CITY OF SANTEE

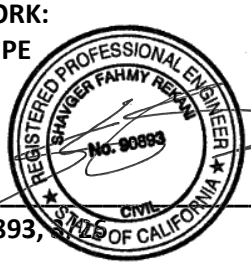
PRIORITY DEVELOPMENT PROJECT (PDP)

STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)

FOR
SUMMIT AVENUE
TM-2023-0003
10939 Summit Avenue
Santee, CA 92071

ASSESSOR'S PARCEL NUMBER(S):
378-190-01

ENGINEER OF WORK:
Shavger Rekani PE



Shavger Rekani PE 90893,

PREPARED FOR:

Warmington Residential
3090 Pullman Street
Costa Mesa, California 92626

PDP SWQMP PREPARED BY:

RICK
5620 Friars Rd, San Diego, CA 92110
(619) 291-0707

PLANS PREPARED BY:

RICK Engineering Company
5620 Friars Rd, San Diego, CA 92110
(619) 291-0707

DATE OF SWQMP:
October 27, 2023
January 29, 2024
April 15, 2024
October 15, 2024
December 19, 2024
Revised March 17, 2025

PDP SWQMP Template Date: February 2016
PDP SWQMP Preparation Date: [3-17-2025]

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TABLE OF CONTENTS

ACRONYMS

APN	Assessor's Parcel Number
BMP	Best Management Practice
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
NRCS	Natural Resources Conservation Service
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
SWQMP	Storm Water Quality Management Plan

SWQMP PREPARER'S
CERTIFICATION PAGE

Project Name: Summit Avenue
Permit Application Number: TM-2023-0003

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 Santee BMP Design Manual, which is a design manual for compliance with local City of Santee and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

I have read and understand that the [City Engineer] has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by the [City Engineer] 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 Rekani, PE# 90893, Exp. 3/26

_____
Print Name

RICK
Company

3/14/2025
Date

Engineer's Seal:

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SWQMP PROJECT OWNER'S
CERTIFICATION PAGE

Project Name: Summit Avenue
Permit Application Number: TM-2023-0003

PROJECT OWNER'S CERTIFICATION

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

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

_____
Project Owner's Signature

Matthew Esquivel
_____
Print Name

Warmington Residential CA, INC.

_____
Company

3/14/2025

_____
Date

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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.

Submittal Number	Date	Project Status	Summary of Changes
1	10/27/2023	☒ Preliminary Design / Planning/ CEQA ☐ Final Design	Initial Submittal
2	1/29/2024	☒ Preliminary Design / Planning/ CEQA ☐ Final Design	Second Submittal – Address minor report comments and clarification on non-vegetated channel northwest of project not included in project.
3	4/15/2024	☒ Preliminary Design / Planning/ CEQA ☐ Final Design	Third Submittal – Address 2nd Submittal Comments from City of Santee.
4	10/15/2024	☒ Preliminary Design / Planning/ CEQA ☐ Final Design	Fourth Submittal – Minor changes to site plan.
5	12/19/2024	☒ Preliminary Design / Planning/ CEQA ☐ Final Design	Fifth Submittal – Address submittal comments received. Addition of biofiltration basin.
6	3/17/2025	☒ Preliminary Design / Planning/ CEQA ☐ Final Design	Sixth Submittal – Address submittal comments received. Addition of proposed culvert.

PRIORITY DEVELOPMENT PROJECT STORM WATER QUALITY MANAGEMENT PLAN FOR SUMMIT AVENUE

Revision Page

March 17, 2025

This PDPSWQMP presents a revision to the December 19, 2024 report pursuant to the City of Santee plan check comments received January 20, 2025. The following text identifies the plan check comments along with the responses in bold.

City of Santee Engineering Comments (John Keane & Claire Singh)

8. In the Storm Water Quality Management Plan (SWQMP), page 59, please remove from the exhibit "not part of project improvements". It is anticipated that the public improvements will be made in this area and that the existing CMP will be removed and replaced within the area that is identified as not being disturbed. Please revise the exhibit to show the replacement of the CMP and installation of public improvements to the northern property line. Approval of the proposed design will occur after final engineering has been submitted for review.

   Noted; "not part of project improvements" has been removed. Replacement of CMP pipe and proposed culvert shown on exhibit.

9. SWQMP Page 61 appears to have the wrong project area and shows two parcels as part of the project scope.

   Project area boundary has been moved accordingly to the appropriate location to show only the project's parcel in the project area.

10. SWQMP Page 99, please show the existing 36" CMP and headwall.

    Noted; Pre-project Hydromodification Management Exhibit has been updated to show the existing 36" CMP and headwall.

11. SWQMP Page 100, the exhibit does not show full frontage improvements to the northern property line. Revise the exhibit to show this correctly.

    Noted; Post-project Hydromodification Management Exhibit has been updated to show full frontage improvements.

12. SWQMP Page 101, same comment as page 61.

    Project area boundary has been moved accordingly to the appropriate location to show only the project's parcel in the project area.

PRIORITY DEVELOPMENT PROJECT STORM WATER QUALITY MANAGEMENT PLAN FOR SUMMIT AVENUE

Revision Page

December 19, 2024

This PDPSWQMP presents a revision to the October 15, 2024 report pursuant to the City of Santee plan check comments received November 25, 2024. The following text identifies the plan check comments along with the responses in bold.

City of Santee Engineering Storm Water Comments (Emily Stein & John Keane)

1a. Page 1: APN Number not apart of project.

APN Number has been removed.

1b. Project proposes the use of a proprietary BMP (modular wetlands system). Please provide detailed justification of the selection of a proprietary BMP and how the project is planning to comply with retention requirements in accordance to the City of Santee's BMP Design Manual. It is unclear how the project will meet retention requirements.

An additional biofiltration basin has been added to the project to comply with requirements in accordance with the City of Santee BMP Design Manual. The City of Santee does not have a retention worksheet as part of its BMP Design Manual, so worksheet B-5.2 and B-5.6 from the City of San Diego have been included. In addition to the retention provided by the proposed biofiltration basin, the DMA exhibit has identified areas that will be reserved for impervious area dispersion.

2. Storm Water Quality Management Plan:

a. Page 54 of 134 (DMA Exhibit):

i. Pervious versus impervious areas are not clear. Exhibit indicates that only the street/road is impervious, however, the buildings and driveways should also be indicated as impervious. Suggest color Coordinating pervious/impervious areas.

Impervious areas have been revised to be inclusive of the building and driveways.

ii. All inlets to be equipped with Full Trash Capture (FTC) devices. Please call out all inlets as containing FTC devices.

After review of the memorandum titled, "Full Capture Device Installation Planning for Compliance with the Statewide Trash Control Policy" dated January 17, 2019 and prepared by DMax, it appears that the public inlets downstream of our project site has not been identified as needed a FTC device. Additionally, it states for years 7 through 10 that the City of Santee would pass an ordinance requiring private properties to install BMPs on their property to address private PLUs. If this ordinance has been passed, please provide a copy for reference. The memorandum includes exhibits that define a strategy for full compliance and this site has not been identified for the placement of a full trash capture device within the private property. For the maintenance of the vault, a connector pipe screen has been proposed at the most downstream inlet tributary to the underground vault to prevent debris build up.

iii. Identify/call out location(s) of access manholes and/or inspection port(s) associated with the vault.

Access manholes and inspection ports will be provided during final engineering when project specific details are provided by the underground vault vendor.

iv. Add details/cutsheets of all makes/models of FTC devices to the exhibit. Can include as a second page if they cant fit into

Standard details for the proposed connector pipe screen have been included on the 2nd sheet of the DMA Exhibit.

b. Attachment 1d: Include results of second exploratory excavation and testing in the SWQMP.

Updated Geotechnical Form I-8 has been included in the SWQMP.

c. Attachment 3a: Include depth of sediment/debris accumulation for which would trigger maintenance action for the vault, MWS, and FTC devices.

Maintenance of the vault, MWS, and FTC device is based on a monthly frequency and storm event size, not based on sediment or debris accumulation. For details regarding maintenance, reference the Operations and Maintenance Procedures Table provided in Attachment 3A of the PDP SWQMP.

d. Attachment 4a: Plans sheets are missing from the SWQMP. Please include.

Latest plan sheets have been included in Attachment 4 of SWQMP.

3. Plan Sheets:

a. Call out/identify locations(s) of full trash capture devices and indicate make/model.

Proposed ADS Flexstorm Connector Pipe Screen (CPS) has been called out on plans.

b. Include BMP details/cutsheets for stormwater pollution prevention signage, vault, MWS, tree well, brow ditches, and FTC devices.

Noted; details of proposed stormwater devices and elements have been included on plan sheets.

PRIORITY DEVELOPMENT PROJECT STORM WATER QUALITY MANAGEMENT PLAN FOR SUMMIT AVENUE

Revision Page

April 15, 2024

This PDPSWQMP presents a revision to the January 29, 2024 report pursuant to the City of Santee plan check comments received March 15, 2024. The following text identifies the plan check comments along with the responses in bold.

City of Santee Engineering Storm Water Comments (Emily Stein & John Keane)

1a. Storm Water Intake Form: Resubmit form with the following edits: Check "no" for Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface that support the use of automotive repair shops and retail gasoline.

Storm Water Intake Form updated.

2a. Storm Water Quality Management Plan: Page 22: Check box "No" for Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface that support the use of automotive repair shops and retail gasoline outlets.

Priority Determination Forn updated.

2b. Storm Water Quality Management Plan: Page 23: Update parcel area to 4.65 acres.

Parcel Area Updated.

2c. Storm Water Quality Management Plan: Page 25: Add discussion of non-vegetated channel. Suggest inserting map showing location of non-vegetated channel (suggest sheet 6 of the grading plans).

Non-vegetated channel discussion added under "additional information" on page 25. Reference to sheet 6 made in explanation.

2d. Storm Water Quality Management Plan: Page 28: Update pre-project drainage area from 10 acres to 4.65 in two locations on page 28.

The correct pre-project drainage area is 10 acres, therefore no change. 10 Acres is inclusive of both on-site and off-site pre-project drainage flows, tributary to POC-1. 4.65 Acres is only the parcel area and does not include off site drainage to POC-1.

2e. Storm Water Quality Management Plan: Page 38, SD-1: Per the regional MS4 permit, the City of Santee is required to oversee that new development projects preserve natural drainage corridors. Suggest updating to Yes because natural drainage along the northern perimeter of the site is to be protected in place.

Form I-5 updated.

2f. Storm Water Quality Management Plan: Page 38, SD-2: Per the regional MS4 permit, the City of Santee is required to have new development projects implement the conservation of natural areas (e.g. trees, vegetation, & soils). Suggest updating to Yes due to the northern portion of the site remaining undisturbed by the project.

Form I-5 updated.

2g. Storm Water Quality Management Plan: Pages 41 & 42: Provide name, mailing address, phone number, and email address for the owner and maintenance provider for each BMP.

No permanent owner has been named yet as this project is still in entitlements. HOA should suffice.

2h. Storm Water Quality Management Plan: Page 43: Fill out Form I-6 for the Tree Well.

Form I-6 updated to include Tree Well (BMP-2).

2i. Storm Water Quality Management Plan: Page 44: Page can be deleted unless there is a fourth BMP that is being proposed as part of this project.

Extra page from I-6 Form deleted.

2j i. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Update exhibit to include a DMA for the northern portion of the parcel. Suggest identifying it as self-mitigating.

Exhibit updated to add a Self-mitigating DMA to northern area within parcel.

2j ii. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Add a site map showing pre-developed conditions to this sheet or include it as a separate sheet behind it.

For pre-developed conditions, refer to the pre-project hydromodification exhibit in Attachment 2A of the PDP SWQMP. It is not typical to have pre-existing conditions for a DMA Exhibit.

2j iv. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Color-coordinate/update exhibit to differentiate between pervious and impervious features.

Impervious hatch added to exhibit to identify impervious area. Pervious areas remain unhatched.

2j v. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Zoom-out the exhibit to show how flows leaving the site will connect with the curb inlet located at the intersection of Summit Ave and Princess Joann Rd (per page 28 of the SWQMP). Can be a separate page.

A drainage path exhibit has been provided after the DMA Exhibit.

2j vi. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Call out/identify locations of all full trash capture devices. Currently, the exhibit only calls out one.

Only one trash capture device is proposed – at the most downstream curb inlet prior to entering the Storm Trap Vault. Pipe screen or equivalent callout added.

2j vii. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Call out/identify location(s) of trash enclosure(s).

No trash enclosures are proposed. Individual trash bins are used. Waste Management Service Will Serve Letter provided in PDP SWQMP Attachment 1C for reference.

2j viii. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Identify/call out location(s) of access manholes and/or inspection port(s) associated with the vault.

Project specific details for vault that designate access manholes and inspection ports will be provided in final engineering submittal.

2j ix. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Call out/identify locations of pet waste stations. Include details of the pet waste stations to the sheet including make, model, example signage, etc.

Pet Waste Station symbol and callout added to DMA exhibit. Locations were determined per the BMLA Conceptual Landscape Plan, dated 1/29/2024. Pet Waste Station details (make, model, example signage, etc.) to be provided in Final Engineering.

2j x. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Add details of each BMP (vault, MWS, tree well, full trash capture device) to the sheet.

Preliminary MWS Detail and Tree Well Detail added to DMA Exhibit. Vault Detail and Trash Capture Device Detail to be provided in future submittal.

2j xi. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Page 24 of the SWQMP indicates that type A and D soils are present. Update note on DMA Exhibit to indicate that type A & D soils have been identified on site.

Notes updated to note both type A and type B soils.

2j xii. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Add a note about the non-vegetated channel to the “Notes” section on the exhibit.

Discussion of non-vegetated channel added to DMA Exhibit Notes.

2j xiii. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Add a brow ditch icon to the legend.

Brow ditch icon added to legend.

2jxiv. Storm Water Quality Management Plan: Page 48 (DMA Exhibit): Add a note about the HOA being responsible for maintenance of the pet waste stations.

Note 10 added to DMA Exhibit - "HOA to be Responsible for Maintenance of the Pet Waste Stations".

2k. Page 51: Update table to include northern portion of the parcel (self-mitigating area).

Table updated to include DMA-2 (Self Mitigating Area).

2l. Page 51: Page 55: Move Design Capture Volume worksheets to section Attachment 1E.

Design Capture Volume worksheets moved to Attachment 1E.

2m. Page 68: Shows a modular wetland system that has chambers that are 6’9” deep. Suggest replacing with a shallower model as chambers greater than 5 feet deep are challenging to inspect and maintain because to enter them requires confined space certification.

The modular wetland proposed is project specific and specified by ConTech. The MWS-L-6-8-7-5-V-HC Model best suites our project and meets design constraints, therefore no change to the model is implemented.

2o. i. Page 79 (Hydromodification Exhibit): Update exhibit to include a DMA for the northern portion of the parcel. Suggest identifying it as self-mitigating.

Self-Mitigating Area callout added.

2o. ii. Page 79 (Hydromodification Exhibit): Add a site map showing pre-developed conditions to this sheet or include as a separate sheet behind it.

A Pre-Project Hydromodification Exhibit which shows pre-developed conditions was already included in submittal, on page 78. Please refer to exhibit.

2o. iii. Page 79 (Hydromodification Exhibit): Color-coordinate/update exhibit to differentiate between pervious and impervious features.

Impervious area hatch was already shown and called out on hydromodification exhibit and legend. Please refer to exhibit.

2o. iv. Page 79 (Hydromodification Exhibit): Zoom-out the exhibit to show how flows leaving the site will connect with the curb inlet located at the intersection of Summit Ave and Princess Joann Rd (per page 28 of the SWQMP). Can be a separate page.

A drainage path exhibit has been provided after the Post-Project Hydromodification Exhibit.

2o. v. Page 79 (Hydromodification Exhibit): Call out/identify locations of all full trash capture devices. Currently, the exhibit only calls out one.

Only one trash capture device is proposed – at the most downstream curb inlet prior to entering the Storm Trap Vault. Pipe screen or equivalent callout added.

2o. vi. Page 79 (Hydromodification Exhibit): Call out/identify location(s) of trash enclosure(s).

No trash enclosures are proposed. Individual trash bins are used. Waste Management Service Will Serve Letter provided in PDP SWQMP for reference.

2o. vii. Page 79 (Hydromodification Exhibit): Identify/call out location(s) of access manholes and/or inspection port(s) associated with the vault.

Project specific details for vault that designate access manholes and inspection ports will be provided in final engineering submittal.

2o. viii. Page 79 (Hydromodification Exhibit): Call out/identify locations of pet waste stations. Include details of the pet waste stations to the sheet including make, model, example signage, etc.

Pet Waste Station symbol and callout added to Hydromodification Exhibit. Locations were determined per the BMLA Conceptual Landscape Plan, dated 1/29/2024. Pet Waste Station details (make, model, example signage, etc.) to be provided in Final Engineering.

2o. ix. Page 79 (Hydromodification Exhibit): Add details of each BMP (vault, MWS, tree well, full trash capture device) to the sheet.

Preliminary MWS Detail and Tree Well Detail added to Hydromodification Exhibit. Vault Detail and Trash Capture Device Detail to be provided in future submittal.

2o. x. Page 79 (Hydromodification Exhibit): Page 24 of the SWQMP indicates that type A and D soils are present. Update note on DMA Exhibit to indicate that type A & D soils have been identified on site.

Notes updated to note both type A and type B soils.

2o. xi. Page 79 (Hydromodification Exhibit): Add a note about the non-vegetated channel to the "Notes" section on the exhibit.

Discussion of non-vegetated channel added to Hydromodification Exhibit Notes.

2o. xii. Page 79 (Hydromodification Exhibit): xii. Add a brow ditch icon to the legend.

Brow ditch icon added to legend.

2o. xiii. Page 79 (Hydromodification Exhibit): xiii. Add a note about the HOA being responsible for maintenance of the pet waste stations.

Notes updated to discuss HOA being responsible for maintenance of pet waste stations.

2. p. Page 81 shows the project area as including the parcel to the north of the project. Update the project area boundary to only include APN # 378-190-0100.

CCSYA Exhibit Project Area Updated.

2. q. Attachment 3a: Additional maintenance actions/indicators information is required for all BMPs utilized for this project (including the vault, MWS, tree well, and full trash capture devices. Suggest including fact sheets from Appendix E of Santee's BMP Design Manual. Also include literature for each device that describe accumulation of sediment (depth of sediment accumulation) and floatables which would trigger maintenance action.

Specifications of the Storm Water vault and trash capture device will be provided in final engineering. Additional Fact Sheets from Santee BMP Design Manual Appendix E are added.

2. r. Attachment 4a: Plans sheets are missing from the SWQMP.

Plan sheets added to Attachment 4.

5a. A discussion of the tree well was not located within the Drainage Study. Please add discussion of tree well to page 1, section 1.2, Post-Project Condition.

Discussion of Tree Well added to Page 1, Section 1.2, under Post Project Condition.

6a. Only describes one boring/exploratory excavation from which stormwater infiltration testing was conducted. Per Santee's BMP Design Manual, a minimum of two exploratory excavations shall be conducted. Please conduct one additional excavation and repeat infiltration testing.

Additional boring and excavation conducted on 4/20/24, and percolation test on 4/22/2024.

6b. Please update Page 30-31 of the document under the "Preliminary Infiltration Rate" section to include language that clearly supports full, partial, or no infiltration conditions for the project site.

Geotechnical Forms updated.

<u>City of Santee Engineering Comments (John Keane & Claire Singh)</u>

4a. Provide a Structural BMP Summary Information sheet (Form 1-6 Page 3 of 4) for the proposed tree well located on Summit Avenue. Indicate the maintenance mechanism for this BMP.

Form I-6 updated to include the Tree Well (GS-1).

PRIORITY DEVELOPMENT PROJECT STORM WATER QUALITY MANAGEMENT PLAN FOR SUMMIT AVENUE

Revision Page

January 29, 2024

This PDPSWQMP presents a revision to the October 27, 2023 report pursuant to the City of Santee plan check comments received December 15, 2023. The following text identifies the plan check comments along with the responses in bold.

City of Santee Comments

1. (Page 1) Missing TM-2023-0003.

Permit Number added.

2. (Page 5) Missing EOW Signature.

Signature provided in later submittal, closer to approval.

3. (Page 5) Missing EOW Seal.

Stamp provided in later submittal, closer to approval.

4. (Page 5) Missing TM-2023-0003.

Permit Number added.

5. (Page 7) Missing Project Owner's signature.

Signature provided in later submittal, closer to approval.

6. (Page 7) Missing Permit Application Number.

Permit Number added.

12. (Page 12) Remove 11009 Summit Avenue from project address.

11009 Summit Avenue removed from project address.

13. (Page 15) Priority Determination Form must be consistent with the Storm Water Intake Form. See redlines for the intake form and update both documents.

Priority Determination Form updated to match Storm Water Intake Form.

14. (Page 17) Remove 11009 Summit Avenue from project address.

11009 Summit Avenue removed from project address.

15. (Page 17) Remove 378-180-10 from APN list.

APN for 11009 Summit Avenue removed.

16. (Page 17) Site Design Checklist areas are inconsistent with drainage study and plans sheets.

Area to be disturbed updated to 2.6 acres (2.1 impervious + 0.5 pervious).

17. (Page 18) Approximate depth to ground water should be consistent with findings from the geotechnical investigation report.

Confirmed with geotechnical report that ground water depth was not encounter of depths greater than 20 feet.

18. (Page 20) Description of Existing Site Drainage Patterns – Sheet 6 of 7 of the plans (VTTM) shows a non-vegetated channel in the northwest zone of the parcel. Update to include a narrative about the non-vegetated channel and how flows might impact the site.

Narrative updated to discuss that the natural drainage swale is outside of the project bounds and not a part of this project.

18. (Page 21) Description of Proposed Site Development – Is this including 10939 & 11009 Summit Avenue? If so, modify description to only include 10939 Summit Ave.

Project description includes all improvements of this specific project only, no additional improvements are noted.

19. (Page 22) Description of Proposed Site Drainage Patterns – Provide more details/specs on the vault. Show cross section and in/out elevations.

See Civil Sheets provided in Attachment 4 of this report for MWS and HMP Storage facility details.

19. (Page 24) Form I-3B – Also add Phosphorus, Total Dissolved Solids, Nitrogen, Cadmium, Benthic Community Effects, Dissolved Oxygen, Toxicity

Pollutant/Stressors added to Form I3-B.

20. (Page 30) Form I-4 – Check box for SC-6 Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal.

No trash storage areas proposed, therefore SC-5 does not apply.

21. (Page 32) Site Design BMP Checklist – Under SD-1, discuss existing natural drainage swale and how the project will address this.

Natural drainage swale is outside of the project bounds and not a part of this project.

22. (Page 33) Form I-5 – Justify why SD-6 Runoff Collection is not applicable.

Justification added to SD-6 applicability.

23. (Page 33) Form I-5 – Justify why SD-8 Harvesting and Using Precipitation is not applicable.

Justification added to SD-8 applicability.

24. (Page 34) Summary of PDP Structural BMPs – Areas discussed do not match, Drainage Study says 2.4 acres.

The drainage study narrative has been updated and removes the discussion of 2.4 acres to avoid confusion. DMA areas and drainage areas are discussing different things; drainage area is related to drainage, while DMA area is related to treatment.

25. (Page 35) Form I-6 – Add mailing address, phone number, and email address for final owner and maintenance provider

HOA is called out to maintain and fund the maintenance of the BMPs. No mailing address, phone number, or email address is provided since it's the future HOA of the property.

26. (Page 36) Form I-6 – Add mailing address, phone number, and email address for final owner and maintenance provider

HOA is called out to maintain and fund the maintenance of the BMPs. No mailing address, phone number, or email address is provided since it's the future HOA of the property.

27. (Page 40) DMA Exhibit – "Zoom out" the exhibit to show the DMA(s) that encumber the entire parcel.

Scale changed from 20 to 40 scale to show the entire parcel.

28. (Page 40) DMA Exhibit – Update exhibit to include the non-vegetated channel featured on sheet 6 of 7 of the VTTM plans.

Existing non-vegetated channel is now called out on plans, noting "protect in place, not part of project improvements".

29. (Page 40) DMA Exhibit – Call out/identify as having an ADS full trash capture device or equivalent.

Item called out is sidewalk underdrain which drains from the modular wetland unit. No trash capture device is necessary.

30. (Page 40) DMA Exhibit – Call out each storm drain inlet as having a drainage insert, full trash capture device, or equivalent.

Trash capture insert proposed at one location which captures and treats all onsite flows. Trash capture at each individual inlet would be excessive as treatment can happen at the most downstream point. Additionally, one trash capture insert would be easier to maintain.

31. (Page 40) DMA Exhibit – Identify location of tree wells. Update language throughout the SWQMP to include discussions of tree wells.

Tree well location called out and PDP SWQMP updated to discuss proposed tree well.

32. (Page 40) DMA Exhibit – Call out/identify responsible party for maintenance of the brow ditches.

HOA called out for the maintenance of brow ditches.

33. (Page 40) DMA Exhibit – Call out/identity location(s) of inspection/maintenance ports.

Inspection/maintenance ports to be called out in final engineering.

34. (Page 40) DMA Exhibit – Add note about responsible party for maintenance of drainage inserts, full trash capture devices, tree well, and brow ditches.

Note 8 added to drainage management exhibit discussing HOA or responsible party will maintain the trash capture inserts, tree wells, and brow ditches into perpetuity.

35. (Page 40) DMA Exhibit – Add a note about no critical coarse sediment yield areas to be protected in proximity to this project.

See Note 3 added on DMA Exhibit.

36. (Page 40) DMA Exhibit – Suggest making the DMA exhibit a multi-page exhibit. Include the pre-project exhibit from the drainage study to show existing topography and impervious areas, existing site drainage network. Also include the demolition plan to demonstrate proposed demolition.

For existing site features and existing topography, reference the HMP Pre-project Exhibit in Attachment 2A of the PDP SWQMP.

37. (Page 40) DMA Exhibit – Add BMP details of the vault, MWS, drainage inserts, full trash capture devices, etc. to this sheet. Include dimensions, model numbers, etc.

BMP Vault detail is added to sheet after DMA exhibit.

38. (Page 42) DMA Summary Table – Summary of DMA Areas are inconsistent.

Areas updated to total 2.6 Acres.

39. (Page 42) Form I-8 – Conclusions about full, partial, or no infiltration conditions should be supported by methods and results from infiltration testing - should be described/included in geotechnical report. Update responses in form I-8 per results from infiltration testing.

Geotechnical report added to Attachment 1D. Form I-8 updated by geotechnical engineer.

40. (Page 49) Form I-8 – Add narrative to Criteria 3.

Narrative updated, form I-8 updated by geotechnical engineer.

41. (Page 49) Form I-8 – Add narrative to Criteria 4.

Narrative updated, form I-8 updated by geotechnical engineer.

42. (Page 51) Form I-8 – Add narrative to Criteria 7.

Narrative updated, form I-8 updated by geotechnical engineer.

43. (Page 51) Form I-8 – Add narrative to Criteria 8.

Narrative updated, form I-8 updated by geotechnical engineer.

44. (Page 53) Boring Location Map – This is an old site plan. Update exhibit.

Boring location map updated with new site plan.

45. (Page 56) BMP Cross-Section – Specify what type of vault.

R-Tank Underground Stormwater Storage call out added to cross section.

46. (Page 56) BMP Cross-Section – Provide elevations.

Elevations added to basin cross section.

47. (Page 58) Contech MWS Detail – Complete this information to make it project specific.

Site specific biofiltration information form updated by Contech.

48. (Page 63) Green Street Detail – Where is the tree well proposed? In the R/W? Call out on plans.

Tree well called out on DMA Exhibit.

49. (Page 68) Hydromodification Post Project Exhibit – Add notes about the following to the exhibit: hydro-logic soil group; depth to groundwater; critical coarse sediment yield areas.

Notes added to exhibit.

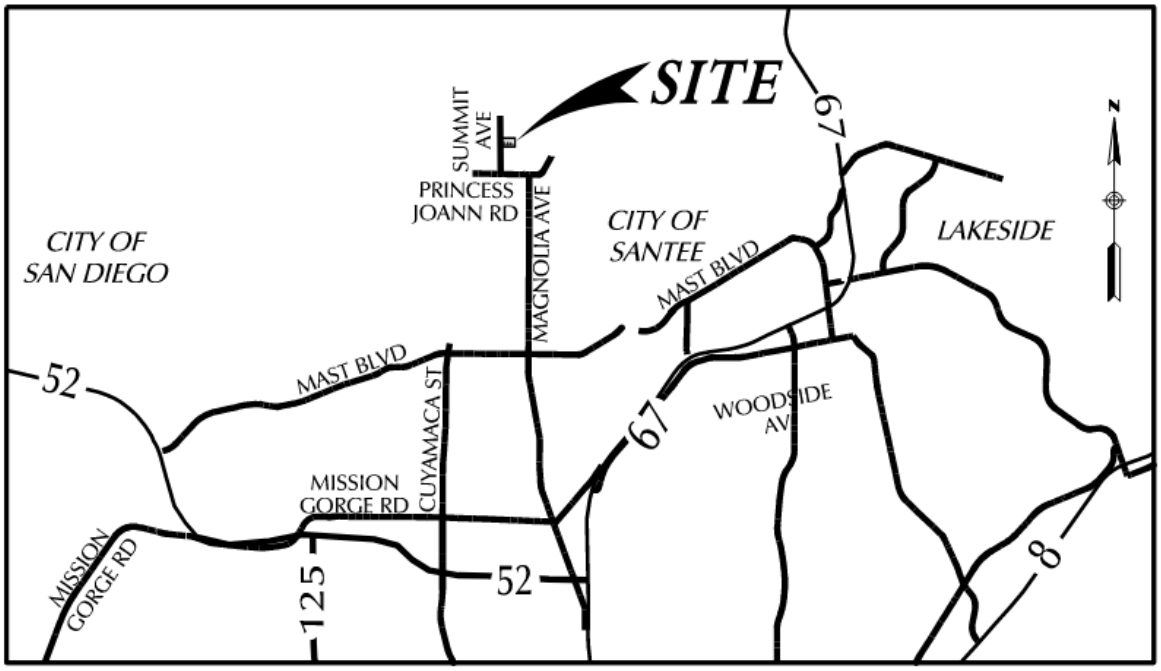
50. (Page 68) Hydromodification Post Project Exhibit – Depict the non-vegetated channel as seen in the VTTM sheets.

The non-vegetated channel is not part of project improvements and outside project's boundary. Callout has been added accordingly.

Page intentionally blank

PROJECT VICINITY MAP

Project Name: Summit Avenue
Permit Application Number: TM-2023-0003



VICINITY MAP
NO SCALE

Applicability of Permanent, Post-Construction Storm Water BMP Requirements **(Storm Water Intake Form for all Development Permit Applications)**	**Form I-1** Model BMP Design Manual [August 31, 2015]

Project Identification

Project Name: Summit Avenue	
Permit Application Number: TM-2023-0003	Date: 3/14/2025
Project Address: 10939 Summit Avenue, Santee, CA 92071	

Determination of Requirements

The purpose of this form is to identify permanent, post-construction requirements that apply to the project. This form serves as a short summary of applicable requirements, in some cases referencing separate forms that will serve as the backup for the determination of requirements.

Answer each step below, starting with Step 1 and progressing through each step until reaching "Stop". **Upon reaching a Stop, do not complete further Steps beyond the Stop.**

Refer to BMP Design Manual sections and/or separate forms referenced in each step below.

Step	Answer	Progression
Step 1: Is the project a "development project"? See Section 1.3 of the BMP Design Manual for guidance.	☒ Yes	Go to Step 2.
	☐ No	Stop. Permanent BMP requirements do not apply. No SWQMP will be required. Provide discussion below.
Discussion / justification if the project is not a "development project" (e.g., the project includes *only* interior remodels within an existing building):		
Step 2: Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, see Section 1.4 of the BMP Design Manual *in its entirety* for guidance, AND complete Form I-2, Project Type Determination.	☐ Standard Project	Stop. Only Standard Project requirements apply, including Standard Project SWQMP.
	☒ PDP	Standard and PDP requirements apply, including PDP SWQMP. Go to Step 3.
	☐ Exception to PDP definitions	Stop. Standard Project requirements apply, and any additional requirements specific to the type of project. Provide discussion and list any additional requirements below. Prepare Standard Project SWQMP.

Form I-1 Page 2, Form Template Date: August 31, 2015		
[Step 2 Continued from Page 1] Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:		
Step 3 (PDPs only). Is the project subject to earlier PDP requirements due to a prior lawful approval? See Section 1.10 of the BMP Design Manual for guidance.	☐ Yes	Consult the [City Engineer] to determine requirements. Provide discussion and identify requirements below. Go to Step 4.
	☒ No	BMP Design Manual PDP requirements apply. Go to Step 4.
Discussion / justification of prior lawful approval, and identify requirements (*not required if prior lawful approval does not apply*):		
Step 4 (PDPs only). Do hydromodification control requirements apply? See Section 1.6 of the BMP Design Manual for guidance.	☒ Yes	PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6). Go to Step 5.
	☐ No	Stop. PDP structural BMPs required for pollutant control (Chapter 5) only. Provide brief discussion of exemption to hydromodification control below.
Discussion / justification if hydromodification control requirements do <u>not</u> apply:		
Step 5 (PDPs subject to hydromodification control requirements only). Does protection of critical coarse sediment yield areas	☐ Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). Stop.

apply based on review of WMAA Potential Critical Coarse Sediment Yield Area Map? See Section 6.2 of the BMP Design Manual for guidance.	☒ No	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. There are no critical coarse sediment yield areas on the project site. Critical coarse sediment protection measures are not required if the project does not impact any yield areas. Attachment 2B provides a map showing the absence of critical coarse sediment yield areas on the project site.

Priority Determination Form	Form I-2 Model BMP Design Manual [August 31, 2015]
Project Information	
Project Name: Summit Avenue	
Permit Application Number: TM-2023-0003	Date: 3/14/2025
Project Address: 10939 Summit Avenue, Santee, CA 92071	
Project Type Determination: Standard Project or Priority Development Project (PDP)	
The project is (select one): ☐ New Development ☒ Redevelopment	
The total proposed newly created or replaced impervious area is: _94,090_ ft^2 (__2.2__) acres	
Is the project in any of the following categories, (a) through (f)?	

Yes	No		
☐	☒	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
☒	☐	(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.
☐	☒	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

Form I-2 Page 2, Form Template Date: August 31, 2015			
Yes ☐	No ☒	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.*
Yes ☐	No ☒	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☒	No ☐	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See BMP Design Manual Section 1.4.2 for additional guidance.*

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

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

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

The following is for redevelopment PDPs only:

The area of existing (pre-project) impervious area at the project site is: 27,450 ft^2 (A)
The total proposed newly created or replaced impervious area is 94,090 ft^2 (B)
Percent impervious surface created or replaced (B/A)*100: 100 %
The percent impervious surface created or replaced is (select one based on the above calculation):

☐ less than or equal to fifty percent (50%) – only new impervious areas are considered PDP

OR

☒ greater than fifty percent (50%) – the entire project site is a PDP

Site Design Checklist For PDPs	Form I-3B (PDPs) Model BMP Design Manual [August 31, 2015]
Project Summary Information	
Project Name	Summit Avenue
Project Address	10939 Summit Avenue, Santee, CA 92071
Assessor's Parcel Number(s) (APN(s))	378-190-01
Permit Application Number	TM-2023-0003
Project Hydrologic Unit	Select One: ☐ Santa Margarita 902 ☐ San Luis Rey 903 ☐ Carlsbad 904 ☐ San Dieguito 905 ☐ Penasquitos 906 ☒ San Diego 907 ☐ Pueblo San Diego 908 ☐ Sweetwater 909 ☐ Otay 910 ☐ Tijuana 911
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	San Diego Hydrologic Unit Lower San Diego Hydrologic Area Santee Hydrologic Subarea (907.12)
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	4.65 Acres (202,554 Square Feet)
Area to be Disturbed by the Project (Project Area)	2.7 Acres (117,612 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	2.2 Acres (94,090 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	0.5 Acres (23,522 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Form I-3B Page 2 of 10, Form Template Date: August 31, 2015
Description of Existing Site Condition
Current Status of the Site (select all that apply): ☒ Existing development ☐ Previously graded but not built out ☐ Demolition completed without new construction ☐ Agricultural or other non-impervious use ☒ Vacant, undeveloped/natural Description / Additional Information: The existing site is located in a rural location, with existing residential structures and undeveloped area.
Existing Land Cover Includes (select all that apply): ☒ Vegetative Cover ☐ Non-Vegetated Pervious Areas ☒ Impervious Areas Description / Additional Information:
Underlying Soil belongs to Hydrologic Soil Group (select all that apply): ☒ NRCS Type A ☐ NRCS Type B ☐ NRCS Type C ☒ NRCS Type D
Approximate Depth to Groundwater (GW): ☐ GW Depth < 5 feet ☐ 5 feet < GW Depth < 10 feet ☐ 10 feet < GW Depth < 20 feet ☒ GW Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):

☐ Watercourses

☐ Seeps

☐ Springs

☐ Wetlands

☒ None

Description / Additional Information:

An existing non-vegetated channel is located at the northwest corner of the project area but will be protected in place and is not part of the project's improvements. Reference sheet 6 of the Grading Plan or the DMA exhibit in Attachment 1A of this PDP SWQMP.

Description of Existing Site Drainage Patterns

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

(1) whether existing drainage conveyance is natural or urban;

The existing drainage conveyance onsite is natural, with no existing inlets or storm drains to convey flows. Water sheet flows off the site and street flows to a curb inlet near the intersection of Summit Avenue and Princess Joann Road.

(2) Is runoff from offsite conveyed through the site? if yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site,

Approximately 7.4 acres with 6.3 cfs of offsite flows are conveyed through the existing site. The project location is downstream of an existing hillside. The hillside is pervious area with natural vegetation.

(3) Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels;

An existing non-vegetated channel is located at the northwest corner of the project area but will be protected in place and is not part of the project's improvements.

(4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations;

The pre-project drainage area equals 10.0 acres. Based on available data, it is anticipated that peak flows from a 100-year, 6-hour storm event will equal 16.3 CFS for the pre-project site. The post-project drainage area equals 10.0 acres. Mitigated peak flows in the post-project condition are expected to be less than pre project flows.

(5) Describe existing site drainage patterns;

The pre-project site drains generally southwest to a single point of compliance (POC). The POC is located at the southwest corner of the property, at the edge of Summit Avenue. After leaving the project site, runoff from Basin 100 flows south along the curb and gutter on Summit Avenue and joins flows on Princess Joann Road. Flows on Princess Joann Road are collected by a curb inlet that drains to the Woodglen Vista Channel. Flows from the channel discharge to the San Diego River, which ultimately flows west and discharges to the Pacific Ocean.

Form I-3B Page 4 of 10, Form Template Date: August 31, 2015
Description of Proposed Site Development
Project Description / Proposed Land Use and/or Activities: The proposed project is a 2.7 acre redevelopment project that proposes the construction of multifamily dwellings with 50 units, a recreation and park area, a residential street with street parking, water quality elements, and street improvements with green street elements.
List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features): The project's impervious features include multifamily dwellings, residential street with parking, and street improvements.
List/describe proposed pervious features of the project (e.g., landscape areas): The project's pervious features include landscaped areas, park area, a biofiltration basin, and a tree well for green street improvements.
Does the project include grading and changes to site topography? ☒ Yes ☐ No Description / Additional Information: The site will be mass graded for the proposed development.

Description of Proposed Site Drainage Patterns

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

☒ Yes
☐ No

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

The proposed drainage system will collect surface flows via grate and curb storm drain inlets and conveyed to an underground vault for detention. A portion of the residential development will be routed to a proposed biofiltration basin via roof drains, then also conveyed to the underground vault. The vault is drained to a modular wetland system located at the southwest corner of the property to treat runoff, then discharged to the point of compliance (POC) on Summit Avenue. The pre-project drainage area equals 10.0 acres. Based on available data, it is anticipated that peak flows from a 100-year, 6-hour storm event will equal 16.3 CFS for the pre-project site. The post-project drainage area equals 10.0 acres. Mitigated peak flows in the post-project condition are expected to be less than pre project flows.

Describe proposed site drainage patterns:

Drainage patterns for the proposed condition will remain similar to drainage patterns in the pre-project condition. In the post-project condition, there's four DMAs and one POC location. Two DMAs (DMA's 1 and 2) are treated via biofiltration basin and Modular Wetland, then discharged from the site at the point of compliance (POC) on Summit Avenue. DMA-3 is for offsite area that's routed around our site and tributary to POC-1. The fourth DMA (GS-1) is for the street improvements and frontage improvements along the project site. Drainage from GS-1 is treated via a green streets tree well, then discharged to POC-1. After run off leaves the site, flows are conveyed along the curb and gutter on Summit Avenue to a curb inlet located at the intersection of Princess Joann Road and Summit Avenue. Flows from the curb inlet are conveyed to the San Diego River, which then discharges to the Pacific Ocean.

Form I-3B Page 6 of 10, Form Template Date: August 31, 2015

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply):

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

Description / Additional Information:

Identification and Narrative of Receiving Water and Pollutants of Concern

Runoff from the project site enters a curb inlet at the intersection of Summit Avenue and Princess Joann Road and flows to the San Diego River. After entering the San Diego River, runoff is discharged 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 and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
San Diego River	Indicator bacteria, Phosphorus, Total Dissolved Solids, Nitrogen, Cadmium, Benthic Community Effects, Dissolved Oxygen, and Toxicity	Indicator bacteria.

Identification of Project Site Pollutants*

***Identification of project site pollutants 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 BMP Design Manual Appendix B.6):

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

Hydromodification Management Requirements

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

☒ Yes, hydromodification management flow control structural BMPs required.

☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

☐ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

☐ No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA for the watershed in which the project resides.

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

Critical Coarse Sediment Yield Areas*
***This Section only required if hydromodification management requirements apply**

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

☐ Yes

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

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

☐ 6.2.1 Verification of Geomorphic Landscape Units (GLUs) Onsite

☐ 6.2.2 Downstream Systems Sensitivity to Coarse Sediment

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

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

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

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

☐ Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 2.b of the SWQMP.

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

Discussion / Additional Information:

Flow Control for Post-Project Runoff*

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

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

There is 1 point of compliance (POC-1) that is located at the southwest corner of the property along Summit Avenue.

☒ No, the low flow threshold is 0.1Q2 (default low flow threshold)

☐ Yes, the result is the low flow threshold is 0.1Q2

☐ Yes, the result is the low flow threshold is 0.3Q2

☐ Yes, the result is the low flow threshold is 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

Discussion / Additional Information: (optional)

Form I-3B Page 10 of 10, Form Template Date: August 31, 2015
Other Site Requirements and Constraints
When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements. N/A
Optional Additional Information or Continuation of Previous Sections As Needed
This space provided for additional information or continuation of information from previous sections as needed.

Source Control BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)	Form I-4 Model BMP Design Manual [August 31, 2015]

Project Identification

Project Name: Summit Avenue

Permit Application Number: TM-2023-0003

Source Control BMPs

All development projects must implement source control BMPs SC-1 through SC-6 where applicable and feasible. See Chapter 4 and Appendix E of the Model BMP Design Manual for information to implement source control BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the Model BMP Design Manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided.

Source Control Requirement	Applied?		
SC-1 Prevention of Illicit Discharges into the MS4	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-1 not implemented:			
SC-2 Storm Drain Stenciling or Signage	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-2 not implemented:			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☒ N/A
Discussion / justification if SC-3 not implemented: Not anticipated for site.			
SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☒ N/A
Discussion / justification if SC-4 not implemented: Not anticipated for site.			

Form I-4 Page 2 of 2, Form Template Date: August 31, 2015			
Source Control Requirement	**Applied?**		
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☒ N/A
Discussion / justification if SC-5 not implemented:			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)			
☒ On-site storm drain inlets	☒ Yes	☐ No	☐ N/A
☐ Interior floor drains and elevator shaft sump pumps	☐ Yes	☐ No	☒ N/A
☐ Interior parking garages	☐ Yes	☐ No	☒ N/A
☒ Need for future indoor & structural pest control	☒ Yes	☐ No	☐ N/A
☒ Landscape/Outdoor Pesticide Use	☒ Yes	☐ No	☐ N/A
☐ Pools, spas, ponds, decorative fountains, and other water features	☐ Yes	☐ No	☒ N/A
☐ Food service	☐ Yes	☐ No	☒ N/A
☒ Refuse areas	☒ Yes	☐ No	☐ N/A
☐ Industrial processes	☐ Yes	☐ No	☒ N/A
☐ Outdoor storage of equipment or materials	☐ Yes	☐ No	☒ N/A
☐ Vehicle and Equipment Cleaning	☐ Yes	☐ No	☒ N/A
☐ Vehicle/Equipment Repair and Maintenance	☐ Yes	☐ No	☒ N/A
☐ Fuel Dispensing Areas	☐ Yes	☐ No	☒ N/A
☐ Loading Docks	☐ Yes	☐ No	☒ N/A
☒ Fire Sprinkler Test Water	☒ Yes	☐ No	☐ N/A
☐ Miscellaneous Drain or Wash Water	☐ Yes	☐ No	☒ N/A
☒ Plazas, sidewalks, and parking lots	☒ Yes	☐ No	☐ N/A

Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.

Site Design BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)	Form I-5 Model BMP Design Manual [August 31, 2015]

Project Identification

Project Name: Summit Avenue

Permit Application Number: TM-2023-0003

Site Design BMPs

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 Model BMP Design Manual for information to implement site design BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the Model BMP Design Manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification may be provided.

Site Design Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-1 not implemented:			
SD-2 Conserve Natural Areas, Soils, and Vegetation	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-2 not implemented:			
SD-3 Minimize Impervious Area	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-3 not implemented:			
SD-4 Minimize Soil Compaction	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-4 not implemented:			
SD-5 Impervious Area Dispersion	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-5 not implemented:			

Form I-5 Page 2 of 2, Form Template Date: August 31, 2015			
Site Design Requirement	**Applied?**		
SD-6 Runoff Collection	☐ Yes	☐ No	☒ N/A
Discussion / justification if SD-6 not implemented: Rain barrels or permeable pavements not proposed; therefore runoff collection is not applicable to project.			
SD-7 Landscaping with Native or Drought Tolerant Species	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-7 not implemented:			
SD-8 Harvesting and Using Precipitation	☐ Yes	☐ No	☒ N/A
Discussion / justification if SD-8 not implemented: Harvest and use is not feasible for project. Reference Worksheet B.3-1 (Form I-7) in Attachment 1c of this report for the Harvest and Use Feasibility Screening Checklist.			

Summary of PDP Structural BMPs	Form I-6 (PDPs) Model BMP Design Manual [August 31, 2015]
Project Identification	
Project Name: Summit Avenue	
Permit Application Number: TM-2023-0003	
PDP Structural BMPs	
All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the BMP Design Manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the BMP Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s). PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the BMP Design Manual). 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).	

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 BMP Design Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

The site consists of four drainage management areas. DMA-1, which includes the majority of the proposed development that drains to the Modular Wetland System, DMA-2, which includes a portion of the residential development that drains to a biofiltration basin via roof drains, GS-1 which includes the street and frontage improvements that drain a green streets tree well, and DMA-3 which comprises of the remaining parcel area that's considered self-mitigating. DMA-1 is 2.4 acres and requires both flow control and pollutant control BMPs. DMA-2 is 0.1 acres that also requires flow control and pollutant control BMPs. GS-1 is 0.2 acres and proposes a tree well per GS-1.00, designed for pollutant control and additional treatment of flows from the project site. DMA-3 is 2.0 acres and is considered self-mitigating, therefore no additional treatment is necessary. DMA-1 drains to an underground vault for HMP storage, which is then conveyed to a modular wetland unit for water quality treatment. DMA-2 drains to the proposed biofiltration basin for water quality treatment, then is conveyed to the underground vault for HMP storage. Since the vault is tributary to the modular wetland unit, drainage from DMA-2 is routed through the MWS for conveyance to the POC. GS-1 is treated for water quality through the tree well, and then discharged through a sidewalk underdrain onto Summit Avenue. The total drainage area is 4.7 acres.

(Continue on page 2 as necessary.)

