

# CITY OF SANTEE

**PRIORITY DEVELOPMENT PROJECT (PDP)  
STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)  
FOR  
Santee Schoolyard**

**10315 Mission Gorge Road  
Santee, CA 92071**

**ASSESSOR'S PARCEL NUMBER(S):  
3840910100, 3840911300, 3840911400**

**ENGINEER OF WORK:  
Shavger Rekani PE**

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**Shavger Rekani PE 90893, 3/24**

**PREPARED FOR:**

The Schoolyard, LLC  
10580 Prospect Avenue, Suite 200  
Santee, California 92071

**PDP SWQMP PREPARED BY:**

RICK Engineering Company  
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:**

July 29, 2022  
Revised: December 16, 2022  
**Revised: April 21, 2023**

PDP SWQMP Template Date: February 2016  
PDP SWQMP Preparation Date: [4-21-2023]

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## 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: Santee Schoolyard**  
**Permit Application Number:**

## PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of 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

\_\_\_\_\_  
Print Name

RICK Engineering Company  
\_\_\_\_\_  
Company

4/21/2023  
\_\_\_\_\_  
Date

Engineer's Seal:

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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                | 7/29/2022  | <input checked="" type="checkbox"/> Preliminary Design / Planning/ CEQA<br><input type="checkbox"/> Final Design | Initial Submittal                          |
| 2                | 12/16/2022 | <input checked="" type="checkbox"/> Preliminary Design / Planning/ CEQA<br><input type="checkbox"/> Final Design | Updated site layout and BMP configuration. |
| 3                | 4/21/2023  | <input checked="" type="checkbox"/> Preliminary Design / Planning/ CEQA<br><input type="checkbox"/> Final Design | Updated site layout and BMP configuration. |
| 4                |            | <input type="checkbox"/> Preliminary Design / Planning/ CEQA<br><input type="checkbox"/> Final Design            |                                            |

# **PRIORITY DEVELOPMENT PROJECT STORM WATER QUALITY MANAGEMENT PLAN FOR SANTEE SCHOOLYARD**

## **Revision Page**

**April 21, 2023**

This Priority Development Project Storm Water Quality Management Plan (PDP SWQMP) presents a revision to the December 16, 2022 report pursuant to the City of San Diego's plan check comments received December 16, 2022. The following text identifies the plan check comments along with the responses in bold.

### **City of Santee Comments**

6.a Develop and implement appropriate Best Management Practices (BMPs) to ensure that the project does not increase pollutant loads from the site. A combination of respective storm water BMPs, including Site Design, Source Control, and Structural Treatment Control shall be implemented in accordance with the approved SWQMP.

**BMPs have been proposed to provide water quality treatment that complies with the guidelines in the City of Santee BMP Design Manual.**

6.b The project design shall incorporate Low Impact Development (LID) and site design BMPs to minimize directly connected impervious areas and to promote infiltration using LID techniques as outlined in the County of San Diego's LID handbook. Parking areas shall be designed to drain to landscape areas. Private roads shall be designed to drain to vegetated swales or landscaped areas.

**LID and site design BMPs will be implemented as specified in the County of San Diego LID handbook.**

6.c The site shall comply with full trash capture requirements by providing completely enclosed trash and recycling enclosures and fitting all storm drain inlets with a State certified grate/screen or trash rack. Said devices must be designed to capture debris of 5 mm or greater, while preventing flooding potential. In addition, any adjacent public storm drain inlet structure to which the site discharges must also be retrofitted with trash capture devices. The device which shall be used for public inlets is the ADS FlexStorm Connector Pipe Screen system or approved equal.

**The proposed development will comply with trash capture requirements and be fitted with trash capture screens.**

6.d All inlets must be labeled with concrete stamp or equivalent - stating, "No Dumping - Drains to River". If work is performed on a public inlet, the public inlet must be labeled with the following standard specification: Public storm drain inlet markers shall be 4" diameter, stainless

steel, natural embossed, inlet marker as manufactured by Almetek Industries or approved equal. Marker shall contain/state "No Dumping" with "Fish w/ Wave" symbol and "Drains to Waterways" legend. Marker shall contain 2" long x 1/4" diameter threaded rod and shall be installed flush and wet-set in top of inlet, centered on width of inlet opening.

