONSTRUCT 6" CURB AND GUTTER
- CONSTRUCT 6" CURB ONLY
- CONSTRUCT CROSS GUTTER
- A/C PAVING
- CONCRETE PAVING
- DECORATIVE CONCRETE SIDEWALK PER LANDSCAPE PLAN
- INSTALL CATCH BASIN
- INSTALL STORM DRAIN PIPE
- INSTALL CONTECH-MODULAR WETLAND UNIT
- CONNECT TO EX STORM DRAIN MANHOLE
- INSTALL STORM DRAIN MANHOLE
- PROTECT EX CURB AND GUTTER
- PARKING LOT STRIPING
- ADA PARKING STRIPING
- TRAFFIC RATED SURFACING PER LANDSCAPE PLANS
- TRENCH REPAIR & STREET OVERLAY
- STEM WALL PER STRUCTURAL PLANS

GENERAL NOTES

- RIGHT OF WAY IMPROVEMENTS SHOWN ON THIS SHEET PER FUTURE PUBLIC IMPROVEMENT PLAN
- ONSITE IMPROVEMENTS SHOWN ON THIS SHEET PER FUTURE BUILDING PERMIT
- SIZING OF THE BMP AND STORM DRAIN SYSTEM IS PRELIMINARY. FINAL SIZE TO BE DETERMINED BY THE DRAINAGE REPORT AND PDP/SWMP.
- ALL CONSTRUCTION DETAILS SHOWN ON THIS SHEET ARE PRELIMINARY.
- PROPOSED ONSITE STORM DRAIN SHALL BE PRIVATE.
- SOILS REPORT TITLED "REPORT OF PRELIMINARY GEOTECHNICAL INVESTIGATION PROPOSED MIXED USE DEVELOPMENT 137 WEST VALLEY PARKWAY ESCONDIDO, CA" PREPARED BY CHRISTIAN WHEELER ENGINEERING.
- PLEASE REFER TO THE ARCHITECTURAL PLANS FOR DRAINAGE DESIGN WITHIN THE BUILDING ENVELOPE
- STREET PAVERS IN THE MAPLE STREET PLAZA SHALL BE REPLACED AND REINSTALLED IN ALL AREAS DISTURBED AND THEIR INSTALLATION SHALL EXTEND INTO AREAS WHERE STREET FURNITURE AND ARCHITECTURAL FEATURES HAVE BEEN REMOVED OR RELOCATED. PAVERS IN AREAS DESIGNATED AS FIRE ACCESS SHALL BE INSTALLED TO MEET FIRE DEPARTMENT VEHICLE LOADING REQUIREMENTS TO THE SATISFACTION OF THE FIRE MARSHALL AND CITY ENGINEER.

EARTHWORK SUMMARY

CUT	1,400 CY
FILL	0 CY
NET	(1,400 CY)