Form I-6 Page 1 of 3 (Copy as many as needed) , Form Template Date: August 31, 2015	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP – 1A	
Construction Plan Sheet No.	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☒ Detention pond or vault for hydromodification management ☐ Other (describe in discussion section below)	
Purpose: ☐ Pollutant control only ☒ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	RICK Engineering Company Shavger Rekani PE (619) 291-0707
Who will be the final owner of this BMP?	HOA
Who will maintain this BMP into perpetuity?	HOA
What is the funding mechanism for maintenance?	HOA

Form I-6 Page 2 of 3 (Copy as many as needed) , Form Template Date: August 31, 2015	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP – 1B	
Construction Plan Sheet No.	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☒ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☐ Other (describe in discussion section below)	
Purpose: ☒ Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	RICK Engineering Company Shavger Rekani PE (619) 291-0707
Who will be the final owner of this BMP?	HOA
Who will maintain this BMP into perpetuity?	HOA
What is the funding mechanism for maintenance?	HOA

Form I-6 Page 3 of 3 (Copy as many as needed) , Form Template Date: August 31, 2015	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP – 2	
Construction Plan Sheet No.	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☒ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☐ Other (describe in discussion section below)	
Purpose: ☒ Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	RICK Engineering Company Shavger Rekani PE (619) 291-0707
Who will be the final owner of this BMP?	HOA
Who will maintain this BMP into perpetuity?	HOA
What is the funding mechanism for maintenance?	HOA

Form I-6 Page 3 of 3 (Copy as many as needed) , Form Template Date: August 31, 2015	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP – 3	
Construction Plan Sheet No.	
Type of structural BMP: ☐ Retention by harvest and use (HU-1) ☐ Retention by infiltration basin (INF-1) ☐ Retention by bioretention (INF-2) ☐ Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐ Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐ Detention pond or vault for hydromodification management ☒ Other (describe in discussion section below) **– Proposed Tree Well**	
Purpose: ☒ Pollutant control only ☐ Hydromodification control only ☐ Combined pollutant control and hydromodification control ☐ Pre-treatment/forebay for another structural BMP ☐ Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	RICK Engineering Company Shavger Rekani PE (619) 291-0707
Who will be the final owner of this BMP?	HOA
Who will maintain this BMP into perpetuity?	HOA
What is the funding mechanism for maintenance?	HOA

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:

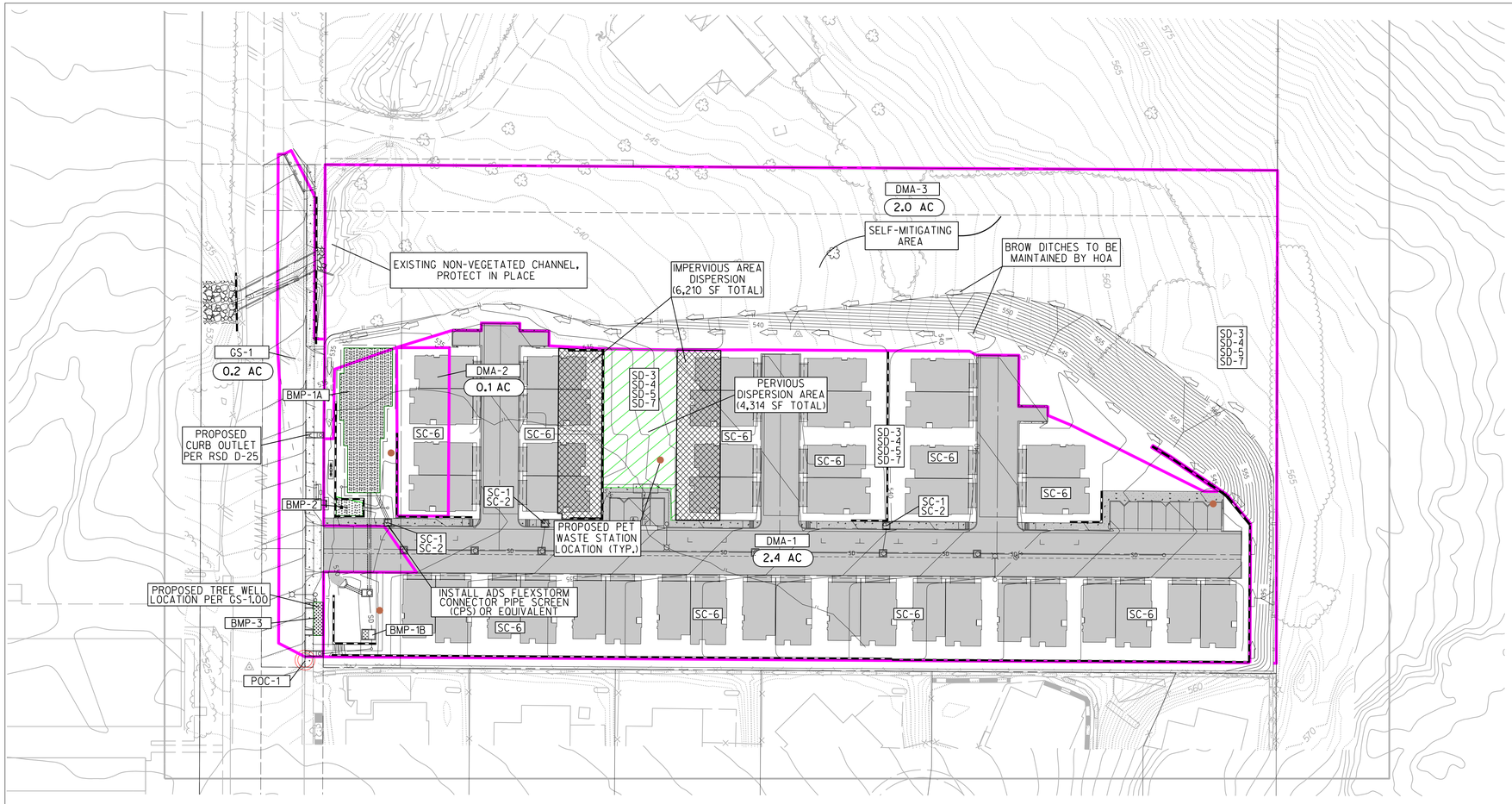
Attachment Sequence	Contents	Checklist
Attachment 1a	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	☒ Included
Attachment 1b	Tabular Summary of DMAs Showing DMA ID matching DMA Exhibit, DMA Area, and DMA Type (Required)* *Provide table in this Attachment OR on DMA Exhibit in Attachment 1a	☐ Included on DMA Exhibit in Attachment 1a ☒ Included as Attachment 1b, separate from DMA Exhibit
Attachment 1c	Form I-7, Harvest and Use Feasibility Screening Checklist (Required unless the entire project will use infiltration BMPs) Refer to Appendix B.3-1 of the BMP Design Manual to complete Form I-7.	☒ Included ☐ Not included because the entire project will use infiltration BMPs
Attachment 1d	Form I-8, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the BMP Design Manual to complete Form I-8.	☒ Included ☐ Not included because the entire project will use harvest and use BMPs
Attachment 1e	Pollutant Control BMP Design Worksheets / Calculations (Required) Refer to Appendices B and E of the BMP Design Manual for structural pollutant control BMP design guidelines	☒ Included

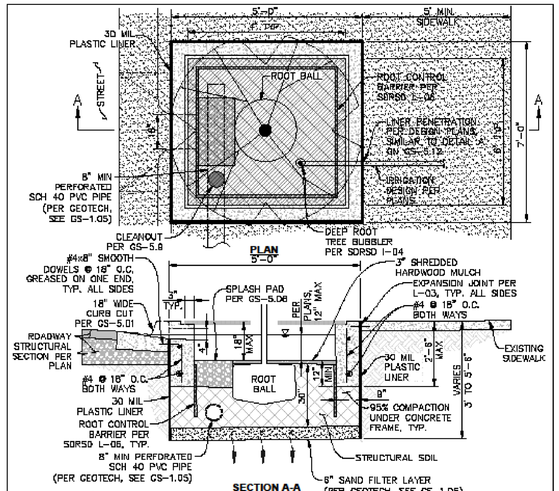
Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

- [X] Underlying hydrologic soil group
- [X] Approximate depth to groundwater
- [X] Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- [X] Critical coarse sediment yield areas to be protected
- [X] Existing topography and impervious areas
- [X] Existing and proposed site drainage network and connections to drainage offsite
- [ ] Proposed demolition
- [X] Proposed grading
- [X] Proposed impervious features
- [X] Proposed design features and surface treatments used to minimize imperviousness
- [X] 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)
- [X] Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Form I-3B)
- [X] Structural BMPs (identify location, type of BMP, and size/detail)

Attachment 1A





DESIGN NOTES:

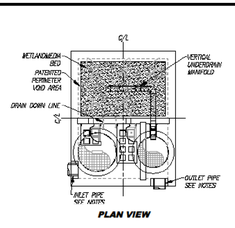
1. STREET IMPROVEMENTS AND DRAINAGE STRUCTURES SHALL BE CONSTRUCTED ACCORDING TO THE LATEST SAN DIEGO REGIONAL STANDARD DRAWINGS AND CALTRANS STANDARD PLANS.
2. CONCRETE SHALL BE 520-C-2500 UNLESS OTHERWISE SPECIFIED.
3. SEE SDRSD DWG L-01 THROUGH L-06 FOR LANDSCAPING DETAILS NOT SPECIFIED HEREIN. (TREE GRATE PER SDRSD L-04).
4. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x8'.
5. PROVIDE 30 MIL PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL.
6. SEAL PLASTIC LINER TO ADJACENT IMPROVEMENTS AND EDGE RESTRAINTS PER GS-5.15.
7. WHEN SAND FILTER LAYER IS OMITTED, PROVIDE GEOTEXTILE BENEATH THE STRUCTURAL SOIL LAYER PER PROJECT-SPECIFIC GEOTECHNICAL RECOMMENDATIONS.
8. PROPOSED SIDEWALK LOCATIONS & INTENDED ADA ROUTES PER PROJECT-SPECIFIC DESIGN PLANS.
9. FOR TREE WELL SUBSURFACE DRAINAGE TYPES, SEE DWG GS-1.05.
10. ALL STRUCTURAL SOILS ARE COMPACTED TO 95% RELATIVE COMPACTION.

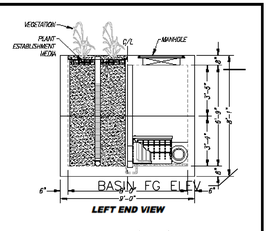
DRAWING NOT TO SCALE

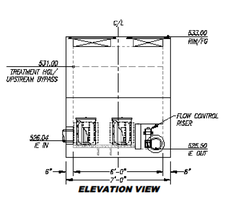
DRAWN BY: NRB	CHECKED BY: KSK	SAN DIEGO COUNTY DESIGN STANDARD	REVISIONS	APPROVED	DATE
RECOMMENDED BY: CHARLES MORELOCK, P.E.			ORIGINAL		10-01-2019
APPROVED BY: COUNTY ENGINEER			REVISED		03-08-2021
WILLIAM P. MORROW, P.E. R.C.E. NO. 46456, EXP 9/30/2022	DATE: 3/15/21	TREE WELL GENERAL DESIGN GUIDANCE	DRAWING NUMBER		GS-1.00

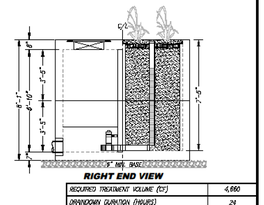
SITE SPECIFIC DATA			
PROJECT NUMBER		78033A-01D	
PROJECT NAME		SUMMIT AVENUE	
PROJECT LOCATION		SANTEE, CA	
STRUCTURE ID		BMP-1B	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
4,660		N/A	
TREATMENT HGL AVAILABLE (FT)		531.00	
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			UPSTREAM
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	526.04	HDPE	8"
OUTLET PIPE	526.50	HDPE	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	533.00	533.00	533.00
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	24"	GRATE DIAMETER	24"
METAMEDIA® VOLUME (CF)			5.78
ORIFICE SIZE (DIA. INCHES)			#2.87"

NOTES: PRELIMINARY NOT FOR CONSTRUCTION. UPSTREAM BYPASS TOP OF WEIR HEIGHT TO BE AT 531.06.









REQUIRED TREATMENT VOLUME (CF)	4,660
DRAWDOWN DURATION (HOURS)	24
AVERAGE DISCHARGE RATE PER MAIS UNIT(GPM)	33.78
OPERATING HEAD (FT)	5.5
METAMEDIA® INFILTRATION RATE (IN/HR)	33
METAMEDIA® LOADING RATE (GPM/SF)	0.33

MWS-L-6-8-7.5"-V-HC
STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT PROTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO USE GROUT AND/OR EPOXY TO MATCH COATED WITH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONDUCTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.

GENERAL NOTES

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

PROPRIETARY AND CONFIDENTIAL: THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF CONTECH AND ITS COMPANIES. ANY DISCLOSURE, USE, ANY PART THEREOF, MAY BE USED, REPRODUCED OR MODIFIED IN ANY MANNER WITH OUT THE WRITTEN CONSENT OF CONTECH.

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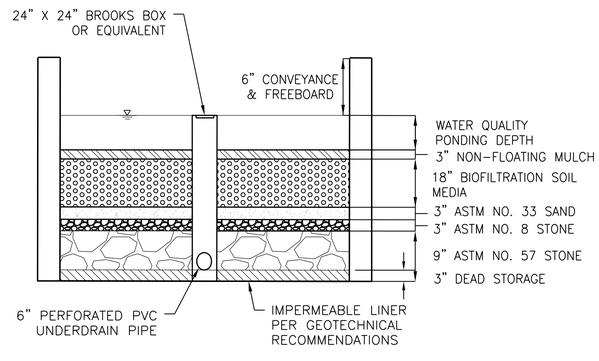


BIOFILTRATION BASIN CROSS-SECTION
BMP-2
NTS

NOTES

1. SIZES OF THE POLLUTANT CONTROL BMPs SHOWN ON THIS EXHIBIT ADDRESS THE PERMANENT STORM WATER QUALITY REQUIREMENTS OF THE CITY OF SANTEE BMP DESIGN MANUAL DATED FEBRUARY 2016.
2. HYDROLOGIC SOIL GROUP TYPES "A" AND "D" HAVE BEEN IDENTIFIED ON SITE.
3. NO CRITICAL COARSE SEDIMENT YIELD AREAS TO BE PROTECTED IN PROXIMITY TO PROJECT.
4. DEPTH TO GROUNDWATER WAS NOT ENCOUNTERED IN BORINGS UP TO 19.5 FEET, PER GEOTECHNICAL REPORT.
5. 85TH PERCENTILE STORM EVENT = 0.52 IN.
6. ALL EXISTING STRUCTURES WITHIN THE PROJECT AREA WILL BE DEMOLISHED.
7. EXISTING NON-VEGETATED CHANNEL TO BE PROTECTED IN PLACE. NOT PART OF PROJECT IMPROVEMENTS.
8. TREE WELL DESIGN PROPOSED PER COUNTY OF SAN DIEGO GREEN STREET STANDARDS GS-1.00
9. HOA TO MAINTAIN THE TRASH CAPTURE INSERT, TREE WELL, BROW DITCH, STORM WATER DETENTION VAULT, AND MODULAR WETLAND SYSTEM INTO PERPETUITY.
10. HOA TO BE RESPONSIBLE FOR MAINTENANCE OF THE PET WASTE STATIONS.

SITE DESIGN/SOURCE CONTROL

SC-1	PREVENTION OF ILLICIT DISCHARGES TO THE MS4
SC-2	STORM DRAIN STENCILING / SIGNAGE
SC-6	ADDITIONAL BMP'S
SD-3	MINIMIZE IMPERVIOUS AREA
SD-4	MINIMIZE SOIL COMPACTION
SD-5	IMPERVIOUS AREA DISPERSION
SD-7	LANDSCAPING WITH NATIVE / DROUGHT TOLERANT SPECIES

LEGEND:

- DMA BOUNDARY
- BASIN X — DMA ID
- X.X AC — DMA AREA
- XXX — POC/BMP ID
- POC
- GREEN STREET ELEMENT
- BMP
- IMPERVIOUS AREA
- IMPERVIOUS AREA DIRECTED TO PERVIOUS AREA
- PERVIOUS DISPERSION AREA
- PET WASTE STATION LOCATION

DRAINAGE MANAGEMENT EXHIBIT FOR SUMMIT AVENUE

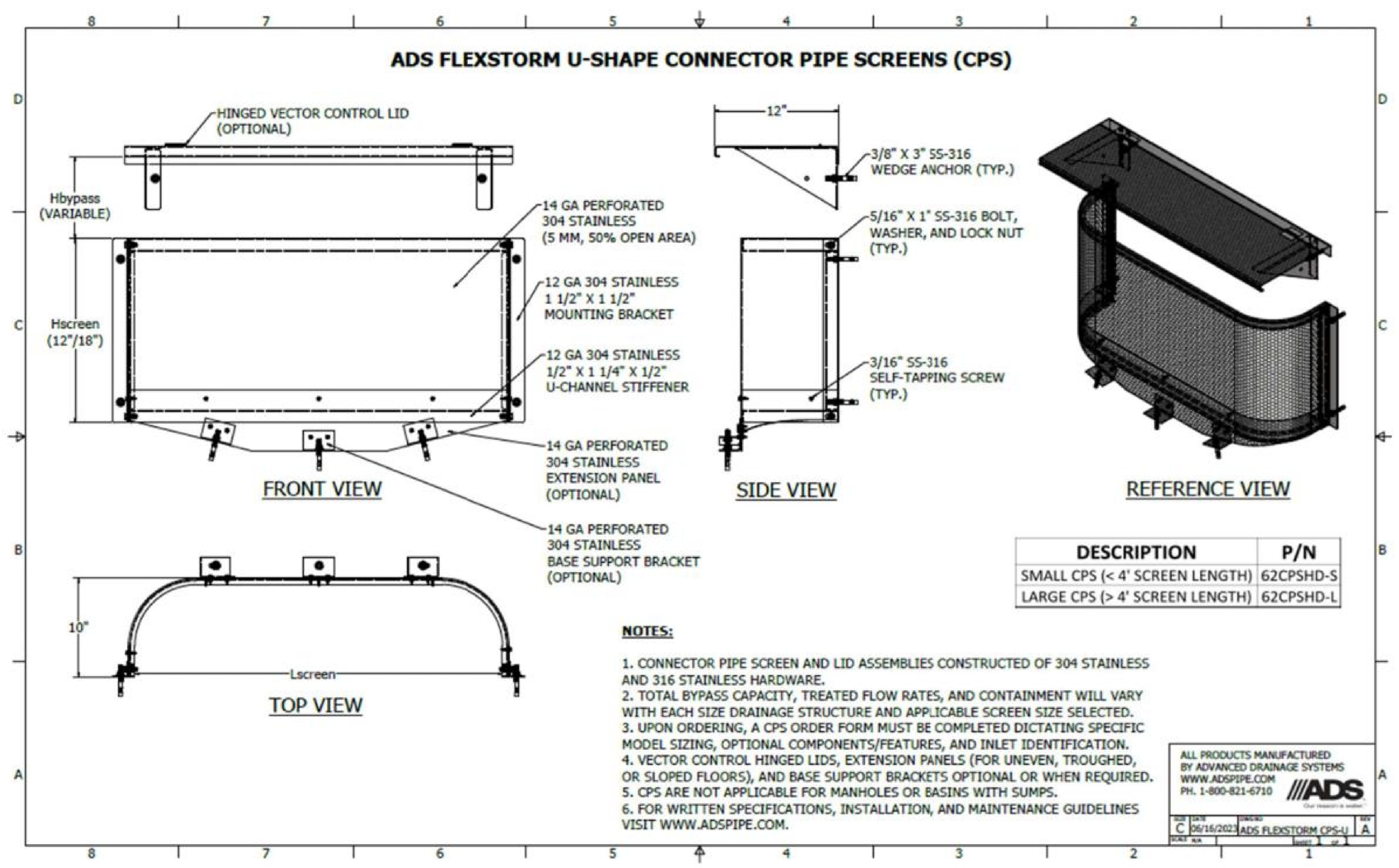
40 20 0 40 80 120

GRAPHIC SCALE 1" = 40'

J-19877

DATE: MARCH 14, 2025

619-291-0707
rickengineering.com
5620 FRIARS ROAD
SAN DIEGO, CA 92110
RICK
SAN DIEGO ORANGE RIVERSIDE SACRAMENTO SAN LUIS OBISPO
SANTA CLARITA PHOENIX TUCSON LAS VEGAS DENVER



DESCRIPTION	P/N
SMALL CPS (< 4' SCREEN LENGTH)	62CPSHD-S
LARGE CPS (> 4' SCREEN LENGTH)	62CPSHD-L

NOTES:

1. CONNECTOR PIPE SCREEN AND LID ASSEMBLIES CONSTRUCTED OF 304 STAINLESS AND 316 STAINLESS HARDWARE.
2. TOTAL BYPASS CAPACITY, TREATED FLOW RATES, AND CONTAINMENT WILL VARY WITH EACH SIZE DRAINAGE STRUCTURE AND APPLICABLE SCREEN SIZE SELECTED.
3. UPON ORDERING, A CPS ORDER FORM MUST BE COMPLETED DICTATING SPECIFIC MODEL SIZING, OPTIONAL COMPONENTS/FEATURES, AND INLET IDENTIFICATION.
4. VECTOR CONTROL HINGED LIDS, EXTENSION PANELS (FOR UNEVEN, TROUGHED, OR SLOPED FLOORS), AND BASE SUPPORT BRACKETS OPTIONAL OR WHEN REQUIRED.
5. CPS ARE NOT APPLICABLE FOR MANHOLES OR BASINS WITH SUMPS.
6. FOR WRITTEN SPECIFICATIONS, INSTALLATION, AND MAINTENANCE GUIDELINES VISIT WWW.ADSPIPE.COM.

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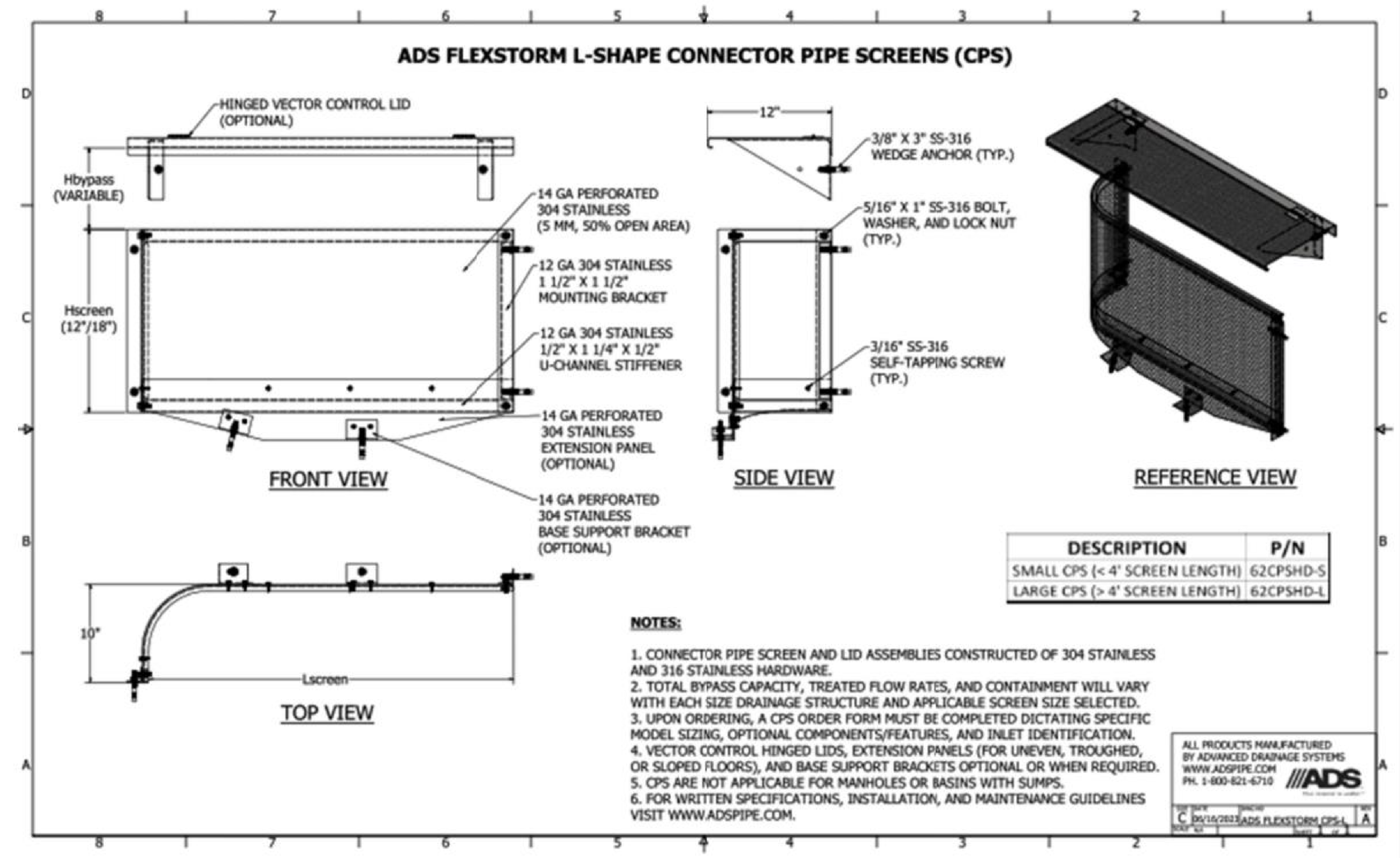

DESCRIPTION	P/N
SMALL CPS (< 4' SCREEN LENGTH)	62CPSHD-S
LARGE CPS (> 4' SCREEN LENGTH)	62CPSHD-L

NOTES:

1. CONNECTOR PIPE SCREEN AND LID ASSEMBLIES CONSTRUCTED OF 304 STAINLESS AND 316 STAINLESS HARDWARE.
2. TOTAL BYPASS CAPACITY, TREATED FLOW RATES, AND CONTAINMENT WILL VARY WITH EACH SIZE DRAINAGE STRUCTURE AND APPLICABLE SCREEN SIZE SELECTED.
3. UPON ORDERING, A CPS ORDER FORM MUST BE COMPLETED DICTATING SPECIFIC MODEL SIZING, OPTIONAL COMPONENTS/FEATURES, AND INLET IDENTIFICATION.
4. VECTOR CONTROL HINGED LIDS, EXTENSION PANELS (FOR UNEVEN, TROUGHED, OR SLOPED FLOORS), AND BASE SUPPORT BRACKETS OPTIONAL OR WHEN REQUIRED.
5. CPS ARE NOT APPLICABLE FOR MANHOLES OR BASINS WITH SUMPS.
6. FOR WRITTEN SPECIFICATIONS, INSTALLATION, AND MAINTENANCE GUIDELINES VISIT WWW.ADSPIPE.COM.

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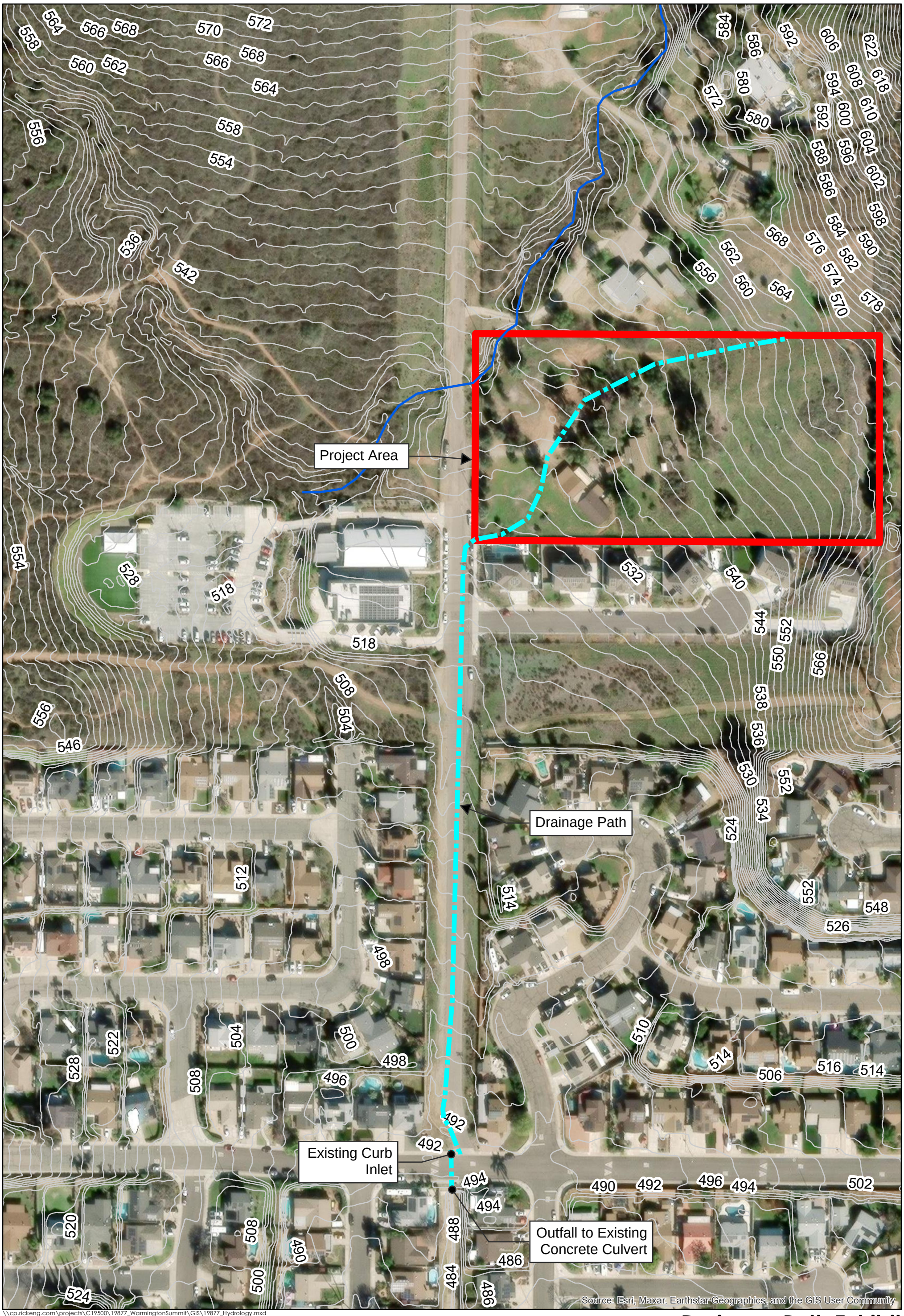
DRAINAGE MANAGEMENT EXHIBIT FOR SUMMIT AVENUE

J-19877

DATE: MARCH 14, 2025

RICK
619-291-0707
rickengineering.com
5620 FRIARS ROAD
SAN DIEGO, CA 92110
SAN DIEGO ORANGE RIVERSIDE SACRAMENTO SAN LUIS OBISPO
SANTA CLARITA PHOENIX TUCSON LAS VEGAS DENVER



\\cp.rickeng.com\projects\C19500\19877_WarmingtonSummit\GIS\19877_Hydrology.mxd

RICK

Scale in Feet

0 120 240 360

North

Date of Exhibit: 3/11/2025
DigitalGlobe Aerial Image: 2017

Drainage Path Exhibit
Summit Ave

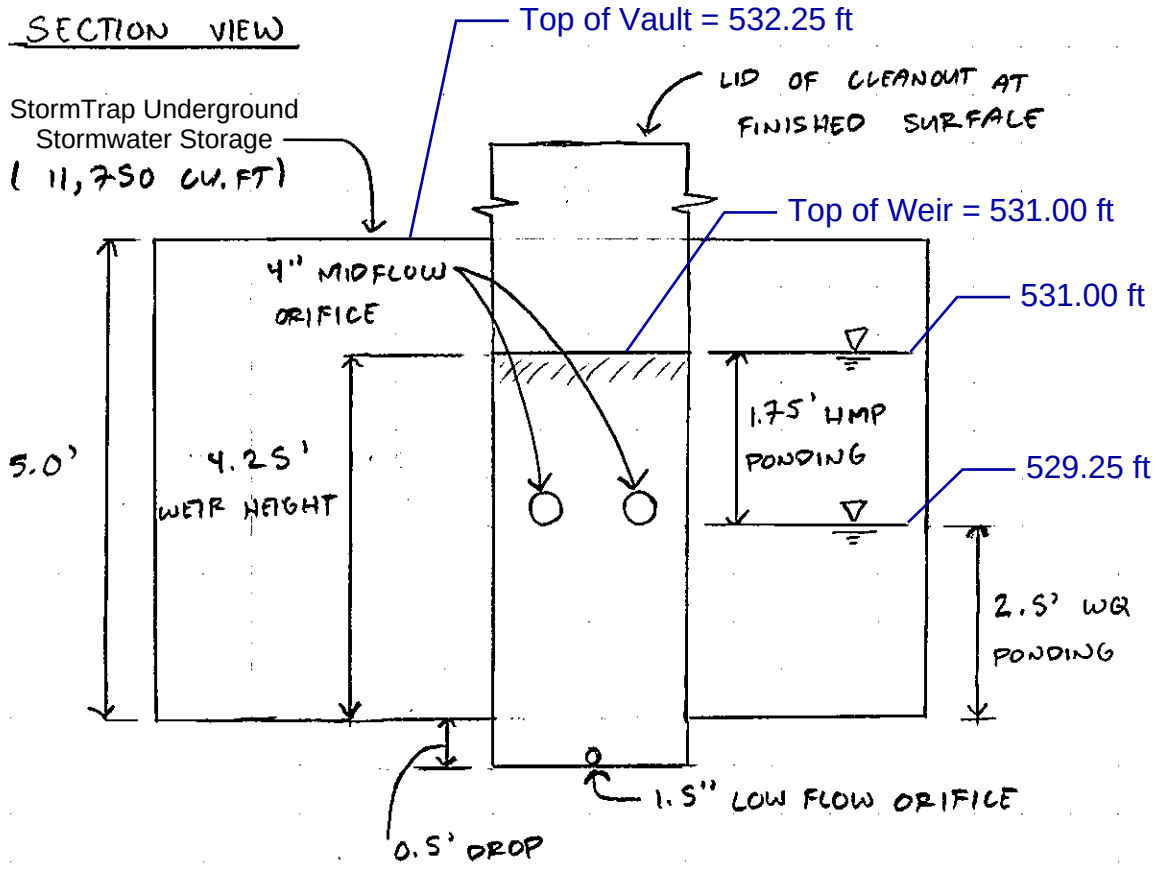
J-19877

RICK ENGINEERING COMPANY™
5620 Friars Road
San Diego, CA 92110-2596
Tel: (619) 291-0707
Fax: (619) 291-4165

Date 10/27/2023
Job No. 19877
Page 1 OF 1
Done By EJS
Checked By EGH

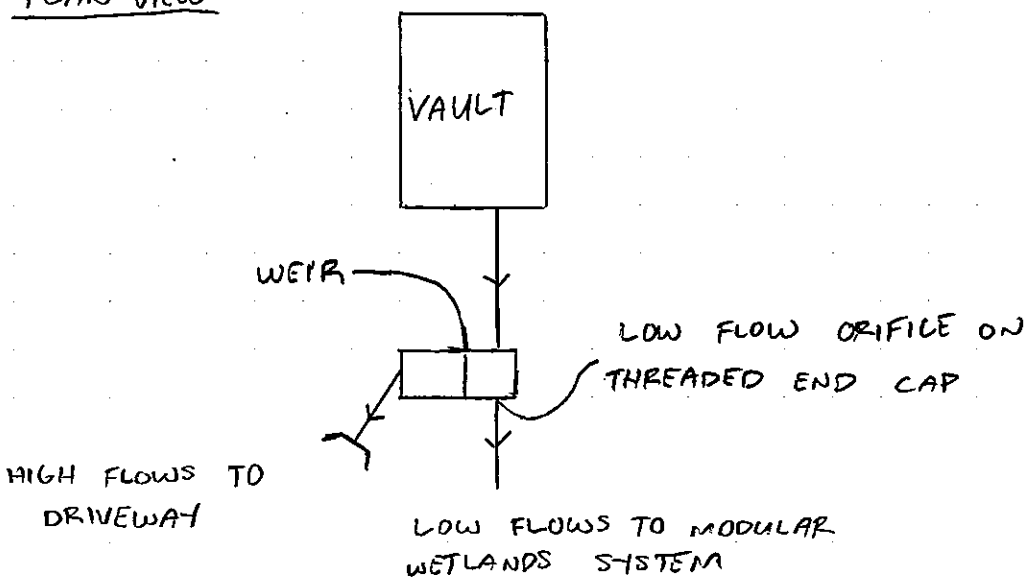
BMP - 1A OUTLET WORKS

SECTION VIEW



NOT TO SCALE

PLAN VIEW



Attachment 1B

TABULAR SUMMARY OF DMAs, (SUMMIT AVENUE)

DMA ID	TRIBUTARY AREA (SQ FT)	AREA (ACRES)	IMPERVIOUS AREA (ACRES)	%IMPERVIOUS	HSG	IMPERVIOUS RUNOFF FACTOR	PERVIOUS RUNOFF FACTOR	AREA WEIGHTED RUNOFF FACTOR	DCV (Cubic Feet)	TREATED BY	POLLUTANT CONTROL TYPE	DRAINS TO (POC ID)
DMA-1	104544	2.4	1.9	80%	D	0.90	0.35	0.79	3579	BMP-1A & 1B	PROP. BIOFILTRATION	POC-1
DMA-2	4356	0.1	0.3	80%	D	0.90	0.35	0.79	149	BMP-2	BIOFILTRATION BASIN	POC-1
DMA-3	87120	2.0	0.0	0%	D	0.90	0.35	0.35	1321	SELF MITIGATING	-	POC-1
GS-1	8712	0.2	0.3	80%	D	0.90	0.35	0.79	298	BMP-3 (GS-1.00)	TREE WELL	POC-1
SUM	**204732**	**4.7**	**2.5**						**5348**			

SUMMARY OF DMA INFORMATION (MUST MATCH PROJECT DESCRIPTION AND SWQMP NARRATIVE)

NO OF DMA		TOTAL DMA AREA (ACRES)	TOTAL IMPERVIOUS AREA (ACRES)	% IMP				AREA WEIGHTED RUNOFF COEFFICIENT	TOTAL DCV (CUBIC FEET)	TOTAL AREA TREATED (ACRES)		NO. OF POCS
4		**4.7**	**2.5**	**60%**				**0.68**	**5348**	**4.7**		**1**

Attachment 1C

DMA-1

Worksheet 0-2. Harvest and Use Feasibility Screening

Harvest and Use Feasibility Screening		Worsksheet B.3-1
1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season? ☒ Toilet and urinal flushing ☒ Landscape irrigation ☐ Other:_____		
2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2. 9.3 gal/person/day * 150 people = (1,395 gal/day) * 1.5 days = 2,092.5 gal/36 hours Moderate plant water use = 1,470 gal/acre * 2.5 acres = 3,675 gal/36 hours Total Demand = 5,767.5 gallons = **771 cubic feet**		
3. Calculate the DCV using worksheet B-2.1. DCV = **3,728 cubic feet**		
3a. Is the 36-hour demand greater than or equal to the DCV? Yes ⇩ / (No) ⇨	3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV? Yes ⇩ / (No) ⇨	3c. Is the 36-hour demand less than 0.25DCV? (Yes) ⇩
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	Harvest and use is considered to be infeasible. ✓

DMA-1

Worksheet 0-1. DCV

	Design Capture Volume	Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.52	inches
2	Area tributary to BMP (s)	A=	2.5	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.79	unitless
4	Street trees 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=	3,728	cubic-feet

GS-1

Worksheet 0-1. DCV

Design Capture Volume		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.52	inches
2	Area tributary to BMP (s)	A=	0.4	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.79	unitless
4	Street trees 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=	596	cubic-feet

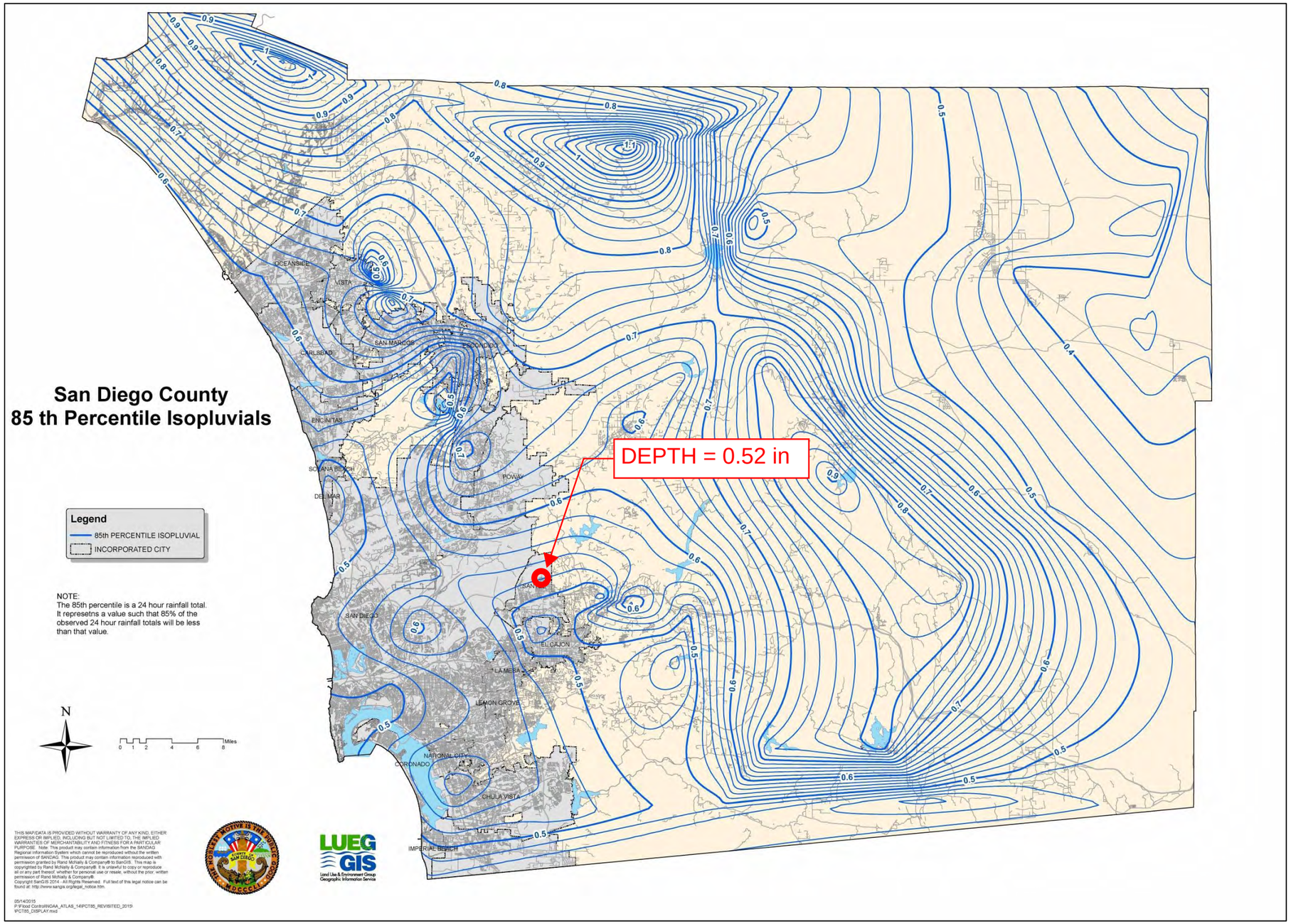


Figure 0-1: 85th Percentile 24-hour Isopluvial Map

Attachment 1D

Categorization of Infiltration Feasibility Condition	Form I-8

Part 1 - Full Infiltration Feasibility Screening Criteria

Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		No

Provide basis:

The site will be graded such that compacted fill will cover the majority of the area and underlain by relatively impermeable older alluvium granitic bedrock. The compacted fill and granitic bedrock possess little void space and therefore the infiltration rate is considered to be less than 0.5 inches per hour.

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

2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	Yes	

Provide basis:

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

Form I-8 Page 2 of 4			
Criteria	Screening Question	**Yes**	**No**
3	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	Yes	
Provide basis: Based on Appendix C.3 screening, the site is not known to be in an area of groundwater contamination and/or soil pollution. Groundwater is greater than 10 feet below existing ground surface. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	**Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	Yes	
Provide basis: □a□ed o□ □□□e□di□□.3 □□ree□i□□□□□e □i□e i□ □o□□□o□□ □o □e i□a□area o□□rou□d□a□er □o□□ami□a□io□ a□d/or □oil □ollu□io□. □rou□d□a□er i□ □rea□er □a□ □0 □ee□□elo□ e□□i□□ □rou□d □ur□a□e. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result *	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** If any answer from row 1-4 is "**No**", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		No

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

Form I-8 Page 3 of 4

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

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

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

Provide basis:

The site will be graded such that compacted fill will cover the majority of the area as well as be underlain by relatively impermeable older alluvium and granitic bedrock. The compacted fill, older alluvium, and granitic bedrock possess litlle void space. Areas at the site could be designed for infiltration rates less than 0.5 inches per hour.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

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

Provide basis:

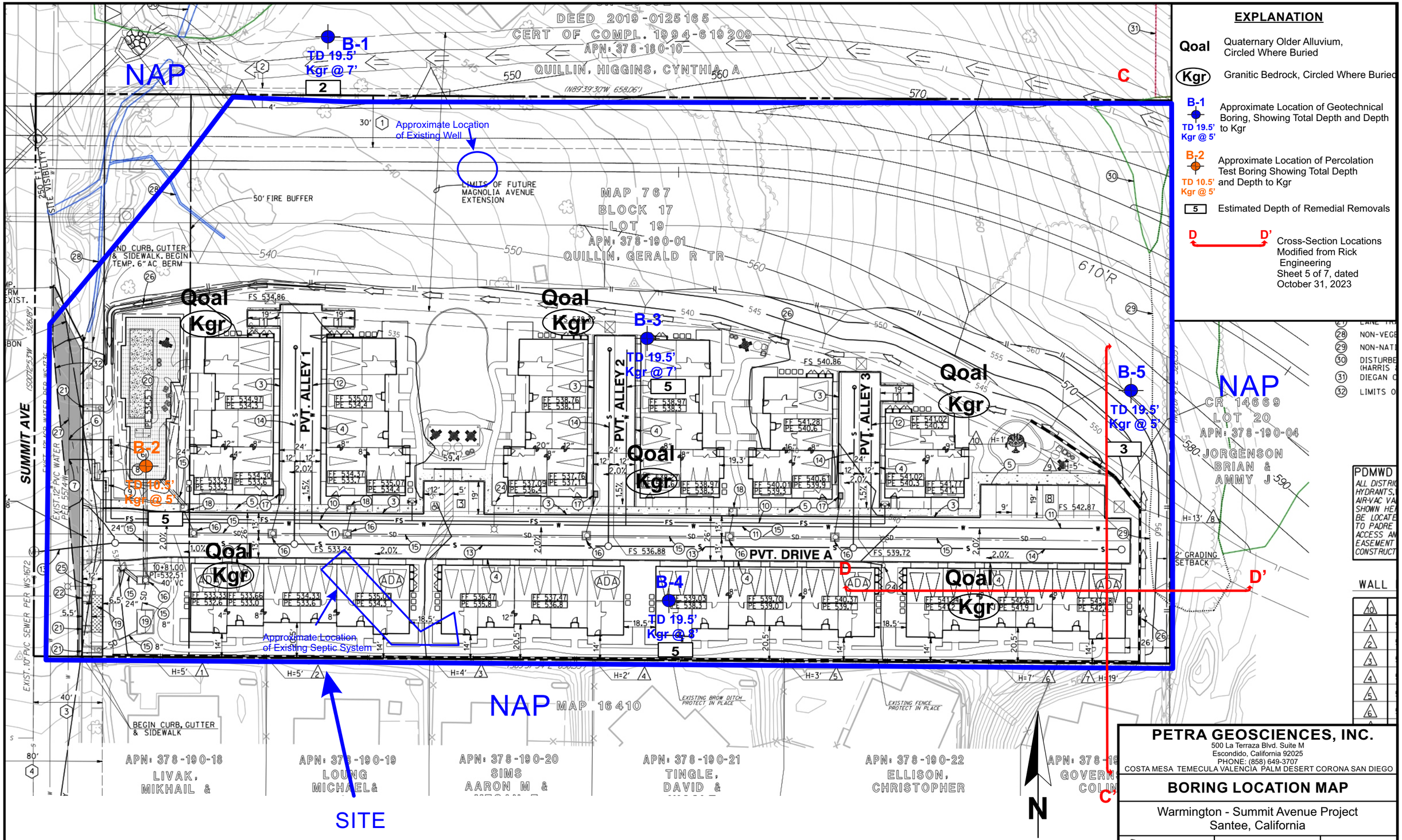
The site will be graded such that compacted fill will cover the majority of the area and underlain by relatively impermeable older alluvium granitic bedrock. The compacted fill and granitic bedrock possess little void space. Areas at the site could be designed for infiltration without increasing risk of geotechnical hazards.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

Form I-8 Page 4 of 4			
Criteria	Screening Question	**Yes**	**No**
7	**Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	Yes	
Provide basis: □a□ed o□ □□□e□di□ □.3 □□ree□i□□□□□e □i□e i□ □o□□□o□□ □o □e i□a□area o□□rou□d□a□er □o□□ami□a□io□ a□d/or □oil □ollu□io□. □rou□d□a□er i□ □rea□er □a□ □0 □ee□□elo□ e□i□i□□ □rou□d □ur□a□e. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
8	**Can infiltration be allowed without violating downstream water rights**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	Yes	
Provide basis: □a□ed o□ □□□e□di□ □.3 □□ree□i□□□□□e □i□e i□ □o□□□o□□ □o □e i□a□area which would impact downstrean water rights. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
Part 2 Result*	If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is **Partial Infiltration.** If any answer from row 5-8 is no, then infiltration of any volume is considered to be **infeasible** within the drainage area. The feasibility screening category is **No Infiltration.**	No Infiltration	

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

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	3	0.75
		Predominant soil texture	0.25	3	0.75
		Site soil variability	0.25	3	0.75
		Depth to groundwater / impervious layer	0.25	3	0.75
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			3
B	Design	Level of pretreatment/ expected sediment loads	0.5	3	1.5
		Redundancy/resiliency	0.25	3	0.75
		Compaction during construction	0.25	3	0.75
		Design Safety Factor, $S_B = \Sigma p$			3
Combined Safety Factor, $S_{total} = S_A \times S_B$				9	
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)				0.45 in/hr	
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$				0.075 in/hr	
Supporting Data					
Briefly describe infiltration test and provide reference to test forms: Test location map and test form attached.					



Base Map Reference: Rick Engineering Company, Vesting Tentative Tract 2023-XX/DR 2023-XX, November 3, 2023

PETRA GEOSCIENCES, INC.
500 La Terraza Blvd. Suite M
Escondido, California 92025
PHONE: (858) 649-3707
COSTA MESA TEMECULA VALENCIA PALM DESERT CORONA SAN DIEGO

BORING LOCATION MAP

Warmington - Summit Avenue Project
Santee, California

PETRA GEOSCIENCES INC.

DATE: January 2024
J.N.: 23-248

Figure 2

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30	5.00	5.44	5.2□	5.6□	3.23
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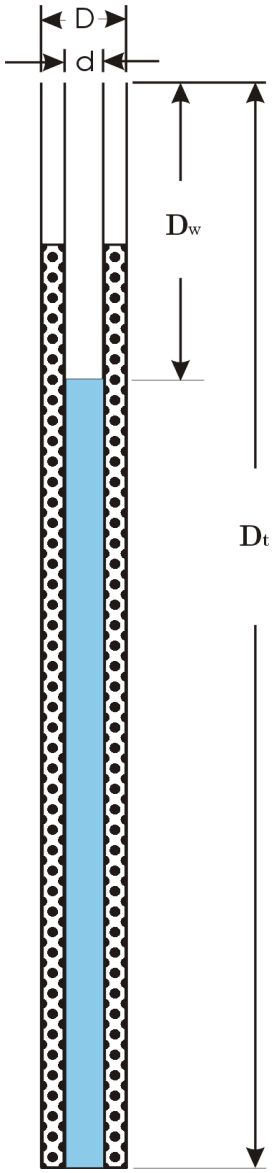

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Categorization of Infiltration Feasibility Condition	Form I-8

Part 1 - Full Infiltration Feasibility Screening Criteria

Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		No

Provide basis:

The site will be graded such that compacted fill will cover the majority of the area and underlain by relatively impermeable older alluvium granitic bedrock. The compacted fill and granitic bedrock possess little void space and therefore the infiltration rate is considered to be less than 0.5 inches per hour.

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

2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		No

Provide basis:

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

Form I-8 Page 2 of 4			
Criteria	Screening Question	**Yes**	**No**
3	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	Yes	
Provide basis: Based on Appendix C.3 screening, the site is not known to be in an area of groundwater contamination and/or soil pollution. Groundwater is greater than 10 feet below existing ground surface. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	**Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		No
Provide basis: Infiltration should not be allowed due to presence of nearby Woodglen Vista Creek. . Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result *	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** If any answer from row 1-4 is "**No**", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		No

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

Form I-8 Page 3 of 4

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

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

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

Provide basis:

The site will be graded such that compacted fill will cover the majority of the area as well as be underlain by relatively impermeable older alluvium and granitic bedrock. The compacted fill, older alluvium, and granitic bedrock possess litlle void space. Areas at the site could be designed for infiltration rates less than 0.5 inches per hour.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		No

Provide basis:

The site will be graded such that compacted fill will cover the majority of the area and underlain by relatively impermeable older alluvium and granitic bedrock. The compacted fill and granitic bedrock possess little void space. Areas at the site should not be designed for infiltration without increasing due to risk of geotechnical hazards.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

<table>
<tr><th colspan="4">Form I-8 Page 4 of 4</th></tr>
<tr><th>Criteria</th><th>Screening Question</th><th>Yes</th><th>No</th></tr>
<tr><td>7</td><td>Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td></td><td>No</td></tr>
<tr><td colspan="4">Provide basis:

□a□ed o□ □□□e□di□□.3 □□ree□i□□□□□e □i□e i□ □o□□□o□□ □o □e i□ a□ area o□□rou□d□a□er □o□ami□a□io□ a□d/or □oil □ollu□io□. □rou□d□a□er i□ □rea□er □□a□ □0 □ee□□elo□ e□i□□i□□ □rou□d □ur□a□e. However, infiltration may initiate perched groundwater creating a shallow water table and/or associated storm water pollutants.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</td></tr>
<tr><td>8</td><td>Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td></td><td>No</td></tr>
<tr><td colspan="4">Provide basis:

□a□ed o□ □□□e□di□□.3 □□ree□i□□□□□e □i□e i□ □o□□□o□□ □o □e i□ a□ area which would impact downstrean water rights. However, nearby Woodglen Vista Creek may be impacted.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</td></tr>
<tr><td>Part 2 Result*</td><td colspan="2">If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration.