**Inlets shall be labeled with markers to prohibit dumping.**

6.e Down spouts and HVAC systems are not permitted to be connected to any storm drain conveyance system. All non-storm water discharges must either drain to landscaped areas or be plumbed to the sewer.

**Non-storm water discharges will be directed to landscape areas or plumbed to the sewer system.**

6.f Fire suppression systems must be designed to be able to discharge to a sewer cleanout for all maintenance and testing activities, or otherwise captured and contained on-site.

**Fire suppression systems will be designed to discharge to sewer or be contained on-site.**

6.g California native/drought-tolerant plants shall be used to the maximum extent feasible to minimize the need for irrigation. Where irrigation is necessary, then the system shall be designed and installed to prevent overspray or irrigation runoff during normal operations and during a break in the line.

**California native and drought-tolerant plants will be used to the maximum extent feasible for landscaping. The irrigation system will be designed to prevent overspray and runoff.**

6.h The final project submittal shall include a standalone Operation and Maintenance (O&M) Plan in accordance with the City of Santee BMP Design Manual.

**An O&M plan will be prepared in accordance with the City of Santee BMP Design Manual and included in the final project submittal.**

6.i Note, the use of a single proprietary device to treat this large of an area may be prohibited by state requirements in place at the time of construction. It is recommended that infiltration techniques be implemented to the maximum extent possible, specifically along the perimeter and landscape pockets within the proposed parking lot.

**The project has been updated to use biofiltration basins instead of a proprietary device. Infiltration is not recommended in the geotechnical report as the site consists of type-D soil.**

6.j Revise the Storm Water Intake Form to identify this is not a part of another priority development project. Provide the WDID number when it becomes available. On Step 2.f, check "yes".

**Storm Water Intake Form Step 2.f has been revised.**

6.j On Form 1-2, Step 5, include a discussion as to why the protection of critical coarse sediment yield areas apply to the project.

**Form I-2, Step 5 has been updated to include a discussion as to why protection of critical coarse sediment yield areas does *not* apply to the project as per the City of Santee BMP Design Manual section 6.2.**

6.j On Form 1-3b, the parcel area should match the CUP application area of 13.1 acres.

**Comment noted. Parcel area has been updated to reflect correct acreage.**

6.j On Form 1-3b, page 4 of 10, add "car wash" after "auto collision/repair shop" in the project description/proposed land use and/or activities section.

**Form I-3B, Page 4 of 10 has been updated to reflect comment.**

6.j On page 6 of 10, check the "refuse" box.

**Refuse box has been checked.**

6.j On page 7 of 10, add "cadmium" to pollutants/stressors section, change oxygen to "dissolved" oxygen, change "dissolved" phosphorous to phosphorous, and leave identification of project site pollutants table blank.

**Page 7 of 10 has been updated to reflect comments.**

6.j On Form 1-4, page 2 of 2, SC-5, uncheck "n/a" and check "yes".

**SC-5 has been updated.**

6.j On SC-6, check "yes" to the following boxes; "refuse area", "fire sprinkler test water", and "miscellaneous drain or wash water".

**SC-6 has been updated.**

6.j On Form 1-5, page 1 of 2, SD-3, check "yes" and add language about landscaped areas and remove "site design requirement largely infeasible".

**SD-3 has been updated.**

6.j On SD-4, check "yes" and add language about "no infiltration condition" and remove "site design requirement largely infeasible".

**SD-4 has been updated.**

6.j On Form 1-6, page 3 of 8, add phone numbers, mailing address, email address for the "Schoolyard LLC" for the final owner, maintenance and funding mechanism for maintenance sections.

**Phone numbers, mailing address, and email address will be provided in a future submittal.**

6.j On Attachment 1b, "Tabular summary of DMAs", show DMA ID as matching DMA exhibit and show calculations.

**DMA IDs have been updated throughout the PDPSWQMP.**

6.j On Worksheets 0-2, Harvest and Use Feasibility Screening, Section 1, check the "other" box and add "vehicle washing".