DISTURBANCE AREA: 1.04 AC

- EARTHWORK VOLUMES REFLECT TOPOGRAPHIC CONDITIONS DESCRIBED IN THE TOPOGRAPHIC SOURCE NOTES ON SHEET C1.0

KINGSBARN REALTY CAPITAL

CLIENT: KINGSBARN REALTY CAPITAL

RICK ENGINEERING COMPANY

5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707

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NOT FOR CONSTRUCTION

KINGSBARN ESCONDIDO
137 WEST VALLEY PARKWAY
ESCONDIDO, CA 92025

1	04/01/24	Entitlement Set
REV	DATE	ISSUE

PRELIMINARY GRADING AND DRAINAGE PLAN

PROJECT #: J-20040
DATE: 8/13/2024

ENTITLEMENT SET

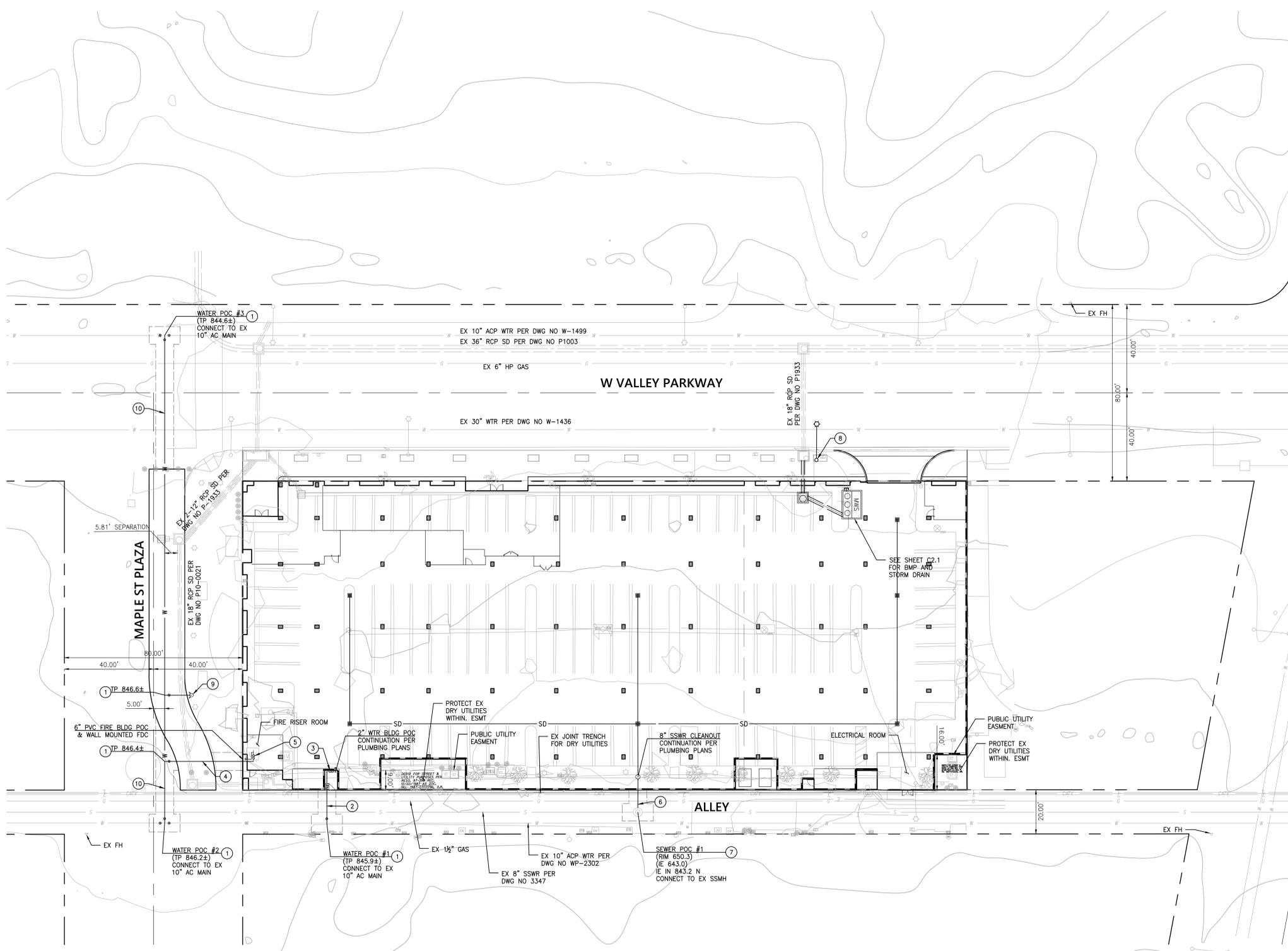
DIGALERT

CALL BEFORE YOU DIG

1-800-227-2600

2 WORKING DAY NOTICE REQUIRED

GRAPHIC SCALE: 1"=10'



LEGEND

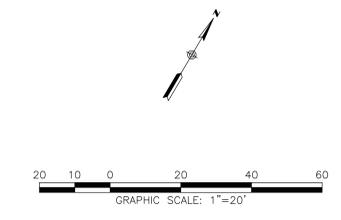
	EXISTING	PROPOSED
TRACT BOUNDARY	---	---
PROPERTY LINE	---	---
RIGHT-OF-WAY	---	---
CENTERLINE	---	---
CURB	---	---
CURB & GUTTER	---	---
FENCE-GENERAL USE	---	---
FENCE-CHAINLINK	---	---
FENCE-MISC	---	---
FENCE-WOOD	---	---
DAYLIGHT LINE	---	---
EASEMENT	---	---
FLOWLINE	---	---
RETAINING WALL	---	---
SLOPE	---	---
CONTOURS	---	---
WATER LINE	W	W
FIRE SERVICE	FS	FS
SANITARY SEWER LINE	S	S
FORCE MAIN	FM	FM
STORM DRAIN LINE	SD	SD
GAS LINE	G	G
ELECTRIC LINE	E	E
OVERHEAD WIRES	OHE	OHE
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FIRE HYDRANT	FH	FH
WATER VALVE	WV	WV
AC PAVING	AP	AP
CONCRETE	C	C

UTILITY NOTES

1. INSERT TEE INTO EXISTING WATER MAIN
2. INSTALL 2" WATER SERVICE AND METER PER COE STD DWG NO W-2-E
3. INSTALL 2" WATER BACKFLOW PREVENTER PER COE STD DWG NO W-10-E
4. INSTALL 6" FIRE SERVICE
5. INSTALL 6" DCDA PER COE STD DWG NO W-7-E
6. INSTALL 8" SEWER LATERAL AND CLEANOUT
7. CONNECT INTO EX SEWER MANHOLE
8. INSTALL LED STREET LIGHT PER COE STD DWG NO E-1-E
9. INSTALL 6" FIRE HYDRANT ASSEMBLY PER COE STD DWG NO W-3-E
10. INSTALL 6" PVC C900 WATER MAIN

GENERAL NOTES

1. THE SIZE OF WATER, FIRE, AND SEWER LATERALS SHOWN ON THIS SHEET ARE PRELIMINARY AND WILL BE CONFIRMED UPON COMPLETION OF THE PROJECT TECHNICAL STUDIES.
2. RIGHT OF WAY IMPROVEMENTS SHOWN ON THIS SHEET PER FUTURE MINISTERIAL PUBLIC IMPROVEMENT PLAN.
3. ONSITE IMPROVEMENTS SHOWN ON THIS SHEET PER FUTURE MINISTERIAL BUILDING PERMIT.



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