If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.</td><td>No Infiltration</td></tr>
</table>

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

EXPLANATION

Qoal Quaternary Older Alluvium, Circled Where Buried

Kgr Granitic Bedrock, Circled Where Buried

B-1 TD 19.5' Kgr @ 5' — Approximate Location of Geotechnical Boring, Showing Total Depth and Depth to Kgr

B-6 TD 10.5' Kgr @ 5' — Approximate Location of Percolation Test Boring Showing Total Depth and Depth to Kgr

5 — Estimated Depth of Remedial Removals

D — D' — Cross-Section Locations Modified from Rick Engineering Sheet 5 of 7, dated October 31, 2023

B-1 TD 19.5' Kgr @ 7'

B-2 TD 10.5' Kgr @ 3.5'

B-3 TD 19.5' Kgr @ 7'

B-4 TD 19.5' Kgr @ 8'

B-5 TD 19.5' Kgr @ 5'

B-6 TD 10.0' Kgr @ 3.5'

Approximate Location of Existing Well

Approximate Location of Existing Septic System

LIMITS OF FUTURE MAGNOLIA AVENUE EXTENSION

50' FIRE BUFFER

SUMMIT AVE

PVT. ALLEY 1

PVT. ALLEY 2

PVT. ALLEY 3

PVT. DRIVE A

MAP 767
BLOCK 17
LOT 19
APN: 378-190-01
QUILLIN, GERALD R TR

DEED 2019-0125165
CERT OF COMPL. 1994-619209
APN: 378-180-10
QUILLIN, HIGGINS, CYNTHIA A

NAP

NAP MAP 16410

NAP CR 14669 LOT 20 APN: 378-190-04 JORGENSON BRIAN & AMMY J

APN: 378-190-18 LIVAK, MIKHAIL &

APN: 378-190-19 LOUNG MICHAEL&

APN: 378-190-20 SIMS AARON M &

APN: 378-190-21 TINGLE, DAVID &

APN: 378-190-22 ELLISON, CHRISTOPHER

SITE

N

Base Map Reference: Rick Engineering Company, Vesting Tentative Tract 2023-XX/DR 2023-XX, November 3, 2023

PETRA GEOSCIENCES, INC.
500 La Terraza Blvd. Suite M
Escondido, California 92025
PHONE: (858) 649-3707
COSTA MESA TEMECULA VALENCIA PALM DESERT CORONA SAN DIEGO

BORING LOCATION MAP

Warmington - Summit Avenue Project
Santee, California

DATE: April 2024
J.N.: 23-248

Figure 2

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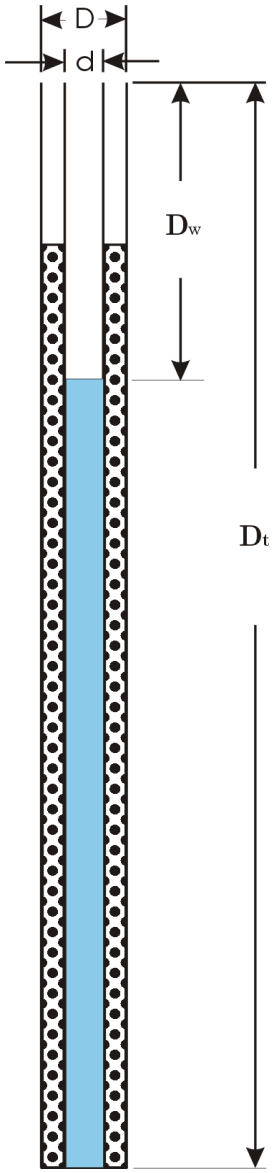

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25	5.00	5.62	7.44	3.36	5.5□
25	5.00	5.45	5.40	4.63	3.□7
30	5.00	5.52	6.24	4.□□	3.□6
30	5.00	5.4□	5.76	5.2□	3.54
30	5.00	5.46	5.52	5.43	3.3□
30	5.00	5.44	5.2□	5.6□	3.23
30	5.00	5.44	5.2□	5.6□	3.23
30	5.00	5.44	5.2□	5.6□	3.23
30	5.00	5.44	5.2□	5.6□	3.23
30	5.00	5.44	5.2□	5.6□	3.23
30	5.00	5.45	5.40	5.56	3.3□
30	5.00	5.44	5.2□	5.6□	3.23
30	5.00	5.44	5.2□	5.6□	3.23
30	5.00	5.44	5.2□	5.6□	3.23
30	5.00	5.44	5.2□	5.6□	3.23

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PETRA GEOSCIENCES INC.

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[illegible]

Deep Percolation Test Method

Total Depth of Boring, D_t (inch)	[illegible]0
Diameter of Hole, D (inch)	[illegible]
Diameter of Pipe, d (inch)	3
[illegible] Correction for Void (%)	40
Pre-Soak depth (inch)	5[illegible]0

Time Interval (min)	Depth to Water Surface D_w (inch)		Change in Head (inch)	Perc. Rate (min/inch)	Perc. Rate (gal/day/ft2)
	1st Reading	2nd Reading			
25	6.04	6.62	6.[illegible]6	3.5[illegible]	5.26
25	6.05	6.52	5.64	4.43	4.2[illegible]
30	6.0[illegible]	6.65	6.[illegible]4	4.3[illegible]	4.35
30	6.05	6.62	6.[illegible]4	4.3[illegible]	4.3[illegible]
30	6.[illegible]0	6.5[illegible]	5.76	5.2[illegible]	3.64
30	6.00	6.5[illegible]	6.[illegible]2	4.[illegible]0	3.7[illegible]
30	6.06	6.53	5.64	5.32	3.52
30	6.05	6.52	5.64	5.32	3.5[illegible]
30	6.00	6.4[illegible]	5.76	5.2[illegible]	3.54
30	6.02	6.4[illegible]	5.64	5.32	3.4[illegible]
30	6.[illegible]0	6.5[illegible]	5.[illegible]	5.[illegible]0	3.72
30	6.05	6.5[illegible]	5.52	5.43	3.43
30	6.00	6.4[illegible]	5.76	5.2[illegible]	3.54
30	6.00	6.4[illegible]	5.76	5.2[illegible]	3.54

[illegible] R[illegible] [illegible]2[illegible] M[illegible]

[illegible] [illegible]d[illegible]^2

[illegible]r[illegible]R[illegible] [illegible] [illegible]r[illegible]

[illegible]or[illegible]e Method[illegible]

Where Infiltration Rate I_t = $\Delta H (60r) / \Delta t (r + 2H_{avg})$

$r = D / 2$

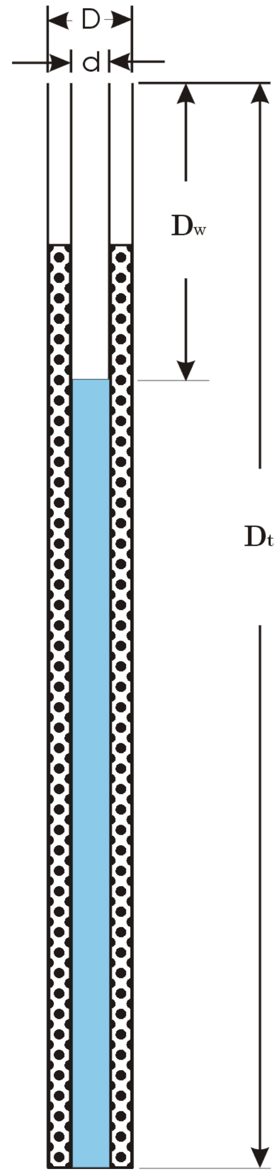
$H_o = D_t - D_o$

$H_f = D_t - D_f$

$\Delta H = \Delta D = H_o - H_f$

$H_{avg} = (H_o + H_f) / 2$

*Rate Number Does Not Include a Factor of Safety



References: San Diego County BMP Design Manual, Appendix D, Effective January 20[illegible]

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PETRA GEOSCIENCES INC.

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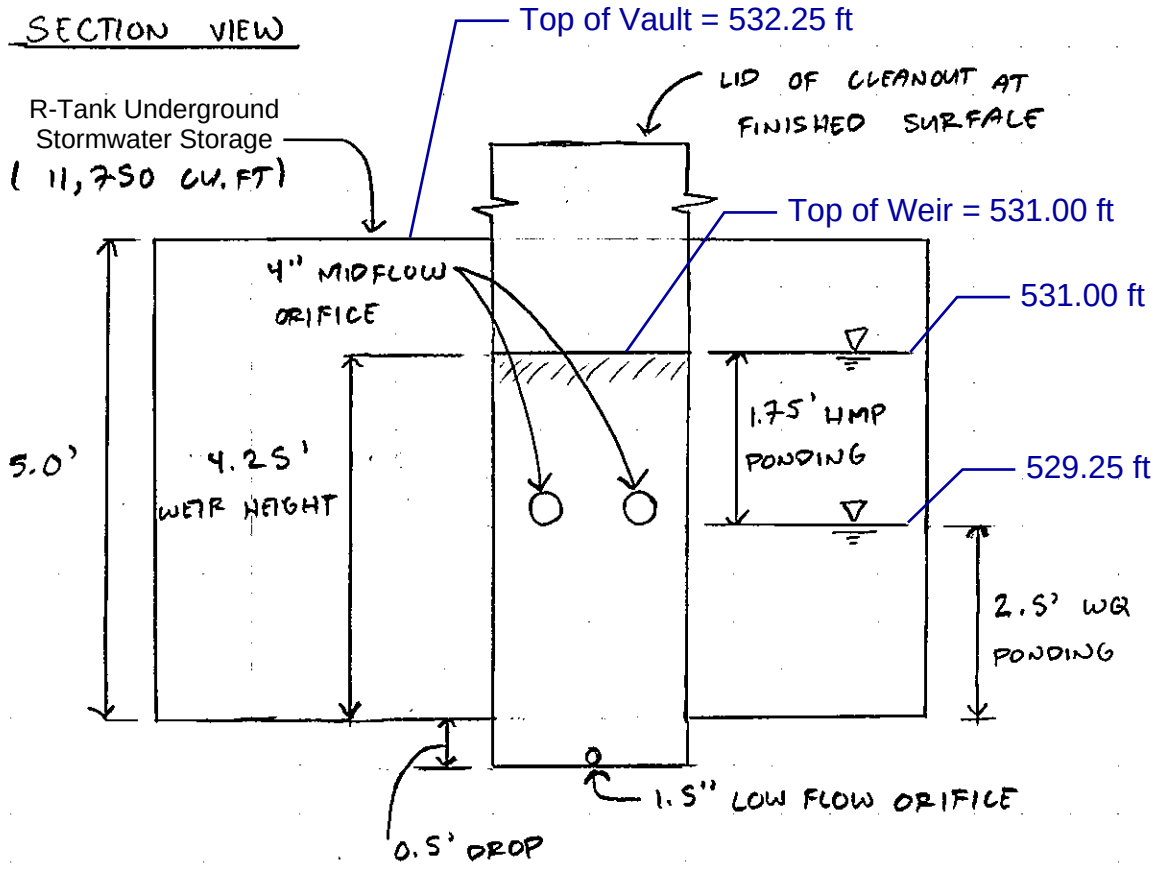
Attachment 1E

RICK ENGINEERING COMPANY™
5620 Friars Road
San Diego, CA 92110-2596
Tel: (619) 291-0707
Fax: (619) 291-4165

Date 10/27/2023
Job No. 19877
Page 1 OF 1
Done By EJS
Checked By EGH

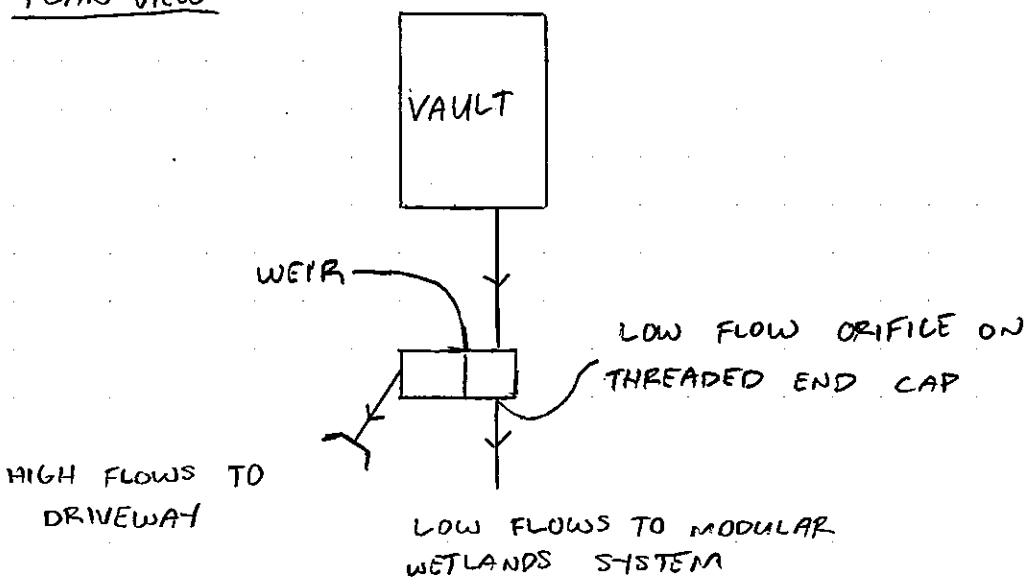
BMP - 1A OUTLET WORKS

SECTION VIEW



NOT TO SCALE

PLAN VIEW



SUMMIT AVENUE
J-19877
12/18/2024

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)	Runoff Factor	85th Percentile Storm Event (in)	Design Capture Volume (c.f.)	Biofiltration Area Provided (ft^2)	Biofiltration Area Required (ft^2)	DCV Multiplier	Volume Provided (ft^3)	Volume Required (ft^3)	MWS Model Name
DMA-1	Biofiltration - Mod Wetlands	2.4	104544	80%	83635	20909	0.79	0.52	3,579	-	-	1.25	6,188	4,474	MWS-L-6-8-7-5-V-HC
DMA-2	Biofiltration Basin	0.1	4356	80%	3485	871	0.79	0.52	149	178	103	1.25	-	-	-
DMA-3	Self Mitigating Area	2.0	78408	0%	0	78408	0.35	0.52	1,321	-	-	1.25	-	-	-
GS-1	Tree Well	0.2	17424	80%	13939	3485	0.79	0.52	298	-	-	1.25	-	-	-

Notes:

1. The required and provided Water Quality volumes are based on the 2013 MS4 permit and the City of Santee BMP Design Manual
2. 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
3.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

VOLUME-BASED

Many states require treatment of a water quality volume and do not offer the option of flow-based design. The MWS Linear and its unique horizontal flow makes it the only biofilter that can be used in volume-based design installed downstream of ponds, detention basins, and underground storage systems.

MODEL #	TREATMENT CAPACITY (cu. ft.) @ 24-HOUR DRAINDOWN	TREATMENT CAPACITY (cu. ft.) @ 48-HOUR DRAINDOWN
MWS-L-4-4	1140	2280
MWS-L-4-6	1600	3200
MWS-L-4-8	2518	5036
MWS-L-4-13	3131	6261
MWS-L-4-15	3811	7623
MWS-L-4-17	4492	8984
MWS-L-4-19	5172	10345
MWS-L-4-21	5853	11706
MWS-L-6-8	3191	6382
MWS-L-8-8	5036	10072
MWS-L-8-12	7554	15109
MWS-L-8-16	10073	20145
MWS-L-8-20	12560	25120
MWS-L-8-24	15108	30216

The City of SAN DIEGO	Project Name	Summit Avenue	
	BMP ID		
Sizing Method for Volume Retention Criteria		**Worksheet B.5-2**	
1	Area draining to the BMP	204732	sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)	0.68	
3	85th percentile 24-hour rainfall depth	0.52	inches
4	Design capture volume [Line 1 x Line 2 x (Line 3/12)]	6033	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% = 0.0000013 x Line 8^3 - 0.000057 x Line 8^2 + 0.0086 x Line 8 - 0.014 When Line 8 ≤ 8% = 0.023	0.023	
10	Target volume retention [Line 9 x Line 4]	139	cu. ft.

The City of SAN DIEGO	Project Name	Summit Avenue
	BMP ID	

Volume Retention for No Infiltration Condition			Worksheet B.5-6	
1	Area draining to the biofiltration BMP	204732		sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)	0.68		
3	Effective impervious area draining to the BMP [Line 1 x Line 2]	139218		sq. ft.
4	Required area for Evapotranspiration [Line 3 x 0.03]	4177		sq. ft.
5	Biofiltration BMP Footprint	178		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.)		4314				
7	Impervious area draining to the landscape area (sq. ft.)		6210				
8	Impervious to Pervious Area ratio [Line 7/Line 6]		1.44	0.00	0.00	0.00	0.00
9	Effective Credit Area If (Line 8 >1.5, Line 6, Line 7/1.5]		4140	0	0	0	0

10	Sum of Landscape area [sum of Line 9 Id's 1 to 5]	4140		sq. ft.
11	Provided footprint for evapotranspiration [Line 5 + Line 10]	4318		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]	1.03	
14	Target Volume Retention [Line 10 from Worksheet B.5.2]	139	cu. ft.
15	Volume retention required from other site design BMPs [(1-Line 13) x Line 14]	-4.17	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		

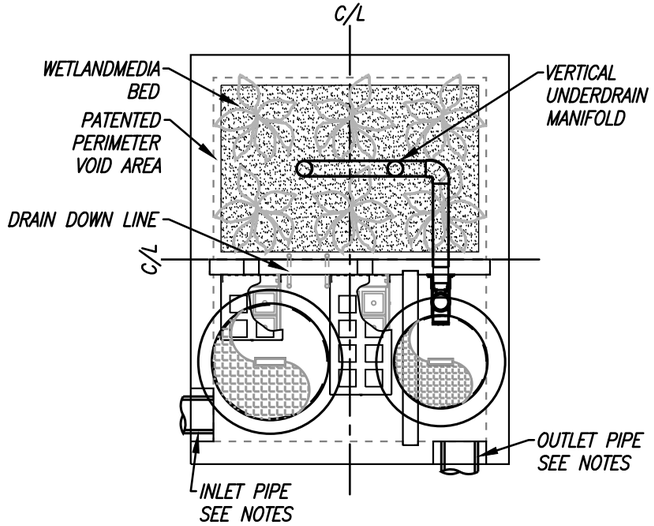
SITE SPECIFIC DATA			
PROJECT NUMBER		786234-010	
PROJECT NAME		SUMMIT AVENUE	
PROJECT LOCATION		SANTEE, CA	
STRUCTURE ID		BMP-1B	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
4,660		N/A	
TREATMENT HGL AVAILABLE (FT)			531.00
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE			UPSTREAM
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	526.04	HDPE	8"
OUTLET PIPE	525.50	HDPE	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	533.00	533.00	533.00
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	30"	OPEN PLANTER	24"
WETLANDMEDIA VOLUME (CY)			5.79
ORIFICE SIZE (DIA. INCHES)			ø0.92"
NOTES: PRELIMINARY NOT FOR CONSTRUCTION. UPSTREAM BYPASS TOP OF WEIR HEIGHT TO BE AT 531.00.			

INSTALLATION NOTES

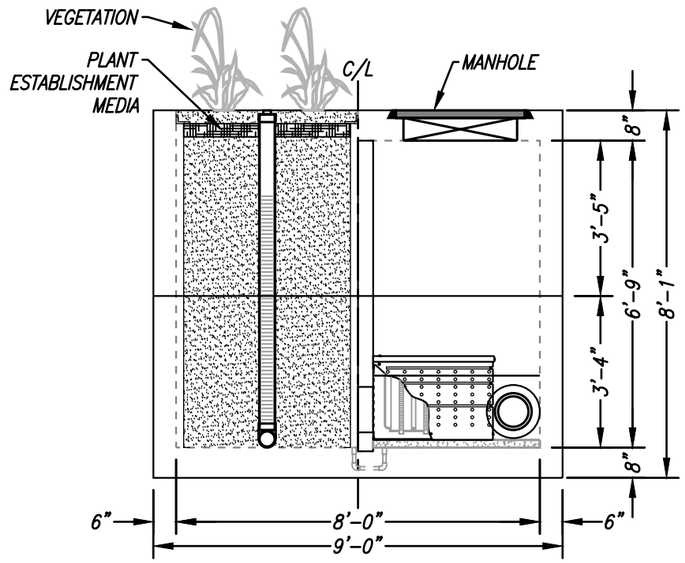
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS' SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO USE GROUT AND/OR BRICKS TO MATCH COVERS WITH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.

GENERAL NOTES

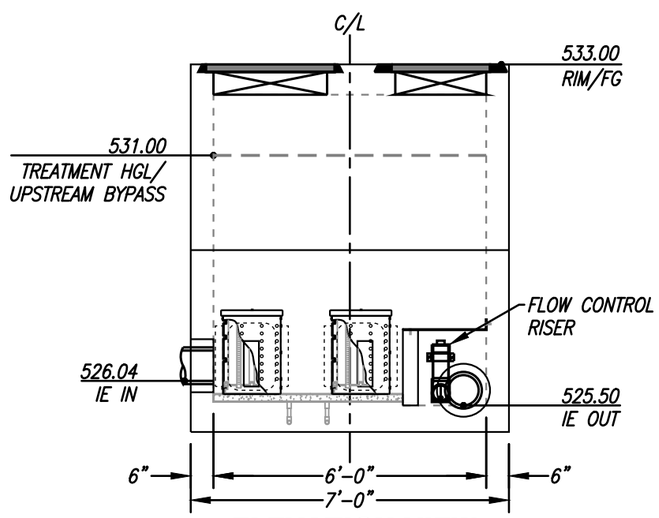
1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT CONTECH.



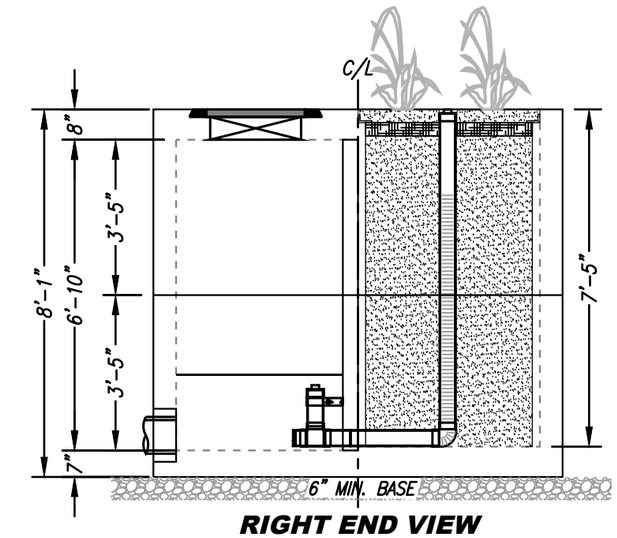
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

REQUIRED TREATMENT VOLUME (CF)		4,660
DRAINDOWN DURATION (HOURS)		24
AVERAGE DISCHARGE RATE PER MWS UNIT(GPM)		23.78
OPERATING HEAD (FT)		5.5
WETLANDMEDIA INFILTRATION RATE (IN/HR)	OR	23
WETLANDMEDIA LOADING RATE (GPM/SF)		0.23

MODULAR WETLANDS
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com

MWS-L-6-8-7'-5"-V-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

1/18/24 BEN.ROEGNER

Green Streets
Standard Drawings

County of San Diego
Department of Public Works

Revised March 2021

Green Streets Standard Drawings

ERRATA

Original Drawings (October 2019)

UPDATE #1 (MARCH 2021):

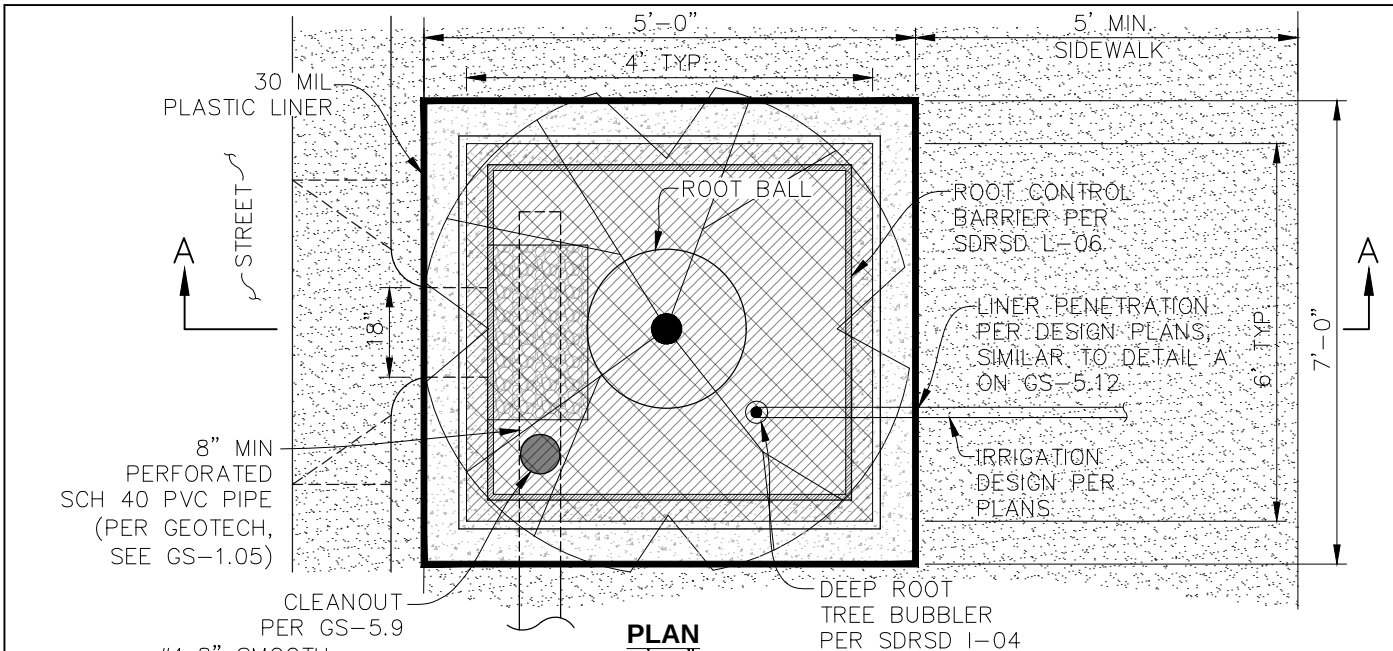
- UPDATED THE DESIGN OF CONCRETE FOOTINGS AND STEEL REINFORCEMENT FOR ELEMENTS ADJACENT TO UNCOMPACTED BMPs;
- REDUCED MAXIMUM CHECK DAM INTERVALS WHEN USED AS A STRUCTURAL ELEMENT;
- CLARIFIED SOIL DEPTHS FOR BIOFILTRATION BASINS AND TREE WELLS;
- REVISED CALLOUTS TO BE CONSISTENT ON ALL SHEETS;
- MISCELLANEOUS FORMATTING REVISIONS FOR CLARITY.
- UPDATED BMP STANDARDS WITH PARKING RESTRICTIONS.
- UPDATED ALL REBAR CALLOUTS TO USE A #4 REBAR INSTEAD OF A #3.
- UPDATED THE DEFINITION OF STRUCTURAL SOILS.
- ADDED DEEPENED SHEAR KEY AND REBAR TO VARIOUS SIDEWALK AND CURB DETAILS.

SAN DIEGO COUNTY
DEPARTMENT OF PUBLIC WORKS

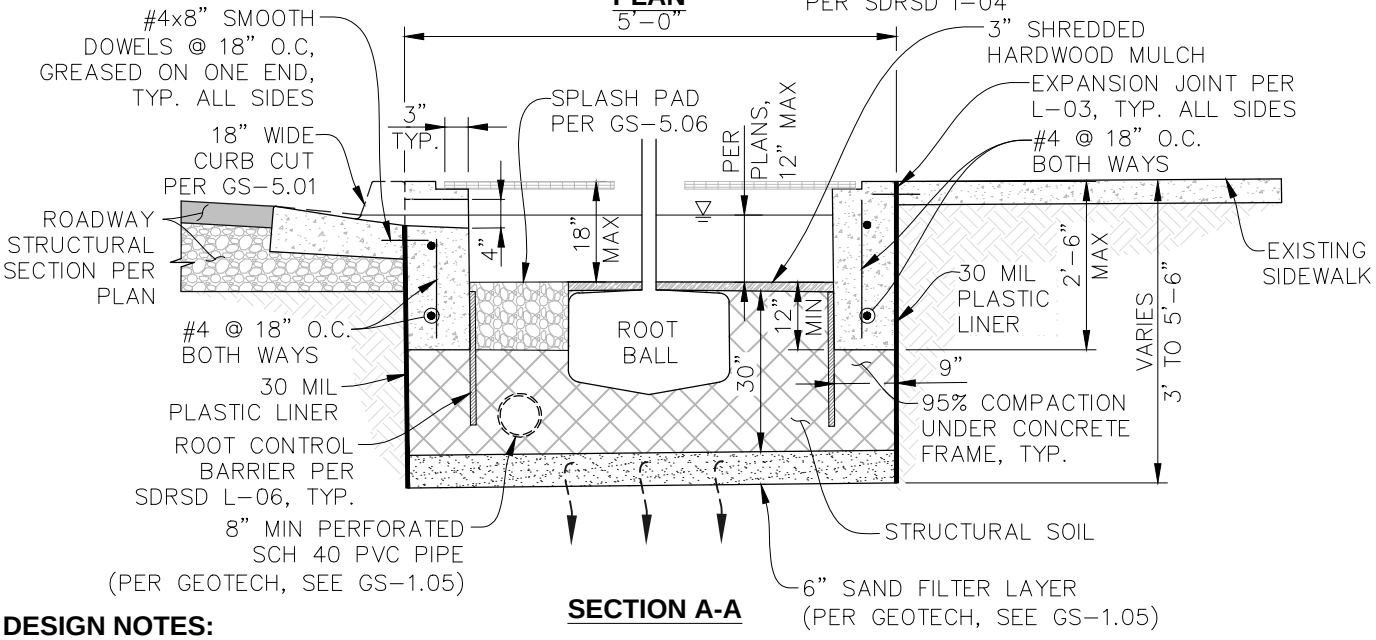
GREEN STREET STANDARD DRAWINGS

NUMBER	TITLE
GS-1	**TREE WELL**
GS-1.00	TREE WELL GENERAL DESIGN GUIDANCE
GS-1.01	SMALL TREE WELL
GS-1.02	LARGE TREE WELL
GS-1.03	TREE WELL ADJACENT TO RIGHT-OF-WAY
GS-1.04a	TREE WELL WITHOUT STRUCTURAL SOIL
GS-1.04b	TREE WELL WITHOUT STRUCTURAL SOIL
GS-1.05	TREE WELL SUBSURFACE DRAINAGE TYPES
GS-2	**DISPERSION AREA**
GS-2.00	DISPERSION AREA GENERAL DESIGN GUIDANCE
GS-2.01	DISPERSION AREA ADJACENT TO ROADWAY
GS-2.02	DISPERSION AREA WITH STEP OUT ZONE
GS-2.03	DISPERSION AREA ADJACENT TO RIGHT-OF-WAY
GS-2.04	CURB EXTENSION ADJACENT TO SIDEWALK
GS-2.05	CURB EXTENSION ADJACENT TO PLANTER STRIP
GS-2.06	OPEN DISPERSION AREA
GS-2.07	DISPERSION SWALES
GS-2.08	DISPERSION AREA FILTER STRIP
GS-3	**BIOFILTRATION**
GS-3.00	BIOFILTRATION GENERAL DESIGN GUIDANCE
GS-3.01	BIOFILTRATION PLANTER ADJACENT TO ROADWAY (12” MAX PONDING DEPTH)
GS-3.02	BIOFILTRATION PLANTER ADJACENT TO ROADWAY (PONDING DEPTH>12”)
GS-3.03	BIOFILTRATION ADJACENT TO ROADWAY (WITH STEP OUT ZONE)
GS-3.04	BIOFILTRATION ADJACENT TO RIGHT-OF-WAY
GS-3.05	CURB EXTENSION ADJACENT TO SIDEWALK W/ BIOFILTRATION
GS-3.06	CURB EXTENSION ADJACENT TO PLANTING STRIP W/ BIOFILTRATION
GS-3.07	BIOFILTRATION IN OPEN AREA
GS-3.08	PARKING LOT BIOFILTRATION BASIN
GS-3.09	CURB BULBOUT WITH BIOFILTRATION
GS-3.10	BIOFILTRATION SUBSURFACE DRAINAGE TYPES
GS-4	**PERMEABLE PAVEMENT**
GS-4.00	PERMEABLE PAVEMENT GENERAL DESIGN GUIDANCE
GS-4.01	PERMEABLE PAVEMENT ELEVATIONS
GS-4.02	PERMEABLE PAVEMENT ELEVATIONS W/ UNDERDRAIN
GS-4.03	PERMEABLE PAVEMENT SUBSURFACE DRAINAGE TYPES

GS-5	**MISCELLANEOUS**
GS-5.01	DISPERSION AREA CURB CUT
GS-5.02	BIOFILTRATION BASIN CURB CUT
GS-5.03	CURB CUT WITH FLUME
GS-5.04a	SIDEWALK UNDERDRAIN
GS-5.04b	SIDEWALK UNDERDRAIN
GS-5.05	TYPICAL STEP OUT ZONES
GS-5.06	SPLASH PAD
GS-5.07	GRAVITY WALL
GS-5.08	INLET AND OUTLET DETAILS FOR CURB EXTENSIONS & BULBOUTS
GS-5.09	CLEANOUTS & OBSERVATION WELLS ADJACENT TO CHECK DAMS
GS-5.10	CLEANOUTS, OBSERVATION WELLS, & OVERFLOW RISERS ADJACENT TO BMP LIMITS
GS-5.11	PERMEABLE PAVEMENT CLEANOUTS AND OBSERVATION WELLS
GS-5.12	DOWNSTREAM STORMWATER FACILITY CONNECTION DETAIL (L≤10)
GS-5.13	DOWNSTREAM STORMWATER FACILITY CONNECTION DETAIL (L>10)
GS-5.14a	CONCRETE CHECK DAM
GS-5.14b	CONCRETE CHECK DAM
GS-5.15	IMPERMEABLE LINER FASTENING DETAIL



PLAN



SECTION A-A

DESIGN NOTES:

1. STREET IMPROVEMENTS AND DRAINAGE STRUCTURES SHALL BE CONSTRUCTED ACCORDING TO THE LATEST SAN DIEGO REGIONAL STANDARD DRAWINGS AND CALTRANS STANDARD PLANS.
2. CONCRETE SHALL BE 520-C-2500 UNLESS OTHERWISE SPECIFIED.
3. SEE SDRSD DWG L-01 THROUGH L-06 FOR LANDSCAPING DETAILS NOT SPECIFIED HEREIN. (TREE GRATE PER SDRSD L-04).
4. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x6'.
5. PROVIDE 30 MIL PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL.
6. SEAL PLASTIC LINER TO ADJACENT IMPROVEMENTS AND EDGE RESTRAINTS PER GS-5.15.
7. WHEN SAND FILTER LAYER IS OMITTED, PROVIDE GEOTEXTILE BENEATH THE STRUCTURAL SOIL LAYER PER PROJECT-SPECIFIC GEOTECHNICAL RECOMMENDATIONS.
8. PROPOSED SIDEWALK LOCATIONS & INTENDED ADA ROUTES PER PROJECT-SPECIFIC DESIGN PLANS.
9. FOR TREE WELL SUBSURFACE DRAINAGE TYPES, SEE DWG GS-1.05.
10. ALL STRUCTURAL SOILS ARE COMPACTED TO 95% RELATIVE COMPACTION.

DRAWING NOT TO SCALE

DRAWN BY: NWB	CHECKED BY: KBK
RECOMMENDED BY: CHARLES MOHRLOCK, P.E.	
APPROVED BY COUNTY ENGINEER	
WP Morgan DATE: 3/15/21	
WILLIAM P. MORGAN, P.E.	
R.C.E. NO. 49452, EXP 9/30/2022	

SAN DIEGO COUNTY DESIGN STANDARD

TREE WELL
GENERAL DESIGN GUIDANCE

REVISIONS	APPROVED	DATE
ORIGINAL		10-01-2019
REVISED		03-08-2021

DRAWING NUMBER **GS-1.00**

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	Hydromodification Management Exhibit (Required)	☒ Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2b	Management of Critical Coarse Sediment Yield Areas (WMAA Exhibit is required, additional analyses are optional) See Section 6.2 of the BMP Design Manual.	☒ Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required) Optional analyses for Critical Coarse Sediment Yield Area Determination ☐ 6.2.1 Verification of Geomorphic Landscape Units Onsite ☐ 6.2.2 Downstream Systems Sensitivity to Coarse Sediment ☐ 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
Attachment 2c	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	☒ Not performed ☐ Included ☐ Submitted as separate stand-alone document
Attachment 2d	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the BMP Design Manual	☒ Included ☐ Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐ Included ☒ Not required because BMPs will drain in less than 96 hours

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

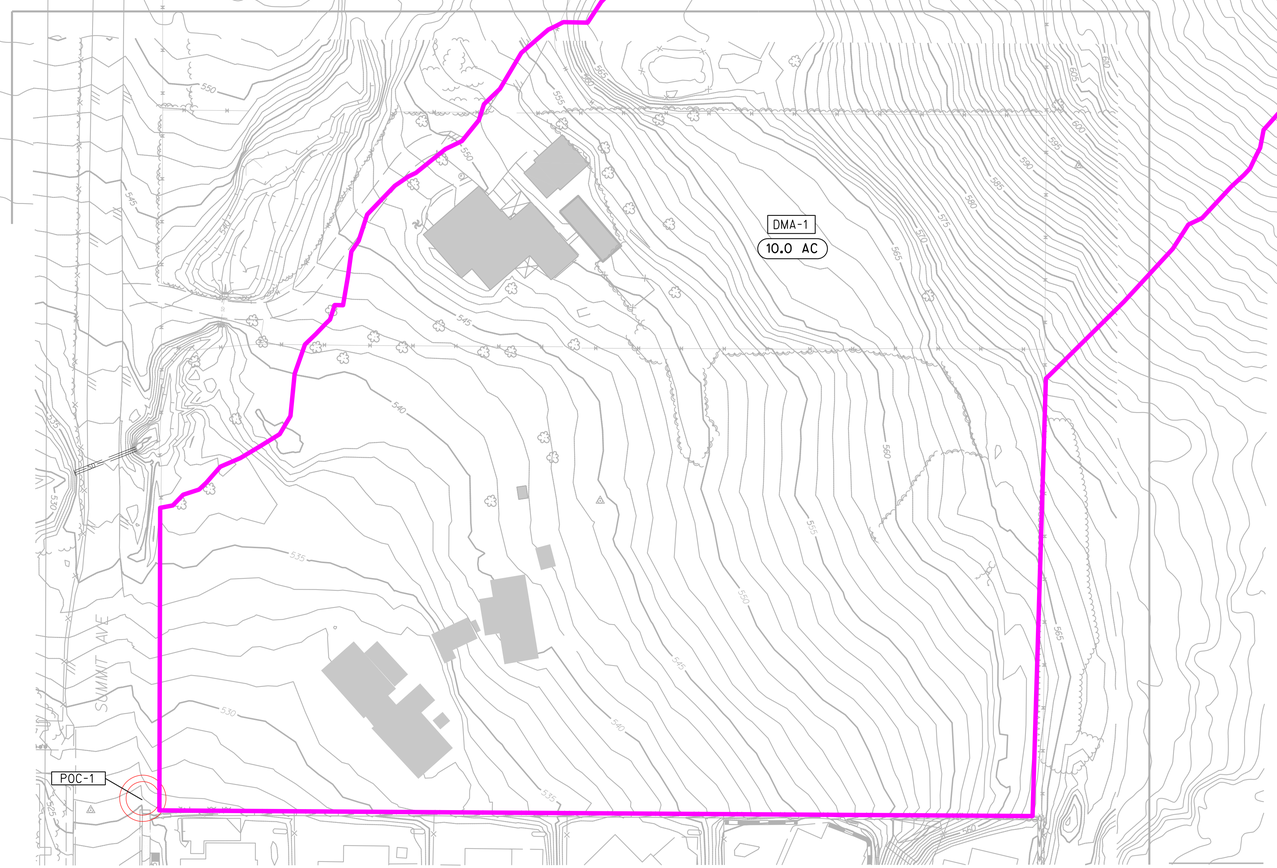
The Hydromodification Management Exhibit must identify:

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

Note: Please Reference Attachment 1A to find specified information.

Attachment 2A

Reference Attachment 1A for HMP Specifications



NOTES

1. SIZES OF THE POLLUTANT CONTROL BMPs SHOWN ON THIS EXHIBIT ADDRESS THE PERMANENT STORM WATER QUALITY REQUIREMENTS OF THE CITY OF SANTEE BMP DESIGN MANUAL DATED FEBRUARY 2016.

2. HYDROLOGIC SOIL GROUP TYPES "A" AND "D" HAVE BEEN IDENTIFIED ON SITE.

3. NO CRITICAL COARSE SEDIMENT YIELD AREAS TO BE PROTECTED IN PROXIMITY TO PROJECT.

4. DEPTH TO GROUNDWATER WAS NOT ENCOUNTERED IN BORINGS UP TO 19.5 FEET, PER GEOTECHNICAL REPORT.

5. 85TH PERCENTILE STORM EVENT = 0.52 IN.

6. ALL EXISTING STRUCTURES WITHIN THE PROJECT AREA WILL BE DEMOLISHED.

7. EXISTING NON-VEGETATED CHANNEL TO BE PROTECTED IN PLACE. NOT PART OF PROJECT IMPROVEMENTS.

8. TREE WELL DESIGN PROPOSED PER COUNTY OF SAN DIEGO GREEN STREET STANDARDS GS-1.00

9. HOA TO MAINTAIN THE TRASH CAPTURE INSERT, TREE WELL, BROW DITCH, STORM WATER DETENTION VAULT, AND MODULAR WETLAND SYSTEM INTO PERPETUITY.

10. HOA TO BE RESPONSIBLE FOR MAINTENANCE OF THE PET WASTE STATIONS.

50 25 0 50 100 150

GRAPHIC SCALE 1" = 50'

SITE DESIGN/SOURCE CONTROL

SC-1	PREVENTION OF ILLICIT DISCHARGES TO THE MS4
SC-2	STORM DRAIN STENCILING / SIGNAGE
SC-6	ADDITIONAL BMP'S
SD-3	MINIMIZE IMPERVIOUS AREA
SD-4	MINIMIZE SOIL COMPACTION
SD-5	IMPERVIOUS AREA DISPERSION
SD-7	LANDSCAPING WITH NATIVE / DROUGHT TOLERANT SPECIES

LEGEND:

- MAJOR DRAINAGE BOUNDARY
- IMPERVIOUS AREA
- BMP
- DMA-X — POC/DMA ID
- X.X AC — SUB BASIN AREA
- POC
- BROW DITCH
- PET WASTE STATION LOCATION

HYDROMODIFICATION MANAGEMENT EXHIBIT FOR SUMMIT AVENUE (PRE-PROJECT)

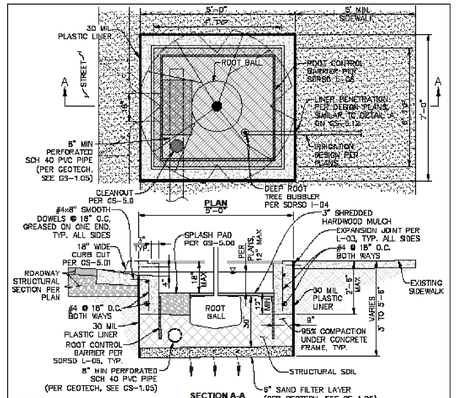
J-19877

DATE: MARCH 14, 2025

619-291-0707
rickengineering.com
5620 FRIARS ROAD
SAN DIEGO, CA 92110

RICK
SAN DIEGO ORANGE RIVERSIDE SACRAMENTO SAN LUIS OBISPO
SANTA CLARITA PHOENIX TUCSON LAS VEGAS DENVER

NOT FOR CONSTRUCTION - EXHIBIT FOR PDP SWQMP ONLY



DESIGN NOTES:

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3. SEE SDRSD DWG L-01 THROUGH L-06 FOR LANDSCAPING DETAILS NOT SPECIFIED HEREIN. (TREE GRATE PER SDRSD L-04).
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7. WHEN SAND FILTER LAYER IS OMITTED, PROVIDE GEOTEXTILE BENEATH THE STRUCTURAL SOIL LAYER PER PROJECT-SPECIFIC GEOTECHNICAL RECOMMENDATIONS.
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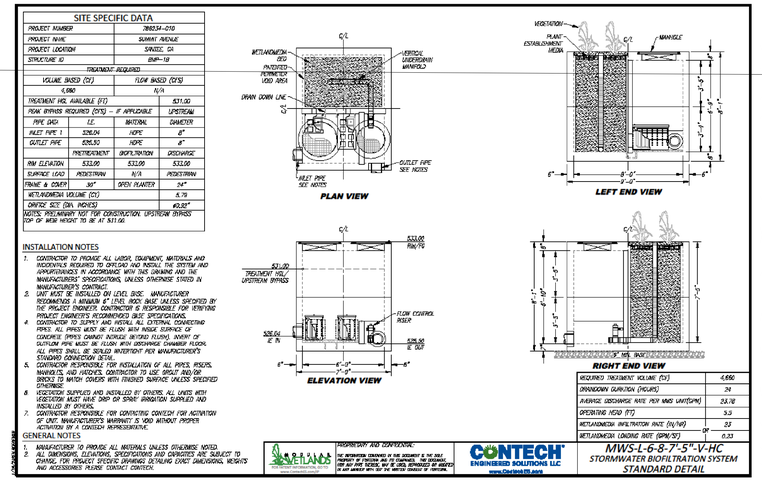
9. FOR TREE WELL SUBSURFACE DRAINAGE TYPES, SEE DWG GS-1.05.
10. ALL STRUCTURAL SOILS ARE COMPACTED TO 95% RELATIVE COMPACTION.

DRAWING NOT TO SCALE

DRAWN BY: NGL	CHECKED BY: JGK	SAN DIEGO COUNTY DESIGN STANDARD	
RECOMMENDED BY: CHARLES HOWLUD, PE			
APPROVED BY: COUNTY ENGINEER	DATE: 3/15/21	**TREE WELL GENERAL DESIGN GUIDANCE**	DRAWING NUMBER **GS-1.00**
WILLIAM P. MORROW, PE RCE. NO. 48432, EXP 9/30/2022			

REVISION	APPROVAL	DATE
ORIGINAL		10-01-2018
REVISED		03-08-2021



SITE SPECIFIC DATA

PROJECT NUMBER	786234-010
PROJECT NAME	SUMMIT AVENUE
PROJECT LOCATION	SANTEE, CA
STRUCTURE ID	BMP-1B

TREATMENT REQUIRED	
VOLUME BASED (CF)	FLOW BASED (CFS)
4,690	N/A
TREATMENT HGL AVAILABLE (FT)	571.00
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE	UPSTREAM

PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	568.04	HDPE	6"
OUTLET PIPE	568.50	HDPE	6"
	PRETREATMENT	BIOFILTRATION	DESCHARGE
RIM ELEVATION	573.00	573.00	573.00
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	30"	OPEN PLANTER	24"
WETLANDMEDIA VOLUME (CY)			5.75
ORIFICE SIZE (DIA INCHES)			#0.25"

NOTES: PRETREATMENT TOP FOR CONSTRUCTION. UPSTREAM BYPASS TOP OF MESH HEIGHT TO BE AT 571.00.

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS' SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 4" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
3. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT PROTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
4. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO USE GROUT AND/OR BRICKS TO MATCH GRADES WITH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
5. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
6. CONTRACTOR RESPONSIBLE FOR CONDUCTING CONTACT FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CERTIFIED REPRESENTATIVE.
7. GENERAL NOTES
1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CONCEPTS ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT CONTECH.

REQUIRED TREATMENT VOLUME (CF)	4,690
DRAWDOWN DURATION (HOURS)	24
AVERAGE DISCHARGE RATE PER MMD UNIT(GPM)	33.78
OPERATING HEAD (FT)	5.3
METLANDMEDIA INFILTRATION RATE (IN/HR)	33
METLANDMEDIA LOADING RATE (GPM/SF)	0.33

PROPRIETARY AND CONFIDENTIAL:
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF CONTECH ENGINEERED SOLUTIONS LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CONTECH ENGINEERED SOLUTIONS LLC IS PROHIBITED. THE INFORMATION CONTAINED IN THIS DRAWING IS FOR THE USE OF THE OWNER, ENGINEER, CONTRACTOR OR AUTHORITY HAVING JURISDICTION. IT MAY NOT BE USED FOR BIDDING OR CONSTRUCTION PURPOSES UNLESS APPEARING IN THE CONTRACT BETWEEN CONTECH AND THE OWNER.

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com

MWS-L-6-8-7'-5"-V-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

NOTES

1. SIZES OF THE POLLUTANT CONTROL BMPs SHOWN ON THIS EXHIBIT ADDRESS THE PERMANENT STORM WATER QUALITY REQUIREMENTS OF THE CITY OF SANTEE BMP DESIGN MANUAL DATED FEBRUARY 2016.
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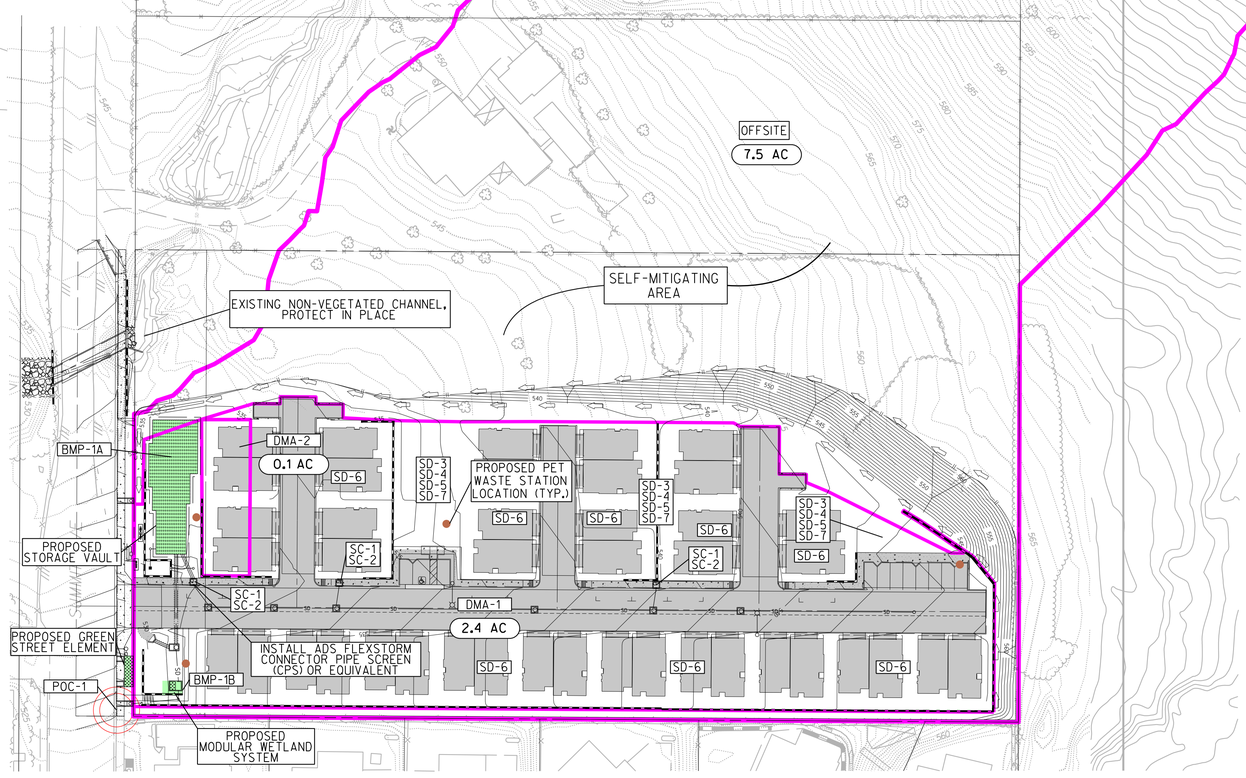
6. ALL EXISTING STRUCTURES WITHIN THE PROJECT AREA WILL BE DEMOLISHED.
7. EXISTING NON-VEGETATED CHANNEL TO BE PROTECTED IN PLACE. NOT PART OF PROJECT IMPROVEMENTS.
8. TREE WELL DESIGN PROPOSED PER COUNTY OF SAN DIEGO GREEN STREET STANDARDS GS-1.00
9. HOA TO MAINTAIN THE TRASH CAPTURE INSERT, TREE WELL, BROW DITCH, STORM WATER DETENTION VAULT, AND MODULAR WETLAND SYSTEM INTO PERPETUITY.
10. HOA TO BE RESPONSIBLE FOR MAINTENANCE OF THE PET WASTE STATIONS.