**Vehicle washing has been added to Harvest and Use Feasibility Screening, Section 1.**

6.j On the page showing the BMP-A1 cross section, please add details to the detention vault including overall shape, inlet/outlet locations, and orifice size.

**BMP Details have been added to cross section. Note that the previously proposed vault is changing to a standard biofiltration basin.**

6.j On the page showing BMP-B1, C1 and C2 cross sections, indicate the orifice size.

**Outlet orifice sizes have been added to the biofiltration basin cross sections.**

6.j On the page showing Biofiltration Basin B2, indicate the orifice size.

**Outlet orifice sizes have been added to the biofiltration basin cross sections.**

6.j The cross section of BMP-A1 shows the detention vault height at 4 feet. If the modular wetland is 3.5' demonstrate how the MWS will line up if it is to receive flow from the vault prior to discharge.

**BMP-A has been changed to a standard biofiltration basin. Details have been updated for this BMP.**

6.j For the proposed MSW-L-8-16-V, please provide calculations for determining the size of the propriety biofiltration modular wetlands system following Appendix F.2 from the City's BMP design manual.

**The proposed MWS has been replaced with a standard biofiltration basin. Water quality and HMP calculations have been provided.**

6.j Provide the flow-based DVC for subject DMAs, multiply that baseline DCV by a factor of 1.5, demonstrate that the selected BMP model has a design flow rate greater or equal to the treatment design flow rate. Since this setup does not likely meet the annual average capture requirements built into the standard biofiltration sizing, additional retention measures should be implemented onsite.

**Biofiltration basins have been proposed to treat the entire project site and 92% annual capture has been demonstrated for each BMP.**

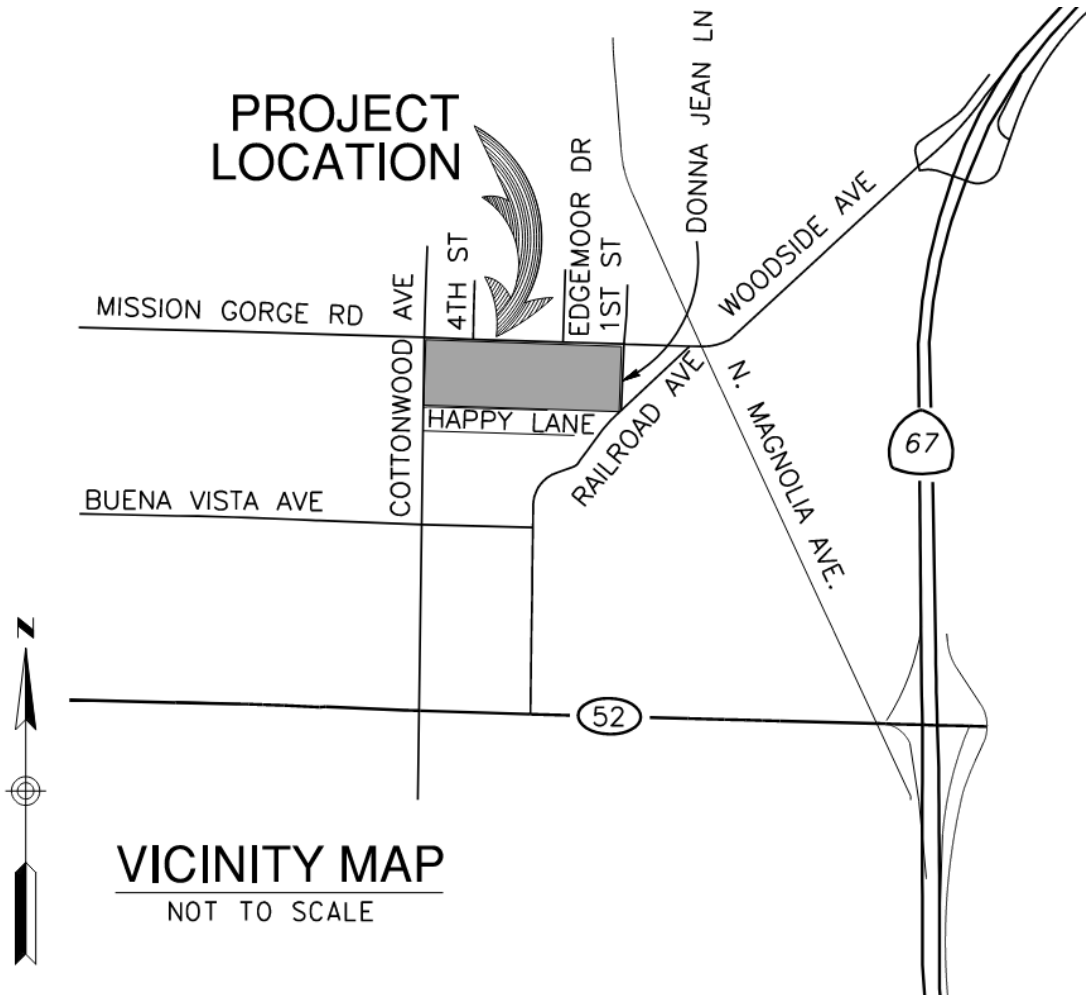
6.j Follow Appendix B "Compact Biofiltration BMPs" section to calculate the target retention volume and total volume retained by the BMP and other site design measures onsite.