N

50 25 0 50 100 150

GRAPHIC SCALE 1" = 50'

SITE DESIGN/SOURCE CONTROL

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LEGEND:

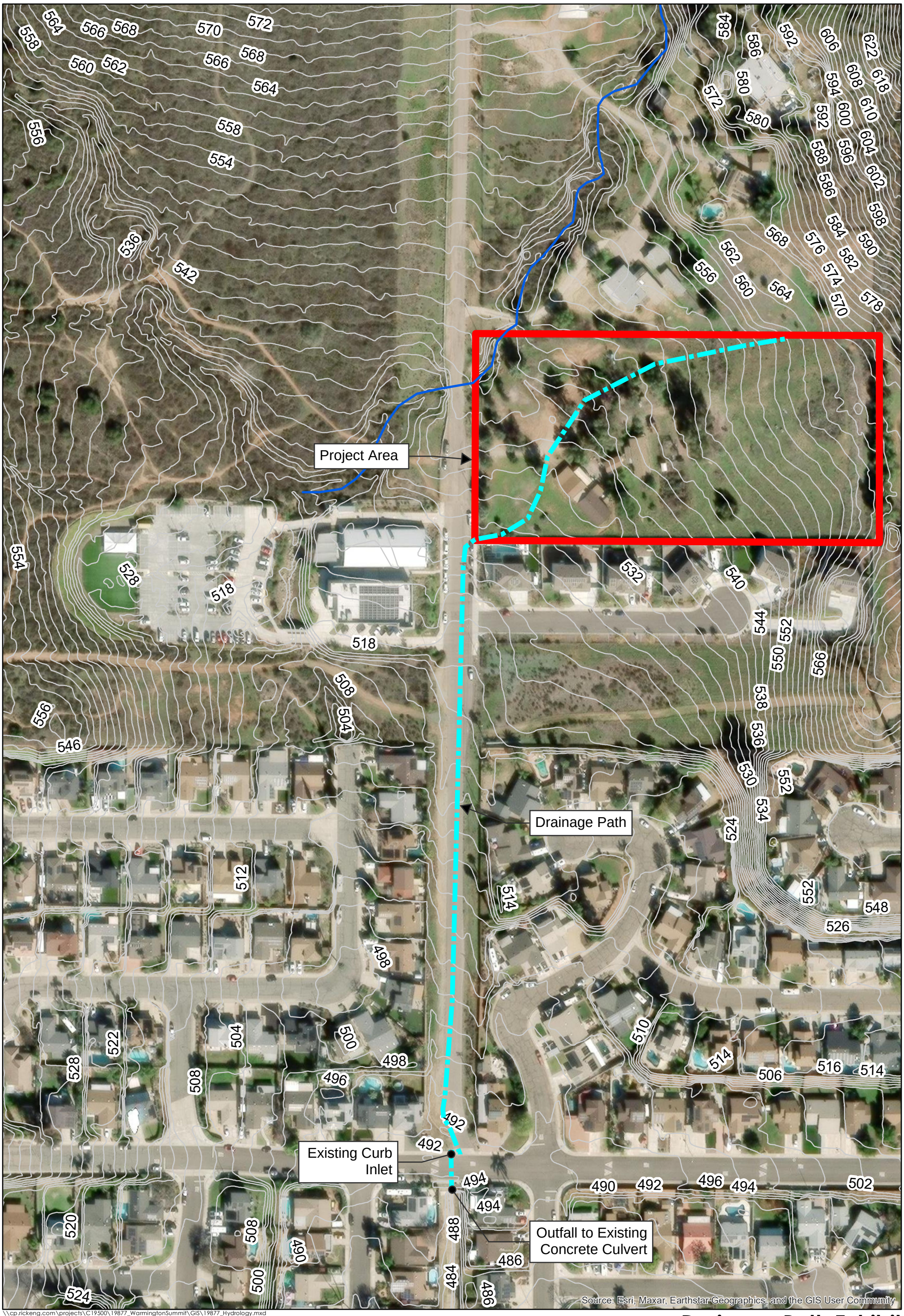
- MAJOR DRAINAGE BOUNDARY
- IMPERVIOUS AREA
- BMP
- DMA-X — POC/DMA ID
- X.X AC — SUB BASIN AREA
- POC
- BROW DITCH
- PET WASTE STATION LOCATION

HYDROMODIFICATION MANAGEMENT EXHIBIT FOR SUMMIT AVENUE (POST-PROJECT)

J-19877
DATE: MARCH 14, 2025

619-291-0707
rickengineering.com
5620 FRIARS ROAD
SAN DIEGO, CA 92110
RICK
SAN DIEGO ORANGE RIVERSIDE SACRAMENTO SAN LUIS OBISPO
SANTA CLARITA PHOENIX TUCSON LAS VEGAS DENVER

NOT FOR CONSTRUCTION - EXHIBIT FOR PDP SWQMP ONLY



\\cp.rickeng.com\projects\C19500\19877_WarmingtonSummit\GIS\19877_Hydrology.mxd

RICK

Scale in Feet

0 120 240 360

North

Date of Exhibit: 3/11/2025
DigitalGlobe Aerial Image: 2017

Drainage Path Exhibit
Summit Ave

J-19877

Attachment 2B

PROJECT AREA

Legend

Critical Coarse Sediment Yield Areas

Project Area

SANDAG & SanGIS

\\cp.rickeng.com\projects\C19500\19877_WarmingtonSummit\GIS\19877_CCSYA_Exhibit_portrait.mxd

RICK ENGINEERING COMPANY

Scale in Feet

0 300 600

North

Critical Coarse Sediment Yield Areas Exhibit

Warmington Summit

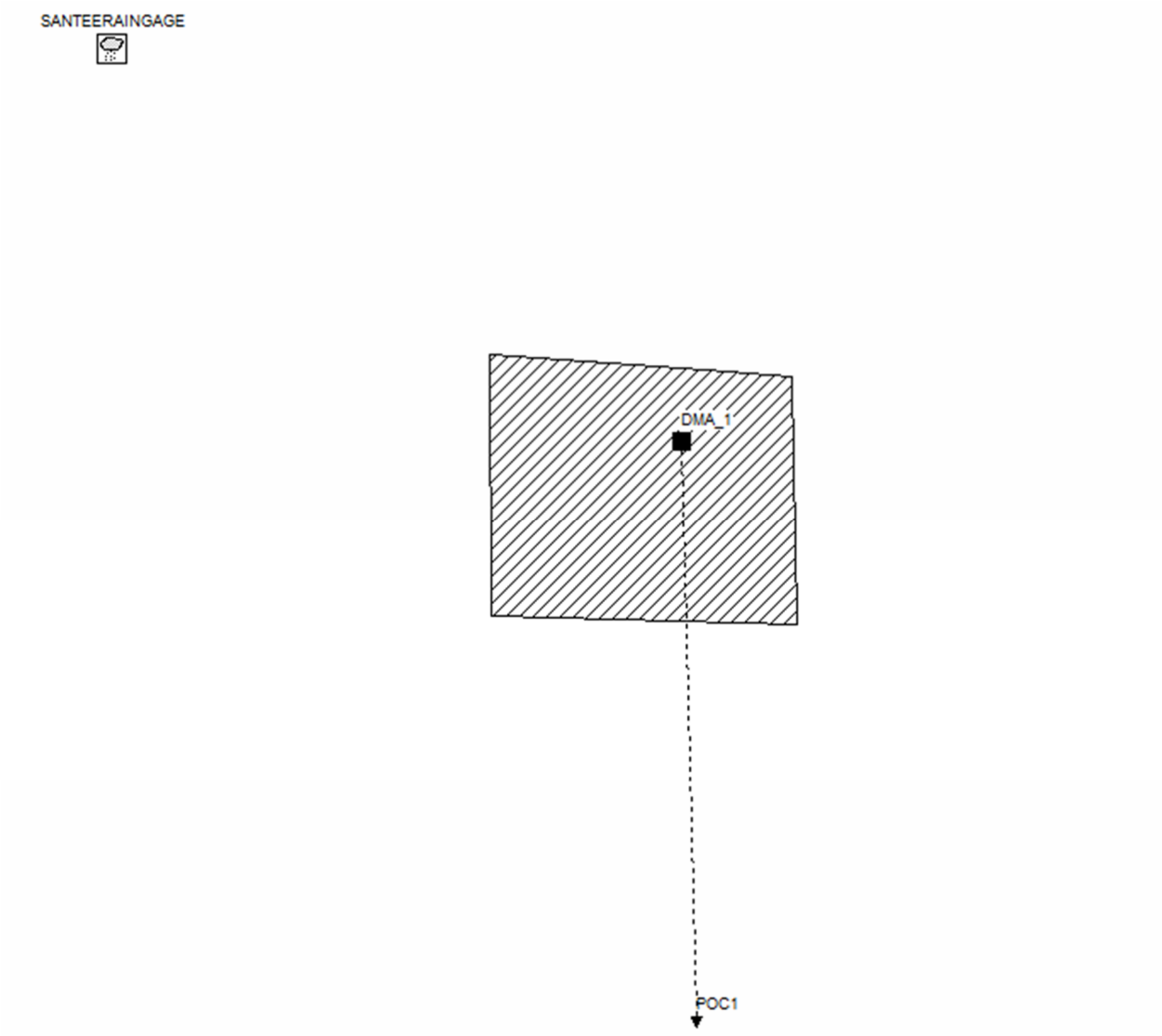
Date of Exhibit: 4/9/2024

DigitalGlobe Aerial Image: See Lower Right of Image

Jn - 19877

Attachment 2D

PRE-PROJECT SWMM MODEL CONFIGURATION



```
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;;Project Title/Notes
19877
SUMMIT AVENUE
Pre-Project

[OPTIONS]
;;Option             Value
FLOW_UNITS           CFS
INFILTRATION         GREEN_AMPT
FLOW_ROUTING         KINWAVE
LINK_OFFSETS         DEPTH
MIN_SLOPE            0
ALLOW_PONDING        NO
SKIP_STEADY_STATE    NO

START_DATE           01/03/1973
START_TIME           12:00:00
REPORT_START_DATE    01/03/1973
REPORT_START_TIME    12:00:00
END_DATE             09/26/2008
END_TIME             16:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          01:00:00
WET_STEP             00:15:00
DRY_STEP             04:00:00
ROUTING_STEP         0:01:00

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         12.557
MAX_TRIALS           8
HEAD_TOLERANCE       0.005
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              1

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DRY_ONLY         NO

[RAINGAGES]
;;Name           Format    Interval SCF      Source
;;-------------- --------- ------ ------ ----------
SANTEERAINGAGE   INTENSITY 1:00     1.0      TIMESERIES Santee

[SUBCATCHMENTS]
;;Name           Rain Gage        Outlet           Area     %Imperv  Width    %Slope   CurbLen  SnowPack
;;-------------- ---------------- ---------------- -------- -------- -------- -------- -------- ----------------
DMA_1            SANTEERAINGAGE   POC1             10       0        272      25       0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo    PctRouted
;;-------------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
DMA_1            0.012      .15        0.05       .1         25         OUTLET

[INFILTRATION]
;;Subcatchment   Suction    Ksat       IMD
;;-------------- ---------- ---------- ----------
DMA_1            9          .025       0.33

[OUTFALLS]
;;Name           Elevation  Type       Stage Data       Gated    Route To
;;-------------- ---------- ---------- ---------------- -------- ----------------
POC1             0          FREE                        NO

[TIMESERIES]
;;Name           Date       Time       Value
;;-------------- ---------- ---------- ----------
Santee           FILE "\\cp.rickeng.com\projects\C19500\19877_WarmingtonSummit\WaterRes\Hydromodification\RAIN GAGE\santee.dat"

[REPORT]
;;Reporting Options
INPUT      NO
CONTROLS   NO
```

```
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS -3652.482 0.000 13652.482 10000.000
Units      None

[COORDINATES]
;;Node           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
POC1             7998.847           3033.449

[VERTICES]
;;Link           X-Coord            Y-Coord
;;-------------- ------------------ ------------------

[Polygons]
;;Subcatchment   X-Coord            Y-Coord
;;-------------- ------------------ ------------------
DMA_1            8059.777           7456.940
DMA_1            8059.777           7456.940
DMA_1            8647.416           7416.413
DMA_1            8647.416           7416.413
DMA_1            8677.812           5734.549
DMA_1            6600.811           5785.208
DMA_1            6590.679           7568.389

[SYMBOLS]
;;Gage           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
SANTEERAINGAGE   4037.487           9625.127
```

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.012)

19877
SUMMIT AVENUE
Pre-Project

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
****

****
Analysis Options
****
Flow Units ..... CFS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... NO
  Water Quality ..... NO
Infiltration Method ..... GREEN_AMPT
Starting Date 01/03/1973 12:00:00
Ending Date 09/26/2008 16:00:00
Antecedent Dry Days 0.0
Report Time Step 01:00:00
Wet Time Step 00:15:00
Dry Time Step 04:00:00

Runoff Quantity Continuity	Volume acre-feet	Depth inches
Total Precipitation	389.917	467.900
Evaporation Loss	16.199	19.439
Infiltration Loss	322.758	387.310
Surface Runoff	58.329	69.995
Final Storage	0.000	0.000
Continuity Error (%)	-1.890	

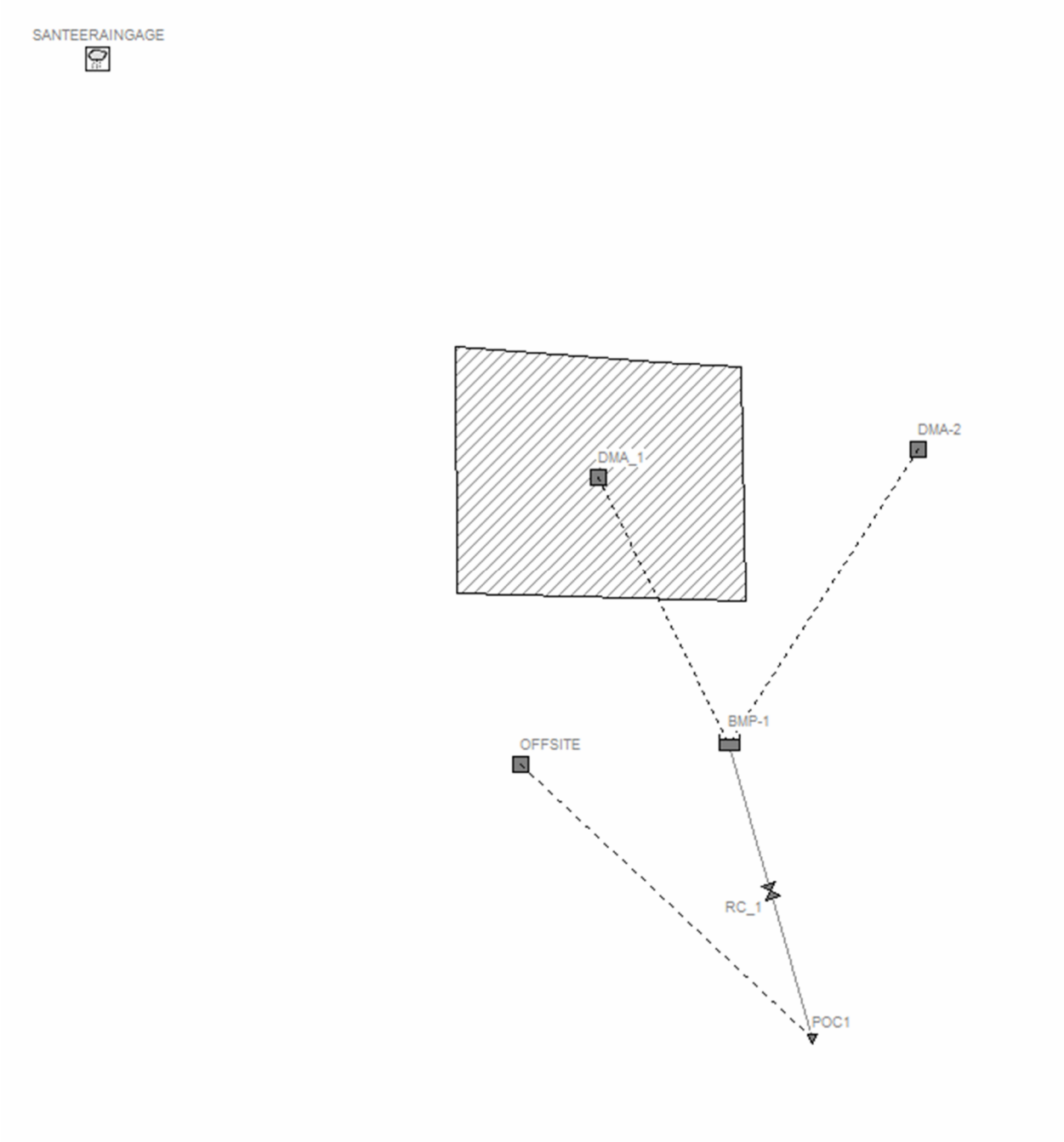
Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	58.329	19.008
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	58.329	19.008
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
DMA_1	467.90	0.00	19.44	387.31	70.00	19.01	7.36	0.150

Analysis begun on: Wed Oct 25 16:21:25 2023
Analysis ended on: Wed Oct 25 16:21:37 2023
Total elapsed time: 00:00:12

POST-PROJECT SWMM MODEL CONFIGURATION



```
[TITLE]
;;Project Title/Notes
19877
SUMMIT AVENUE
Post-Project

[OPTIONS]
;;Option             Value
FLOW_UNITS           CFS
INFILTRATION         GREEN_AMPT
FLOW_ROUTING         KINWAVE
LINK_OFFSETS         DEPTH
MIN_SLOPE            0
ALLOW_PONDING        NO
SKIP_STEADY_STATE    NO

START_DATE           01/03/1973
START_TIME           12:00:00
REPORT_START_DATE    01/03/1973
REPORT_START_TIME    12:00:00
END_DATE             09/26/2008
END_TIME             16:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          01:00:00
WET_STEP             00:15:00
DRY_STEP             04:00:00
ROUTING_STEP         0:01:00
RULE_STEP            00:00:00

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         12.557
MAX_TRIALS           8
HEAD_TOLERANCE       0.005
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              1

[EVAPORATION]
;;Data Source    Parameters
;;--------------- ----------------
MONTHLY          .06    .08    .11    .16    .18    .21    .21    .20    .16    .12    .08    .06
DRY_ONLY         NO

[RAINGAGES]
;;Name           Format    Interval SCF      Source
;;-------------- --------- ------ ------ ----------
SANTEERAINGAGE   INTENSITY 1:00     1.0      TIMESERIES Santee

[SUBCATCHMENTS]
;;Name           Rain Gage        Outlet           Area     %Imperv  Width    %Slope   CurbLen  SnowPack
;;-------------- ---------------- ---------------- -------- -------- -------- -------- -------- ----------------
DMA_1            SANTEERAINGAGE   BMP-1            2.5      80       156      2        0
OFFSITE          SANTEERAINGAGE   POC1             7.5      0        218      25       0
DMA-2            SANTEERAINGAGE   BMP-1            0.1      25       111      0.5      0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo    PctRouted
;;-------------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
DMA_1            0.012      .15        0.05       .1         25         OUTLET
OFFSITE          0.012      0.15       0.05       0.1        25         OUTLET
DMA-2            0.012      0.15       0.05       0.1        25         OUTLET

[INFILTRATION]
;;Subcatchment   Param1     Param2     Param3     Param4     Param5
;;-------------- ---------- ---------- ---------- ---------- ----------
DMA_1            9.0        .025       0.33
OFFSITE          9.0        0.025      0.33
DMA-2            3.5        0.5        0.25

[OUTFALLS]
;;Name           Elevation  Type       Stage Data       Gated    Route To
;;-------------- ---------- ---------- ---------------- -------- ----------------
POC1             0          FREE                        NO

[STORAGE]
;;Name           Elev.    MaxDepth   InitDepth  Shape      Curve Type/Params            SurDepth  Fevap    Psi      Ksat     IMD
;;-------------- -------- ---------- ---------- ---------- ---------------------------- --------- --------          -------- --------
BMP-1            0        10         0          TABULAR    SC_1                         0         0

[OUTLETS]
;;Name           From Node        To Node          Offset     Type            QTable/Qcoeff    Qexpon     Gated
;;-------------- ---------------- ---------------- ---------- --------------- ---------------- ---------- --------
RC_1             BMP-1            POC1             0          TABULAR/DEPTH   RC_1                        NO

[CURVES]
;;Name           Type       X-Value    Y-Value
;;-------------- ---------- ---------- ----------
RC_1             Rating     0.00       0.039
RC_1                        0.04       0.041
```

RC_1	0.08	0.043
RC_1	0.13	0.044
RC_1	0.17	0.046
RC_1	0.21	0.047
RC_1	0.25	0.049
RC_1	0.29	0.050
RC_1	0.33	0.052
RC_1	0.38	0.053
RC_1	0.42	0.055
RC_1	0.46	0.056
RC_1	0.50	0.057
RC_1	0.54	0.058
RC_1	0.58	0.060
RC_1	0.63	0.061
RC_1	0.67	0.062
RC_1	0.71	0.063
RC_1	0.75	0.064
RC_1	0.79	0.066
RC_1	0.83	0.067
RC_1	0.88	0.068
RC_1	0.92	0.069
RC_1	0.96	0.070
RC_1	1.00	0.071
RC_1	1.04	0.072
RC_1	1.08	0.073
RC_1	1.13	0.074
RC_1	1.17	0.075
RC_1	1.21	0.076
RC_1	1.25	0.077
RC_1	1.29	0.078
RC_1	1.33	0.079
RC_1	1.38	0.080
RC_1	1.42	0.080
RC_1	1.46	0.081
RC_1	1.50	0.082
RC_1	1.54	0.083
RC_1	1.58	0.084
RC_1	1.63	0.085
RC_1	1.67	0.086
RC_1	1.71	0.087
RC_1	1.75	0.087
RC_1	1.79	0.088
RC_1	1.83	0.089
RC_1	1.88	0.090
RC_1	1.92	0.091
RC_1	1.96	0.091
RC_1	2.00	0.092
RC_1	2.04	0.093
RC_1	2.08	0.094
RC_1	2.13	0.095
RC_1	2.17	0.095
RC_1	2.21	0.096
RC_1	2.25	0.097
RC_1	2.29	0.098
RC_1	2.33	0.098
RC_1	2.38	0.099
RC_1	2.42	0.100
RC_1	2.46	0.101
RC_1	2.50	0.101
RC_1	2.54	0.116
RC_1	2.58	0.141
RC_1	2.63	0.174
RC_1	2.67	0.213
RC_1	2.71	0.257
RC_1	2.75	0.305
RC_1	2.79	0.358
RC_1	2.83	0.450
RC_1	2.88	0.491
RC_1	2.92	0.528
RC_1	2.96	0.563
RC_1	3.00	0.595
RC_1	3.04	0.625
RC_1	3.08	0.653
RC_1	3.13	0.680
RC_1	3.17	0.706
RC_1	3.21	0.731
RC_1	3.25	0.755
RC_1	3.29	0.778
RC_1	3.33	0.801
RC_1	3.38	0.823
RC_1	3.42	0.844
RC_1	3.46	0.864
RC_1	3.50	0.884
RC_1	3.54	0.904
RC_1	3.58	0.923
RC_1	3.63	0.942
RC_1	3.67	0.960
RC_1	3.71	0.978
RC_1	3.75	0.996
RC_1	3.79	1.013
RC_1	3.83	1.030
RC_1	3.88	1.046
RC_1	3.92	1.063
RC_1	3.96	1.079
RC_1	4.00	1.095
RC_1	4.04	1.110

```
RC_1                        4.08       1.126
RC_1                        4.13       1.141
RC_1                        4.17       1.156
RC_1                        4.21       1.171
RC_1                        4.25       1.185
RC_1                        4.29       1.302
RC_1                        4.33       1.503
RC_1                        4.38       1.758
RC_1                        4.42       2.058
RC_1                        4.46       2.397
RC_1                        4.50       2.769
RC_1                        4.54       3.173
RC_1                        4.58       3.605
RC_1                        4.63       4.065
RC_1                        4.67       4.549
RC_1                        4.71       5.058
RC_1                        4.75       5.590
RC_1                        4.79       6.144
RC_1                        4.83       6.719
RC_1                        4.88       7.314
RC_1                        4.92       7.929
RC_1                        4.96       8.563
RC_1                        5.00       9.216
;
SC_1             Storage    0          2350
SC_1                        5          2350

[TIMESERIES]
;;Name           Date       Time       Value
;;-------------- ---------- ---------- ----------
Santee           FILE "\\cp.rickeng.com\projects\C19500\19877_WarmingtonSummit\WaterRes\Hydromodification\RAIN GAGE\santee.dat"

[REPORT]
;;Reporting Options
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS -3652.482 0.000 13652.482 10000.000
Units      None

[COORDINATES]
;;Node           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
POC1             9163.783           2583.622
BMP-1            8564.014           4705.882

[VERTICES]
;;Link           X-Coord            Y-Coord
;;-------------- ------------------ ------------------

[Polygons]
;;Subcatchment   X-Coord            Y-Coord
;;-------------- ------------------ ------------------
DMA_1            8059.777           7456.940
DMA_1            8059.777           7456.940
DMA_1            8647.416           7416.413
DMA_1            8647.416           7416.413
DMA_1            8677.812           5734.549
DMA_1            6600.811           5785.208
DMA_1            6590.679           7568.389
OFFSITE          7064.591           4555.940
DMA-2            9923.511           6822.369

;;Storage Node   X-Coord            Y-Coord
;;-------------- ------------------ ------------------
BMP-1            8564.014           4705.882

[SYMBOLS]
;;Gage           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
SANTEERAINGAGE   4037.487           9625.127
```

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)

19877
SUMMIT AVENUE
Post-Project

****
Analysis Options
****
Flow Units ..... CFS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... NO
  Water Quality ..... NO
Infiltration Method ..... GREEN_AMPT
Flow Routing Method ..... KINWAVE
Starting Date 01/03/1973 12:00:00
Ending Date 09/26/2008 16:00:00
Antecedent Dry Days 0.0
Report Time Step 01:00:00
Wet Time Step 00:15:00
Dry Time Step 04:00:00
Routing Time Step ..... 60.00 sec

Runoff Quantity Continuity	Volume acre-feet	Depth inches
Total Precipitation	393.816	467.900
Evaporation Loss	23.421	27.826
Infiltration Loss	258.457	307.078
Surface Runoff	114.774	136.365
Final Storage	0.000	0.000
Continuity Error (%)	-0.720	

Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	114.774	37.401
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	114.673	37.368
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.088	

****
Highest Flow Instability Indexes
****
All links are stable.

****
Routing Time Step Summary
****
Minimum Time Step : 59.00 sec
Average Time Step : 60.00 sec
Maximum Time Step : 60.00 sec
% of Time in Steady State : 0.00
Average Iterations per Step : 1.00
% of Steps Not Converging : 0.00

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
DMA_1	467.90	0.00	64.30	75.25	316.40	16.03	332.43	22.57	2.47	0.710
OFFSITE	467.90	0.00	15.81	383.77	0.00	71.46	71.46	14.55	5.62	0.153

DMA-2	467.90	0.00	17.31	350.49	102.16	0.51	102.68	0.28	0.05	0.219

****
Node Depth Summary
****

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min	Reported Max Depth Feet
POC1	OUTFALL	0.00	0.00	0.00	0 00:00	0.00
BMP-1	STORAGE	0.03	4.44	4.44	1388 05:01	4.43

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Flow Balance Error Percent
POC1	OUTFALL	5.62	7.61	1388 05:01	14.6	37.4	0.000
BMP-1	STORAGE	2.50	2.50	1827 09:01	22.8	22.8	0.144

****
Node Flooding Summary
****

No nodes were flooded.

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft³	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 ft³	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
BMP-1	0.066	0.3	0.0	0.0	10.423	44.4	1388 05:01	2.19

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
POC1	4.41	0.10	7.61	37.365
System	4.41	0.10	7.61	37.365

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
RC_1	DUMMY	2.19	1388 05:01			

****
Conduit Surcharge Summary
****

No conduits were surcharged.

Analysis begun on: Wed Dec 18 15:31:24 2024
Analysis ended on: Wed Dec 18 15:31:50 2024
Total elapsed time: 00:00:26

BMP-1A (Stage-Storage-Discharge Rating Curve)

BMP-1A

Storage Characteristics	
Depth (ft) =	5
Width (ft) =	
Length (ft) =	
Low Flow Orifice (Underdrain)	
Num. of Orifices =	1
Orifice Invert (ft) =	-0.5
Orifice Diameter (in) =	1.5
Cg =	0.6
Mid-flow Orifice (1st)	
Num. of Orifices =	2
Orifice Invert (ft) =	2.5
Orifice Diameter (in) =	4
Cg =	0.6
Weir Overflow	
Upper Weir Inv (ft) =	4.25
B (ft) =	4
Cs =	3

BMP A Rating and Storage Table									
h (in)	h (ft)	Underdrain Orifices	Midflow Orifice (1st)	Overflow Weir	Total Flow (cfs)	Effective Surface Area (ft2)	Porosity (N/A)	Incremental Volume (ft3)	Cumulative Volume (ft3)
0.0	0.00	0.039	0.000	0.000	0.039	2350	0.00	98	0
0.5	0.04	0.041	0.000	0.000	0.041	2350	0.00	98	98
1.0	0.08	0.043	0.000	0.000	0.043	2350	0.00	98	196
1.5	0.13	0.044	0.000	0.000	0.044	2350	0.00	98	294
2.0	0.17	0.046	0.000	0.000	0.046	2350	0.00	98	392
2.5	0.21	0.047	0.000	0.000	0.047	2350	0.00	98	490
3.0	0.25	0.049	0.000	0.000	0.049	2350	0.00	98	588
3.5	0.29	0.050	0.000	0.000	0.050	2350	0.00	98	685
4.0	0.33	0.052	0.000	0.000	0.052	2350	0.00	98	783
4.5	0.38	0.053	0.000	0.000	0.053	2350	0.00	98	881
5.0	0.42	0.055	0.000	0.000	0.055	2350	0.00	98	979
5.5	0.46	0.056	0.000	0.000	0.056	2350	0.00	98	1077
6.0	0.50	0.057	0.000	0.000	0.057	2350	0.00	98	1175
6.5	0.54	0.058	0.000	0.000	0.058	2350	0.00	98	1273
7.0	0.58	0.060	0.000	0.000	0.060	2350	0.00	98	1371
7.5	0.63	0.061	0.000	0.000	0.061	2350	0.00	98	1469
8.0	0.67	0.062	0.000	0.000	0.062	2350	0.00	98	1567
8.5	0.71	0.063	0.000	0.000	0.063	2350	0.00	98	1665
9.0	0.75	0.064	0.000	0.000	0.064	2350	0.00	98	1763
9.5	0.79	0.066	0.000	0.000	0.066	2350	0.00	98	1860
10.0	0.83	0.067	0.000	0.000	0.067	2350	0.00	98	1958
10.5	0.88	0.068	0.000	0.000	0.068	2350	0.00	98	2056
11.0	0.92	0.069	0.000	0.000	0.069	2350	0.00	98	2154
11.5	0.96	0.070	0.000	0.000	0.070	2350	0.00	98	2252
12.0	1.00	0.071	0.000	0.000	0.071	2350	0.00	98	2350
12.5	1.04	0.072	0.000	0.000	0.072	2350	0.00	98	2448
13.0	1.08	0.073	0.000	0.000	0.073	2350	0.00	98	2546
13.5	1.13	0.074	0.000	0.000	0.074	2350	0.00	98	2644
14.0	1.17	0.075	0.000	0.000	0.075	2350	0.00	98	2742
14.5	1.21	0.076	0.000	0.000	0.076	2350	0.00	98	2840
15.0	1.25	0.077	0.000	0.000	0.077	2350	0.00	98	2938
15.5	1.29	0.078	0.000	0.000	0.078	2350	0.00	98	3035
16.0	1.33	0.079	0.000	0.000	0.079	2350	0.00	98	3133
16.5	1.38	0.080	0.000	0.000	0.080	2350	0.00	98	3231

17.0	1.42	0.080	0.000	0.000	0.080	2350	0.00	98	3329
17.5	1.46	0.081	0.000	0.000	0.081	2350	0.00	98	3427
18.0	1.50	0.082	0.000	0.000	0.082	2350	0.00	98	3525
18.5	1.54	0.083	0.000	0.000	0.083	2350	0.00	98	3623
19.0	1.58	0.084	0.000	0.000	0.084	2350	0.00	98	3721
19.5	1.63	0.085	0.000	0.000	0.085	2350	0.00	98	3819
20.0	1.67	0.086	0.000	0.000	0.086	2350	0.00	98	3917
20.5	1.71	0.087	0.000	0.000	0.087	2350	0.00	98	4015
21.0	1.75	0.087	0.000	0.000	0.087	2350	0.00	98	4113
21.5	1.79	0.088	0.000	0.000	0.088	2350	0.00	98	4210
22.0	1.83	0.089	0.000	0.000	0.089	2350	0.00	98	4308
22.5	1.88	0.090	0.000	0.000	0.090	2350	0.00	98	4406
23.0	1.92	0.091	0.000	0.000	0.091	2350	0.00	98	4504
23.5	1.96	0.091	0.000	0.000	0.091	2350	0.00	98	4602
24.0	2.00	0.092	0.000	0.000	0.092	2350	0.00	98	4700
24.5	2.04	0.093	0.000	0.000	0.093	2350	0.00	98	4798
25.0	2.08	0.094	0.000	0.000	0.094	2350	0.00	98	4896
25.5	2.13	0.095	0.000	0.000	0.095	2350	0.00	98	4994
26.0	2.17	0.095	0.000	0.000	0.095	2350	0.00	98	5092
26.5	2.21	0.096	0.000	0.000	0.096	2350	0.00	98	5190
27.0	2.25	0.097	0.000	0.000	0.097	2350	0.00	98	5288
27.5	2.29	0.098	0.000	0.000	0.098	2350	0.00	98	5385
28.0	2.33	0.098	0.000	0.000	0.098	2350	0.00	98	5483
28.5	2.38	0.099	0.000	0.000	0.099	2350	0.00	98	5581
29.0	2.42	0.100	0.000	0.000	0.100	2350	0.00	98	5679
29.5	2.46	0.101	0.000	0.000	0.101	2350	0.00	98	5777
30.0	2.50	0.101	0.000	0.000	0.101	2350	0.00	98	5875
30.5	2.54	0.102	0.007	0.000	0.116	2350	0.00	98	5973
31.0	2.58	0.103	0.019	0.000	0.141	2350	0.00	98	6071
31.5	2.63	0.103	0.035	0.000	0.174	2350	0.00	98	6169
32.0	2.67	0.104	0.054	0.000	0.213	2350	0.00	98	6267
32.5	2.71	0.105	0.076	0.000	0.257	2350	0.00	98	6365
33.0	2.75	0.105	0.100	0.000	0.305	2350	0.00	98	6463
33.5	2.79	0.106	0.126	0.000	0.358	2350	0.00	98	6560
34.0	2.83	0.107	0.172	0.000	0.450	2350	0.00	98	6658
34.5	2.88	0.108	0.192	0.000	0.491	2350	0.00	98	6756
35.0	2.92	0.108	0.210	0.000	0.528	2350	0.00	98	6854
35.5	2.96	0.109	0.227	0.000	0.563	2350	0.00	98	6952
36.0	3.00	0.110	0.243	0.000	0.595	2350	0.00	98	7050
36.5	3.04	0.110	0.257	0.000	0.625	2350	0.00	98	7148
37.0	3.08	0.111	0.271	0.000	0.653	2350	0.00	98	7246
37.5	3.13	0.112	0.284	0.000	0.680	2350	0.00	98	7344
38.0	3.17	0.112	0.297	0.000	0.706	2350	0.00	98	7442
38.5	3.21	0.113	0.309	0.000	0.731	2350	0.00	98	7540
39.0	3.25	0.113	0.321	0.000	0.755	2350	0.00	98	7638
39.5	3.29	0.114	0.332	0.000	0.778	2350	0.00	98	7735
40.0	3.33	0.115	0.343	0.000	0.801	2350	0.00	98	7833
40.5	3.38	0.115	0.354	0.000	0.823	2350	0.00	98	7931
41.0	3.42	0.116	0.364	0.000	0.844	2350	0.00	98	8029
41.5	3.46	0.117	0.374	0.000	0.864	2350	0.00	98	8127
42.0	3.50	0.117	0.384	0.000	0.884	2350	0.00	98	8225
42.5	3.54	0.118	0.393	0.000	0.904	2350	0.00	98	8323
43.0	3.58	0.118	0.402	0.000	0.923	2350	0.00	98	8421
43.5	3.63	0.119	0.411	0.000	0.942	2350	0.00	98	8519
44.0	3.67	0.120	0.420	0.000	0.960	2350	0.00	98	8617
44.5	3.71	0.120	0.429	0.000	0.978	2350	0.00	98	8715
45.0	3.75	0.121	0.437	0.000	0.996	2350	0.00	98	8813
45.5	3.79	0.122	0.446	0.000	1.013	2350	0.00	98	8910
46.0	3.83	0.122	0.454	0.000	1.030	2350	0.00	98	9008
46.5	3.88	0.123	0.462	0.000	1.046	2350	0.00	98	9106
47.0	3.92	0.123	0.470	0.000	1.063	2350	0.00	98	9204
47.5	3.96	0.124	0.478	0.000	1.079	2350	0.00	98	9302
48.0	4.00	0.124	0.485	0.000	1.095	2350	0.00	98	9400
48.5	4.04	0.125	0.493	0.000	1.110	2350	0.00	98	9498
49.0	4.08	0.126	0.500	0.000	1.126	2350	0.00	98	9596
49.5	4.13	0.126	0.507	0.000	1.141	2350	0.00	98	9694
50.0	4.17	0.127	0.515	0.000	1.156	2350	0.00	98	9792
50.5	4.21	0.127	0.522	0.000	1.171	2350	0.00	98	9890
51.0	4.25	0.128	0.529	0.000	1.185	2350	0.00	98	9988

51.5	4.29	0.128	0.536	0.102	1.302	2350	0.00	98	10085
52.0	4.33	0.129	0.542	0.289	1.503	2350	0.00	98	10183
52.5	4.38	0.130	0.549	0.530	1.758	2350	0.00	98	10281
53.0	4.42	0.130	0.556	0.817	2.058	2350	0.00	98	10379
53.5	4.46	0.131	0.562	1.141	2.397	2350	0.00	98	10477
54.0	4.50	0.131	0.569	1.500	2.769	2350	0.00	98	10575
54.5	4.54	0.132	0.575	1.890	3.173	2350	0.00	98	10673
55.0	4.58	0.132	0.582	2.309	3.605	2350	0.00	98	10771
55.5	4.63	0.133	0.588	2.756	4.065	2350	0.00	98	10869
56.0	4.67	0.133	0.594	3.228	4.549	2350	0.00	98	10967
56.5	4.71	0.134	0.600	3.723	5.058	2350	0.00	98	11065
57.0	4.75	0.135	0.606	4.243	5.590	2350	0.00	98	11163
57.5	4.79	0.135	0.613	4.784	6.144	2350	0.00	98	11260
58.0	4.83	0.136	0.618	5.346	6.719	2350	0.00	98	11358
58.5	4.88	0.136	0.624	5.929	7.314	2350	0.00	98	11456
59.0	4.92	0.137	0.630	6.532	7.929	2350	0.00	98	11554
59.5	4.96	0.137	0.636	7.154	8.563	2350	0.00	98	11652
60.0	5.00	0.138	0.642	7.794	9.216	2350	0.00	98	11750

WQ PONDING DEPTH = 2.5'

DOWNSTREAM BIOFILTRATION BMP
DESIGN FLOW RATE = 0.101 CFS

WQ STORAGE = 5,875 CU. FT.

5,875 CU. FT. > (1.25 x DCV)
5,875 CU. FT. > (1.25 x 3,728 CU. FT)
5,875 CU. FT. > 4,660 CU. FT.

ADEQUATE POLLUANT CONTROL IS PROVIDED ✓

BMP 1A - VAULT				CALCULATED	
	STORAGE		DISCHARGE	DRAWDOWN TIME	
h (ft)	Incremental storage volume (ft3)	Cumulative storage volume (ft3)	Total Flow (cfs)	Incremental Drawdown Time (hr)	Cumulative Drawdown Time (hr)
0.000	98	0	0.039	0.00	0.00
0.042	98	98	0.041	0.68	0.68
0.083	98	196	0.043	0.65	1.33
0.125	98	294	0.044	0.63	1.96
0.167	98	392	0.046	0.60	2.56
0.208	98	490	0.047	0.58	3.14
0.250	98	588	0.049	0.56	3.71
0.292	98	685	0.050	0.55	4.25
0.333	98	783	0.052	0.53	4.78
0.375	98	881	0.053	0.52	5.30
0.417	98	979	0.055	0.50	5.81
0.458	98	1,077	0.056	0.49	6.30
0.500	98	1,175	0.057	0.48	6.78
0.542	98	1,273	0.058	0.47	7.25
0.583	98	1,371	0.060	0.46	7.71
0.625	98	1,469	0.061	0.45	8.16
0.667	98	1,567	0.062	0.44	8.60
0.708	98	1,665	0.063	0.43	9.04
0.750	98	1,763	0.064	0.43	9.46
0.792	98	1,860	0.066	0.42	9.88
0.833	98	1,958	0.067	0.41	10.29
0.875	98	2,056	0.068	0.41	10.70
0.917	98	2,154	0.069	0.40	11.10
0.958	98	2,252	0.070	0.39	11.49
1.000	98	2,350	0.071	0.39	11.88
1.042	98	2,448	0.072	0.38	12.26
1.083	98	2,546	0.073	0.38	12.63
1.125	98	2,644	0.074	0.37	13.00
1.167	98	2,742	0.075	0.37	13.37
1.208	98	2,840	0.076	0.36	13.73
1.250	98	2,938	0.077	0.36	14.09
1.292	98	3,035	0.078	0.35	14.44
1.333	98	3,133	0.079	0.35	14.79
1.375	98	3,231	0.080	0.34	15.13
1.417	98	3,329	0.080	0.34	15.47
1.458	98	3,427	0.081	0.34	15.81
1.500	98	3,525	0.082	0.33	16.14
1.542	98	3,623	0.083	0.33	16.47
1.583	98	3,721	0.084	0.33	16.79
1.625	98	3,819	0.085	0.32	17.12
1.667	98	3,917	0.086	0.32	17.44
1.708	98	4,015	0.087	0.32	17.75
1.750	98	4,113	0.087	0.31	18.06
1.792	98	4,210	0.088	0.31	18.37
1.833	98	4,308	0.089	0.31	18.68
1.875	98	4,406	0.090	0.30	18.99
1.917	98	4,504	0.091	0.30	19.29
1.958	98	4,602	0.091	0.30	19.59
2.000	98	4,700	0.092	0.30	19.88
2.042	98	4,798	0.093	0.29	20.17
2.083	98	4,896	0.094	0.29	20.47
2.125	98	4,994	0.095	0.29	20.75
2.167	98	5,092	0.095	0.29	21.04
2.208	98	5,190	0.096	0.28	21.33
2.250	98	5,288	0.097	0.28	21.61
2.292	98	5,385	0.098	0.28	21.89
2.333	98	5,483	0.098	0.28	22.16
2.375	98	5,581	0.099	0.28	22.44
2.417	98	5,679	0.100	0.27	22.71
2.458	98	5,777	0.101	0.27	22.98
2.500	98	5,875	0.101	0.27	23.25
2.542	98	5,973	0.116	0.25	23.51
2.583	98	6,071	0.141	0.21	23.72
2.625	98	6,169	0.174	0.17	23.89
2.667	98	6,267	0.213	0.14	24.03
2.708	98	6,365	0.257	0.12	24.15
2.750	98	6,463	0.305	0.10	24.24
2.792	98	6,560	0.358	0.08	24.32
2.833	98	6,658	0.450	0.07	24.39
2.875	98	6,756	0.491	0.06	24.45
2.917	98	6,854	0.528	0.05	24.50
2.958	98	6,952	0.563	0.05	24.55
3.000	98	7,050	0.595	0.05	24.60
3.042	98	7,148	0.625	0.04	24.64
3.083	98	7,246	0.653	0.04	24.69
3.125	98	7,344	0.680	0.04	24.73
3.167	98	7,442	0.706	0.04	24.77
3.208	98	7,540	0.731	0.04	24.80
3.250	98	7,638	0.755	0.04	24.84
3.292	98	7,735	0.778	0.04	24.88
3.333	98	7,833	0.801	0.03	24.91
3.375	98	7,931	0.823	0.03	24.94
3.417	98	8,029	0.844	0.03	24.98
3.458	98	8,127	0.864	0.03	25.01
3.500	98	8,225	0.884	0.03	25.04
3.542	98	8,323	0.904	0.03	25.07
3.583	98	8,421	0.923	0.03	25.10

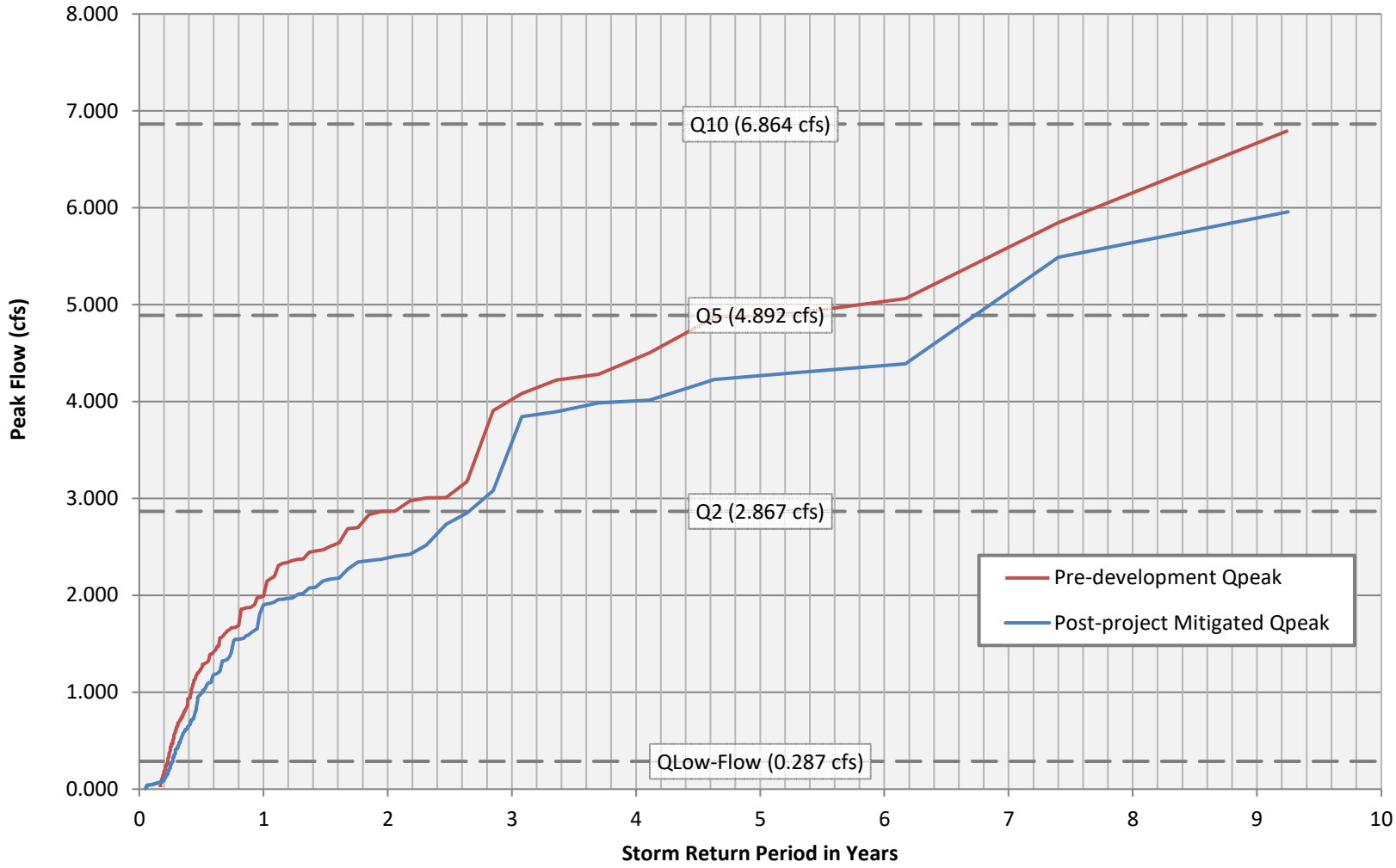
WQ DRAWDOWN TIME =23.25 HR

3.625	98	8,519	0.942	0.03	25.13
3.667	98	8,617	0.960	0.03	25.16
3.708	98	8,715	0.978	0.03	25.19
3.750	98	8,813	0.996	0.03	25.21
3.792	98	8,910	1.013	0.03	25.24
3.833	98	9,008	1.030	0.03	25.27
3.875	98	9,106	1.046	0.03	25.29
3.917	98	9,204	1.063	0.03	25.32
3.958	98	9,302	1.079	0.03	25.35
4.000	98	9,400	1.095	0.03	25.37
4.042	98	9,498	1.110	0.02	25.39
4.083	98	9,596	1.126	0.02	25.42
4.125	98	9,694	1.141	0.02	25.44
4.167	98	9,792	1.156	0.02	25.47
4.208	98	9,890	1.171	0.02	25.49
4.250	98	9,988	1.185	0.02	25.51
4.292	98	10,085	1.302	0.02	25.54
4.333	98	10,183	1.503	0.02	25.55
4.375	98	10,281	1.758	0.02	25.57
4.417	98	10,379	2.058	0.01	25.59
4.458	98	10,477	2.397	0.01	25.60
4.500	98	10,575	2.769	0.01	25.61
4.542	98	10,673	3.173	0.01	25.62
4.583	98	10,771	3.605	0.01	25.63
4.625	98	10,869	4.065	0.01	25.63
4.667	98	10,967	4.549	0.01	25.64
4.708	98	11,065	5.058	0.01	25.64
4.750	98	11,163	5.590	0.01	25.65
4.792	98	11,260	6.144	0.00	25.65
4.833	98	11,358	6.719	0.00	25.66
4.875	98	11,456	7.314	0.00	25.66
4.917	98	11,554	7.929	0.00	25.67
4.958	98	11,652	8.563	0.00	25.67
5.000	98	11,750	9.216	0.00	25.67

Peak Flow Frequency Summary

	HMP Flow Frequency Range Based on:	SWMM - Weibull	
Return Period	**Pre-development Qpeak (cfs)**	**Post-project - Mitigated Q (cfs)**	*Check*
Low-Flow = 0.1*Q2	0.287	0.239	*Okay! -> Decreased by 0.048 cfs*
2-year	2.867	2.387	*Okay! -> Decreased by 0.48 cfs*
3-year	4.020	3.578	*Okay! -> Decreased by 0.443 cfs*
4-year	4.443	4.005	*Okay! -> Decreased by 0.438 cfs*
5-year	4.892	4.266	*Okay! -> Decreased by 0.625 cfs*
6-year	5.034	4.372	*Okay! -> Decreased by 0.662 cfs*
7-year	5.591	5.132	*Okay! -> Decreased by 0.46 cfs*
8-year	6.155	5.641	*Okay! -> Decreased by 0.514 cfs*
9-year	6.669	5.895	*Okay! -> Decreased by 0.775 cfs*
10-year	6.864	6.050	*Okay! -> Decreased by 0.813 cfs*

Peak Flow Frequency Curves



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Low-flow Threshold:	10%	
0.1xQ2 (Pre):	0.2867	cfs
Q10 (Pre):	6.864	cfs
# of Intervals between flow bins:	99	
Incremental Q (Pre):	0.06643	cfs
Total Hourly Data:	313203	hours
Flow Frequency Range Based on:	**SWMM - Weibull**	

The proposed BMP: **PASSED**

Beginning of Interval (Flow Bin)	Pre-develop. Flow (cfs)	Pre-develop. Hours	Pre-develop. % Time Exceeding	Post-project Hours	Post-project % Time Exceeding	Percentage	Pass/Fail
1	0.287	695	2.22E-03	759	2.42E-03	*109%*	*Pass^*
2	0.353	619	1.98E-03	652	2.08E-03	*105%*	*Pass^*
3	0.420	551	1.76E-03	557	1.78E-03	*101%*	*Pass^*
4	0.486	475	1.52E-03	484	1.55E-03	*102%*	*Pass^*
5	0.552	429	1.37E-03	416	1.33E-03	97%	Pass
6	0.619	380	1.21E-03	359	1.15E-03	94%	Pass
7	0.685	338	1.08E-03	315	1.01E-03	93%	Pass
8	0.752	299	9.55E-04	282	9.00E-04	94%	Pass
9	0.818	269	8.59E-04	257	8.21E-04	96%	Pass
10	0.885	247	7.89E-04	235	7.50E-04	95%	Pass
11	0.951	233	7.44E-04	213	6.80E-04	91%	Pass
12	1.018	217	6.93E-04	199	6.35E-04	92%	Pass
13	1.084	198	6.32E-04	188	6.00E-04	95%	Pass
14	1.150	187	5.97E-04	175	5.59E-04	94%	Pass
15	1.217	170	5.43E-04	155	4.95E-04	91%	Pass
16	1.283	155	4.95E-04	145	4.63E-04	94%	Pass
17	1.350	143	4.57E-04	132	4.21E-04	92%	Pass
18	1.416	129	4.12E-04	121	3.86E-04	94%	Pass
19	1.483	115	3.67E-04	115	3.67E-04	*100%*	*Pass^*
20	1.549	103	3.29E-04	101	3.22E-04	98%	Pass
21	1.615	95	3.03E-04	91	2.91E-04	96%	Pass
22	1.682	83	2.65E-04	77	2.46E-04	93%	Pass
23	1.748	79	2.52E-04	73	2.33E-04	92%	Pass
24	1.815	76	2.43E-04	71	2.27E-04	93%	Pass
25	1.881	69	2.20E-04	70	2.23E-04	*101%*	*Pass^*
26	1.948	64	2.04E-04	63	2.01E-04	98%	Pass
27	2.014	58	1.85E-04	55	1.76E-04	95%	Pass
28	2.080	57	1.82E-04	48	1.53E-04	84%	Pass
29	2.147	55	1.76E-04	46	1.47E-04	84%	Pass
30	2.213	53	1.69E-04	42	1.34E-04	79%	Pass
31	2.280	50	1.60E-04	41	1.31E-04	82%	Pass
32	2.346	47	1.50E-04	39	1.25E-04	83%	Pass
33	2.413	43	1.37E-04	35	1.12E-04	81%	Pass
34	2.479	40	1.28E-04	32	1.02E-04	80%	Pass
35	2.546	37	1.18E-04	28	8.94E-05	76%	Pass
36	2.612	34	1.09E-04	26	8.30E-05	76%	Pass
37	2.678	33	1.05E-04	26	8.30E-05	79%	Pass
38	2.745	30	9.58E-05	24	7.66E-05	80%	Pass
39	2.811	29	9.26E-05	23	7.34E-05	79%	Pass
40	2.878	25	7.98E-05	20	6.39E-05	80%	Pass
41	2.944	25	7.98E-05	20	6.39E-05	80%	Pass
42	3.011	22	7.02E-05	20	6.39E-05	91%	Pass
43	3.077	21	6.70E-05	19	6.07E-05	90%	Pass
44	3.143	20	6.39E-05	18	5.75E-05	90%	Pass
45	3.210	18	5.75E-05	17	5.43E-05	94%	Pass
46	3.276	18	5.75E-05	17	5.43E-05	94%	Pass
47	3.343	18	5.75E-05	17	5.43E-05	94%	Pass
48	3.409	17	5.43E-05	17	5.43E-05	*100%*	*Pass^*
49	3.476	17	5.43E-05	16	5.11E-05	94%	Pass
50	3.542	16	5.11E-05	15	4.79E-05	94%	Pass
51	3.608	15	4.79E-05	14	4.47E-05	93%	Pass
52	3.675	15	4.79E-05	14	4.47E-05	93%	Pass

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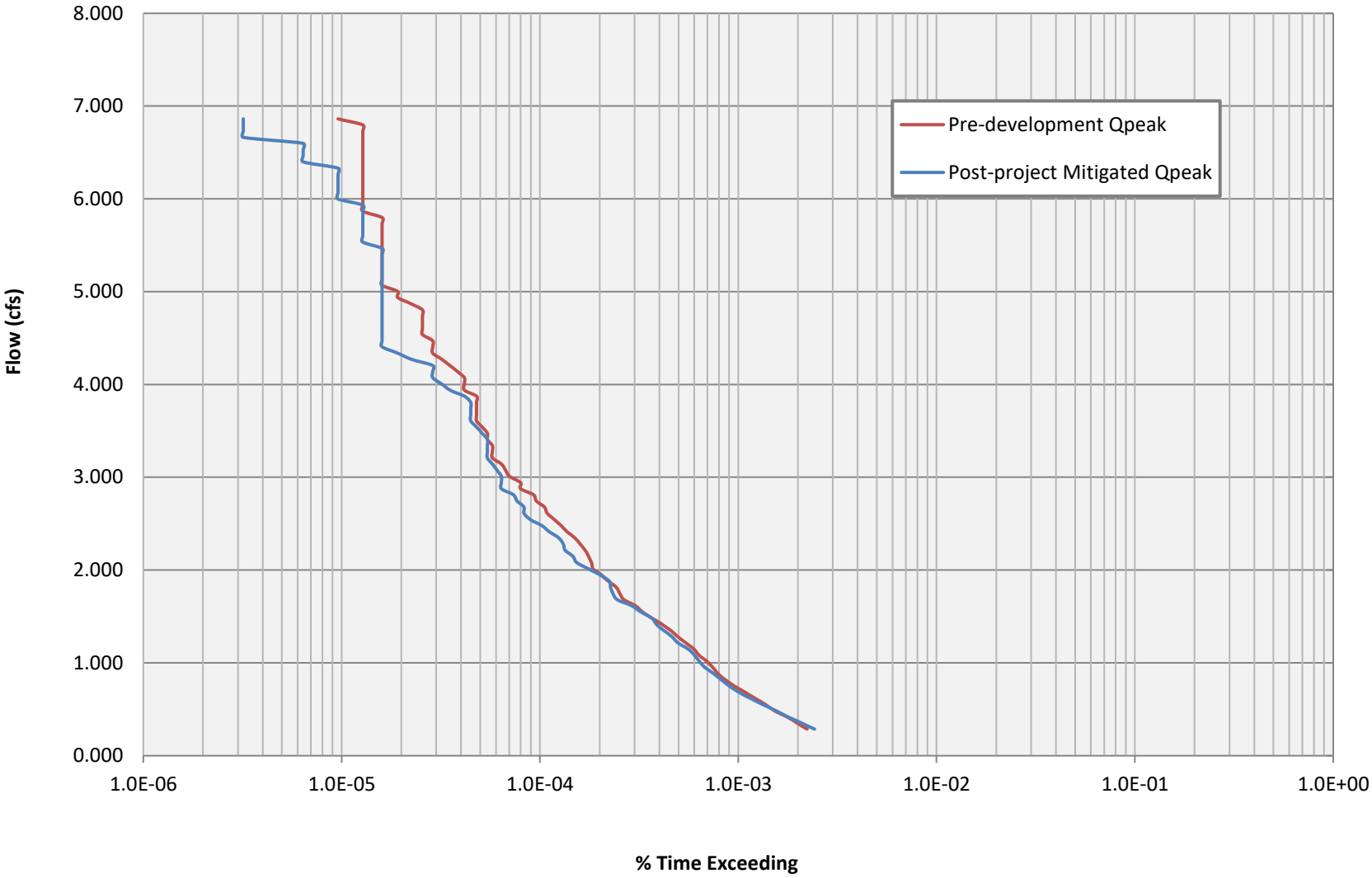
[POC 1]

Flow Frequency Range Based on: SWMM - Weibull

Beginning of Interval (Flow Bin)	Pre-develop. Flow (cfs)	Pre-develop. Hours	Pre-develop. % Time Exceeding	Post-project Hours	Post-project % Time Exceeding	Percentage	Pass/Fail
53	3.741	15	4.79E-05	14	4.47E-05	93%	Pass
54	3.808	15	4.79E-05	14	4.47E-05	93%	Pass
55	3.874	15	4.79E-05	13	4.15E-05	87%	Pass
56	3.941	13	4.15E-05	11	3.51E-05	85%	Pass
57	4.007	13	4.15E-05	10	3.19E-05	77%	Pass
58	4.074	13	4.15E-05	9	2.87E-05	69%	Pass
59	4.140	12	3.83E-05	9	2.87E-05	75%	Pass
60	4.206	11	3.51E-05	9	2.87E-05	82%	Pass
61	4.273	10	3.19E-05	7	2.23E-05	70%	Pass
62	4.339	9	2.87E-05	6	1.92E-05	67%	Pass
63	4.406	9	2.87E-05	5	1.60E-05	56%	Pass
64	4.472	9	2.87E-05	5	1.60E-05	56%	Pass
65	4.539	8	2.55E-05	5	1.60E-05	63%	Pass
66	4.605	8	2.55E-05	5	1.60E-05	63%	Pass
67	4.671	8	2.55E-05	5	1.60E-05	63%	Pass
68	4.738	8	2.55E-05	5	1.60E-05	63%	Pass
69	4.804	8	2.55E-05	5	1.60E-05	63%	Pass
70	4.871	7	2.23E-05	5	1.60E-05	71%	Pass
71	4.937	6	1.92E-05	5	1.60E-05	83%	Pass
72	5.004	6	1.92E-05	5	1.60E-05	83%	Pass
73	5.070	5	1.60E-05	5	1.60E-05	*100%*	*Pass^*
74	5.136	5	1.60E-05	5	1.60E-05	*100%*	*Pass^*
75	5.203	5	1.60E-05	5	1.60E-05	*100%*	*Pass^*
76	5.269	5	1.60E-05	5	1.60E-05	*100%*	*Pass^*
77	5.336	5	1.60E-05	5	1.60E-05	*100%*	*Pass^*
78	5.402	5	1.60E-05	5	1.60E-05	*100%*	*Pass^*
79	5.469	5	1.60E-05	5	1.60E-05	*100%*	*Pass^*
80	5.535	5	1.60E-05	4	1.28E-05	80%	Pass
81	5.601	5	1.60E-05	4	1.28E-05	80%	Pass
82	5.668	5	1.60E-05	4	1.28E-05	80%	Pass
83	5.734	5	1.60E-05	4	1.28E-05	80%	Pass
84	5.801	5	1.60E-05	4	1.28E-05	80%	Pass
85	5.867	4	1.28E-05	4	1.28E-05	*100%*	*Pass^*
86	5.934	4	1.28E-05	4	1.28E-05	*100%*	*Pass^*
87	6.000	4	1.28E-05	3	9.58E-06	75%	Pass
88	6.067	4	1.28E-05	3	9.58E-06	75%	Pass
89	6.133	4	1.28E-05	3	9.58E-06	75%	Pass
90	6.199	4	1.28E-05	3	9.58E-06	75%	Pass
91	6.266	4	1.28E-05	3	9.58E-06	75%	Pass
92	6.332	4	1.28E-05	3	9.58E-06	75%	Pass
93	6.399	4	1.28E-05	2	6.39E-06	50%	Pass
94	6.465	4	1.28E-05	2	6.39E-06	50%	Pass
95	6.532	4	1.28E-05	2	6.39E-06	50%	Pass
96	6.598	4	1.28E-05	2	6.39E-06	50%	Pass
97	6.664	4	1.28E-05	1	3.19E-06	25%	Pass
98	6.731	4	1.28E-05	1	3.19E-06	25%	Pass
99	6.797	4	1.28E-05	1	3.19E-06	25%	Pass
100	6.864	3	9.58E-06	1	3.19E-06	33%	Pass

Flow Duration Exceedance Curves



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 Thresholds and Actions (Required)	☒ Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Maintenance Agreement (when applicable)	☐ Included ☐ Not Applicable

ATTACHMENT 3B TO BE INCLUDED DURING FINAL ENGINEERING

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

☒ **Preliminary Design / Planning / CEQA level submittal:**

Attachment 3a must identify:

- ☒ Typical maintenance indicators and actions for proposed structural BMP(s) based on Section 7.7 of the BMP Design Manual

Attachment 3b is not required for preliminary design / planning / CEQA level submittal.

☐ **Final Design level submittal:**

Attachment 3a must identify:

- ☐ Specific maintenance indicators and actions for proposed structural BMP(s). This shall be based on Section 7.7 of the BMP 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 private entity operation and maintenance, Attachment 3b shall include a draft maintenance agreement in the local jurisdiction's standard format (PDP applicant to contact the [City Engineer] to obtain the current maintenance agreement forms).

Attachment 3A

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	
	OUTLET PROTECTION	1. MONTHLY; 2. WITHIN 24 HOURS AFTER EACH "SIGNIFICANT RAIN EVENT" AND 3. WITHIN 24 HOURS FOLLOWING CONSTRUCTION IN IMMEDIATE AREA OF OUTLET PROTECTION	1. AS DETERMINED BY INSPECTION; 2. WHEN DISTURBED OR MISSING ROCKS (RIP RAP), OR SOIL EROSION BELOW AND/OR ADJACENT TO OUTLET PROTECTION ARE OBSERVED.	1. REMOVE TRASH, DEBRIS AND LEAVES. REPAIR ANY DAMAGE TO ROOF DRAINS; 2. IMMEDIATELY REPOSITION ALL DISPLACED ENERGY DISSIPATER; AND 3. IF SOIL EROSION IS FOUND, EXTEND ENERGY DISSIPATER (I.E. LANDSCAPE ROCKS AND/OR SPLASH PADS); REPOSITION OR INCREASE LIMITS OF ENERGY DISSIPATER TO COVER ERODED AREA.	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	TRASH STORAGE AREAS	WEEKLY	1. AS DETERMINED BY INSPECTION; 2. STANDING WATER IN TRASH STORAGE AREA. 3. LOOSE TRASH OR DEBRIS. 4. LEAKED OR SPILLED MATERIALS. 5. COMPROMISED FENCE, SCREEN, GATE, WALL, BIN. LID OR ROOF AWNING (WHERE APPLICABLE). 6. CRACKED OR OTHERWISE COMPROMISED PAVING OR OTHER FLAWED FLOOR SURFACE (AS APPLICABLE).	1. IF STANDING WATER IS OBSERVED IN THE AREA, DETERMINE THE WATER SOURCE AND REMOVE THE SOURCE. ALLOW STANDING WATER TO EVAPORATE. IF WATER DOES NOT EVAPORATE IN 48 HOURS, REDISTRIBUTE THE WATER TO LANDSCAPED AREA(S). DO NOT DRAIN WATER TO STORM DRAIN SYSTEM; 2. REMOVE AND PROPERLY DISPOSE LOOSE TRASH, DEBRIS, AND LEAKED OR SPILLED MATERIALS. USE APPROPRIATE SPILL CLEANUP MATERIAL AS NECESSARY TO REMOVE ALL LEAKED AND SPILLED MATERIALS INCLUDING MATERIALS ADHERED TO PAVEMENT. IDENTIFY AND REMOVE OR REPAIR THE SOURCE OF ANY LEAKED OR SPILLED MATERIALS; AND 3. REPAIR THE FOLLOWING AS APPLICABLE: COMPROMISED FENCE, SCREEN, GATE, WALL, BIN, LID OR ROOF AWNING, CRACKED OR COMPROMISED PAVING OR OTHER FLOOR SURFACE.	YES	
	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 (BMP-1B)	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	
	DETENTION VAULT (BMP-1A)	1.TWICE PER YEAR (ON OR BEFORE SEPTEMBER 30TH AND FOLLOWING THE RAINY SEASON AFTER MAY 1ST) 2. AFTER EACH "SIGNIFICANT RAIN EVENT"	1. AS DETERMINED BY INSPECTION; AND 2. ON OR BEFORE SEPTEMBER 30TH AND FOLLOWING THE RAINY SEASON AFTER MAY 1ST	1. REMOVE ACCUMULATED MATERIALS SUCH AS TRASH, DEBRIS AND SEDIMENTS; 2. MAINTAIN INLET AND OUTLET PIPES TO AVOID CLOGGING.	YES	
	CONNECTOR PIPE SCREEN (CPS) (VAULT PRE TREATMENT)	1. IMMEADIATELY FOLLOWING CONSTRUCTION 2. INSPECT MONTHLY. IF CATCH BASIN IS MORE THAN 25% FULL OR MORE IN ONE MONTH, INCREASE INSPECTION FREQUENCY TO MONTHLY PLUS AFTER EVERY 0.1-INCH OR LARGER STORM EVENT.	1. AS DETERMINED BY INSPECTION	1. REMOVE TRASH AND DEBRIS IN FRONT OF SCREEN BY HAND OR USING A STANDARD VACUUM TRUCK.	YES	
	BIOFILTRATION BASIN (BMP-2)	1. TWICE A YEAR (ON OR BEFORE SEPTEMBER 15TH AND FOLLOWING THE RAINY SEASON AFTER MAY 1ST); AND 2. AFTER EACH "SIGNIFICANT RAIN EVENT" (NOTE: INSPECTOR SHALL CHECK FOR THE FOLLOWING MAINTENANCE INIDICATORS: EROSION IN THE FORM OF RILLS OR GULLIES, PONDING WATER, BARE AREAS, DEAD VEGETATION, ANIMAL BURROWS, HOLES, MOUNDS, AND TRASH)	1. AS DETERMINED BY INSPECTION; AND 2. ON OR BEFORE SEPTEMBER 30TH AND FOLLOWING THE RAINY SEASON AFTER MAY 1ST; AND 3. AFTER EACH "SIGNIFICANT RAIN EVENT"[2]	1. REPLACE MULCH IN AREAS OF RUTS, RILLS, OR GULLIES 2. RE-SEED AND/OR PLANT SLOPES AND AREAS OF EXPOSED SOILS 3. ROUTINE MAINTENANCE TO REMOVE ACCUMULATED MATERIALS SUCH AS TRASH AND DEBRIS 4. NON-ROUTINE MAINTENANCE WILL BE REQUIRED TO BACKWASH AND CLEAR UNDERDRAINS IF INSPECTION INDICATES UNDERDRAINS ARE CLOGGED 5. DEPENDING ON POLLUTANT LOADS, SOILS MAY NEED TO BE REPLACED EVERY 5 TO 10 YEARS. 6. THE RISER STRUCTURE SHOULD BE MAINTAINED TO AVOID CLOGGING AND ANY LEAKAGE THROUGH BOLTHOLES.	YES	
	TREE WELL (BMP-3)	1.INSPECT MONTHLY AND AFTER EVERY 0.5-INCH OR LARGER STORM EVENT. IF STANDING WATER IS OBSERVED, INCREASE INSPECTION FREQUENCY TO AFTER EVERY 0.1-INCH OR LARGER STORM EVENT.	1. MAINTENANCE WHEN NEEDED.	1. ROUTINE ACTIONS AS NECESSARY TO MAINTAIN TREE HEALTH; 2. REMOVE DEAD OR DISEASED TREE. REPLACE PER ORIGINAL PLANS; 3. LOOSEN OR REPLACE SOILS SURROUNDING THE TREE TO RESTORE DRAINAGE; 4. DISPERSE ANY STANDING WATER FROM THE TREE WELL TO NEARBY LANDSCAPING; 5. MAKE REPAIRS AS APPROPRIATE TO RESTORE DRAINAGE INTO THE TREE WELL.	YES	

NOTES:

1. 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.

2. A SIGNIFICANT RAIN EVENT CONSIDERED WHENEVER THE NATIONAL WEATHER SERVICE REPORTS 0.50" OF RAIN IN 48 HOURS FOR THE LOCAL COMMUNITY.

3. 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.

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Biofiltration

BMP MAINTENANCE FACT SHEET
FOR
STRUCTURAL BMP BF-1 BIOFILTRATION

Biofiltration facilities are vegetated surface water systems that filter water through vegetation, and soil or engineered media prior to discharge via underdrain or overflow to the downstream conveyance system. Biofiltration facilities have limited or no infiltration. They are typically designed to provide enough hydraulic head to move flows through the underdrain connection to the storm drain system. Typical biofiltration components include:

- Inflow distribution mechanisms (e.g., perimeter flow spreader or filter strips)
- Energy dissipation mechanism for concentrated inflows (e.g., splash blocks or riprap)
- Shallow surface ponding for captured flows
- Side slope and basin bottom vegetation selected based on climate and ponding depth
- Non-floating mulch layer
- Media layer (planting mix or engineered media) capable of supporting vegetation growth
- Filter course layer consisting of aggregate to prevent the migration of fines into uncompacted native soils or the aggregate storage layer
- Aggregate storage layer with underdrain(s)
- Impermeable liner or uncompacted native soils at the bottom of the facility
- Overflow structure

Normal Expected Maintenance

Biofiltration requires routine maintenance to: remove accumulated materials such as sediment, trash or debris; maintain vegetation health; maintain infiltration capacity of the media layer; replenish mulch; and maintain integrity of side slopes, inlets, energy dissipators, and outlets. A summary table of standard inspection and maintenance indicators is provided within this Fact Sheet.

Non-Standard Maintenance or BMP Failure

If any of the following scenarios are observed, the BMP is not performing as intended to protect downstream waterways from pollution and/or erosion. Corrective maintenance, increased inspection and maintenance, BMP replacement, or a different BMP type will be required.

- The BMP is not drained between storm events. Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health, and surface ponding longer than approximately 96 hours following a storm event poses a risk of vector (mosquito) breeding. Poor drainage can result from clogging of the media layer, filter course, aggregate storage layer, underdrain, or outlet structure. The specific cause of the drainage issue must be determined and corrected.
- Sediment, trash, or debris accumulation greater than 25% of the surface ponding volume within one month. This means the load from the tributary drainage area is too high, reducing BMP function or clogging the BMP. This would require pretreatment measures within the tributary area draining to the BMP to intercept the materials. Pretreatment components, especially for sediment, will extend the life of components that are more expensive to replace such as media, filter course, and aggregate layers.
- Erosion due to concentrated storm water runoff flow that is not readily corrected by adding erosion control blankets, adding stone at flow entry points, or minor re-grading to restore proper drainage according to the original plan. If the issue is not corrected by restoring the BMP to the original plan and grade, the [City Engineer] shall be contacted prior to any additional repairs or reconstruction.

Other Special Considerations

Biofiltration is a vegetated structural BMP. Vegetated structural BMPs that are constructed in the vicinity of, or connected to, an existing jurisdictional water or wetland could inadvertently result in creation of expanded waters or wetlands. As such, vegetated structural BMPs have the potential to come under the jurisdiction of the United States Army Corps of Engineers, SDRWQCB, California Department of Fish and Wildlife, or the United States Fish and Wildlife Service. This could result in the need for specific resource agency permits and costly mitigation to perform maintenance of the structural BMP. Along with proper placement of a structural BMP, **routine maintenance is key to preventing this scenario**.

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Biofiltration

SUMMARY OF STANDARD INSPECTION AND MAINTENANCE FOR BF-1 BIOFILTRATION		
The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district. Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.		
Threshold/Indicator	**Maintenance Action**	**Typical Maintenance Frequency**
Accumulation of sediment, litter, or debris	Remove and properly dispose of accumulated materials, without damage to the vegetation or compaction of the media layer.	• Inspect monthly. If the BMP is 25% full* or more in one month, increase inspection frequency to monthly plus after every 0.1-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Obstructed inlet or outlet structure	Clear blockage.	• Inspect monthly and after every 0.5-inch or larger storm event. • Remove any accumulated materials found at each inspection.
Damage to structural components such as weirs, inlet or outlet structures	Repair or replace as applicable	• Inspect annually. • Maintenance when needed.
Poor vegetation establishment	Re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintenance when needed.
Dead or diseased vegetation	Remove dead or diseased vegetation, re-seed, re-plant, or re-establish vegetation per original plans.	• Inspect monthly. • Maintenance when needed.
Overgrown vegetation	Mow or trim as appropriate.	• Inspect monthly. • Maintenance when needed.
2/3 of mulch has decomposed, or mulch has been removed	Remove decomposed fraction and top off with fresh mulch to a total depth of 3 inches.	• Inspect monthly. • Replenish mulch annually, or more frequently when needed based on inspection.

*"25% full" is defined as ¼ of the depth from the design bottom elevation to the crest of the outflow structure (e.g., if the height to the outflow opening is 12 inches from the bottom elevation, then the materials must be removed when there is 3 inches of accumulation – this should be marked on the outflow structure).

SUMMARY OF STANDARD INSPECTION AND MAINTENANCE FOR BF-1 BIOFILTRATION (Continued from previous page)		
Threshold/Indicator	**Maintenance Action**	**Typical Maintenance Frequency**
Erosion due to concentrated irrigation flow	Repair/re-seed/re-plant eroded areas and adjust the irrigation system.	• Inspect monthly. • Maintenance when needed.
Erosion due to concentrated storm water runoff flow	Repair/re-seed/re-plant eroded areas, and make appropriate corrective measures such as adding erosion control blankets, adding stone at flow entry points, or minor re-grading to restore proper drainage according to the original plan. If the issue is not corrected by restoring the BMP to the original plan and grade, the [City Engineer] shall be contacted prior to any additional repairs or reconstruction.	• Inspect after every 0.5-inch or larger storm event. If erosion due to storm water flow has been observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintenance when needed. If the issue is not corrected by restoring the BMP to the original plan and grade, the [City Engineer] shall be contacted prior to any additional repairs or reconstruction.
Standing water in BMP for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health	Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, clearing underdrains, or repairing/replacing clogged or compacted soils.	• Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintenance when needed.
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	If mosquitos/larvae are observed: first, immediately remove any standing water by dispersing to nearby landscaping; second, make corrective measures as applicable to restore BMP drainage to prevent standing water. If mosquitos persist following corrective measures to remove standing water, or if the BMP design does not meet the 96-hour drawdown criteria due to release rates controlled by an orifice installed on the underdrain, the [City Engineer] shall be contacted to determine a solution. A different BMP type, or a Vector Management Plan prepared with concurrence from the County of San Diego Department of Environmental Health, may be required.	• Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintenance when needed.
Underdrain clogged	Clear blockage.	• Inspect if standing water is observed for longer than 24-96 hours following a storm event. • Maintenance when needed.

References

American Mosquito Control Association.
http://www.mosquito.org/
California Storm Water Quality Association (CASQA). 2003. Municipal BMP Handbook.
https://www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook
County of San Diego. 2014. Low Impact Development Handbook.
http://www.sandiegocounty.gov/content/sdc/dpw/watersheds/susmp/lid.html
San Diego County Copermittees. 2016. Model BMP Design Manual, Appendix E, Fact Sheet BF-1.
http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=250&Itemid=220

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BF-1
Biofiltration

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

INSPECTION AND MAINTENANCE CHECKLIST FOR BF-1 BIOFILTRATION PAGE 1 of 5			
Threshold/Indicator	**Maintenance Recommendation**	**Date**	**Description of Maintenance Conducted**
Accumulation of sediment, litter, or debris Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Remove and properly dispose of accumulated materials, without damage to the vegetation ☐ If sediment, litter, or debris accumulation exceeds 25% of the surface ponding volume within one month (25% full*), add a forebay or other pre-treatment measures within the tributary area draining to the BMP to intercept the materials. ☐ Other / Comments:		
Poor vegetation establishment Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Re-seed, re-plant, or re-establish vegetation per original plans ☐ Other / Comments:		

*"25% full" is defined as ¼ of the depth from the design bottom elevation to the crest of the outflow structure (e.g., if the height to the outflow opening is 12 inches from the bottom elevation, then the materials must be removed when there is 3 inches of accumulation – this should be marked on the outflow structure).

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

INSPECTION AND MAINTENANCE CHECKLIST FOR BF-1 BIOFILTRATION PAGE 2 of 5			
Threshold/Indicator	**Maintenance Recommendation**	**Date**	**Description of Maintenance Conducted**
Dead or diseased vegetation Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Remove dead or diseased vegetation, re-seed, re-plant, or re-establish vegetation per original plans ☐ Other / Comments:		
Overgrown vegetation Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Mow or trim as appropriate ☐ Other / Comments:		
2/3 of mulch has decomposed, or mulch has been removed Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Remove decomposed fraction and top off with fresh mulch to a total depth of 3 inches ☐ Other / Comments:		

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

INSPECTION AND MAINTENANCE CHECKLIST FOR BF-1 BIOFILTRATION PAGE 3 of 5			
Threshold/Indicator	**Maintenance Recommendation**	**Date**	**Description of Maintenance Conducted**
Erosion due to concentrated irrigation flow Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Repair/re-seed/re-plant eroded areas and adjust the irrigation system ☐ Other / Comments:		
Erosion due to concentrated storm water runoff flow Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Repair/re-seed/re-plant eroded areas, and make appropriate corrective measures such as adding erosion control blankets, adding stone at flow entry points, or minor re-grading to restore proper drainage according to the original plan ☐ If the issue is not corrected by restoring the BMP to the original plan and grade, the [City Engineer] shall be contacted prior to any additional repairs or reconstruction ☐ Other / Comments:		

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Biofiltration

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

INSPECTION AND MAINTENANCE CHECKLIST FOR BF-1 BIOFILTRATION PAGE 4 of 5			
Threshold/Indicator	**Maintenance Recommendation**	**Date**	**Description of Maintenance Conducted**
Obstructed inlet or outlet structure Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Clear blockage ☐ Other / Comments:		
Underdrain clogged (inspect underdrain if standing water is observed for longer than 24-96 hours following a storm event) Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Clear blockage ☐ Other / Comments:		
Damage to structural components such as weirs, inlet or outlet structures Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Repair or replace as applicable ☐ Other / Comments:		

BF-1
Biofiltration

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

INSPECTION AND MAINTENANCE CHECKLIST FOR BF-1 BIOFILTRATION PAGE 5 of 5			
Threshold/Indicator	**Maintenance Recommendation**	**Date**	**Description of Maintenance Conducted**
Standing water in BMP for longer than 24-96 hours following a storm event* Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, clearing underdrains, or repairing/replacing clogged or compacted soils ☐ Other / Comments:		
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology Maintenance Needed? ☐ YES ☐ NO ☐ N/A	☐ Apply corrective measures to remove standing water in BMP when standing water occurs for longer than 24-96 hours following a storm event.** ☐ Other / Comments:		

*Surface ponding longer than approximately 24 hours following a storm event may be detrimental to vegetation health, and surface ponding longer than approximately 96 hours following a storm event poses a risk of vector (mosquito) breeding. Poor drainage can result from clogging of the media layer, filter course, aggregate storage layer, underdrain, or outlet structure. The specific cause of the drainage issue must be determined and corrected.

**If mosquitos persist following corrective measures to remove standing water, or if the BMP design does not meet the 96-hour drawdown criteria due to release rates controlled by an orifice installed on the underdrain, the [City Engineer] shall be contacted to determine a solution. A different BMP type, or a Vector Management Plan prepared with concurrence from the County of San Diego Department of Environmental Health, may be required.

E.14 BF-3 Proprietary Biofiltration Systems

The purpose of this fact sheet is to help explain the potential role of proprietary BMPs in meeting biofiltration requirements, when full retention of the DCV is not feasible. The fact sheet does not describe design criteria like the other fact sheets in this appendix because this information varies by BMP product model.

Criteria for Use of a Proprietary BMP as a Biofiltration BMP

A proprietary BMP may be acceptable as a "biofiltration BMP" under the following conditions:

(1) The BMP meets the minimum design criteria listed in Appendix F, including the pollutant treatment performance standard in Appendix F.1;

(2) The BMP is designed and maintained in a manner consistent with its performance certifications (See explanation in Appendix F.2); and

(3) The BMP is acceptable at the discretion of the City Engineer. The City Engineer has no obligation to accept any proprietary biofiltration BMP.

Guidance for Sizing a Proprietary BMP as a Biofiltration BMP

Proprietary biofiltration BMPs must meet the same sizing guidance as non-proprietary BMPs. Sizing is typically based on capturing and treating 1.50 times the DCV not reliably retained. Guidance for sizing biofiltration BMPs to comply with requirements of this manual is provided in Appendix F.2.

SD-1
Tree Wells

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

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

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

Normal Expected Maintenance

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

Non-Standard Maintenance or BMP Failure

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

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

Other Special Considerations

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

SD-1
Tree Wells

SUMMARY OF STANDARD INSPECTION AND MAINTENANCE FOR SD-1 TREE WELLS		
The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district. Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.		
Threshold/Indicator	**Maintenance Action**	**Typical Maintenance Frequency**
Tree health	Routine actions as necessary to maintain tree health.	• Inspect monthly. • Maintenance when needed.
Dead or diseased tree	Remove dead or diseased tree. Replace per original plans.	• Inspect monthly. • Maintenance when needed.
Standing water in tree well for longer than 24 hours following a storm event Surface ponding longer than approximately 24 hours following a storm event may be detrimental to tree health	Loosen or replace soils surrounding the tree to restore drainage.	• Inspect monthly and after every 0.5-inch or larger storm event. If standing water is observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintenance when needed.
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	Disperse any standing water from the tree well to nearby landscaping. Loosen or replace soils surrounding the tree to restore drainage (and prevent standing water).	• Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintenance when needed
Entrance / opening to the tree well is blocked such that storm water will not drain into the tree well (e.g., a curb inlet opening is blocked by debris or a grate is clogged causing runoff to flow around instead of into the tree well; or a surface depression is filled such that runoff drains away from the tree well)	Make repairs as appropriate to restore drainage into the tree well.	• Inspect monthly. • Maintenance when needed.

References

American Mosquito Control Association.
http://www.mosquito.org/
County of San Diego. 2014. Low Impact Development Handbook.
http://www.sandiegocounty.gov/content/sdc/dpw/watersheds/susmp/lid.html
San Diego County Copermittees. 2016. Model BMP Design Manual, Appendix E, Fact Sheet SD-1.
http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=250&Itemid=220

SD-1
Tree Wells

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

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

SD-1
Tree Wells

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

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

ATTACHMENT 4
Copy of Plan Sheets Showing Permanent Storm Water BMPs

This is the cover sheet for Attachment 4.

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 Form I-6 Summary of PDP Structural BMPs

☒ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit

☒ Details and specifications for construction of structural BMP(s)

☒ Signage indicating the location and boundary of structural BMP(s) as required by the [City Engineer]

☐ 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

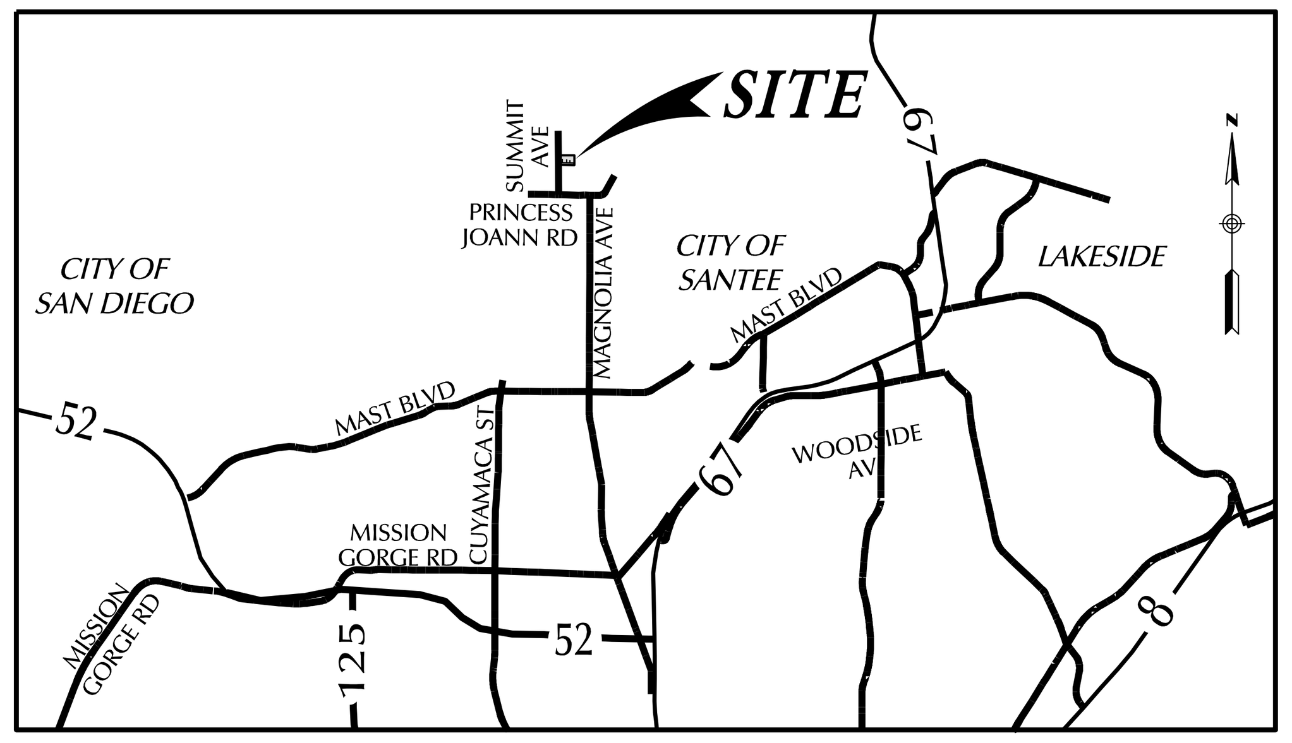
☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

☒ 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 shall be provided. Photocopies of general brochures are not acceptable.

TM NO. 2023-0003/DR 2023-0007
SUMMIT AVENUE SITE MULTIFAMILY



VICINITY MAP

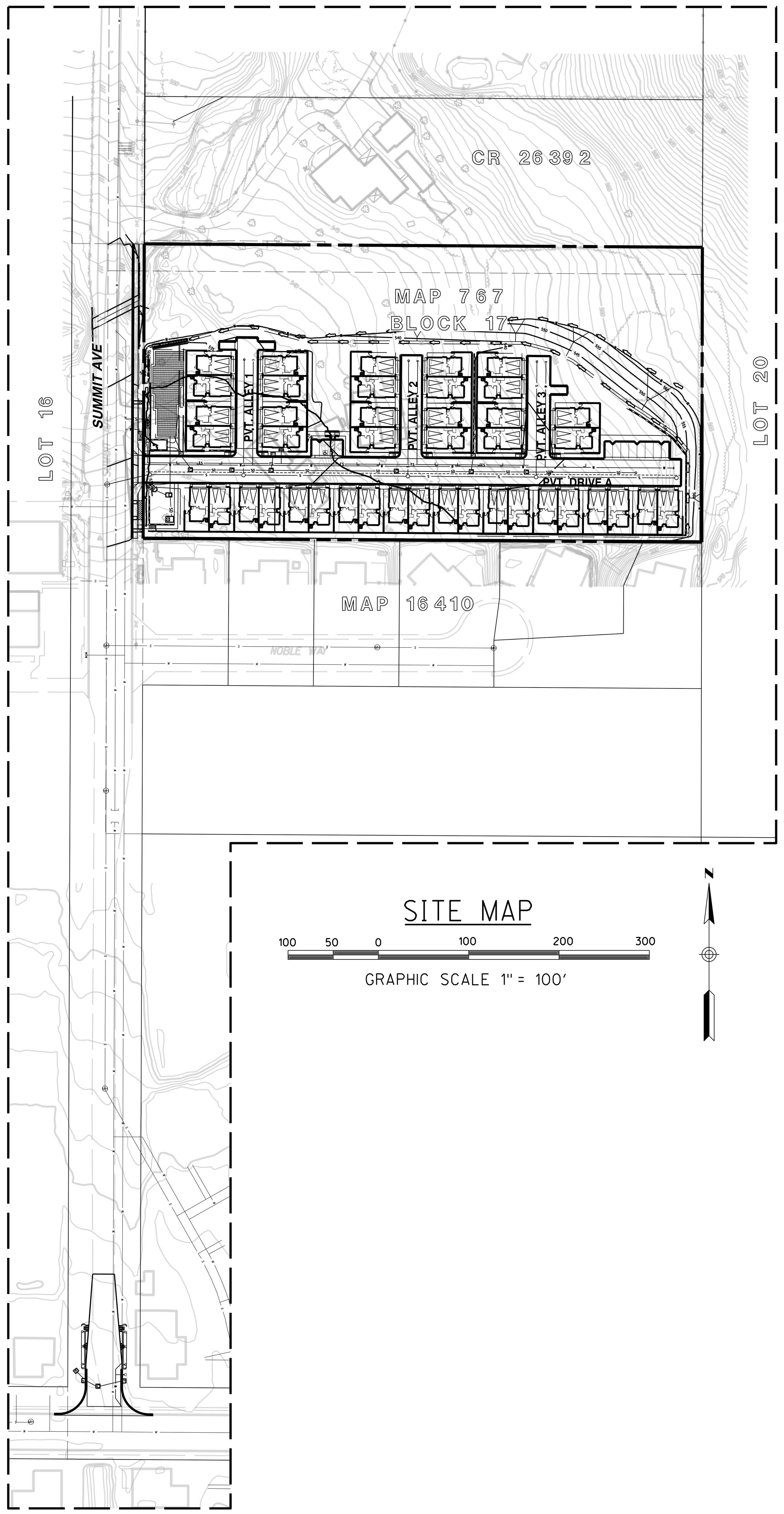
NO SCALE

LEGEND / QUANTITIES

LEGEND	SYMBOL	QUANTITIES
PROJECT BOUNDARY		
EXIST TOPO CONTOUR		
LOT LINE		
FINISH FLOOR ELEVATION	FF 538.67	
PAD ELEVATION	PE 538.0	
RESIDENTIAL BLDG NUMBER	(5)	
RESIDENTIAL UNIT NUMBER	1	
SD CLEANOUT		
SD INLET		
PVT STORM DRAIN	—SD—	
PVT SEWER MAIN (8")	—S—	
PVT SEWER MANHOLE		5 EA.
WATER MAIN	—W—	1,000 LF
FIRE HYDRANT		2 EA.
WATER SERVICE AND METER		50 EA.
SLOPE (2:1 MAX.)		
STREET GRADIENT	2%	
STREET ELEVATION	537.3	
BROW DITCH		
RETAINING WALL		
TOP OF WALL ELEVATION	TW	
FINISHED SURFACE ELEVATION	FS	
PARKING SPACES	(5)	
EXISTING CONCRETE		
EXISTING PAVEMENT		

DEVELOPMENT SUMMARY

1. GROSS PROJECT AREA: 4.65 AC
2. NET PROJECT AREA: 2.89 AC
3. NUMBER OF EXISTING LOTS: 1
4. NUMBER OF RESIDENTIAL DU'S = 42
5. DENSITY = 9 DU/DA (42 DU/4.65 AC)
6. EXISTING GENERAL PLAN DESIGNATION: R7 (MEDIUM DENSITY RESIDENTIAL)
7. EXISTING/PROPOSED ZONING: R7 (7-14 DU/AC)
8. PRESENT LAND USE: SINGLE FAMILY DETACHED
9. PROPOSED LAND USE: RESIDENTIAL
10. SETBACKS:
    FRONT: 20 FT
    INTERIOR SIDE: 10 FT
    EXTERIOR SIDE: 10 FT
    REAR: 10 FT
11. PRIVATE OPEN SPACE
    REQUIRED: 100 SF/DU X 42 DU = 4,200 SF
    PROVIDED: 19,578 SF
12. COMMON OPEN SPACE
    REQUIRED: 150 SF/DU X 42 DU = 6,300 SF
    ACTIVE COMMON O.S. PROVIDED: 11,602 SF
    PASSIVE COMMON O.S. PROVIDED: 30,807 SF
    TOTAL COMMON O.S. PROVIDED: 42,409 SF
13. PARKING
    RESIDENTAIL PARKING (GARAGE)
    REQUIRED: 2 SPACES / DU X 42 DU'S = 84 SPACES
    PROVIDED: 84 SPACES
    GUEST PARKING:
    REQUIRED: 1 SPACE / 4 DU'S = 11 SPACES
    PROVIDED: 21 SPACES
14. LOT COVERAGE
    GROSS AREA: 4.65 AC (202,554 SF) (DEVELOPED LOT)
    BUILDING FOOTPRINT:
    DUPLEXES
    B200 (1,746 SF) X 21: 36,666 SF
    TOTAL BUILDING FOOTPRINT: 36,666 SF
    LOT COVERAGE: (36,666 SF/202,554 SF) = 18% < 55% MAX.



SITE MAP

CONDOMINIUM STATEMENT

THIS IS A MAP OF A RESIDENTIAL CONDOMINIUM PROJECT AS DEFINED IN SECTION 4125 OF THE STATE OF CALIFORNIA CIVIL CODE.

PARK IN-LIEU FEE STATEMENT:

THE APPLICANT SHALL PAY FEES IN LIEU OF DEDICATING LAND FOR PARK AND/OR RECREATION PURPOSES.

EARTHWORK/GRADING QUANTITIES

CUT: 20,300 CY FILL: 3,800 CY EXPORT: 17,500 CY

QUANTITIES SHOWN ARE QUANTITIES AND DO NOT INCLUDE THE EFFECT OF REMEDIAL GRADING. THE RAW NUMBERS HAVE NOT BEEN ADJUSTED FOR SHRINKAGE OR BULKAGE.

EXISTING LAND USE DESIGNATION

LU: SINGLE FAMILY DETACHED

R7: MEDIUM DENSITY RESIDENTIAL (7-14 DU/AC.)

ENGINEER OF WORK

RICK ENGINEERING CO.
5620 FRIARS RD
SAN DIEGO, CA 92110
PH. (619) 291-0707

Karen Van Ert 10/25/2024

KAREN S. VAN ERT DATE
R.C.E. NO. 56991
EXP. 6-30-2025

REGISTERED PROFESSIONAL ENGINEER — KAREN S. VAN ERT — No. 56991 — CIVIL — STATE OF CALIFORNIA

OWNER/AUTHORIZED AGENT

WARMINGTON RESIDENTIAL CALIFORNIA INC.
3090 PULLMAN STREET
COSTA MESA, CALIFORNIA 92626
PHONE: (714) 434-4416

MATTHEW ESQUIVEL DATE
PROJECT MANAGER
WARMINGTON RESIDENTIAL CALIFORNIA INC.

ASSESSOR'S PARCEL NUMBER

378-190-01-00

SHEET INDEX

TOPOGRAPHY

TOPO SOURCE: TOPO SOURCE RICK ENGINEERING COMPANY
FLOWN: JULY 24, 2023
DATUM: NGVD 29

BASIS OF BEARINGS:

THE BASIS OF BEARINGS AND COORDINATES FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), ZONE 6, BASED UPON THE GRID BEARING BETWEEN GPS STATIONS 1017 AND 2122, AND IS DETERMINED BY GPS MEASUREMENTS TAKEN ON JULY 13, 2023 PER RECORD OF SURVEY 11252.

I.E. GPS STATION 1017 TO 2022: S 89°37'26"E 1720.69' (GRID)

BASIS OF ELEVATIONS

THE BASIS OF ELEVATIONS FOR THIS SURVEY IS THE STANDARD STREET SURVEY MONUMENT STAMPED "RCE 18010" PER MAP 10225 AT THE CENERLINE INTERSECTION OF PRINCESS JOANN RD. & KEITH ST. ELEVATION: 505.42 MSLD

PUBLIC UTILITIES

WATER (PUBLIC)	PADRE DAM MUNICIPAL WATER DISTRICT
SEWER	PADRE DAM MUNICIPAL WATER DISTRICT
STORM DRAIN	(PRIVATE)
GAS & ELECTRIC	SDG&E
CABLE T.V.	COX CABLE
POLICE & FIRE	CITY OF SANTEE
SCHOOL DISTRICT	GROSSMONT UNION HIGH SCHOOL DISRICT SANTEE ELEMENTARY SCHOOL DISTRICT

GENERAL NOTES

1. ASSESSORS PARCEL NUMBERS: 378-190-01.
2. PRIVATE WATER SYSTEM TO BE INSTALLED IN ACCORDANCE WITH CALIFORNIA PLUMBING CODE
3. SPECIFIC METHODS OF HANDLING STORM DRAINAGE ARE SUBJECT TO DETAILED APPROVAL BY THE CITY ENGINEER AT THE TIME OF SUBMISSION OF IMPROVEMENT AND GRADING PLANS. DESIGN SHALL BE ACCOMPLISHED ON THE BASIS OF THE REQUIREMENTS OF THE SUBDIVISION MANUAL. DRAINAGE EASEMENTS SHALL BE PROVIDED AS REQUIRED BY THE CITY ENGINEER.
4. PRIVATE SEWER MAINS ARE 8" MINIMUM P.V.C. UNLESS OTHERWISE SHOWN.
5. EVIDENCE SHALL BE PROVIDED OF HAVING OBTAINED GRADING RIGHTS ON ADJACENT PROPERTY WHERE REQUIRED.
6. UTILITIES SHALL BE UNDERGROUND. EASEMENTS TO BE PROVIDED AS NECESSARY.
7. FIRE HYDRANTS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF SANTEE FIRE DEPARTMENT DESIGN STANDARDS.
8. GRADING MAY BE BUILT PRIOR TO FINAL MAP RECORDATION.
9. GRADING SHOWN HEREON IS PRELIMINARY AND SUBJECT TO MODIFICATION IN FINAL DESIGN SUBJECT TO SUBSTANTIAL CONFORMANCE APPROVAL BY THE CITY OF SANTEE.
10. STORM DRAIN AND SEWER SHOWN IS PRELIMINARY AND IS SUBJECT TO MODIFICATION WITH FINAL DESIGN.
11. TEMPORARY AND PERMANENT STRUCTURAL BEST MANAGEMENT PRACTICES WILL BE INCORPORATED IN THE DESIGN AND IMPLEMENTATION OF THE DEVELOPMENT.
12. TRASH COLLECTION TO BE CURB SIDE.

LEGAL DESCRIPTION

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

PARCEL 1:

THAT PORTION OF LOT 19 IN BLOCK 17 OF CAJON PARK, IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 767 FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, NOVEMBER 27, 1893, WHICH LIES NORTHERLY OF A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERLY LINE OF SAID LOT 19 WHICH IS DISTANT THEREON SOUTH 0°02'02" EAST, 326.62 FEET FROM THE NORTHWEST CORNER OF SAID LOT; THENCE SOUTH 89°55'45" EAST, 658.48 FEET TO A POINT ON THE EAST LINE OF SAID LOT 19 WHICH IS DISTANT THEREON SOUTH 0°02'26" EAST, 326.74 FEET FROM THE NORTHEAST CORNER OF SAID LOT.

EXPRESSLY EXCEPTING ANY PORTION OF SUMMIT AVENUE LYING WESTERLY OF AND ADJOINING SAID LOT 19.

PARCEL 2:

AN EASEMENT FOR ROAD AND PUBLIC UTILITY PURPOSES OVER, UNDER, UPON AND ACROSS ALL OF SUMMIT AVENUE AS SHOWN ON SAID MAP NO. 767 LYING WESTERLY OF AND ADJOINING THE WESTERLY LINES OF LOTS 19 AND 30 IN SAID BLOCK 17 AND THE NORTHERLY 40.00 FEET OF SIXTH STREET AS SHOWN ON SAID MAP NO. 767 LYING BETWEEN THE SOUTHERLY PROLONGATION OF THE WESTERLY LINE OF SAID SUMMIT AVENUE AND THE SOUTHERLY PROLONGATION OF A LINE DRAWN PARALLEL WITH AND 50.00 FEET EASTERLY MEASURED AT RIGHT ANGLES FROM THE WESTERLY LINE OF LOT 28 IN SAID BLOCK 17 AND THE SOUTHERLY 40.00 FEET OF SAID SIXTH STREET LYING BETWEEN THE NORTHERLY PROLONGATION OF THE WESTERLY LINE OF LOT 4 IN BLOCK 16 OF SAID CAJON PARK AND THE NORTHERLY PROLONGATION OF THE CENTER LINE OF CENTRAL AVENUE AS SHOWN ON SAID MAP NO. 767 AND THAT PORTION OF THE EASTERLY 50.00 FEET OF SAID CENTRAL AVENUE LYING BETWEEN THE WESTERLY PROLONGATION OF THE NORTHERLY LINE OF LOT 4 IN SAID BLOCK 16 AND THE WESTERLY PROLONGATION OF THE SOUTHERLY LINE OF LOT 12 IN SAID BLOCK 16.

ALL OF THE FOREGOING PORTIONS OF SAID STREET AND AVENUES HAVING BEEN VACATED AND CLOSED TO PUBLIC USE ON OCTOBER 3, 1900 BY AN ORDER OF THE BOARD OF SUPERVISORS OF SAID SAN DIEGO COUNTY AND BEING RECORDED IN BOOK 3, PAGE 95 OF SUPERVISOR'S RECORDS.