**Total retention volume and BMP retention volume for each DMA is shown in Attachment 1E.**



# PROJECT VICINITY MAP

Project Name: Santee Schoolyard  
Permit Application Number:



| <b>Applicability of Permanent, Post-Construction Storm Water BMP Requirements</b><br>(Storm Water Intake Form for all Development Permit Applications)                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       | <b>Form I-1</b><br>Model BMP Design Manual<br>[August 31, 2015]                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Identification</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                       |                                                                                                                                                                                                                      |
| Project Name: Santee Schoolyard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                       |                                                                                                                                                                                                                      |
| Permit Application Number:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       | Date: 12/16/2022                                                                                                                                                                                                     |
| Project Address:<br><br>10315 Mission Gorge Road<br>Santee, CA 92071                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                       |                                                                                                                                                                                                                      |
| <b>Determination of Requirements</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                       |                                                                                                                                                                                                                      |
| <p>The purpose of this form is to identify permanent, post-construction requirements that apply to the project. This form serves as a short <u>summary</u> of applicable requirements, in some cases referencing separate forms that will serve as the backup for the determination of requirements.</p> <p>Answer each step below, starting with Step 1 and progressing through each step until reaching "Stop". <b>Upon reaching a Stop, do not complete further Steps beyond the Stop.</b></p> <p>Refer to BMP Design Manual sections and/or separate forms referenced in each step below.</p> |                                                       |                                                                                                                                                                                                                      |
| Step                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Answer                                                | Progression                                                                                                                                                                                                          |
| <b>Step 1:</b> Is the project a "development project"?<br>See Section 1.3 of the BMP Design Manual for guidance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <input checked="" type="checkbox"/> Yes               | Go to Step 2.                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> No                           | Stop.<br>Permanent BMP requirements do not apply. No SWQMP will be required. Provide discussion below.                                                                                                               |
| Discussion / justification if the project is <u>not</u> a "development project" (e.g., the project includes <i>only</i> interior remodels within an existing building):                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                       |                                                                                                                                                                                                                      |
| <b>Step 2:</b> Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions?<br>To answer this item, see Section 1.4 of the BMP Design Manual <i>in its entirety</i> for guidance, AND complete Form I-2, Project Type Determination.                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> Standard Project             | Stop.<br><u>Only Standard Project requirements apply, including Standard Project SWQMP.</u>                                                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input checked="" type="checkbox"/> PDP               | <u>Standard and PDP requirements apply, including PDP SWQMP.</u><br>Go to Step 3.                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> Exception to PDP definitions | Stop.<br><u>Standard Project requirements apply, and any additional requirements specific to the type of project.</u> Provide discussion and list any additional requirements below. Prepare Standard Project SWQMP. |