ASSESSOR'S PARCEL NUMBER: 378-190-01-00

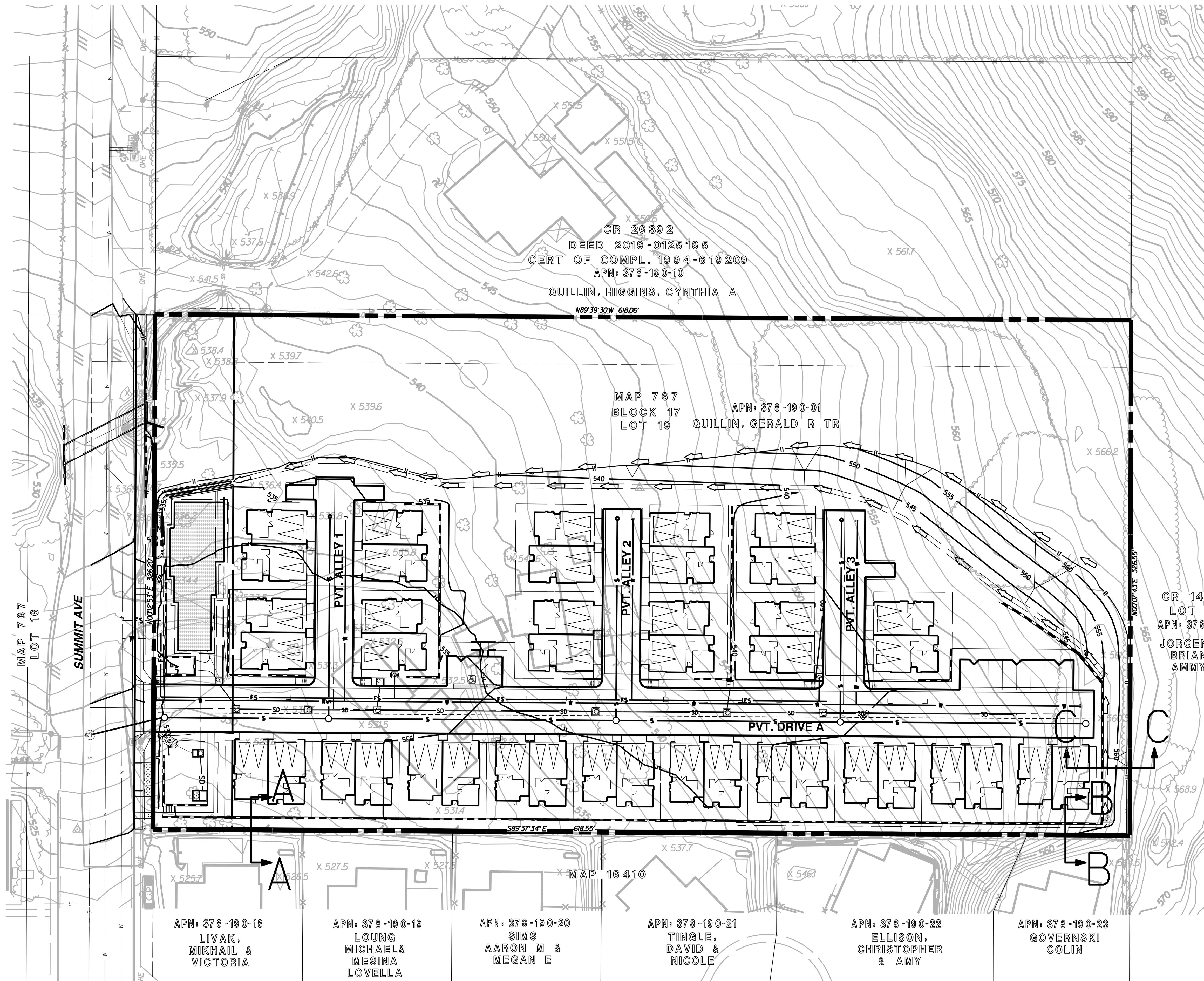
NO.	REVISIONS	DATE	BY
1	1ST VTTM SUBMITTAL	11/03/23	REC
2	2ND VTTM SUBMITTAL	02/01/24	REC
3	3RD VTTM SUBMITTAL	04/25/24	REC
4	4TH VTTM SUBMITTAL	12/19/24	REC
5	5TH VTTM SUBMITTAL	03/17/25	REC

TM NO. 2023-0003/DR 2023-0007

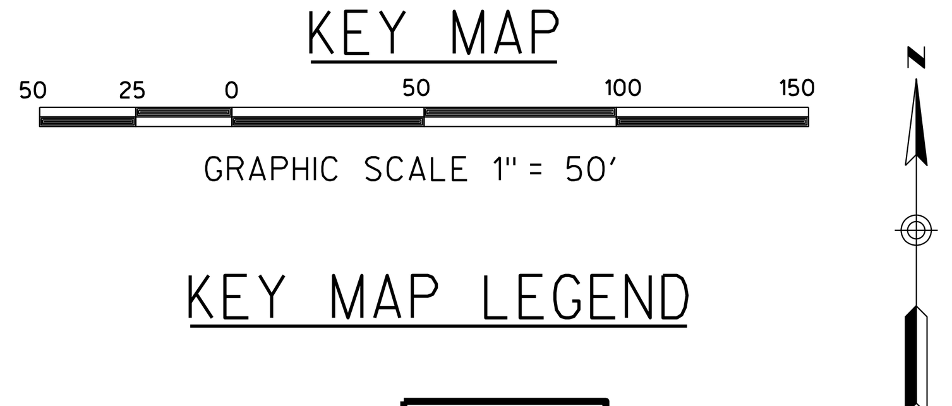
SUMMIT AVENUE

City of Santee, California

RICK
619-291-0707
rickengineering.com
5620 FRIARS ROAD
SAN DIEGO, CA 92110
SAN DIEGO ORANGE RIVERSIDE SACRAMENTO SAN LUIS OBISPO
SANTA CLARITA PHOENIX TUCSON LAS VEGAS DENVER



KEY MAP

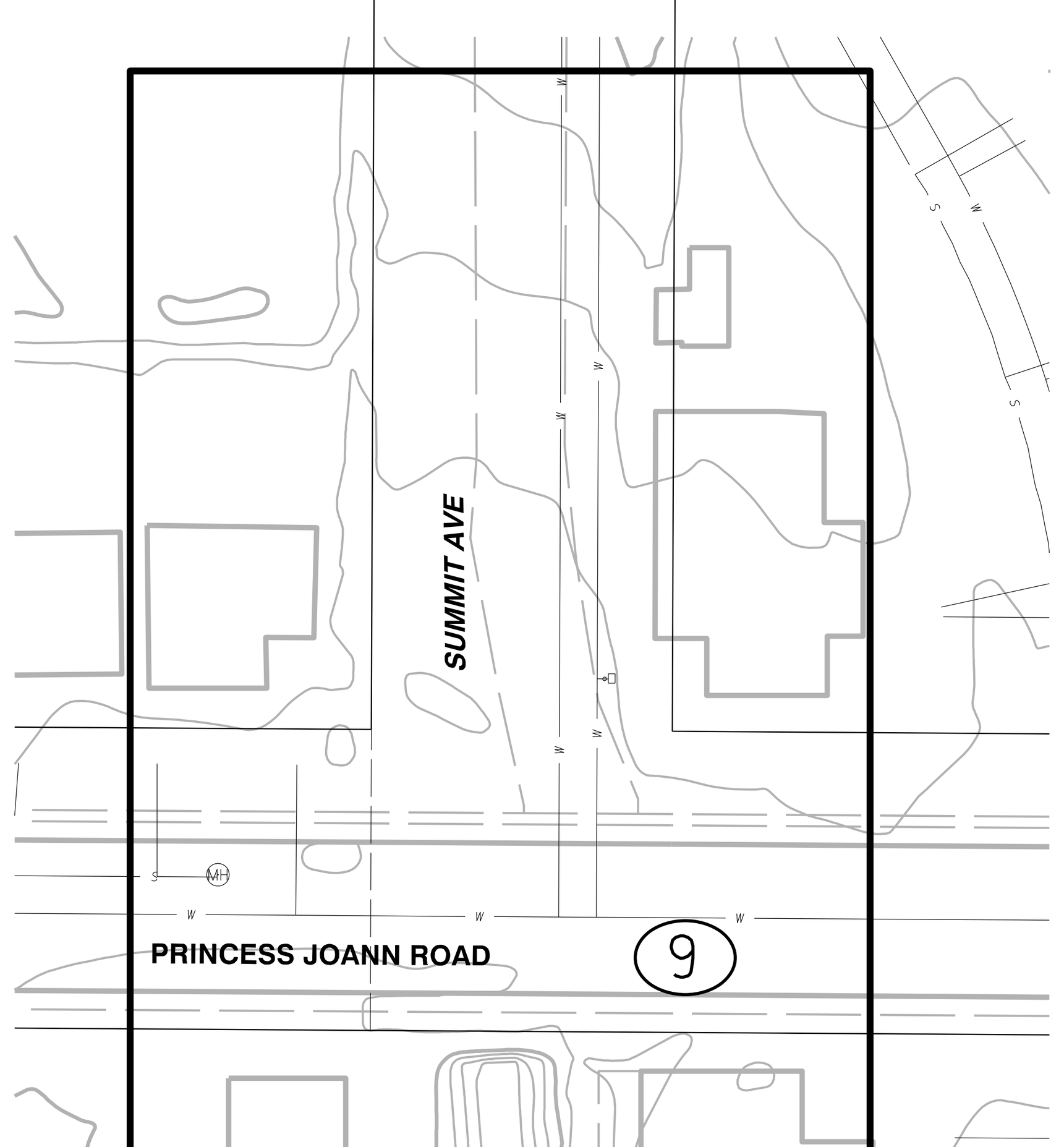


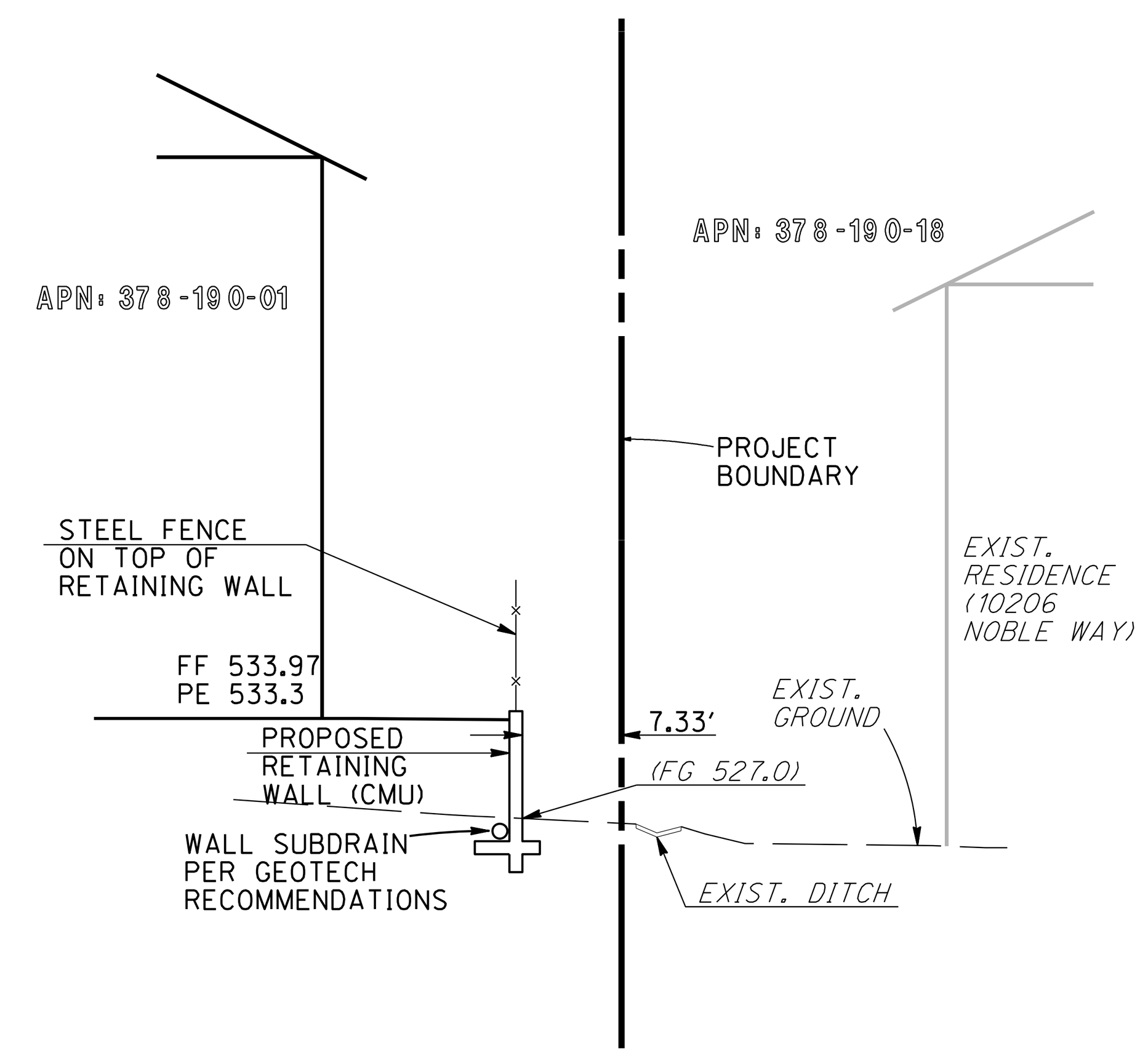
GRAPHIC SCALE 1" = 50'

KEY MAP LEGEND

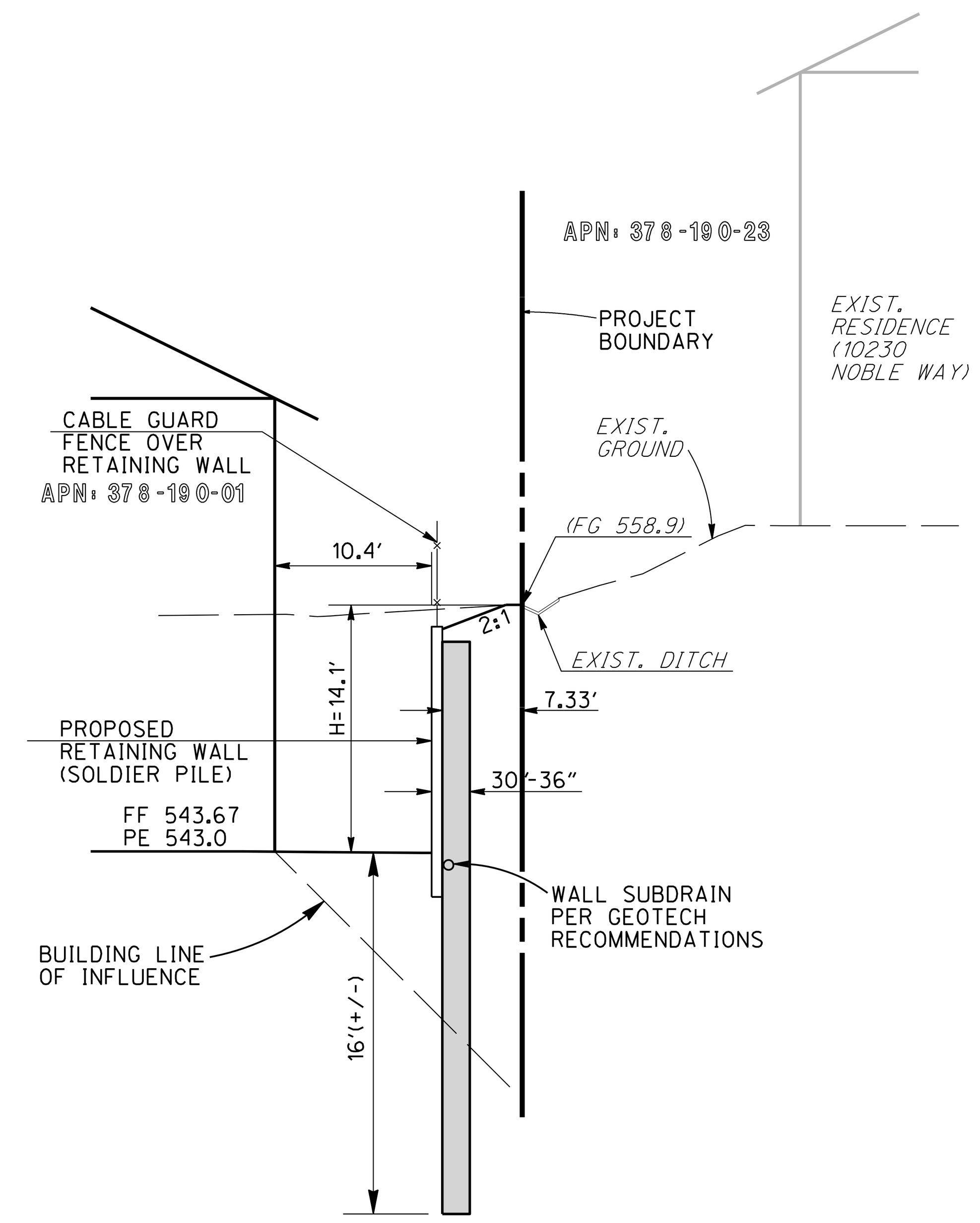
KEY MAP: SHEET

KEY MAP: SHEET NUMBER (3)

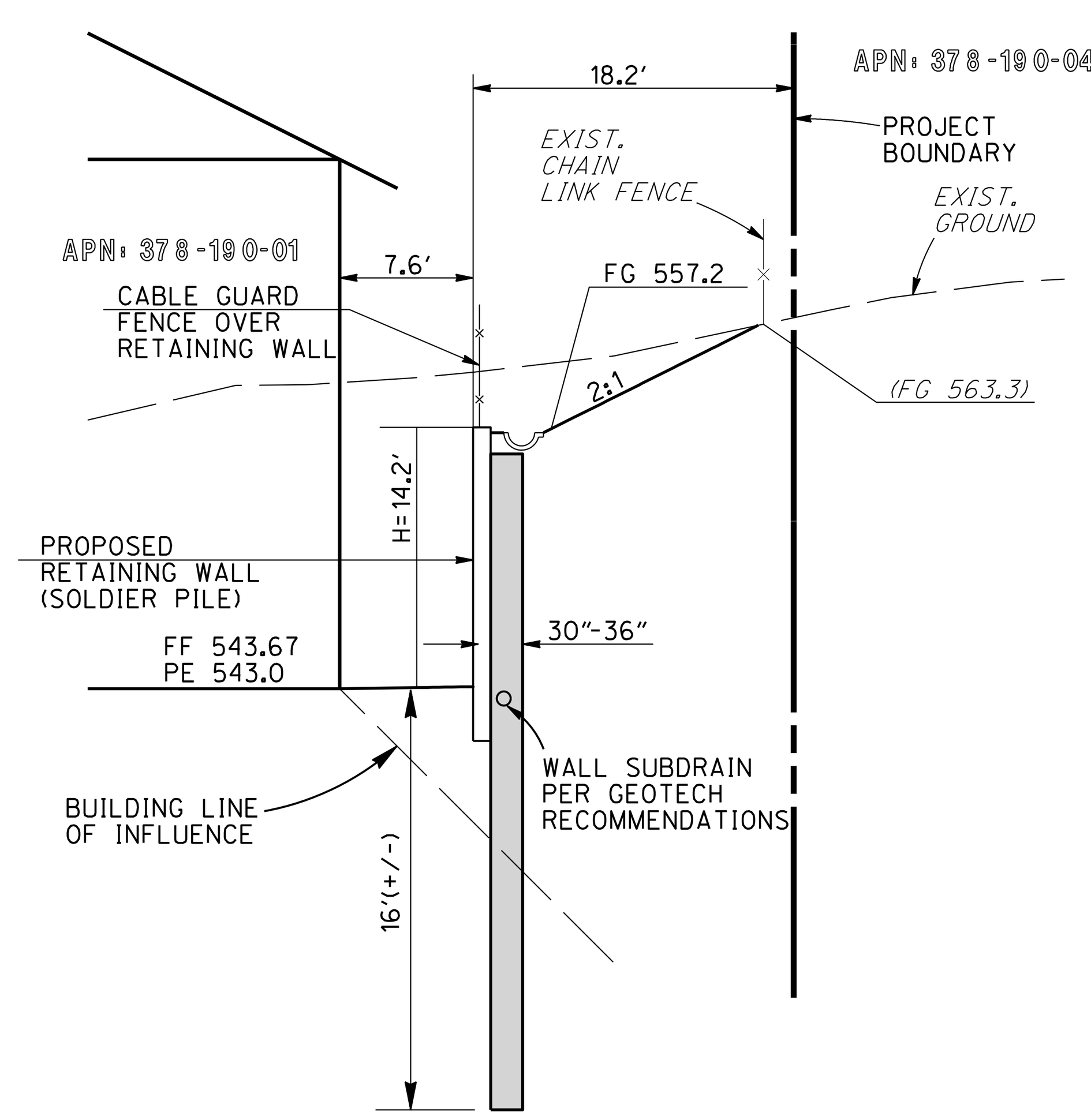




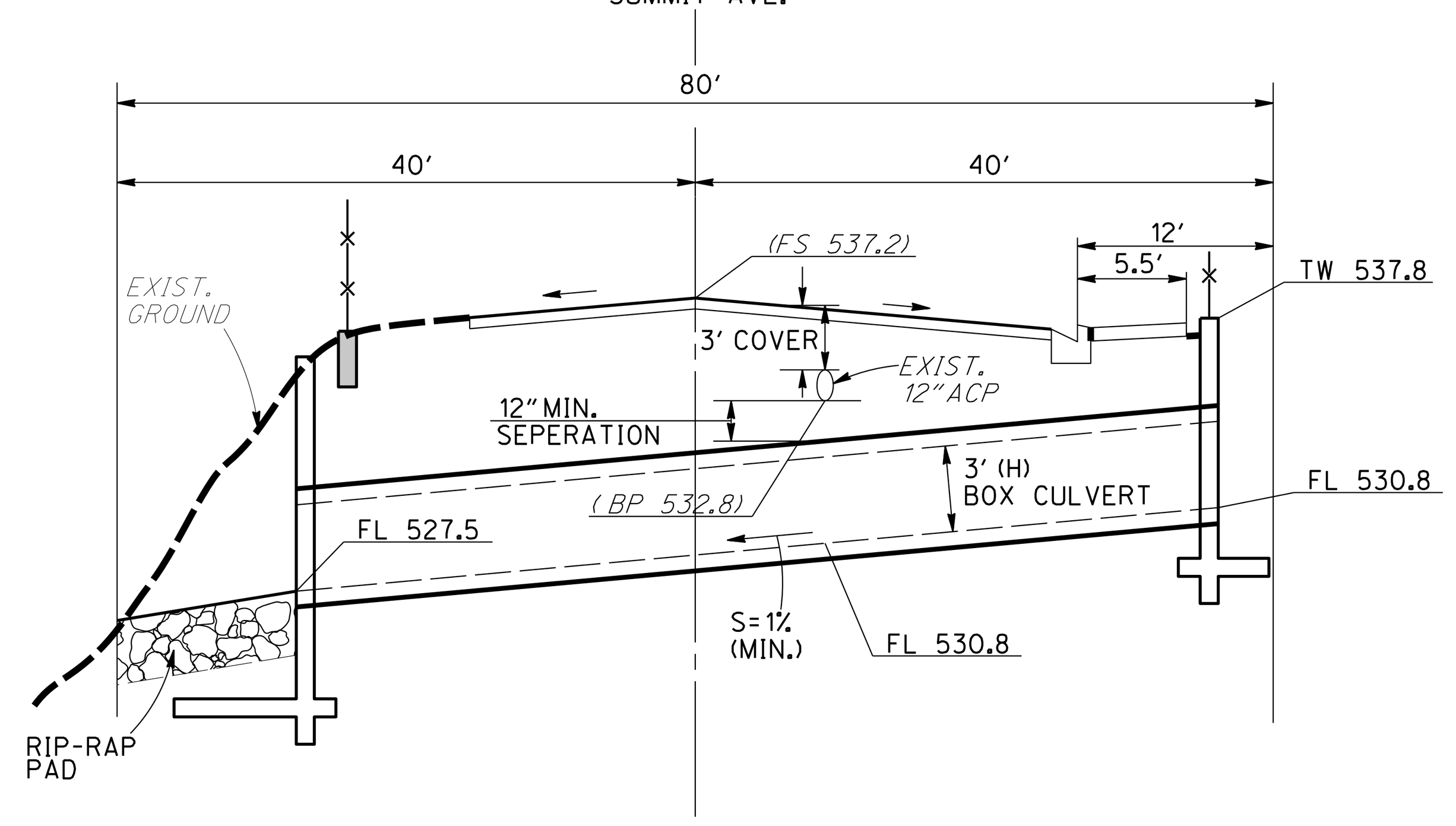
SECTION A-A
NO SCALE



SECTION B-B
NO SCALE



SECTION C-C
NO SCALE



SECTION D-D
NO SCALE

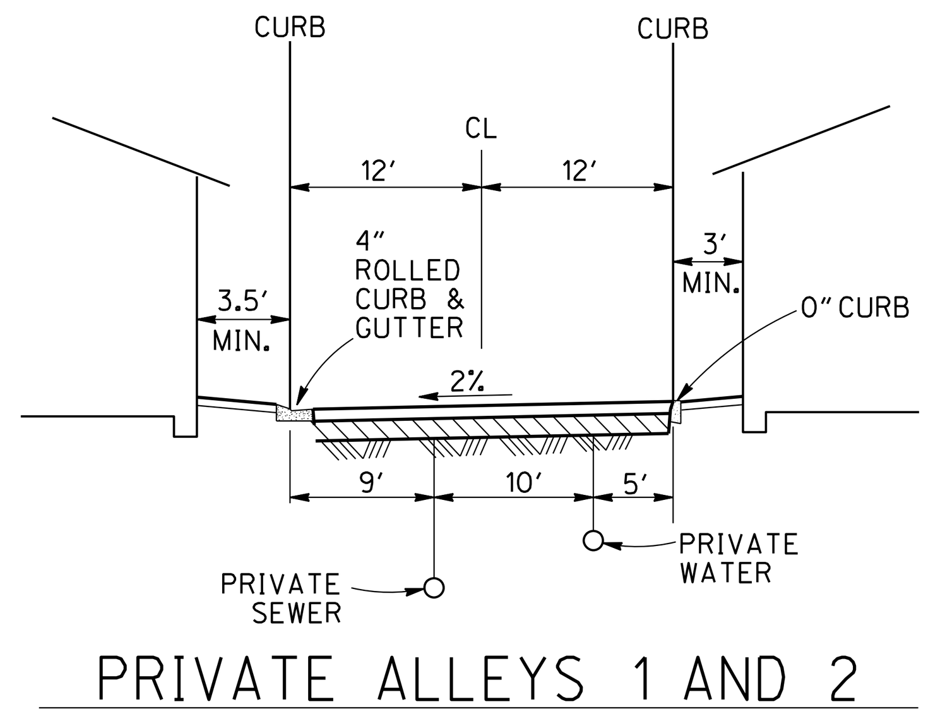
RICK
619-291-0707
rickengineering.com
5620 FRIARS ROAD
SAN DIEGO, CA 92110
SAN DIEGO ORANGE RIVERSIDE SACRAMENTO SAN LUIS OBISPO
SANTA CLARITA PHOENIX TUCSON LAS VEGAS DENVER

TM NO. 2023-0003/DR 2023-0007

KEY MAP/DETAILS/STREET SECTIONS

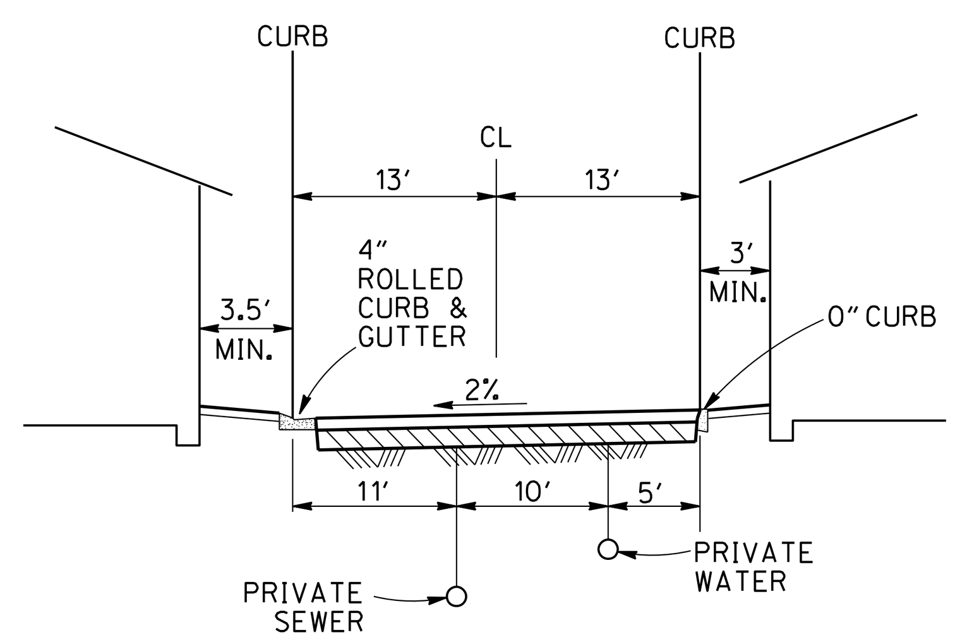
SUMMIT AVENUE

City of Santee, California



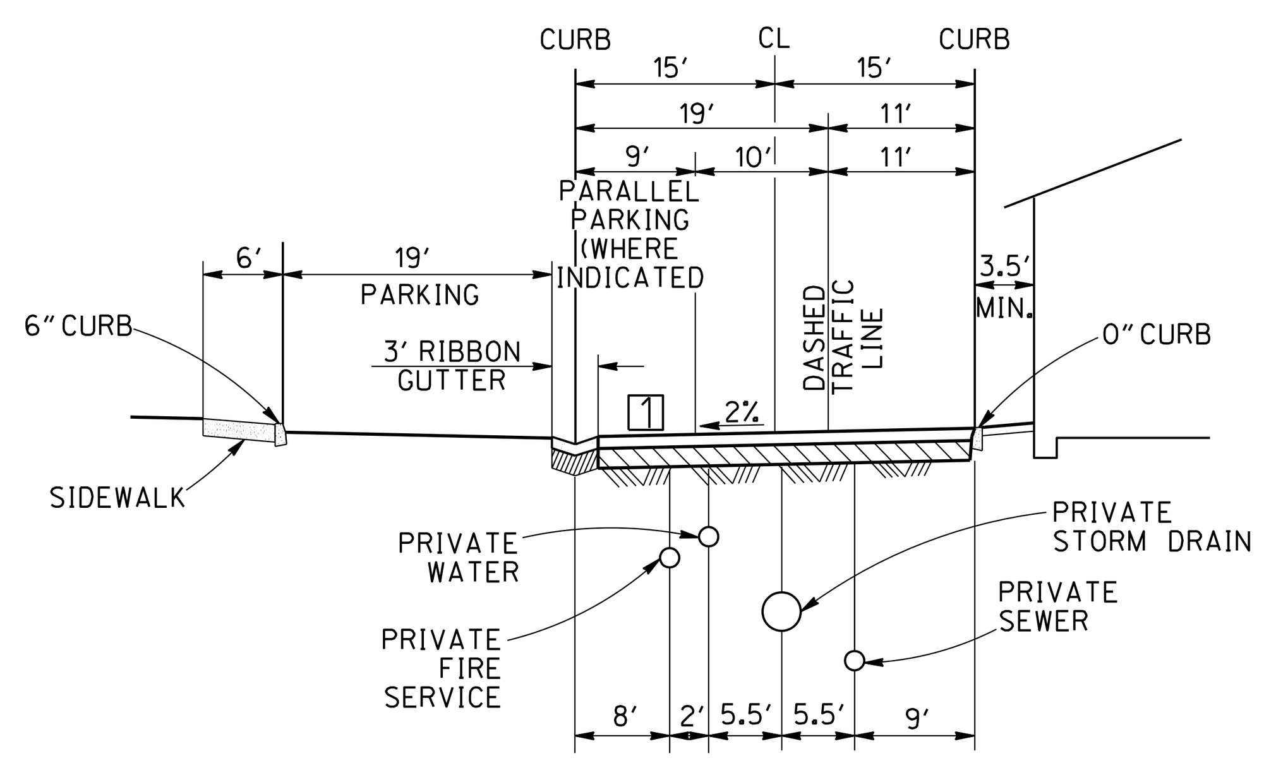
PRIVATE ALLEYS 1 AND 2

NOT TO SCALE



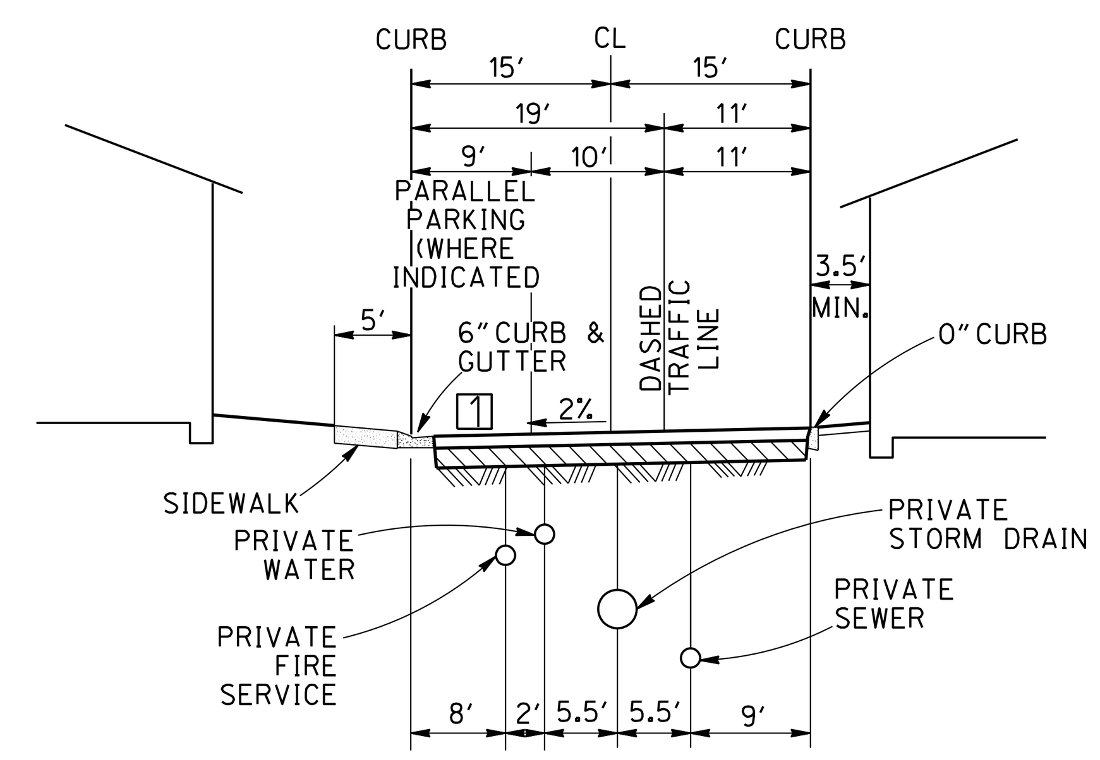
PRIVATE ALLEY 3

NOT TO SCALE



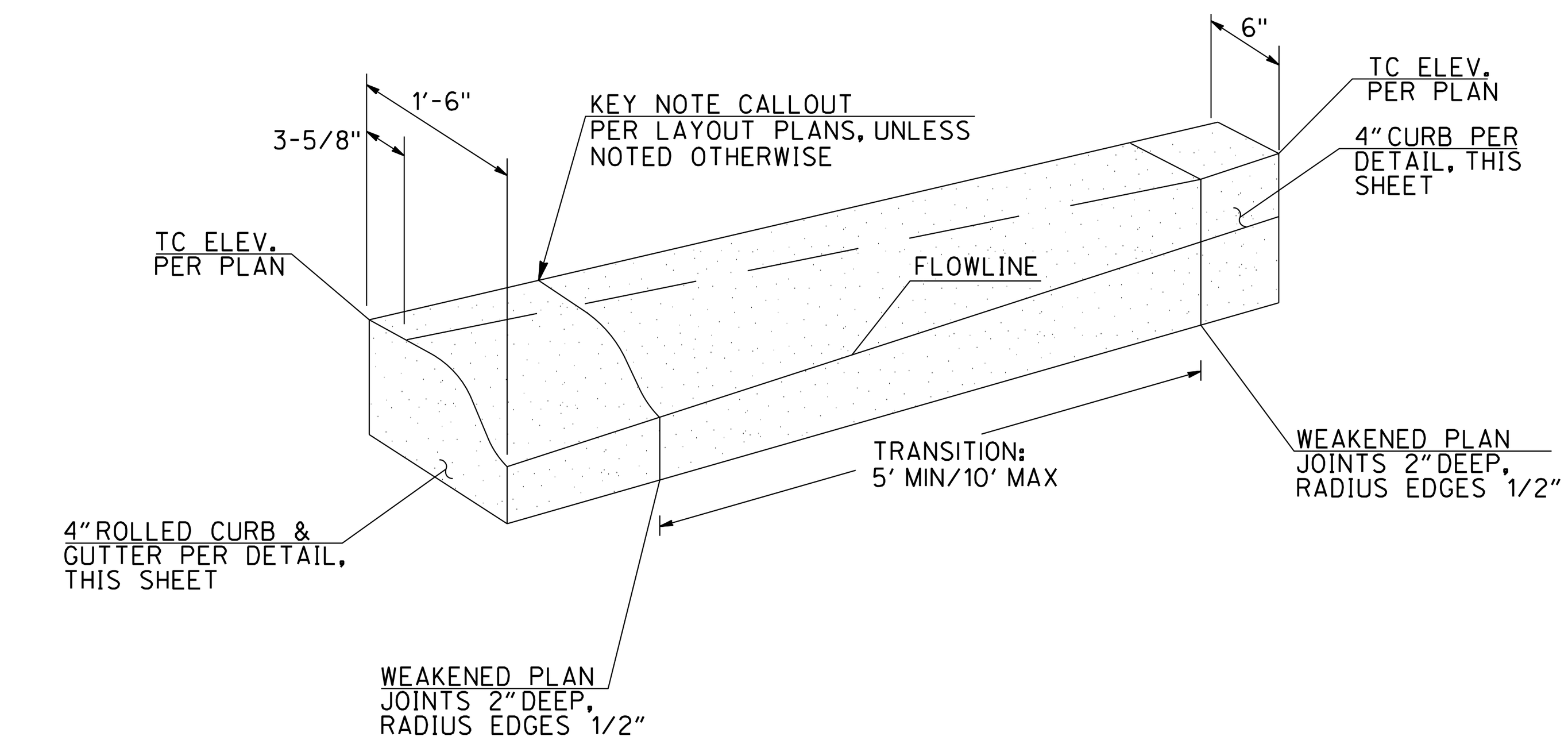
PRIVATE DRIVE A WITH PARKING

NOT TO SCALE



PRIVATE DRIVE A WITH NO PARKING

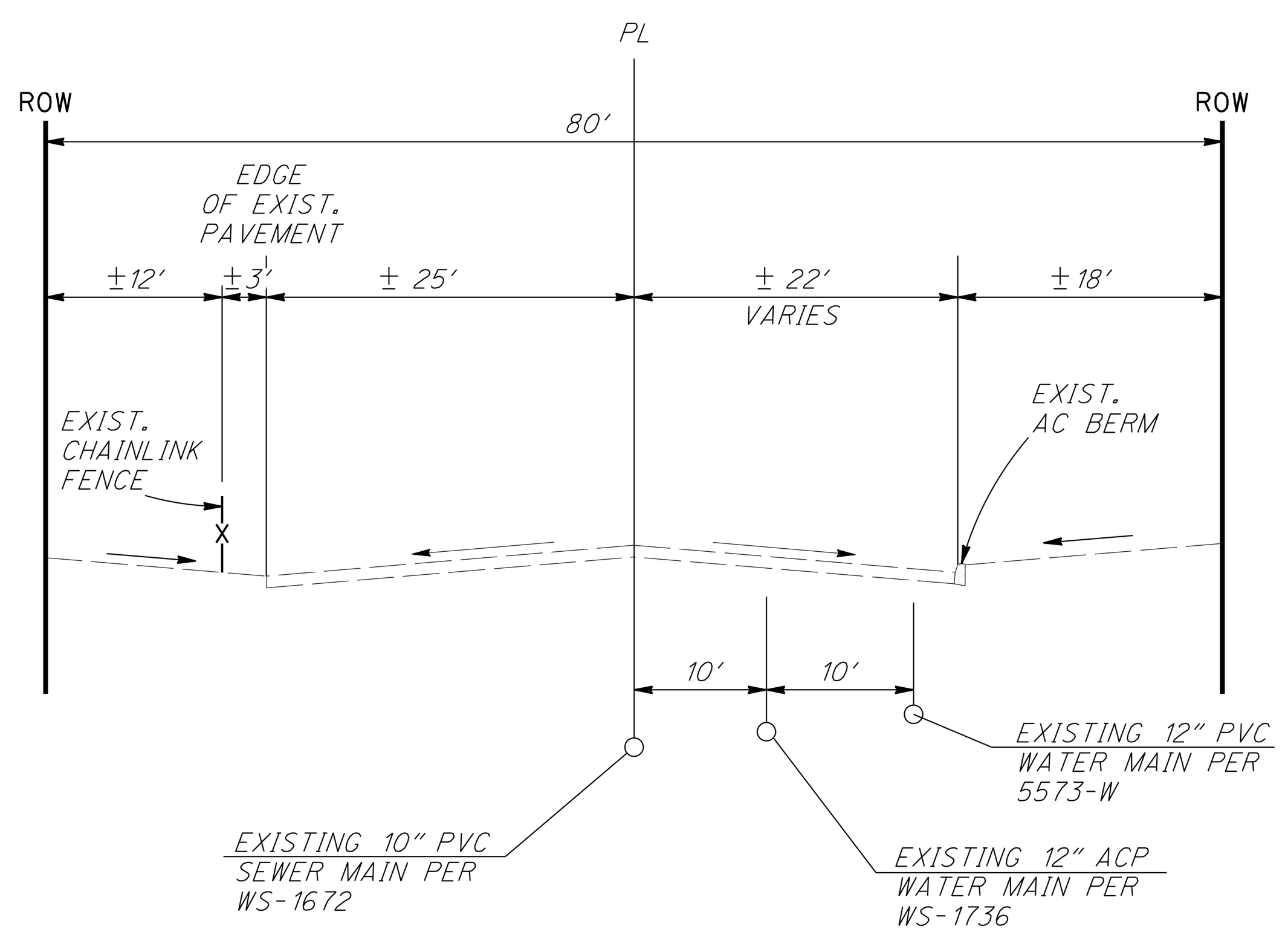
NOT TO SCALE



NOTES:
1. REFER TO RSD G-1 AND G-4A FOR SPECIFIC DIMENSIONS RELATED TO EACH TYPE OF CURB.
2. TRANSITIONS SHOULD OCCUR ALONG THE BACK OF CURB, HOLDING EDGE OF PAVEMENT PARALLEL AND CONCENTRIC WITH STREET CENTERLINE.

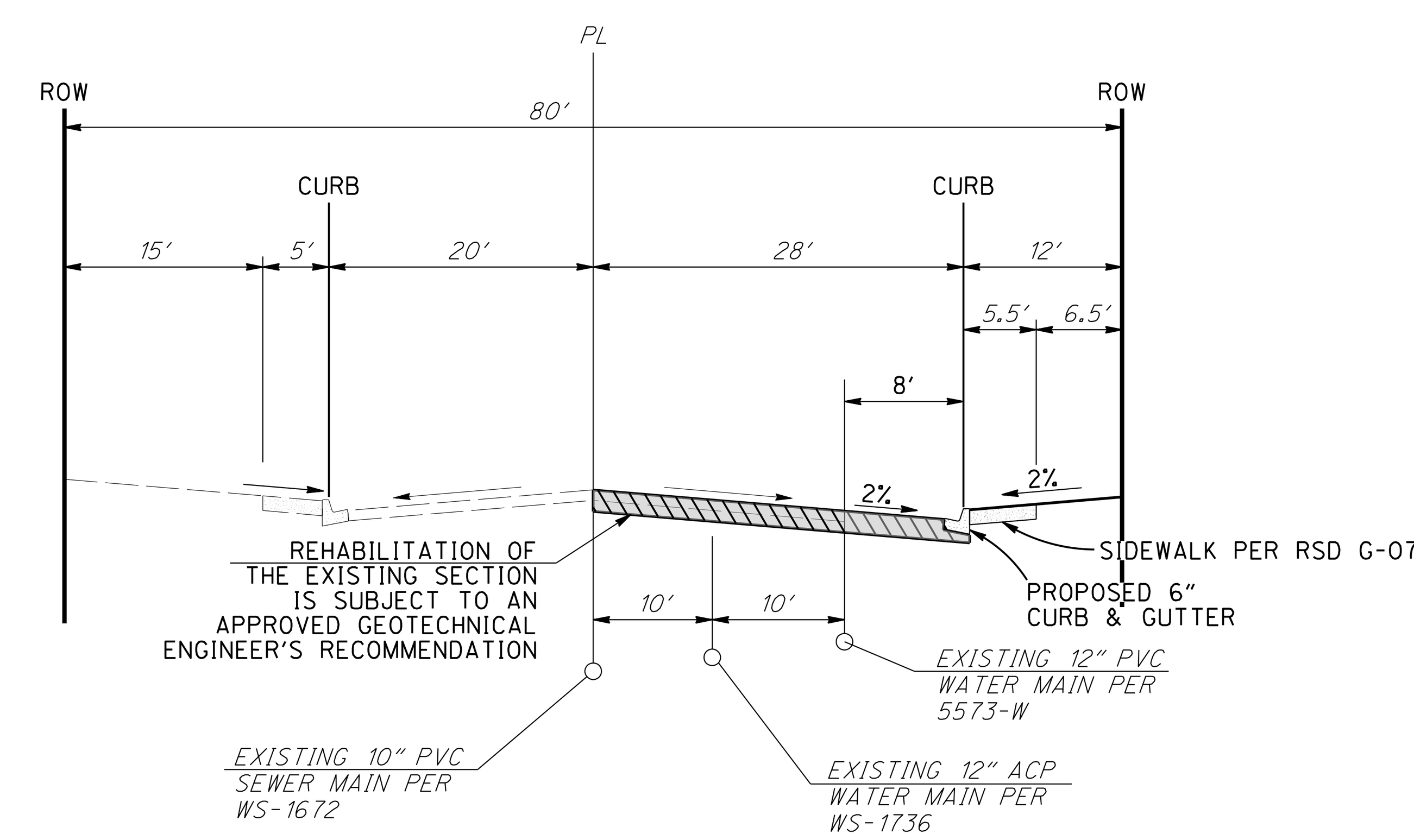
4" CURB TO ROLLED CURB TRANSITION
PER SDRSD G-04B (MOD.)