**[Step 2 Continued from Page 1]** Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:

|                                                                                                                                                                       |                                         |                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Step 3 (PDPs only).</b> 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. | <input checked="" type="checkbox"/> Yes | Consult the [City Engineer] to determine requirements. Provide discussion and identify requirements below.<br>Go to Step 4. |
|                                                                                                                                                                       | <input type="checkbox"/> No             | BMP Design Manual PDP requirements apply.<br>Go to Step 4.                                                                  |

Discussion / justification of prior lawful approval, and identify requirements (*not required if prior lawful approval does not apply*):

|                                                                                                                                    |                                         |                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 4 (PDPs only).</b> Do hydromodification control requirements apply? See Section 1.6 of the BMP Design Manual for guidance. | <input checked="" type="checkbox"/> Yes | PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6).<br>Go to Step 5.                                 |
|                                                                                                                                    | <input type="checkbox"/> No             | Stop.<br>PDP structural BMPs required for pollutant control (Chapter 5) only.<br>Provide brief discussion of exemption to hydromodification control below. |

Discussion / justification if hydromodification control requirements do not apply:

|                                                                                                                                      |                              |                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Step 5 (PDPs subject to hydromodification control requirements only).</b> Does protection of critical coarse sediment yield areas | <input type="checkbox"/> Yes | Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2).<br>Stop. |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                    |                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>apply based on review of WMAA Potential Critical Coarse Sediment Yield Area Map?<br/>See Section 6.2 of the BMP Design Manual for guidance.</p> | <p><input checked="" type="checkbox"/> No</p> | <p>Management measures not required for protection of critical coarse sediment yield areas.<br/>Provide brief discussion below.</p> <p>There are no critical coarse sediment yield areas on or adjacent to 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 or near the project site.</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Project Information**

Project Name:

|                            |                  |
|----------------------------|------------------|
| Permit Application Number: | Date: 12/16/2022 |
|----------------------------|------------------|

Project Address:

10315 Mission Gorge Road  
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: 478071 ft<sup>2</sup> (11) acres

Is the project in any of the following categories, (a) through (f)?

|                                            |                                           |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------|-------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Yes<br><input type="checkbox"/>            | No<br><input checked="" type="checkbox"/> | (a) | New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Yes<br><input checked="" type="checkbox"/> | No<br><input type="checkbox"/>            | (b) | Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Yes<br><input checked="" type="checkbox"/> | No<br><input type="checkbox"/>            | (c) | <p>New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses:</p> <ul style="list-style-type: none"> <li>(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).</li> <li>(ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater.</li> <li>(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.</li> <li>(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.</li> </ul> |

**Form I-2 Page 2, Form Template Date: August 31, 2015**

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

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: 87991 ft<sup>2</sup> (A)

The total proposed newly created or replaced impervious area is 473279 ft<sup>2</sup> (B)

Percent impervious surface created or replaced (B/A)\*100: 538 %

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

| <b>Site Design Checklist<br/>For PDPs</b>                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Form I-3B (PDPs)<br/>Model BMP Design Manual<br/>[August 31, 2015]</b> |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Project Summary Information</b>                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                           |
| Project Name                                                                                                                          | Santee Schoolyard                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                           |
| Project Address                                                                                                                       | 10315 Mission Gorge Road, Santee, CA                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                           |
| Assessor's Parcel Number(s) (APN(s))                                                                                                  | 3840910100, 3840911300, 3840911400                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                           |
| Permit Application Number                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                           |
| Project Hydrologic Unit                                                                                                               | Select One:<br><input type="checkbox"/> Santa Margarita 902<br><input type="checkbox"/> San Luis Rey 903<br><input type="checkbox"/> Carlsbad 904<br><input type="checkbox"/> San Dieguito 905<br><input type="checkbox"/> Penasquitos 906<br><input checked="" type="checkbox"/> San Diego 907<br><input type="checkbox"/> Pueblo San Diego 908<br><input type="checkbox"/> Sweetwater 909<br><input type="checkbox"/> Otay 910<br><input type="checkbox"/> Tijuana 911 |                                                                           |
| Project Watershed<br>(Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)                                       | 4907.12                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                           |
| Parcel Area<br>(total area of Assessor's Parcel(s) associated with the project)                                                       | <u>13.1</u> Acres ( <u>579348</u> Square Feet)                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                           |
| Area to be Disturbed by the Project<br>(Project Area)                                                                                 | <u>12.9</u> Acres ( <u>561924</u> Square Feet)                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                           |
| Project Proposed Impervious Area<br>(subset of Project Area)                                                                          | <u>10.7</u> Acres ( <u>466092</u> Square Feet)                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                           |
| Project Proposed Pervious Area<br>(subset of Project Area)                                                                            | <u>2.2</u> Acres ( <u>95832</u> Square Feet)                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                           |
| Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                           |

**Description of Existing Site Condition**

Current Status of the Site (select all that apply):

- Existing development
- Previously graded but not built out
- Demolition completed without new construction
- Agricultural or other non-impervious use
- Vacant, undeveloped/natural

Description / Additional Information:

Existing Land Cover Includes (select all that apply):

- 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:

**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;

**Water sheet flows off the site and street flows to a storm drain at the intersection of Mission Gorge Road and Cottonwood Avenue.**

(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,

**No, offsite runoff is not conveyed through the site.**

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

**There is no drainage conveyance network currently on site.**

(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 17.4 acres. Based on available data, it is anticipated that peak flows from a 100-year, 6-hour storm event will equal 23.1 CFS for the pre-project site. The post-project drainage area equals 17.4 acres. Based on available data, it is anticipated that peak flows from the mitigated post-project site will be less than 23.1 CFS for a 100-year, 6-hour storm event.**

(5) Describe existing site drainage patterns;

**The pre-project site drains generally northwest to a single point of compliance (POC). The POC consists of a curb inlet located along the eastern edge Cottonwood Ave., just south of the intersection of Cottonwood Ave. and Mission Gorge Rd. Runoff from the southern part of Basin 100 flows from the eastern boundary of the site to the west along Happy Ln. before it rounds the corner at Cottonwood Ave. and flows north along the street where it is collected by the curb inlet. Runoff from the northern part of Basin 100 flows north to Mission Gorge Rd. then concentrates and flows west along the street until it rounds the corner and travels south at Cottonwood Ave. where it collected by the curb inlet. After entering the curb inlet, runoff from the project site drains to the San Diego River which flows approximately west and ultimately to the Pacific Ocean.**

**Description of Proposed Site Development**

Project Description / Proposed Land Use and/or Activities:

The project will convert an abandoned schoolyard into a car dealership. The facilities consist of an auto sales & service building, an automotive supercenter, an auto collision/repair shop, and a car wash. Parking lots, sidewalks, and sidewalks will also be constructed.

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

The project will consist of buildings, parking lots, sidewalks, and an auto display pad.

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

Pervious features consist of landscaped areas.

Does the project include grading and changes to site topography?

Yes

No

Description / Additional Information:

The site will be graded to provide level ground for the building foundations and parking lots.

**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. Flows will be conveyed via underground storm drains to a point of compliance (POC) located just south of the intersection of Cottonwood Ave. and Mission Gorge Rd.

The pre-project drainage area and peak flow are 17.4 acres and 23.1 cfs. The post-project drainage area and mitigated peak flow are 17.4 acres and less than 23.1 cfs.

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, the project area is divided into three lots which each drain to a separate underground storage vault and proprietary compact biofiltration system. After exiting the vaults and compact biofiltration system, the stormwater is conveyed via a private storm drain to a connection with the public storm drain system located at the curb inlet which is on the southeast corner of the intersection of Cottonwood Ave. and Mission Gorge Rd.. After connecting to the public storm drain system, flows from the site are conveyed to the San Diego River.

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

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

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 Cottonwood Ave. and Mission Gorge Rd. and flows to the San Diego River. After entering the San Diego River, runoff is discharged to the Pacific Ocean at the San Diego River outlet at Dog Beach.