NOT TO SCALE



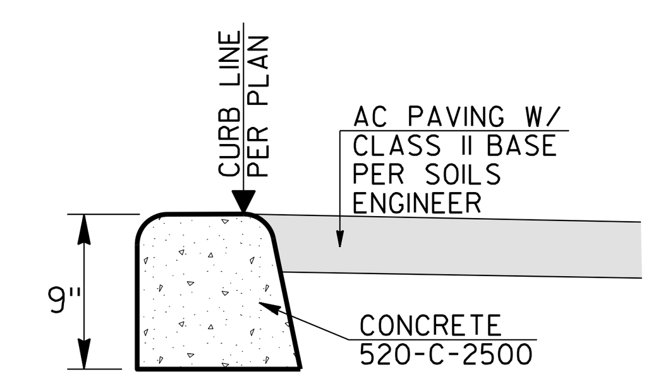
TYPICAL EXISTING STREET SECTION
SUMMIT AVENUE

(NO PARKING)
NOT TO SCALE



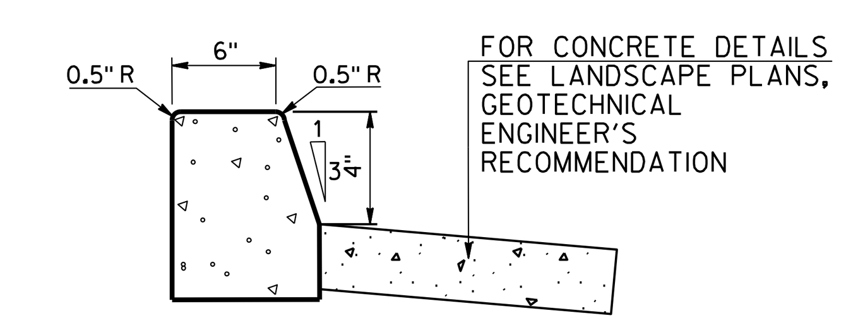
TYPICAL STREET SECTION
SUMMIT AVENUE

(WITH PARKING)
NOT TO SCALE
(SOUTHERLY 303' TO POINT OF TRANSITION)



0" CURB (PVT)

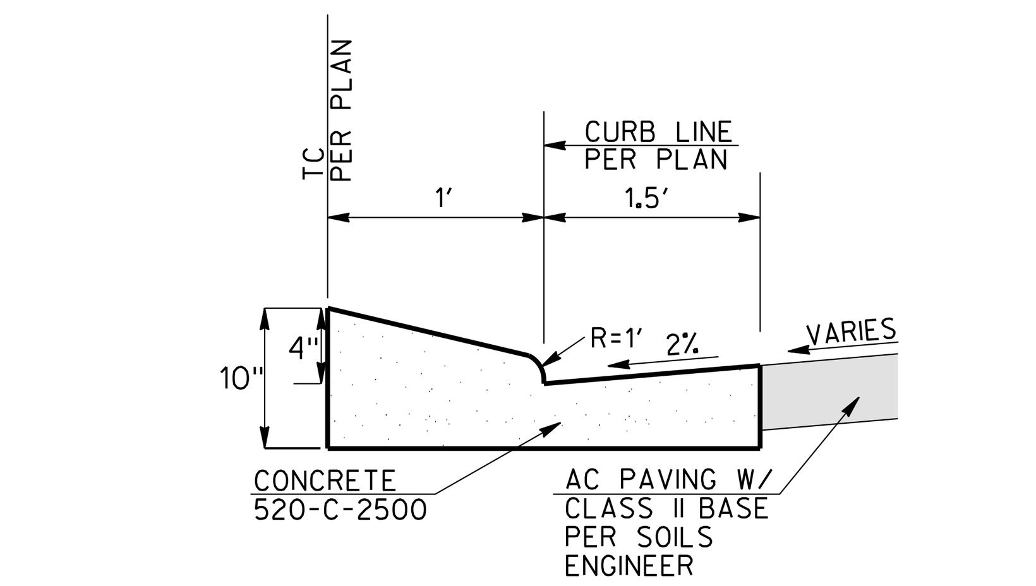
NOT TO SCALE



NOTES: SEE CITY OF SAN DIEGO STANDARD DWG G-1 FOR FURTHER DETAILS

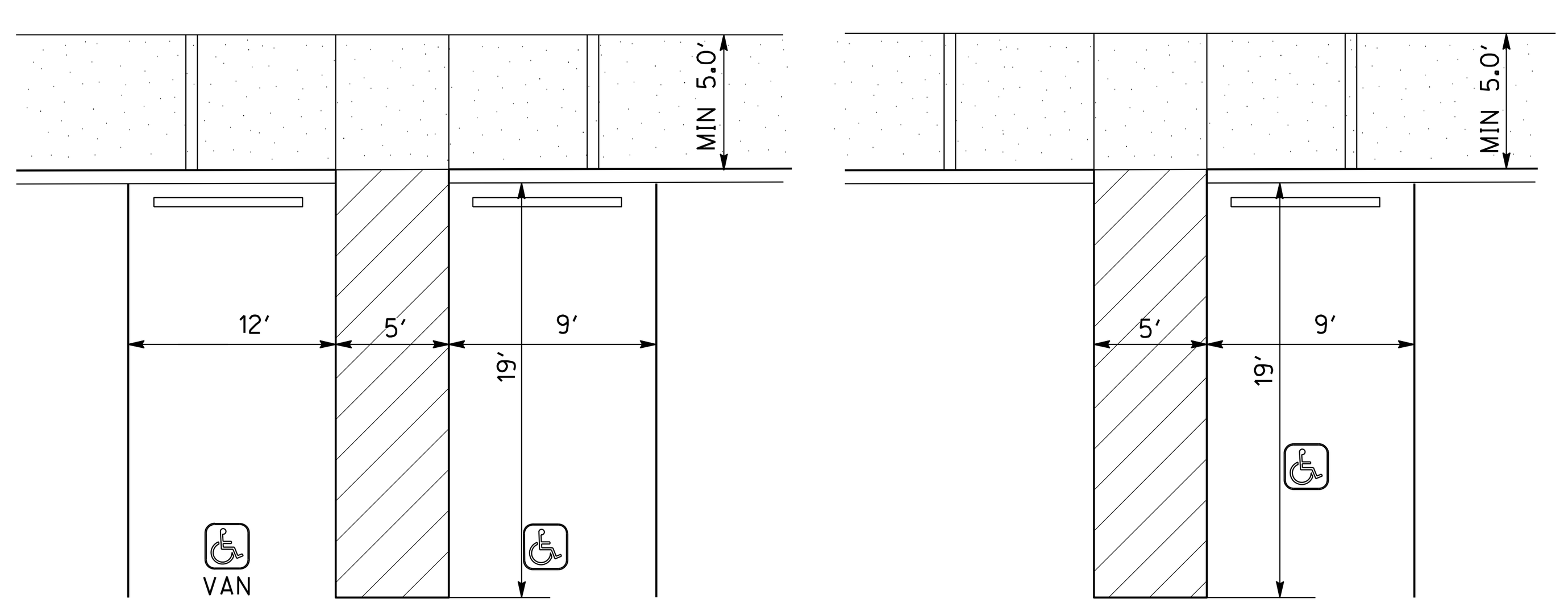
MODIFIED (TYPE G-1 CURB)
4" CURB (PVT)

NOT TO SCALE



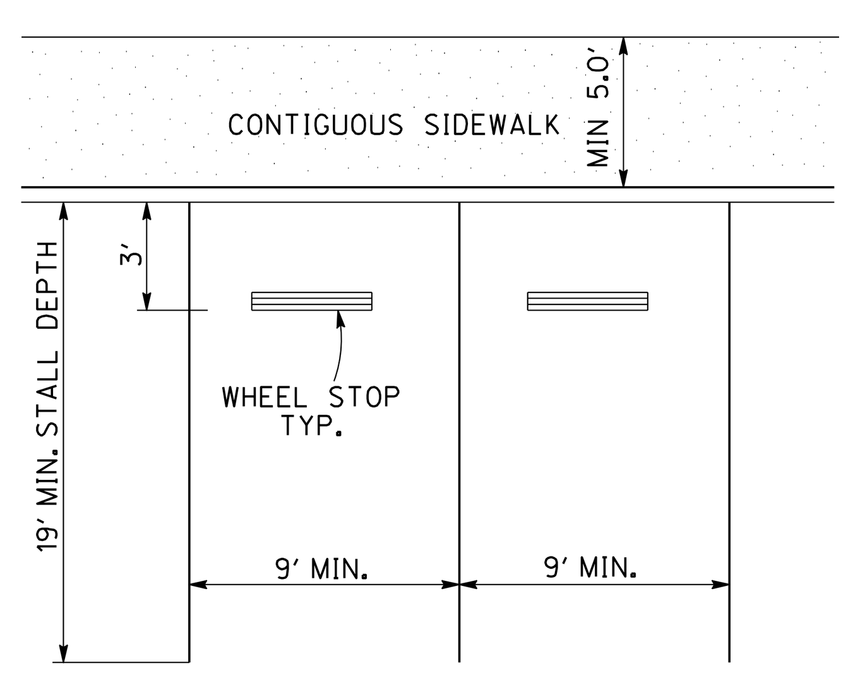
4" ROLLED CURB & GUTTER DETAIL (PVT)

NOT TO SCALE



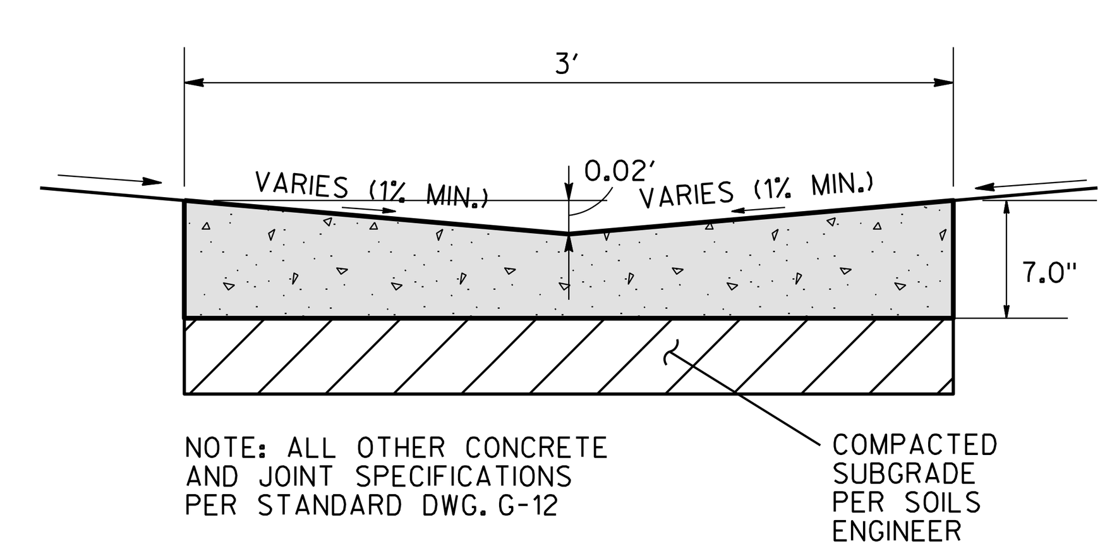
DISABLED PARKING STALL(S)

NO SCALE



TYPICAL PARKING STALL
FOR PARK SITE

NO SCALE

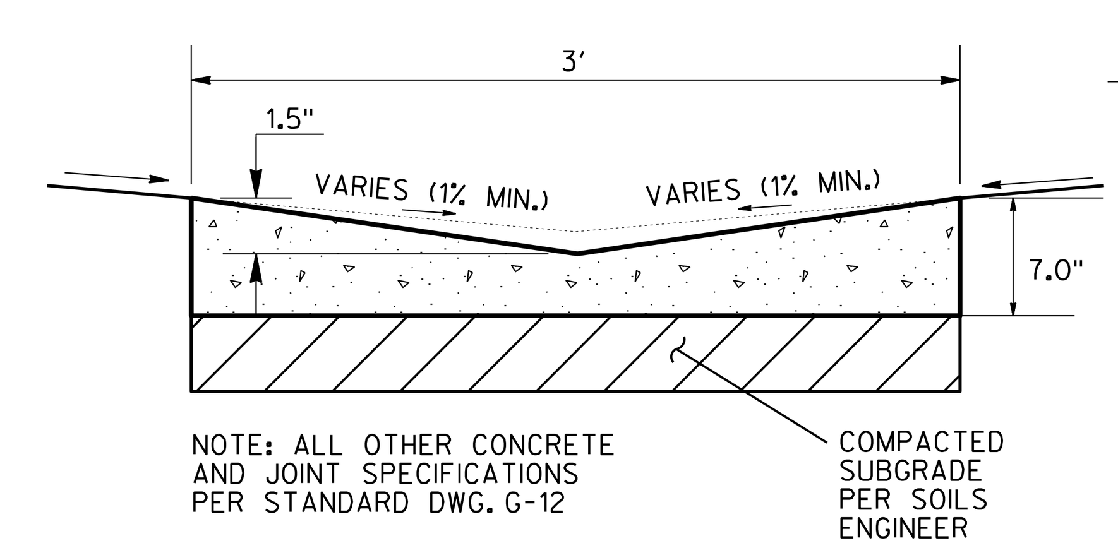


NOTE: ALL OTHER CONCRETE AND JOINT SPECIFICATIONS PER STANDARD DWG. G-12

COMPACTED SUBGRADE PER SOILS ENGINEER

3' RIBBON GUTTER (PVT)
(TYPE-1)

NOT TO SCALE



NOTE: ALL OTHER CONCRETE AND JOINT SPECIFICATIONS PER STANDARD DWG. G-12

COMPACTED SUBGRADE PER SOILS ENGINEER

3' RIBBON GUTTER (PVT)
(TYPE-2)

NOT TO SCALE

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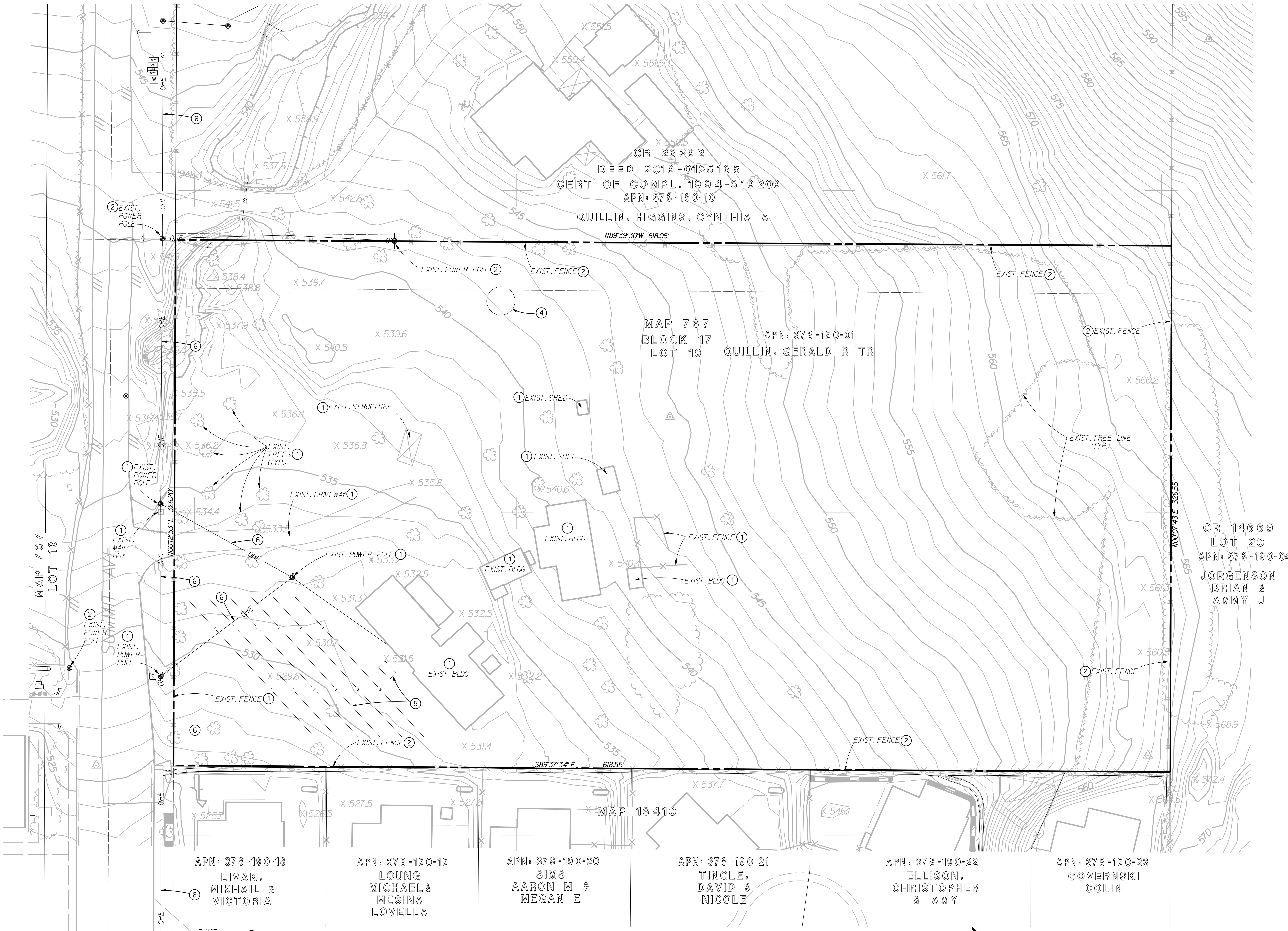
TM NO. 2023-0003/DR 2023-0007

KEY MAP/DETAILS/STREET SECTIONS

SUMMIT AVENUE

City of Santee, California



CONSTRUCTION NOTES

1. TO BE REMOVED
2. PROTECT IN PLACE
3. TO BE RELOCATED
4. APPROXIMATE LOCATION OF EXISTING WATER WELL. WELL TO BE REMOVED ACCORDING TO LOCAL AND STATE REGULATIONS
5. APPROXIMATE LOCATION OF EXISTING SEPTIC SYSTEM. SEPTIC SYSTEM TO BE REMOVED ACCORDING TO LOCAL AND STATE REGULATIONS
6. EXISTING OVERHEAD TO BE REMOVED AND PLACED UNDERGROUND PER SEPARATE PERMIT

30 15 0 30 60 90

GRAPHIC SCALE 1" = 30'

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EXISTING TOPOGRAPHY

SUMMIT AVENUE

City of Santee, California

LEGAL DESCRIPTION

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

PARCEL 1:

THAT PORTION OF LOT 19 IN BLOCK 17 OF CAJON PARK, IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 767 FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, NOVEMBER 27, 1893, WHICH LIES NORTHERLY OF A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERLY LINE OF SAID LOT 19 WHICH IS DISTANT THEREON SOUTH 0°02'02" EAST, 326.62 FEET FROM THE NORTHWEST CORNER OF SAID LOT; THENCE SOUTH 89°55'45" EAST, 658.48 FEET TO A POINT ON THE EAST LINE OF SAID LOT 19 WHICH IS DISTANT THEREON SOUTH 0°02'26" EAST, 326.74 FEET FROM THE NORTHEAST CORNER OF SAID LOT.

EXPRESSLY EXCEPTING ANY PORTION OF SUMMIT AVENUE LYING WESTERLY OF AND ADJOINING SAID LOT 19.

PARCEL 2:

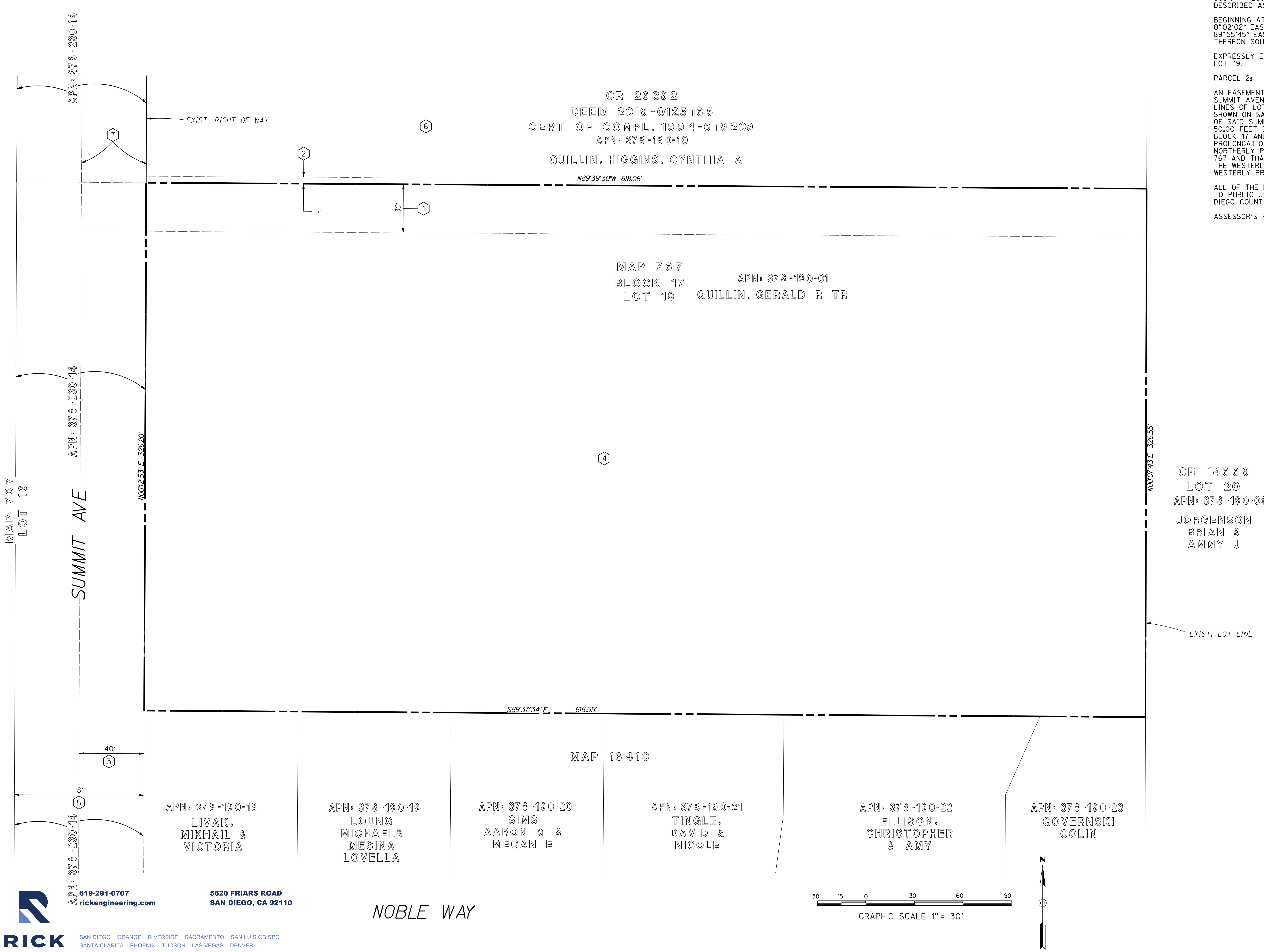
AN EASEMENT FOR ROAD AND PUBLIC UTILITY PURPOSES OVER, UNDER, UPON AND ACROSS ALL OF SUMMIT AVENUE AS SHOWN ON SAID MAP NO. 767 LYING WESTERLY OF AND ADJOINING THE WESTERLY LINES OF LOTS 19 AND 30 IN SAID BLOCK 17 AND THE NORTHERLY 40.00 FEET OF SIXTH STREET AS SHOWN ON SAID MAP NO. 767 LYING BETWEEN THE SOUTHERLY PROLONGATION OF THE WESTERLY LINE OF SAID SUMMIT AVENUE AND THE SOUTHERLY PROLONGATION OF A LINE DRAWN PARALLEL WITH AND 50.00 FEET EASTERLY MEASURED AT RIGHT ANGLES FROM THE WESTERLY LINE OF LOT 28 IN SAID BLOCK 17 AND THE SOUTHERLY 40.00 FEET OF SAID SIXTH STREET LYING BETWEEN THE NORTHERLY PROLONGATION OF THE WESTERLY LINE OF LOT 4 IN BLOCK 16 OF SAID CAJON PARK AND THE NORTHERLY PROLONGATION OF THE CENTER LINE OF CENTRAL AVENUE AS SHOWN ON SAID MAP NO. 767 AND THAT PORTION OF THE EASTERLY 50.00 FEET OF SAID CENTRAL AVENUE LYING BETWEEN THE WESTERLY PROLONGATION OF THE NORTHERLY LINE OF LOT 4 IN SAID BLOCK 16 AND THE WESTERLY PROLONGATION OF THE SOUTHERLY LINE OF LOT 12 IN SAID BLOCK 16.

ALL OF THE FOREGOING PORTIONS OF SAID STREET AND AVENUES HAVING BEEN VACATED AND CLOSED TO PUBLIC USE ON OCTOBER 3, 1900 BY AN ORDER OF THE BOARD OF SUPERVISORS OF SAID SAN DIEGO COUNTY AND BEING RECORDED IN BOOK 3, PAGE 95 OF SUPERVISOR'S RECORDS.

ASSESSOR'S PARCEL NUMBER: 378-190-01-00

EXISTING EASEMENTS

1. *INGRESS & EGRESS FOR ROAD & PUBLIC UTILITY PURPOSES PER DOC. NO. 68100 IN BOOK 7058, PG 273; AND DOC. NO. 68492 IN BOOK 7058, PG 26; BOTH RECORDED APRIL 29, 1958, O.R.*
2. *EASEMENT FOR POLE LINES, UNDERGROUND CONDUITS WITH THE RIGHT OF INRESS & EGRESS DOC. NO. 102822 REC. 06-19-1968*
3. *EASEMENT FOR ROAD & PUBLIC UTILITIES RESERVED IN DEED TO CYNTHIA ANNE HIGGINS DOC. 2019-0125165, O.R. REC. 4/8/2019*
4. *PARCEL 1 PER DEED RECORDED APRIL 29, 1258 AS DOC. NO. 68100 IN BOOK 7058, PG 273*
5. *PARCEL 2 PER DEED RECORDED APRIL 29, 1258 AS DOC. NO. 68100 IN BOOK 7058, PG 273*
6. *PARCEL 1 PER DEED RECORDED APRIL 29, 1258 AS DOC. NO. 68492 IN BOOK 7058, PG 26*
7. *PARCEL 2 PER DEED RECORDED APRIL 29, 1258 AS DOC. NO. 68492 IN BOOK 7058, PG 26*



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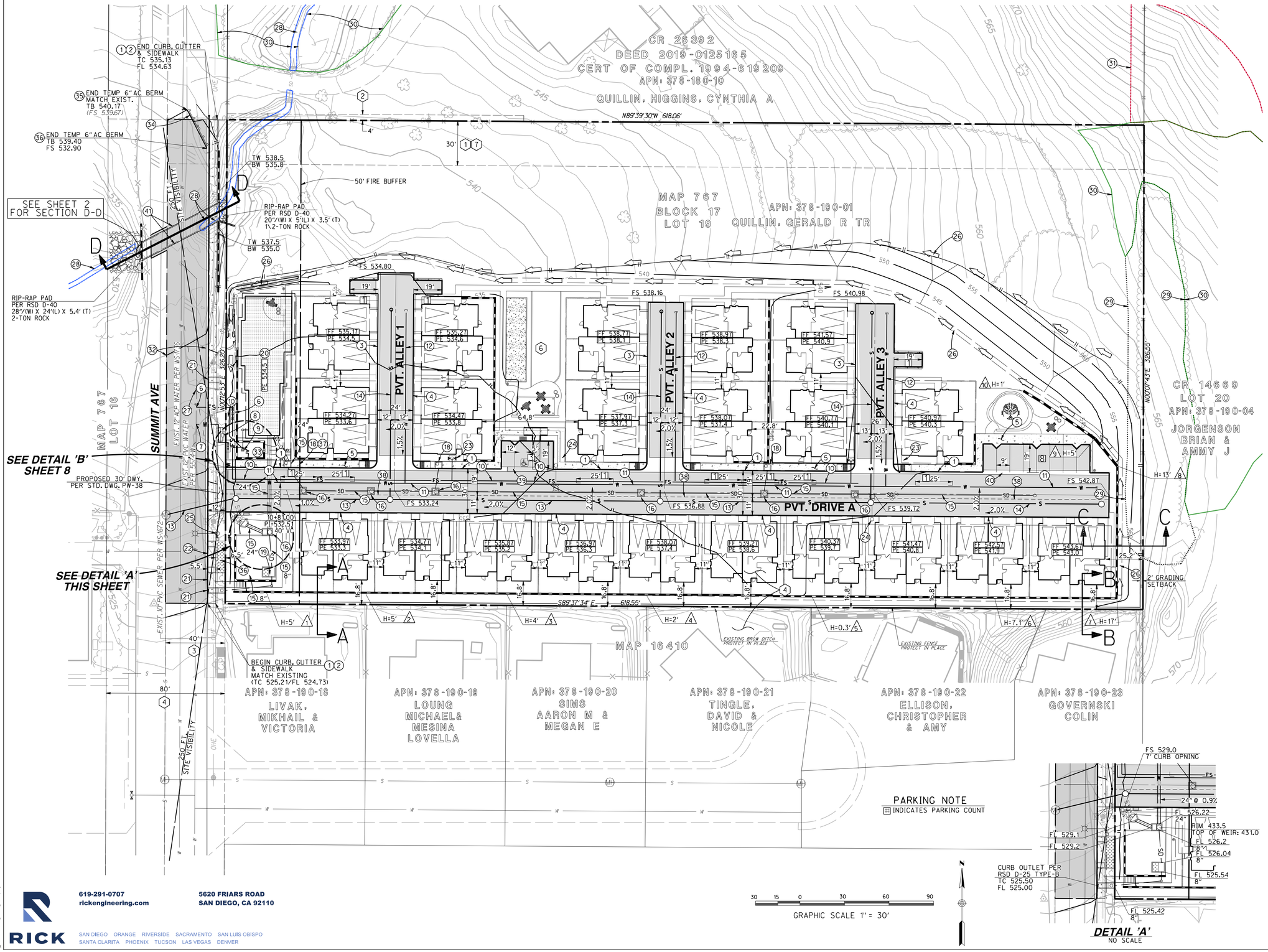
BOUNDARY/EXISTING EASEMENTS

SUMMIT AVENUE

City of Santee, California



CONSTRUCTION NOTES

1. PROPOSED 6" CURB AND GUTTER PER RSD G-02
2. PROPOSED 5' SIDEWALK PER RSD G-07
3. PROP. 4" ROLLED CURB AND GUTTER. SEE DET., SHT. 3 (PVT.)
4. PROPOSED 0" CURB (PVT.)
5. PROPOSED SIDEWALK PER RSD G-07 (PVT.)
6. PROPOSED 10" FIRE SERVICE W/10" RPDA (PVT.)
7. PROPOSED 4" DOMESTIC WATER LATERAL (PVT.)
8. PROPOSED 3" DOMESTIC WATER METER ASSEMBLY
9. PROPOSED 4" DOMESTIC WATER RP DEVICE (PVT.)
10. PROPOSED 8" FIRE SERVICE (PVT.)
11. PROPOSED 4" DOMESTIC WATER (PVT.)
12. PROPOSED 3" DOMESTIC WATER (PVT.)
13. PROPOSED 8" SEWER MAIN (PVT.)
14. PROPOSED 4" SEWER MAIN (PVT.)
15. PROP. STORM DRAIN (PVT.) (18" HDPE UNLESS NOTED OTHERWISE)
16. PROPOSED STORM DRAIN CLEAN OUT (PVT.) (RSD D-09)
17. PROPOSED STORM DRAIN INLET (PVT.) (PROVIDE "NO DUMPING" STENCILING, SEE DETAIL, SHT. 8)
18. PROPOSED STORM DRAIN TYPE-B CURB INLET (PVT.) (RSD D-09) (PROVIDE "NO DUMPING" STENCILING, SEE DETAIL, SHT. 8)
19. PROPOSED S.D. WATER QUALITY TREATMENT DEVICE (PVT.) (MODULAR WETLAND SYSTEM-MWS-L-6-8-7'-5"-V-HC)
20. PROPOSED S.D. DETENTION VAULT (PVT.)(STORM TRAP OR EQUAL)
21. PROPOSED CURB OUTLET PER RSD D-25 (PVT.)
22. PROPOSED REVERSE CURB OUTLET PER MOD. RSD D-25 (PVT.)
23. PROPOSED FIRE HYDRANT (PVT.)
24. PROPOSED STREET LIGHT (PVT.)
25. PROP. STREET LIGHTING STANDARD PER DWG. PW-20 (PUBLIC)
26. PROPOSED BROW DITCH TYPE-B (PVT.) (RSD D-75)
27. LANE TRANSITION TRAFFIC STRIPING
28. NON-VEGETATED CHANNEL (HARRIS & ASSOCIATES)
29. NON-NATIVE WOODLAND (HARRIS & ASSOCIATES)
30. DISTURBED DIEGAN COASTAL SAGE SCRUB (HARRIS & ASSOCIATES)
31. DIEGAN COASTAL SAGE SCRUB (HARRIS & ASSOCIATES)
32. LIMITS OF PROPOSED AC PAVEMENT (SUMMIT AVE.)
33. WQ TREATMENT BASIN (SEE DETAIL 'B', SHT 8)
34. PROVIDE BARRICADE PER SDRSD M-9
35. PROVIDE REFLECTIVE MARKERS OVER TOP OF PROP. AC BERM
36. GREEN STREET ELEMENT (WQ TREE WELL)
37. PROVIDE TRASH CAPTURE DEVICE
38. STRIPED CENTERLINE
39. 3' RIBBON GUTTER (TYPE-1), SEE DETAIL, SHT. 3
40. 3' RIBBON GUTTER (TYPE-2), SEE DETAIL, SHT. 3
41. 10'(W)X3'(H) BOX CULVERT PER RSD D-76 (SEE DETAILS SHT. 9)

PDMWD EASEMENT NOTE:

ALL DISTRICT FACILITIES,I.E.WATER MAINS,FIRE HYDRANTS,WATER METERS,BLOW OFF VALVES, AIR-VAC VALVES,AND ALL RELATED APPURTENANCES SHOWN HEREON WITHIN PRIVATE PROPERTY ARE TO BE LOCATED WITHIN A UTILITY EASEMENT DEDICATED TO PADRE DAM MUNICIPAL WATER DISTRICT FOR ACCESS AND MAINTENANCE TO SAID FACILITIES.SAID EASEMENT WILL BE SHOWN ON ALL FINAL CONSTRUCTION DOCUMENTS

WALL ELEVATION TABLE

	TW	BW		TW	BW
1	531.1	526.5	6	549.0	541.9
2	532.9	528.1	7	560.0	543.0
3	535.1	531.4	8	556.3	543.1
4	536.5	535.1	9	548.5	543.2
5	540.0	539.7	10	542.4	542.2

EXISTING EASEMENTS

1. *INGRESS & EGRESS FOR ROAD & PUBLIC UTILITY PURPOSES PER DOC. NO. 68100 IN BOOK 7058, PG 273; AND DOC. NO. 68492 IN BOOK 7058, PG 26; BOTH RECORDED APRIL 29, 1958,O.R.*
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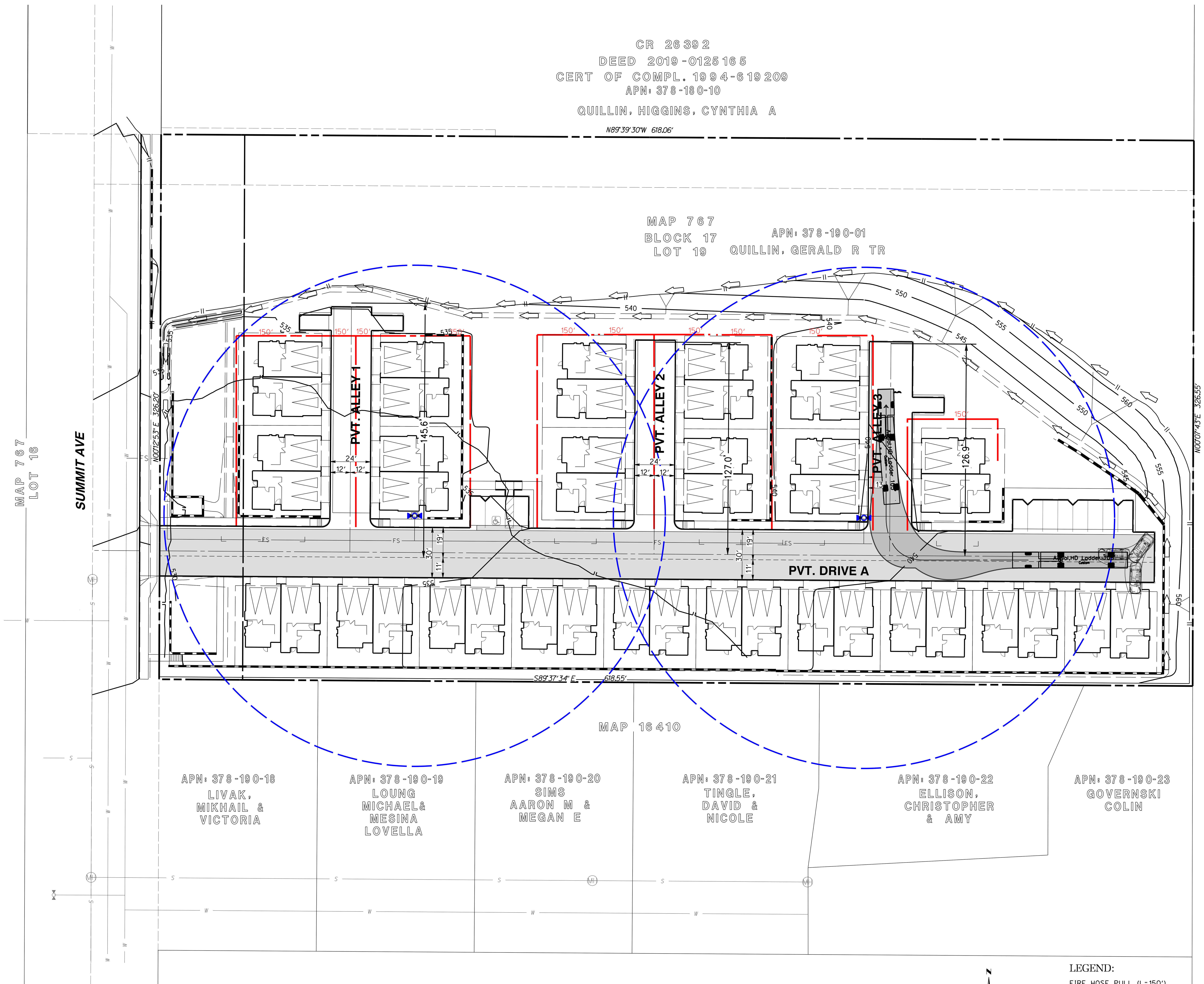
SITE

SUMMIT AVENUE

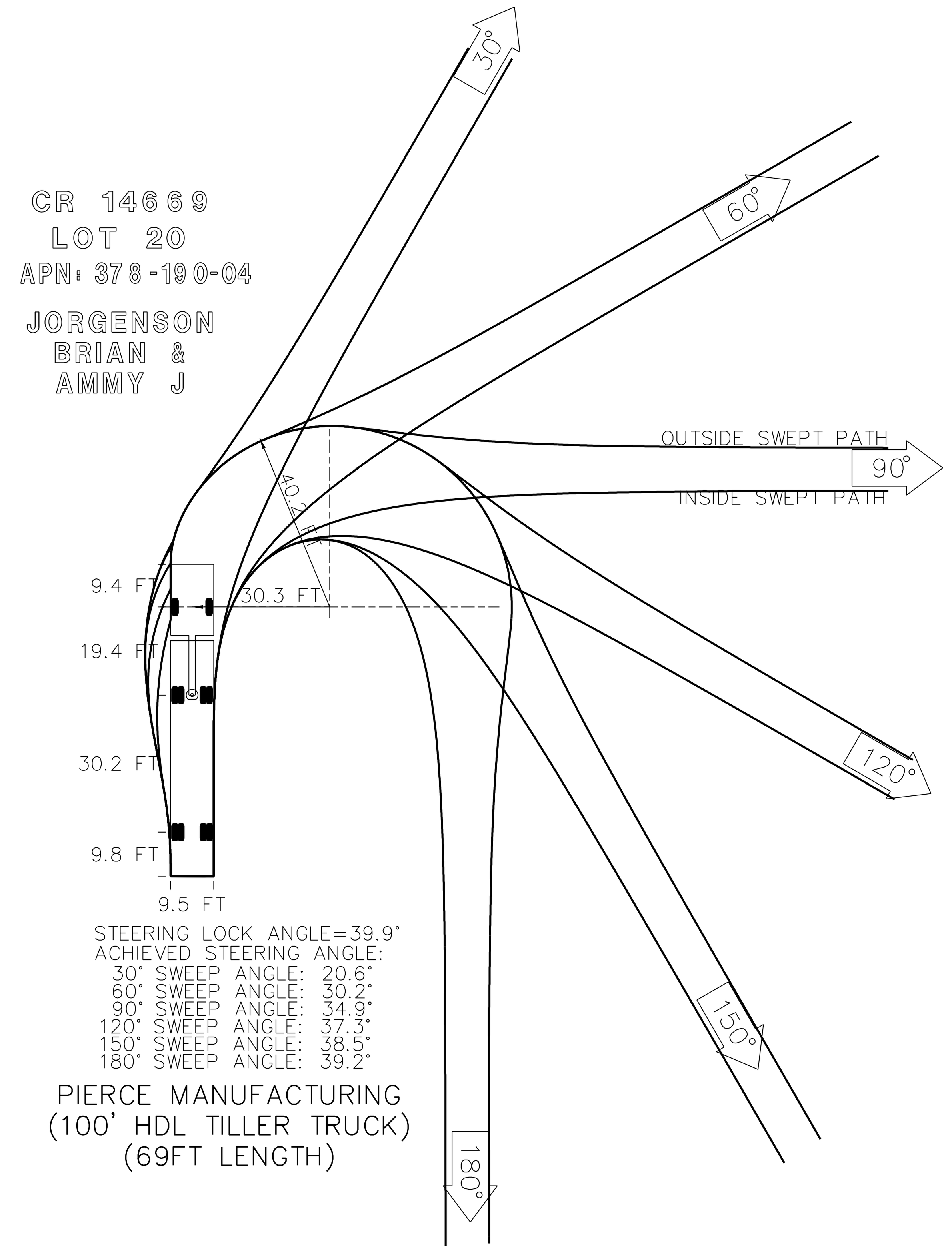
City of Santee, California

6 OF 11



FIRE LANE NOTE

1) FIRE LANE(S) SHALL BE IDENTIFIED BY PAINTING CURBS RED WITH WHITE-STENCILED LETTERS INDICATING "NO PARKING - FIRE LANE" EVERY 30 FEET ALONG PORTIONS OF THE FIRE LANE. RED STRIPES WITH WHITE STENCILED LETTERS SHALL BE PAINTED ON THE CURB OR ASPHALT IN FRONT OF GARAGES ALONG FIRE LANES AS WELL. SIGNS INDICATING THE SAME CAN BE INSTALLED IN-LIEU OF PAINTING CURBS RED. SIGNS SHALL BE PLACED EVERY 75 FEET (OR OTHER APPROVED SPACING), PLACED IN BETWEEN THE CURB STENCILING. EXACT PLACEMENT SHALL BE APPROVED BY THE FIRE CODE OFFICIAL PRIOR TO INSTALLATION.



STEERING LOCK ANGLE=39.9°
ACHIEVED STEERING ANGLE:
30° SWEEP ANGLE: 20.6°
60° SWEEP ANGLE: 30.2°
90° SWEEP ANGLE: 34.9°
120° SWEEP ANGLE: 37.3°
150° SWEEP ANGLE: 38.5°
180° SWEEP ANGLE: 39.2°

PIERCE MANUFACTURING
(100' HDL TILLER TRUCK)
(69FT LENGTH)

GRAPHIC SCALE 1" = 30'

LEGEND:

FIRE HOSE PULL (L=150')	red dashed line
FIRE HYDRANT (PVT) PER WAS WF-01	hydrant symbol
RADIUS = 150'	blue dashed line
FIRE TRUCK TURNING (HOOK & LADDER)	green line
FIRE ACCESS	grey shading

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FIRE ACCESS EXHIBIT

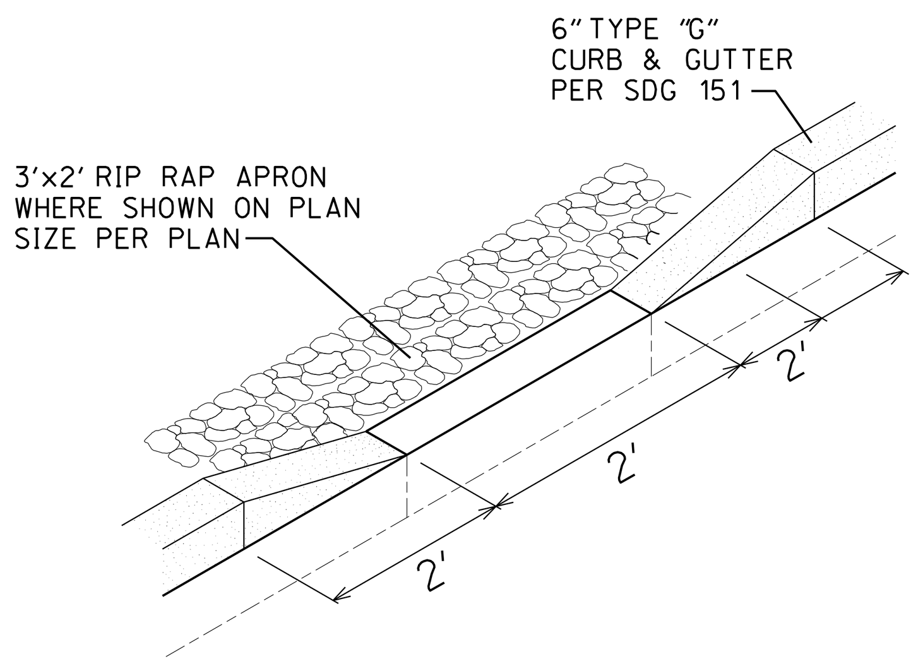
SUMMIT AVENUE

City of Santee, California

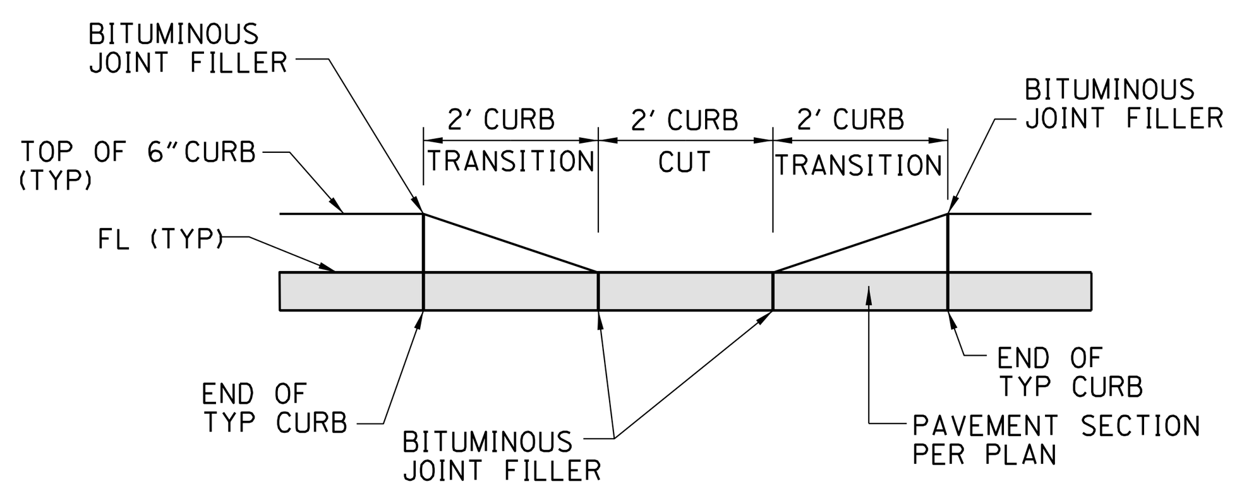
\\cp.rickeng.com\projects\C19500\19877_WarmingtonSummit\Civil\PlanSets\T
17-MAR-2025 16:54

STORM DRAIN POLLUTION PREVENTION SIGNAGE

CURB OPENING DETAILS



CURB OPENING WITH RIPRAP
NO SCALE



CURB CUT & TRANSITION DETAIL
NOT TO SCALE

SITE SPECIFIC DATA			
PROJECT NUMBER		786234–010	
PROJECT NAME		SUMMIT AVENUE	
PROJECT LOCATION		SANTEE, CA	
STRUCTURE ID		BMP–1B	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
4,660		N/A	
TREATMENT HGL AVAILABLE (FT)			531.00
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			UPSTREAM
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	526.04	HDPE	8"
OUTLET PIPE	525.50	HDPE	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	533.00	533.00	533.00
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	30"	OPEN PLANTER	24"
WETLANDMEDIA VOLUME (CY)			5.79
ORIFICE SIZE (DIA. INCHES)			ø0.92"

NOTES: PRELIMINARY NOT FOR CONSTRUCTION. UPSTREAM BYPASS TOP OF WEIR HEIGHT TO BE AT 531.00.

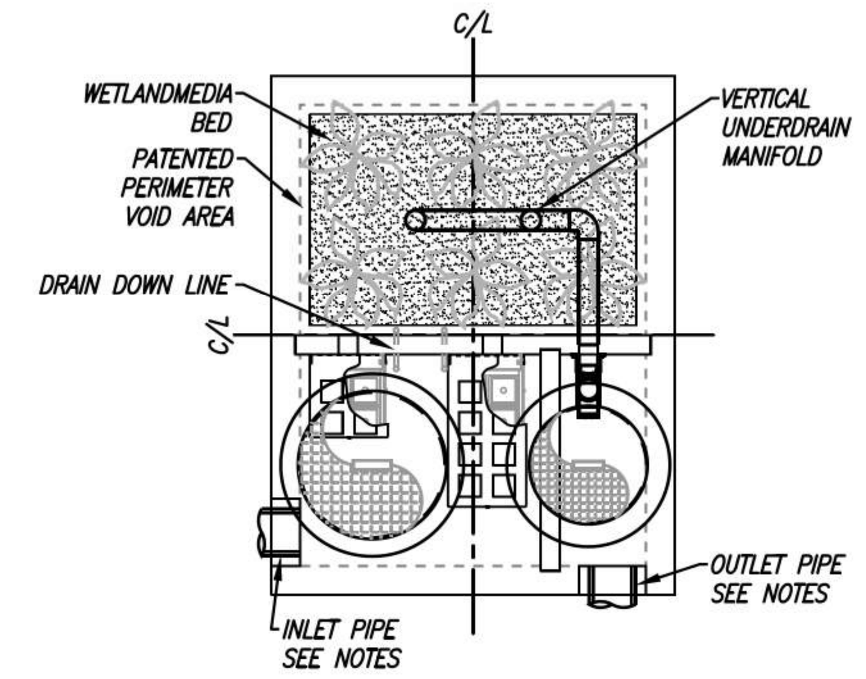
INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS' SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO USE GROUT AND/OR BRICKS TO MATCH COVERS WITH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.

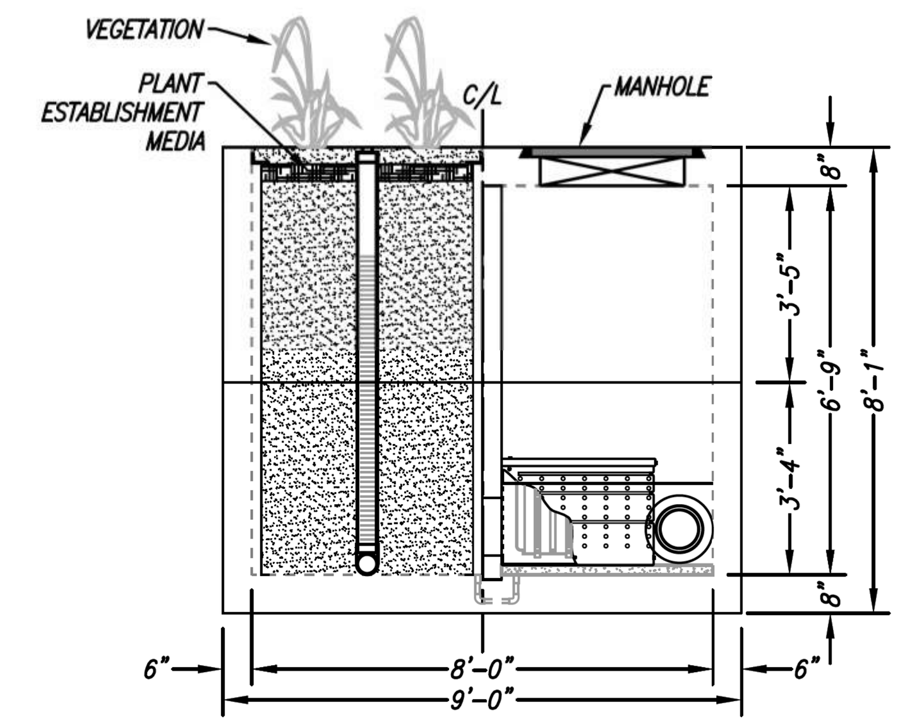
GENERAL NOTES

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

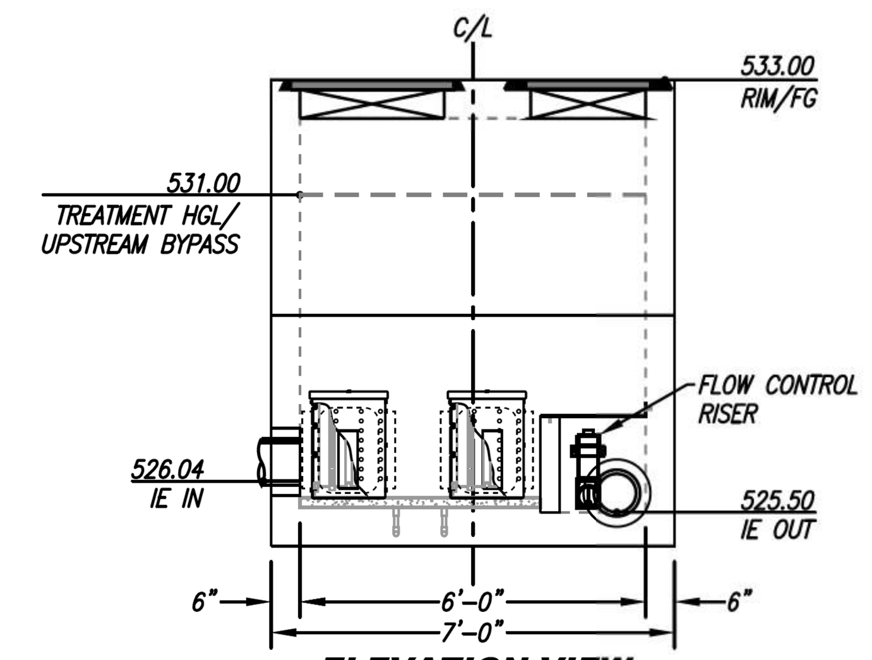
1/18/24BEN BOEGEMAN



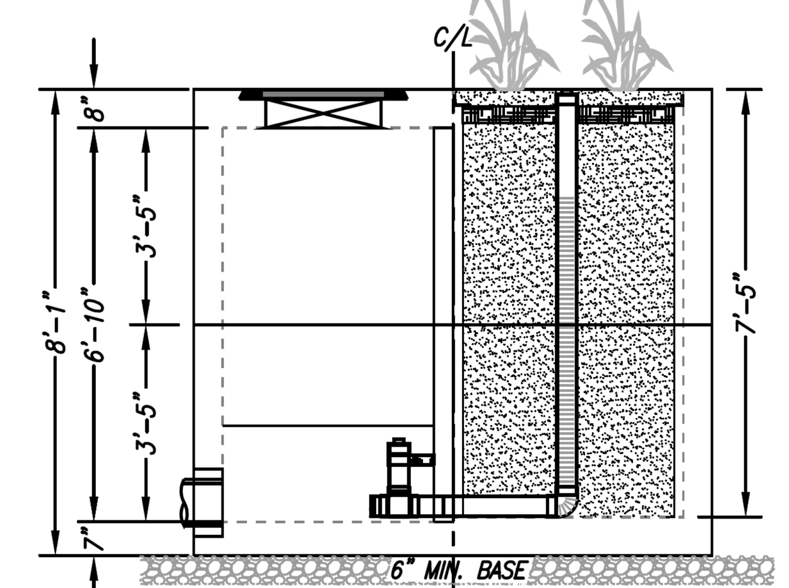
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

REQUIRED TREATMENT VOLUME (CF)	4,660
DRAINDOWN DURATION (HOURS)	24
AVERAGE DISCHARGE RATE PER MWS UNIT(GPM)	23.78
OPERATING HEAD (FT)	5.5
WETLANDMEDIA INFILTRATION RATE (IN/HR)	23
OR	
WETLANDMEDIA LOADING RATE (GPM/SF)	0.23

MODULAR WETLANDS
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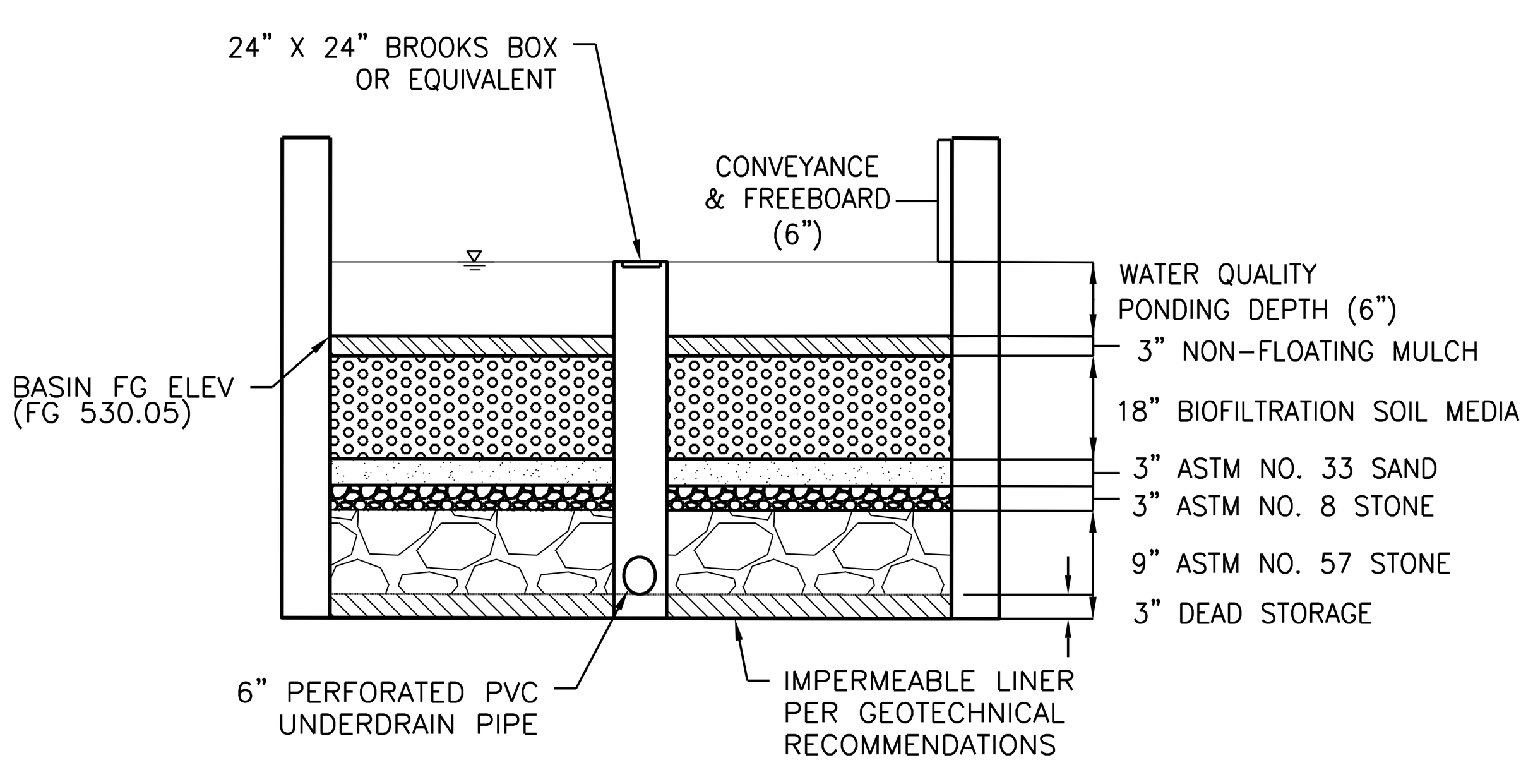
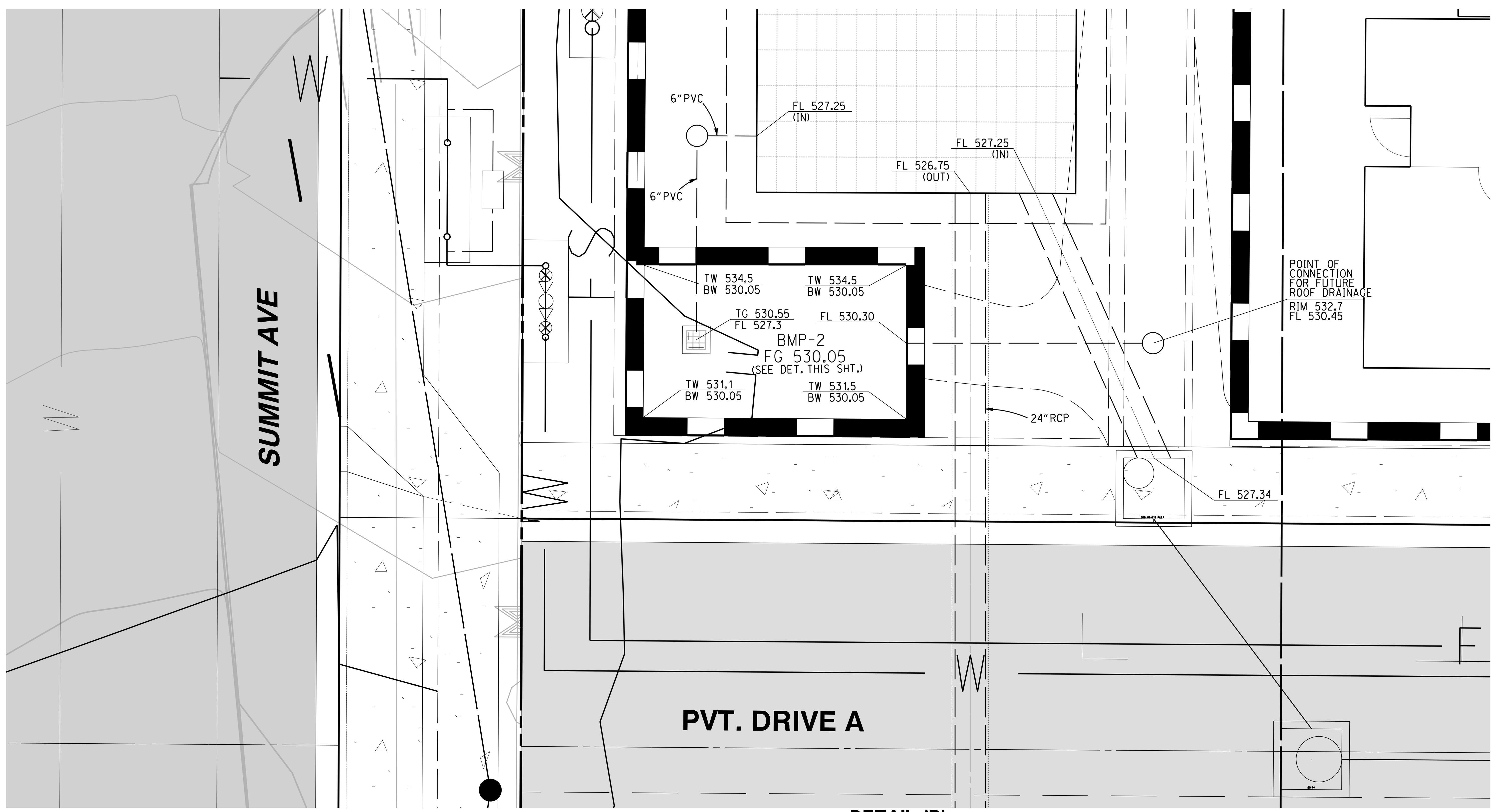
MWS-L-6-8-7'-5"-V-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL



BIOFILTRATION BASIN CROSS-SECTION
BMP-2
NTS



DETAIL 'B'
SCALE: 1"=5'

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RICK
SAN DIEGO ORANGE RIVERSIDE SACRAMENTO SAN LUIS OBISPO
SANTA CLARITA PHOENIX TUCSON LAS VEGAS DENVER

TM NO. 2023-0003/DR 2023-0007
WQ TREATMENT DETAILS
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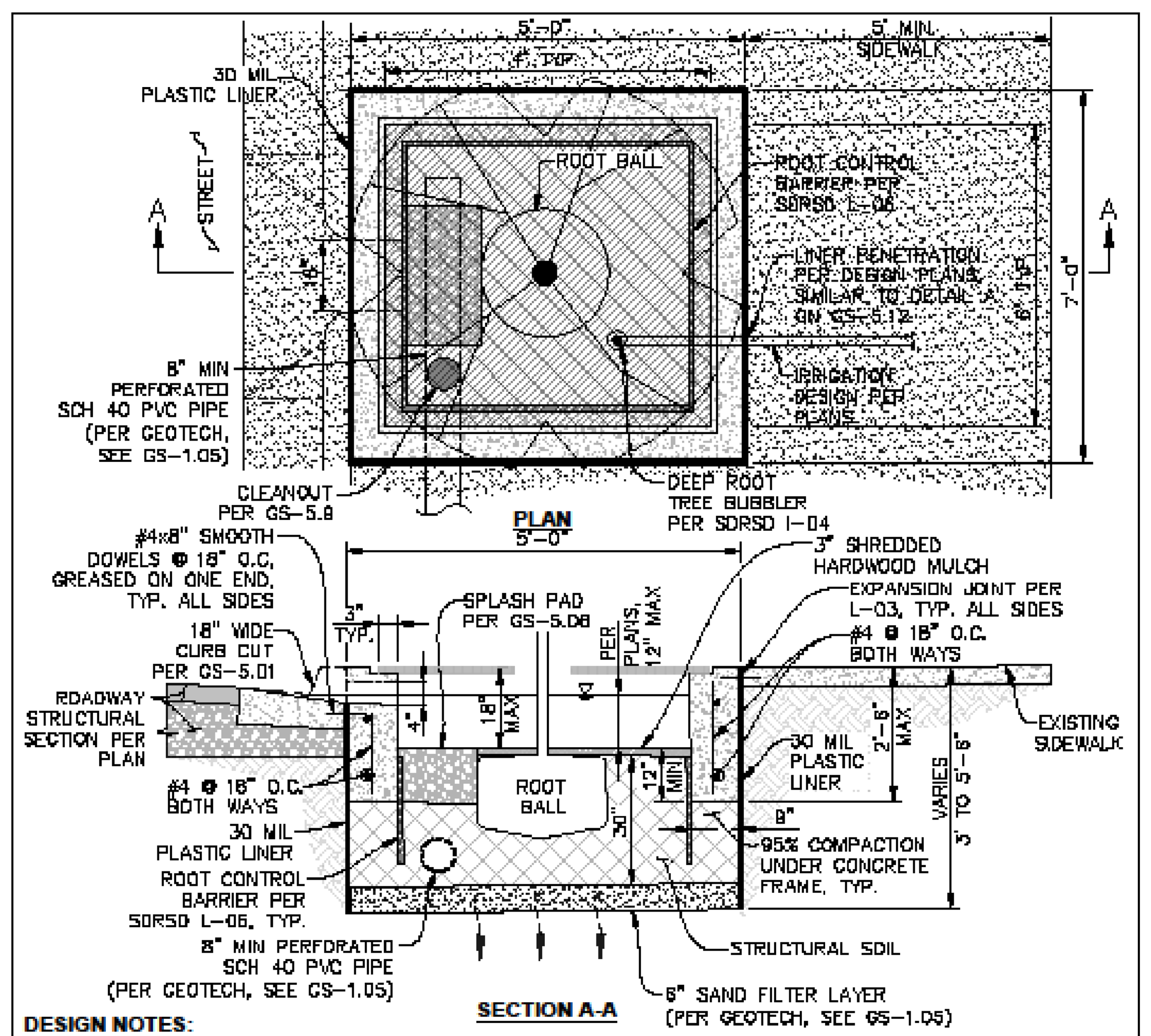


DESIGN NOTES:

1. STREET IMPROVEMENTS AND DRAINAGE STRUCTURES SHALL BE CONSTRUCTED ACCORDING TO THE LATEST SAN DIEGO REGIONAL STANDARD DRAWINGS AND CALTRANS STANDARD PLANS.
2. CONCRETE SHALL BE 520-C-2500 UNLESS OTHERWISE SPECIFIED.
3. SEE SDRSD DWG L-01 THROUGH L-06 FOR LANDSCAPING DETAILS NOT SPECIFIED HEREIN. (TREE GRATE PER SDRSD L-04).
4. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x8'.
5. PROVIDE 30 MIL PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL.
6. SEAL PLASTIC LINER TO ADJACENT IMPROVEMENTS AND EDGE RESTRAINTS PER GS-5.15.
7. WHEN SAND FILTER LAYER IS OMITTED, PROVIDE GEOTEXTILE BENEATH THE STRUCTURAL SOIL LAYER PER PROJECT-SPECIFIC GEOTECHNICAL RECOMMENDATIONS.
8. PROPOSED SIDEWALK LOCATIONS & INTENDED ADA ROUTES PER PROJECT-SPECIFIC DESIGN PLANS.
9. FOR TREE WELL SUBSURFACE DRAINAGE TYPES, SEE DWG GS-1.05.
10. ALL STRUCTURAL SOILS ARE COMPACTED TO 95% RELATIVE COMPACTION.

DRAWING NOT TO SCALE

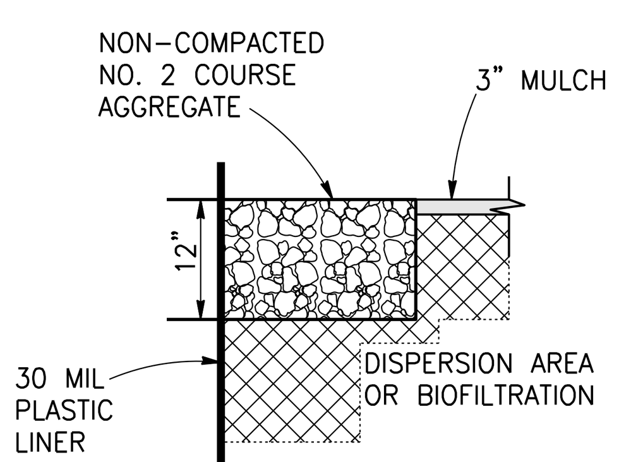
DRAWN BY: MAB	CHECKED BY: KBK	SAN DIEGO COUNTY DESIGN STANDARD	REVISIONS	APPROVED	DATE
RECOMMENDED BY: CHARLES WOHRLECK, P.E.			ORIGINAL		10-01-2019
APPROVED BY COUNTY ENGINEER DATE: 3/15/21 WILLIAM P. MORGAN, P.E. RCE. NO. 48452, EXP 9/30/2022		TREE WELL GENERAL DESIGN GUIDANCE	REVISED		03-08-2021
			DRAWING NUMBER		GS-1.00

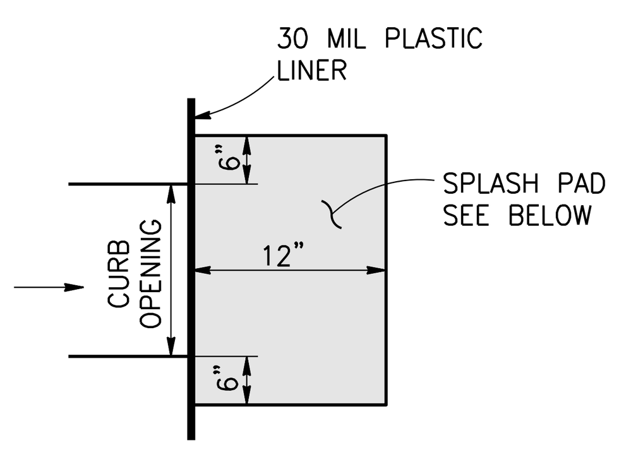
SPAN 10' (ALL MEASUREMENTS IN FEET AND/OR INCHES UNLESS NOTED OTHERWISE)

SPAN			10'																
HEIGHT			4'		5'		6'		7'		8'			9'			10'		
STRENGTH CLASSIFICATION			A	B	A	B	A	B	A	B	A	B	C	A	B	C	A	B	C
MAX FILL OVER TOP			9	18	9	18	9	18	9	18	8	18	28	8	18	28	8	18	28
CONC.	TOP SLAB	T_1	8	9 1/2	8 1/4	9 3/4	8 1/4	9 3/4	8 1/2	9 3/4	8 1/2	9 3/4	12 1/4	8 1/2	9 3/4	12 1/4	8 1/2	9 3/4	12 1/4
	Bottom Slab	T_2	8 3/4	10 1/2	9	10 3/4	9	10 3/4	9 1/4	11	9 1/4	11	13 1/4	9 1/4	11	13 1/4	9 1/4	11	13 1/4
	Sidewalls	T_3	7 1/4	9 1/2	7 1/4	9 1/2	7 1/4	9 1/2	7 1/4	9 1/2	7 1/4	9 1/2	11 1/2	8	9 1/2	11 1/2	9	9 1/2	11 1/2
REINFORCING STEEL	"a"	SIZE BAR #	6	6	6	6	6	6	6	6	6	6	7	6	6	7	6	6	7
		SPACING	11	8	11	8	11	8	11	8	11	8	9	11	8	9	11	8	9
		LENGTH	9-5	9-8	9-5	9-8	9-5	9-8	9-5	9-8	9-5	9-8	9-9	9-6	9-8	9-9	9-5	9-8	9-9
	"b"	SIZE BAR #	5	6	5	6	5	6	5	6	5	6	6	5	6	6	5	6	6
		SPACING	11	8	11	8	11	8	11	8	11	8	9	11	8	9	11	8	9
		DIMENSION "X"	2	2	2	2	2	2	2	2	2	2	2-6	2	2	2-6	2	2	2-6
		LENGTH	3-10	4-2	3-10	4-2	3-10	4-2	3-10	4-2	3-10	4-2	4-8	3-10	4-2	4-8	3-10	4-2	4-8
	"c"	SIZE BAR #	5	6	5	6	5	6	5	6	5	6	6	5	6	6	5	6	6
		SPACING	11	8	11	8	11	8	11	8	11	8	9	11	8	9	11	8	9
		DIMENSION "Y"	2-8	3-4	2-8	3-4	2-8	3-4	2-8	3-4	2-8	3-4	3-6	2-8	3-4	3-6	2-8	3-4	3-6
		LENGTH	6-11	7-10	8-1	8-10	9-1	9-10	10-1	10-10	11-1	11-10	12-3	12-1	12-10	13-3	13-1	13-10	14-3
	"c_1"	SIZE BAR #	5	6	5	6	5	6	5	6	5	6	6	5	6	6	5	6	6
		SPACING	11	8	11	8	11	8	11	8	11	8	9	11	8	9	11	8	9
		DIMENSION "Y"	2-8	3-4	2-8	3-4	2-8	3-4	2-8	3-4	2-8	3-4	3-6	2-8	3-4	3-6	2-8	3-4	3-6
		LENGTH	4-7	5-8	4-7	5-8	4-7	5-8	4-7	5-8	4-7	5-8	6	4-7	5-8	6	4-7	5-8	6-2
	"d" BARS	TOP SLAB-NO. OF	9	5	9	5	9	5	9	5	9	5	5	9	5	5	9	5	5
		BOTTOM SLAB-NO. OF	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	"e" BARS	SPACING	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
	SPACERS	TOTAL NUMBER	32		34		36		40		40			44			48		
QUAN.	CONCRETE: C.Y. PER LIN. FT.		0.75	0.94	0.82	1.08	0.86	1.08	0.92	1.15	0.97	1.21	1.50	1.06	1.26	1.57	1.18	1.32	1.65
	REINFORCING LBS. PER LIN. FT.		143	221	148	228	154	235	160	244	164	250	265	170	259	273	178	267	281

NOTE
FOR BOXES OF HEIGHT LESS THAN THAT SHOWN IN TABLE, USE NEXT GREATER TABLE HEIGHT SLABS, WALL DIMENSIONS AND REINFORCING STEEL. MAKE CHANGES TO BAR LENGTHS AND NUMBER OF SPACERS AND QUANTITIES AS NECESSARY.

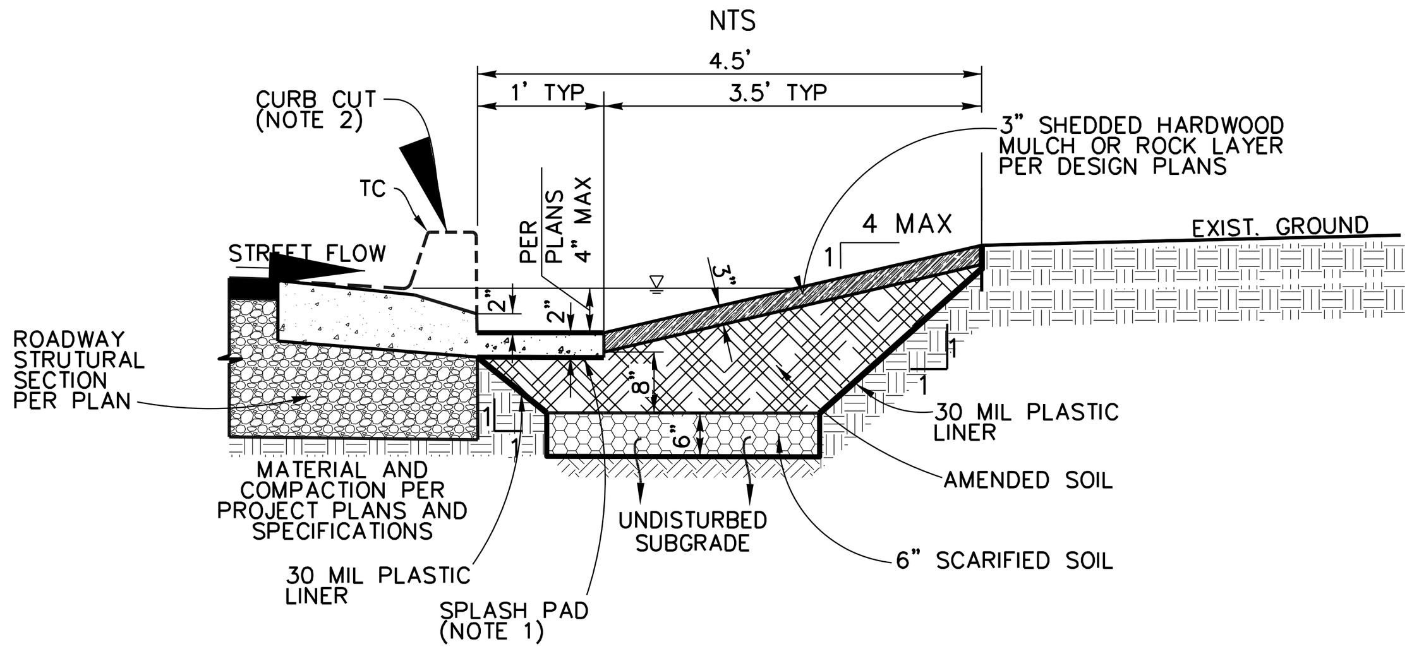
Revision	By	Approved	Date	SAN DIEGO REGIONAL STANDARD DRAWING	RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE
ORIGINAL		A.Kercheval	12/75		03/24/2022 Chairperson R.C.E. 52241 Date
Edited	T.R.	T. Regello	10/15	SINGLE BOX CULVERT DETAILS No.1	
Edited	M.W.	M. Widelski	10/18		DRAWING NUMBER D-76B
Reviewed	RP	S. Engedo	03/22		





BIOFILTRATION BASINS & DISPERSION AREAS

NTS

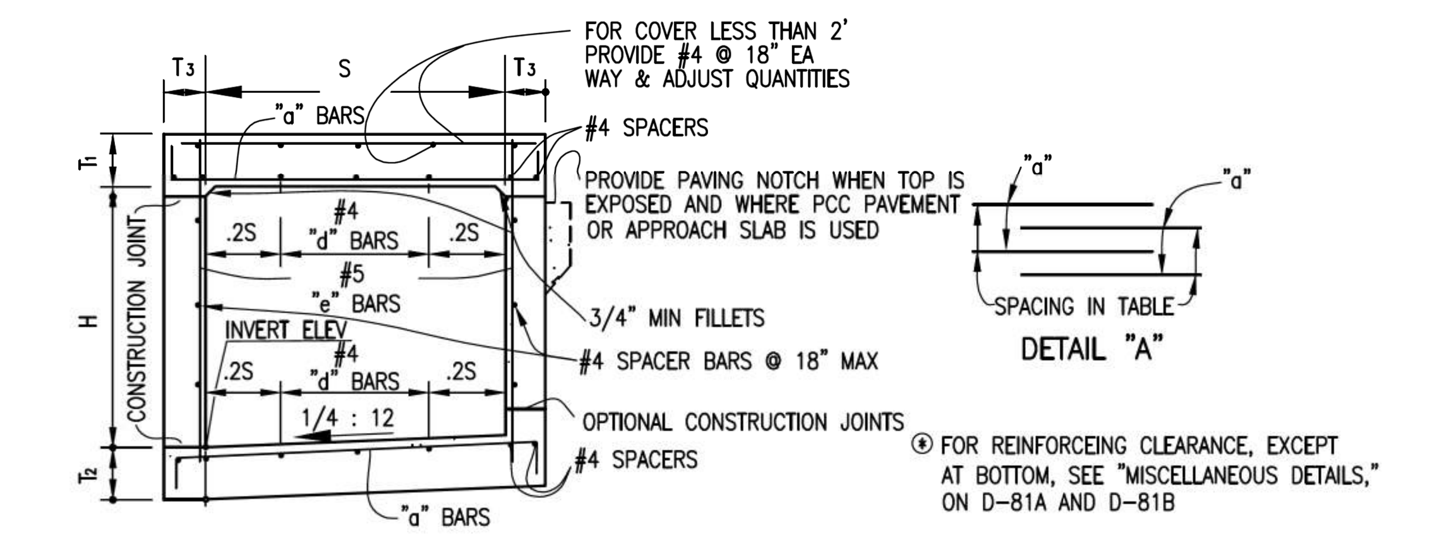


NOTES:

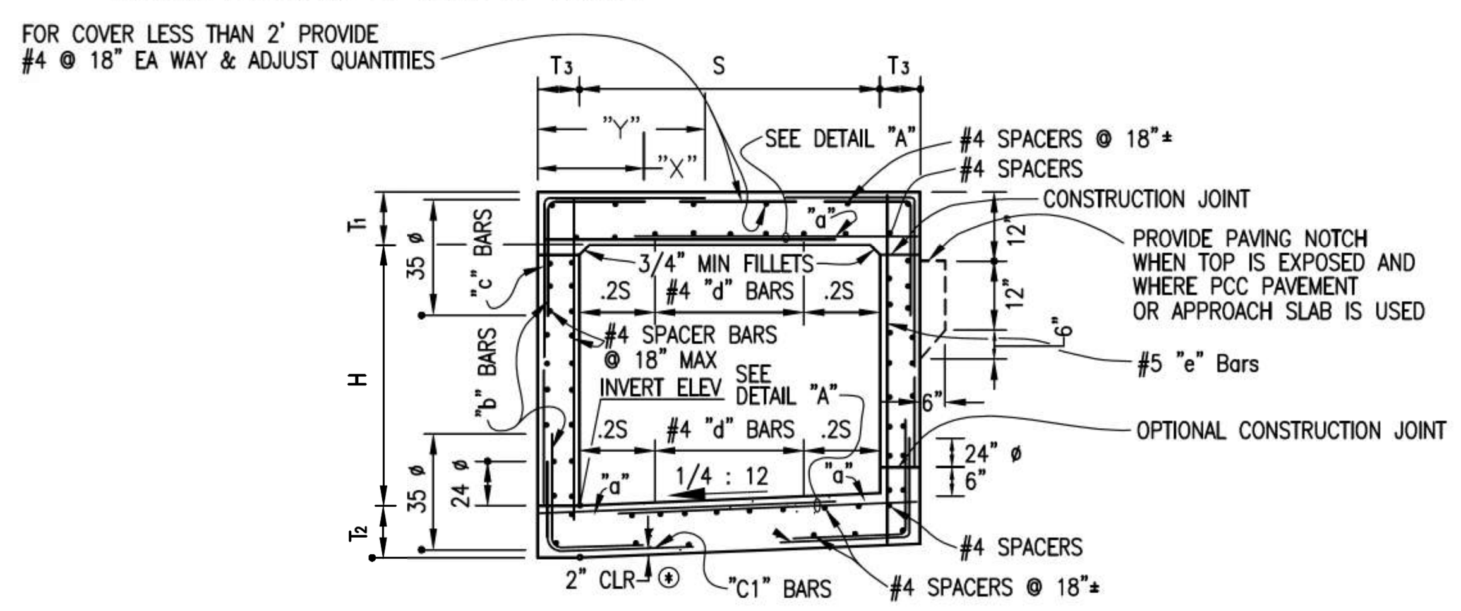
1. NON-COMPACTED NO. 2 COURSE AGGREGATE SEE DETAIL, THIS SHEET
2. CURB-CUT SEE DETAIL, THIS SHEET

GREEN STREET ELEMENT SECTION

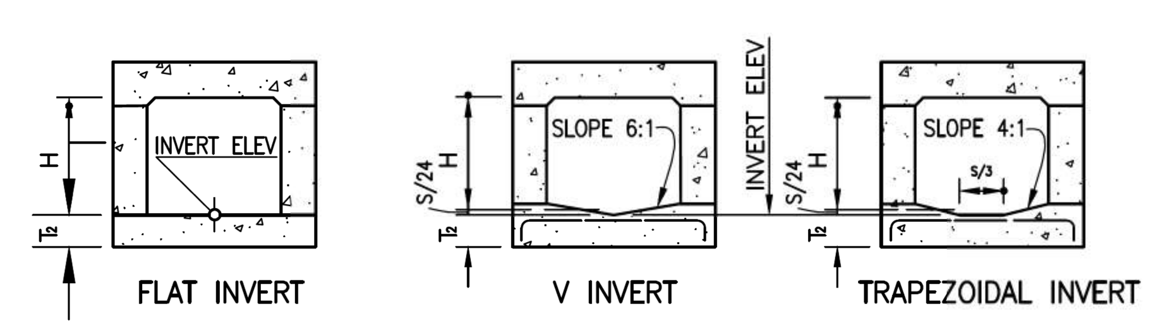
NTS



TYPICAL SECTIONS 2' THRU 6' SPANS



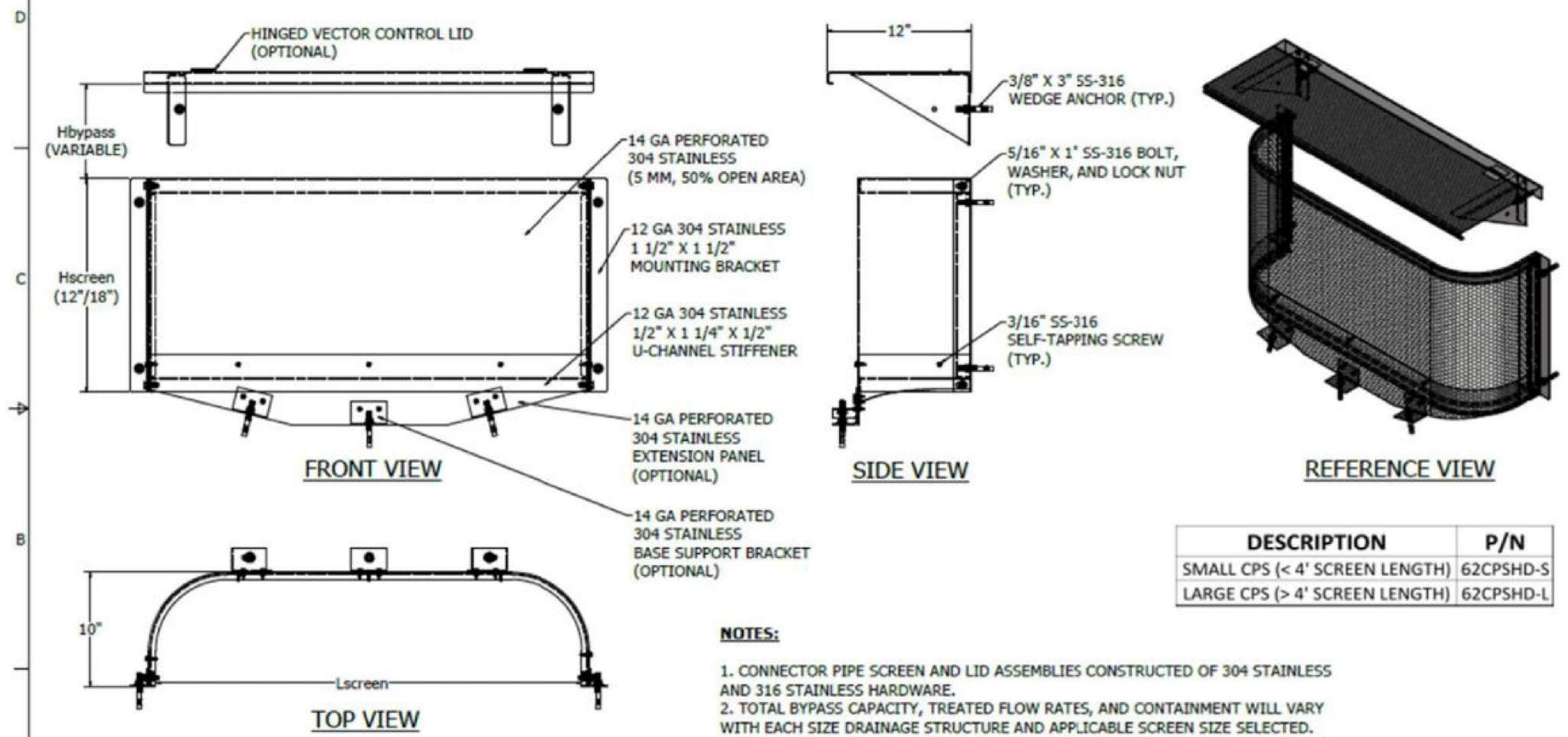
TYPICAL SECTIONS 7' THRU 12' SPANS



ALTERNATIVE INVERTS
(WHEN SPECIFIED ON PLANS)

Revision	By	Approved	Date	SAN DIEGO REGIONAL STANDARD DRAWING	RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE
ORIGINAL		Kercheval	12/75		03/24/2022 Chairperson R.C.E. 52241 Date
Edited	T.R.	T. Regello	10/15	SINGLE BOX CULVERT DETAILS NO.2	
Edited	M.W.	M. Widelski	10/18		DRAWING NUMBER D-76G
Reviewed	RP	S. Engedo	03/22		

ADS FLEXSTORM U-SHAPE CONNECTOR PIPE SCREENS (CPS)



DESCRIPTION	P/N
SMALL CPS (< 4' SCREEN LENGTH)	62CPSHD-S
LARGE CPS (> 4' SCREEN LENGTH)	62CPSHD-L

NOTES:

1. CONNECTOR PIPE SCREEN AND LID ASSEMBLIES CONSTRUCTED OF 304 STAINLESS AND 316 STAINLESS HARDWARE.
2. TOTAL BYPASS CAPACITY, TREATED FLOW RATES, AND CONTAINMENT WILL VARY WITH EACH SIZE DRAINAGE STRUCTURE AND APPLICABLE SCREEN SIZE SELECTED.
3. UPON ORDERING, A CPS ORDER FORM MUST BE COMPLETED DICTATING SPECIFIC MODEL SIZING, OPTIONAL COMPONENTS/FEATURES, AND INLET IDENTIFICATION.
4. VECTOR CONTROL HINGED LIDS, EXTENSION PANELS (FOR UNEVEN, TROUGHED, OR SLOPED FLOORS), AND BASE SUPPORT BRACKETS OPTIONAL OR WHEN REQUIRED.
5. CPS ARE NOT APPLICABLE FOR MANHOLES OR BASINS WITH SUMPS.
6. FOR WRITTEN SPECIFICATIONS, INSTALLATION, AND MAINTENANCE GUIDELINES VISIT WWW.ADSPIPE.COM.

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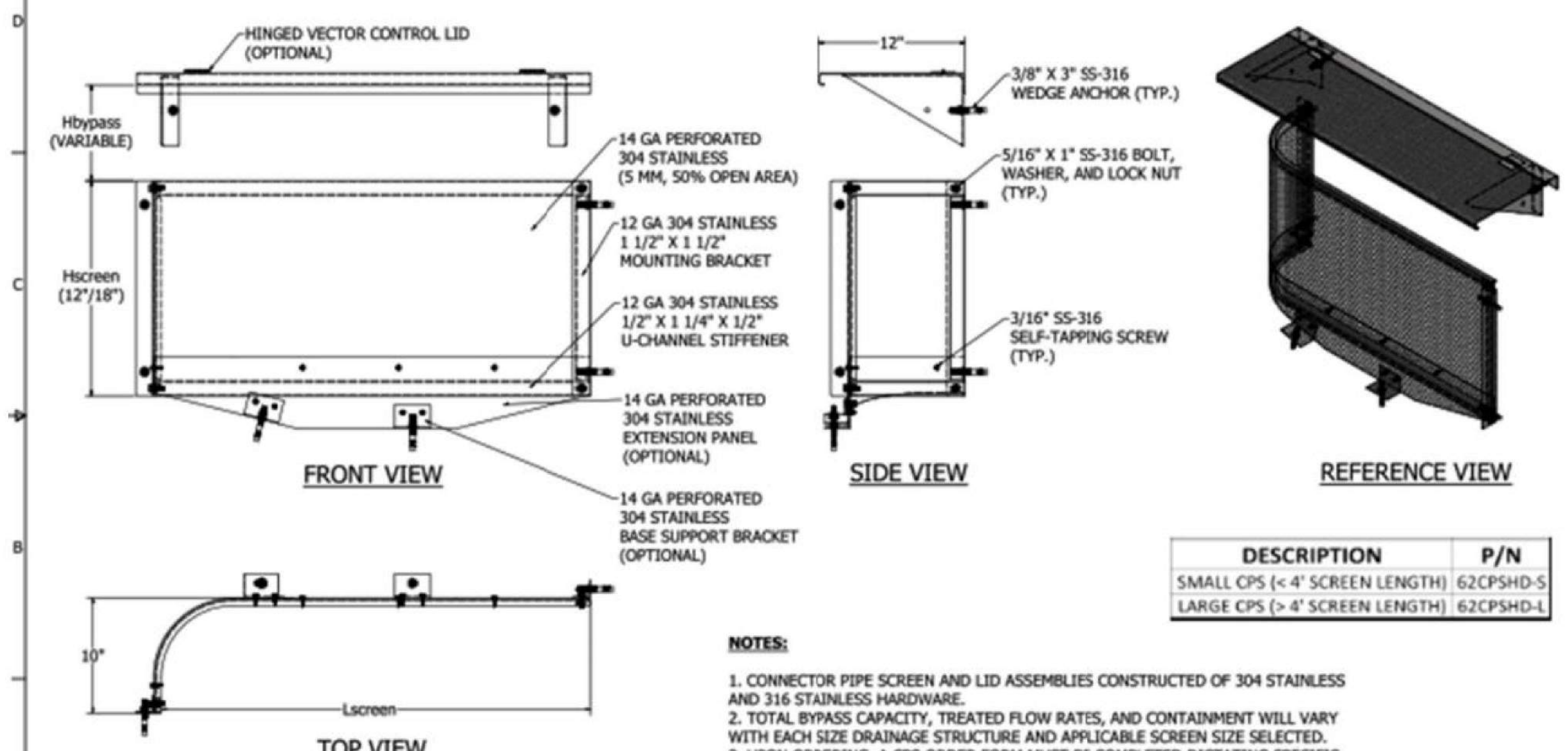
C 06/16/2023 ADS FLEXSTORM CPS-U A

ADS FLEXSTORM L-SHAPE CONNECTOR PIPE SCREENS (CPS)



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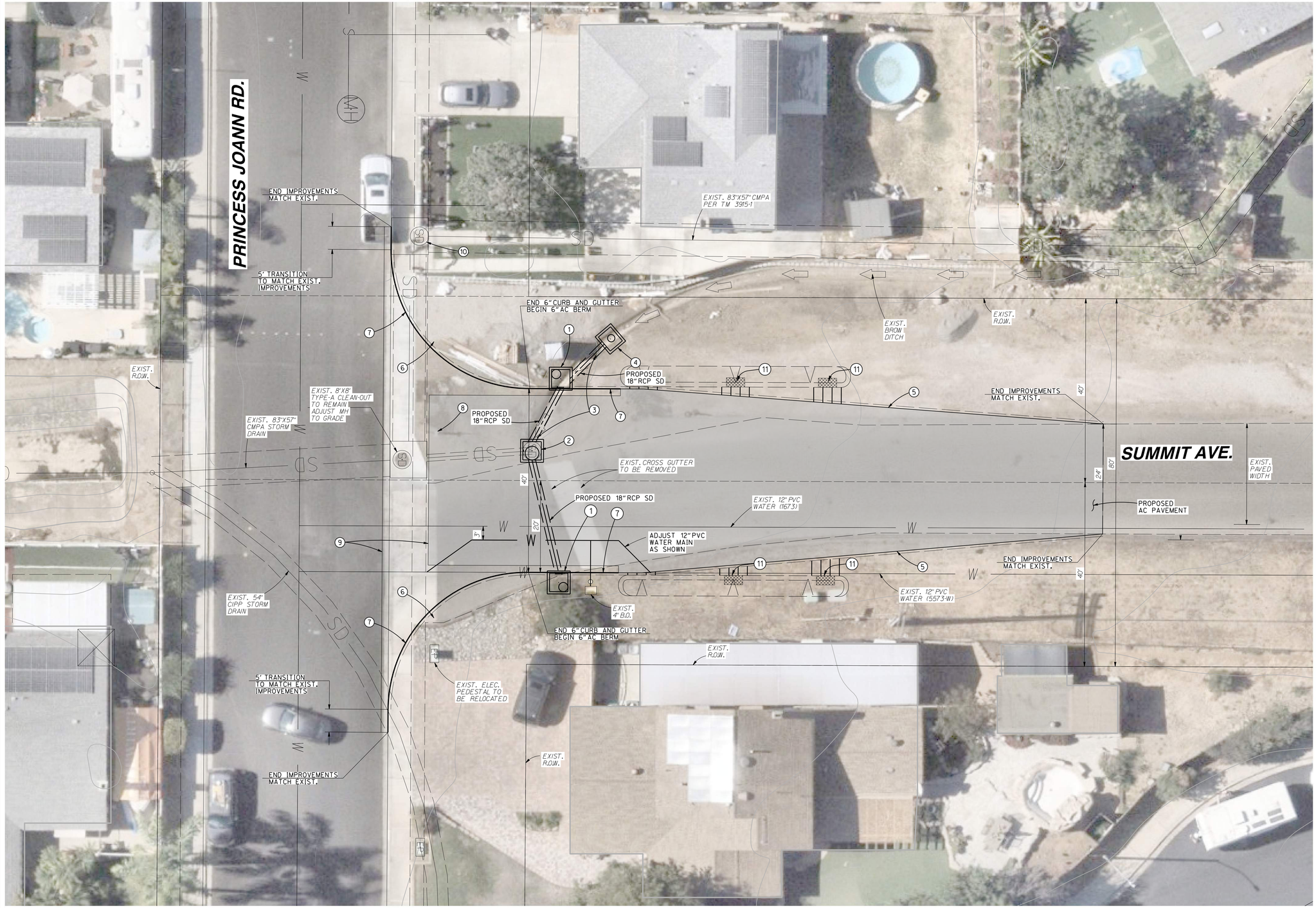
SANTA CLARITA PHOENIX TUCSON LAS VEGAS DENVER

TM NO. 2023-0003/DR 2023-0007

WQ TREATMENT DETAILS

SUMMIT AVENUE

City of Santee, California



CONSTRUCTION NOTES

1. PROPOSED TYPE-B INLET PER RSD D-02
2. EXIST. TYPE-F CATCH BASIN TO BE REMOVED, REPLACE WITH TYPE-A4 C.O. PER RSD D-09
3. PORTION OF EXIST. BROW DITCH TO BE REMOVED
4. PROPOSED TYPE-F CATCH BASIN PER RSD D-07
5. PROPOSED TEMPORARY 6" AC BERM
6. PROPOSED TYPE-A CURB RAMP PER RSD G-27A
7. PROPOSED 6" CURB AND GUTTER PER RSD G-02
8. EXIST. STREET SIGN TO BE RELOCATED
9. PROPOSED CROSS-GUTTER PER RSD G-12
10. EXIST. 9' TYPE-B INLET TO REMAIN
11. PROPOSED "GREEN STREET ELEMENT" SEE DETAILS, SHEET 15

GRAPHIC SCALE 1" = 10'

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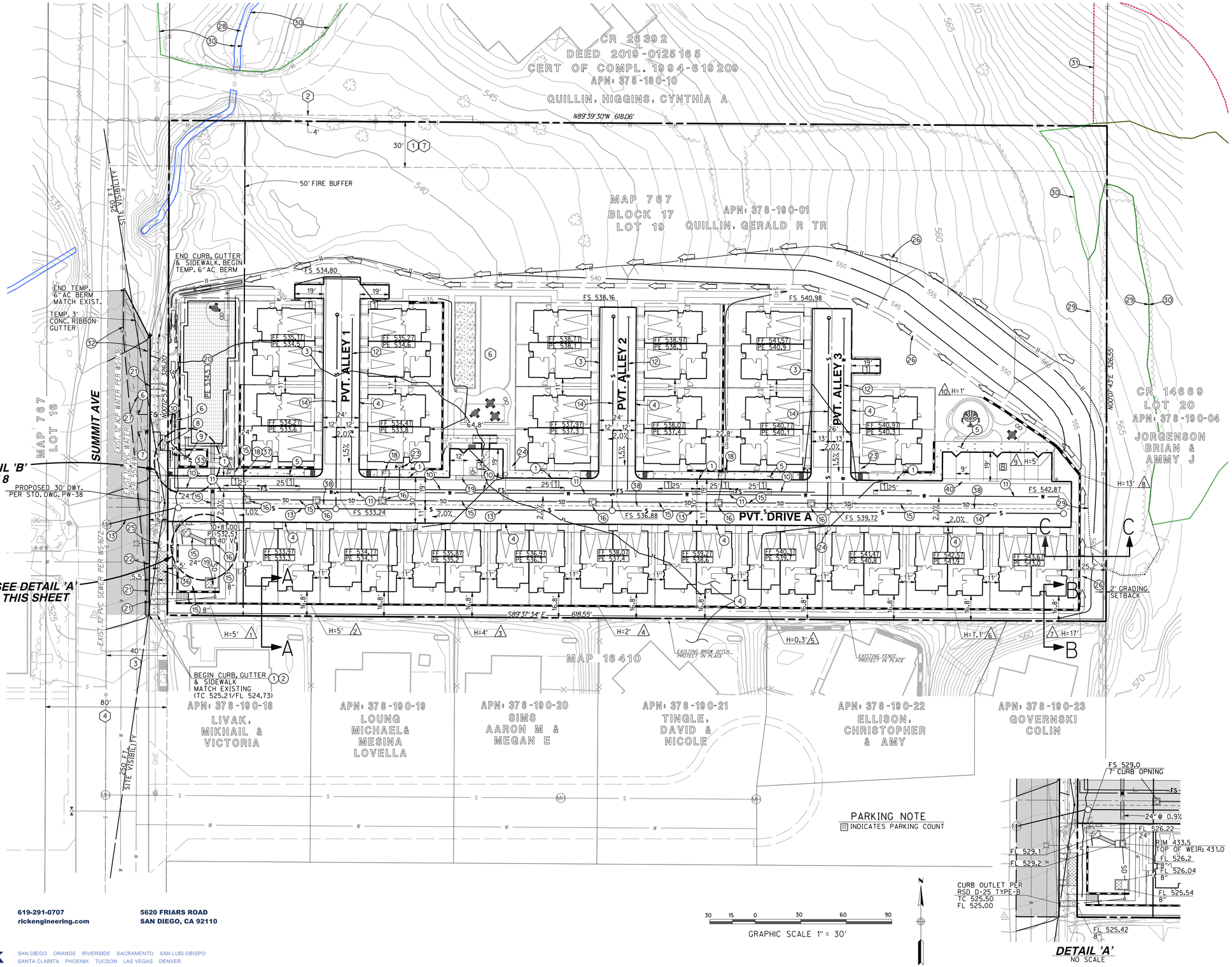
INTERSECTION IMPROVEMENTS

SUMMIT AVENUE

10 OF 10



CONSTRUCTION NOTES

① PROPOSED 6" CURB AND GUTTER PER RSD G-02
② PROPOSED 5' SIDEWALK PER RSD G-07
③ PROP. 4" ROLLED CURB AND GUTTER. SEE DET., SHT. 3 (PVT.)
④ PROPOSED 0" CURB (PVT.)
⑤ PROPOSED SIDEWALK PER RSD G-07 (PVT.)
⑥ PROPOSED 10" FIRE SERVICE W/10" RPDA (PVT.)
⑦ PROPOSED 4" DOMESTIC WATER LATERAL (PVT.)
⑧ PROPOSED 3" DOMESTIC WATER METER ASSEMBLY
⑨ PROPOSED 4" DOMESTIC WATER RP DEVICE (PVT.)
⑩ PROPOSED 8" FIRE SERVICE (PVT.)
⑪ PROPOSED 4" DOMESTIC WATER (PVT.)
⑫ PROPOSED 3" DOMESTIC WATER (PVT.)
⑬ PROPOSED 8" SEWER MAIN (PVT.)
⑭ PROPOSED 4" SEWER MAIN (PVT.)
⑮ PROP. STORM DRAIN (PVT.) (18" HDPE UNLESS NOTED OTHERWISE)
⑯ PROPOSED STORM DRAIN CLEAN OUT (PVT.) (RSD D-09)
⑰ PROPOSED STORM DRAIN INLET (PVT.) (PROVIDE "NO DUMPING" STENCILING, SEE DETAIL, SHT. 8)
⑱ PROPOSED STORM DRAIN TYPE-B CURB INLET (PVT.) (RSD D-09) (PROVIDE "NO DUMPING" STENCILING, SEE DETAIL, SHT. 8)
⑲ PROPOSED S.D. WATER QUALITY TREATMENT DEVICE (PVT.) (MODULAR WETLAND SYSTEM-MWS-L-6-8-7'-5"-V-HC)
⑳ PROPOSED S.D. DETENTION VAULT (PVT.)(STORM TRAP OR EQUAL)
㉑ PROPOSED CURB OUTLET PER RSD D-25 (PVT.)
㉒ PROPOSED REVERSE CURB OUTLET PER MOD. RSD D-25 (PVT.)
㉓ PROPOSED FIRE HYDRANT (PVT.)
㉔ PROPOSED STREET LIGHT (PVT.)
㉕ PROP. STREET LIGHTING STANDARD PER DWG. PW-20 (PUBLIC)
㉖ PROPOSED BROW DITCH TYPE-B (PVT.) (RSD D-75)
㉗ LANE TRANSITION TRAFFIC STRIPING
㉘ NON-VEGETATED CHANNEL (HARRIS & ASSOCIATES)
㉙ NON-NATIVE WOODLAND (HARRIS & ASSOCIATES)
㉚ DISTURBED DIEGAN COASTAL SAGE SCRUB (HARRIS & ASSOCIATES)
㉛ DIEGAN COASTAL SAGE SCRUB (HARRIS & ASSOCIATES)
㉜ LIMITS OF PROPOSED AC PAVEMENT (SUMMIT AVE.)
㉝ WQ TREATMENT BASIN (SEE DETAIL 'B', SHT 8)
㉞ PROVIDE BARRICADE PER SDRSD M-9
㉟ PROVIDE REFLECTIVE MARKERS OVER TOP OF PROP. AC BERM
㊱ GREEN STREET ELEMENT (WQ TREE WELL)
㊲ PROVIDE TRASH CAPTURE DEVICE
㊳ STRIPED CENTERLINE
㊴ 3' RIBBON GUTTER (TYPE-1), SEE DETAIL, SHT. 3
㊵ 3' RIBBON GUTTER (TYPE-2), SEE DETAIL, SHT. 3

PDMWD EASEMENT NOTE:

ALL DISTRICT FACILITIES, I.E. WATER MAINS, FIRE HYDRANTS, WATER METERS, BLOW OFF VALVES, AIR-VAC VALVES, AND ALL RELATED APPURTENANCES SHOWN HEREON WITHIN PRIVATE PROPERTY ARE TO BE LOCATED WITHIN A UTILITY EASEMENT DEDICATED TO PADRE DAM MUNICIPAL WATER DISTRICT FOR ACCESS AND MAINTENANCE TO SAID FACILITIES. SAID EASEMENT WILL BE SHOWN ON ALL FINAL CONSTRUCTION DOCUMENTS

WALL ELEVATION TABLE

X	TW	BW	X	TW	BW
1	531.1	526.5	6	549.0	541.9
2	532.9	528.1	7	560.0	543.0
3	535.1	531.4	8	556.3	543.1
4	536.5	535.1	9	548.5	543.2
5	540.0	539.7	10	542.4	542.2

EXISTING EASEMENTS

① *INGRESS & EGRESS FOR ROAD & PUBLIC UTILITY PURPOSES PER DOC. NO. 68100 IN BOOK 7058, PG 273; AND DOC. NO. 68492 IN BOOK 7058, PG 26; BOTH RECORDED APRIL 29, 1958, O.R.*

② *EASEMENT FOR POLE LINES, UNDERGROUND CONDUITS WITH THE RIGHT OF INRESS & EGRESS DOC. NO. 102822 REC. 06-19-1968*

③ *EASEMENT FOR ROAD & PUBLIC UTILITIES RESERVED IN DEED TO CYNTHIA ANNE HIGGINS DOC. 2019-0125165, O.R. REC. 4/8/2019*

④ *PARCEL 1 PER DEED RECORDED APRIL 29, 1258 AS DOC. NO. 68100 IN BOOK 7058, PG 273*

⑤ *PARCEL 2 PER DEED RECORDED APRIL 29, 1258 AS DOC. NO. 68100 IN BOOK 7058, PG 273*

⑥ *PARCEL 1 PER DEED RECORDED APRIL 29, 1258 AS DOC. NO. 68492 IN BOOK 7058, PG 26*

⑦ *PARCEL 2 PER DEED RECORDED APRIL 29, 1258 AS DOC. NO. 68492 IN BOOK 7058, PG 26*

TM NO. 2023-0003/DR 2023-0007

INTERIM SUMMIT AVENUE IMPROVEMENTS

SUMMIT AVENUE

City of Santee, California

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