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:

| <b>303(d) Impaired Water Body</b>                                                  | <b>Pollutant(s)/Stressor(s)</b>                                                                                                   | <b>TMDLs / WQIP Highest Priority Pollutant</b> |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| San Diego River                                                                    | Indicator bacteria, benthic community effects, nitrogen, dissolved oxygen, phosphorus, total dissolved solids, toxicity, cadmium. | Indicator bacteria                             |
| Pacific Ocean Shoreline, San Diego HU, at the San Diego River outlet, at Dog Beach | Indicator bacteria.                                                                                                               | 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):

| <b>Pollutant</b>            | <b>Not Applicable to the Project Site</b> | <b>Expected from the Project Site</b> | <b>Also a Receiving Water Pollutant of Concern</b> |
|-----------------------------|-------------------------------------------|---------------------------------------|----------------------------------------------------|
| 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 (POC1) that is located along the east side Cottonwood Avenue at the intersection of Cottonwood Avenue and Mission Gorge Road. The POC consists of a curb inlet.

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)

**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<br>for All Development Projects<br>(Standard Projects and Priority Development Projects)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Form I-4<br>Model BMP Design<br>Manual<br>[August 31, 2015] |                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Project Identification</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                             |                                                                     |
| Project Name: Santee Schoolyard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                             |                                                                     |
| Permit Application Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                             |                                                                     |
| <b>Source Control BMPs</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                             |                                                                     |
| 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                             |                                                                     |
| <ul style="list-style-type: none"> <li>• "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.</li> <li>• "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.</li> <li>• "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.</li> </ul> |  |                                                             |                                                                     |
| <b>Source Control Requirement</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | <b>Applied?</b>                                             |                                                                     |
| <b>SC-1</b> Prevention of Illicit Discharges into the MS4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | <input checked="" type="checkbox"/> Yes                     | <input type="checkbox"/> No <input type="checkbox"/> N/A            |
| Discussion / justification if SC-1 not implemented:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                             |                                                                     |
| <b>SC-2</b> Storm Drain Stenciling or Signage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | <input checked="" type="checkbox"/> Yes                     | <input type="checkbox"/> No <input type="checkbox"/> N/A            |
| Discussion / justification if SC-2 not implemented:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                             |                                                                     |
| <b>SC-3</b> Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | <input type="checkbox"/> Yes                                | <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| Discussion / justification if SC-3 not implemented:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                             |                                                                     |
| Not anticipated for site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                             |                                                                     |
| <b>SC-4</b> Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | <input type="checkbox"/> Yes                                | <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| Discussion / justification if SC-4 not implemented:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                             |                                                                     |
| Not anticipated for site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                             |                                                                     |

| Source Control Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Applied?                                |                             |                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------|------------------------------|
| <b>SC-5</b> Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| Discussion / justification if SC-5 not implemented:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |                             |                              |
| <p><b>SC-6</b> Additional BMPs Based on Potential Sources of Runoff Pollutants<br/>(must answer for each source listed below)</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> On-site storm drain inlets</li> <li><input type="checkbox"/> Interior floor drains and elevator shaft sump pumps</li> <li><input type="checkbox"/> Interior parking garages</li> <li><input type="checkbox"/> Need for future indoor &amp; structural pest control</li> <li><input type="checkbox"/> Landscape/Outdoor Pesticide Use</li> <li><input type="checkbox"/> Pools, spas, ponds, decorative fountains, and other water features</li> <li><input type="checkbox"/> Food service</li> <li><input checked="" type="checkbox"/> Refuse areas</li> <li><input type="checkbox"/> Industrial processes</li> <li><input type="checkbox"/> Outdoor storage of equipment or materials</li> <li><input checked="" type="checkbox"/> Vehicle and Equipment Cleaning</li> <li><input checked="" type="checkbox"/> Vehicle/Equipment Repair and Maintenance</li> <li><input type="checkbox"/> Fuel Dispensing Areas</li> <li><input type="checkbox"/> Loading Docks</li> <li><input checked="" type="checkbox"/> Fire Sprinkler Test Water</li> <li><input checked="" type="checkbox"/> Miscellaneous Drain or Wash Water</li> <li><input checked="" type="checkbox"/> Plazas, sidewalks, and parking lots</li> </ul> |                                         |                             |                              |

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.

| <b>Site Design BMP Checklist<br/>for All Development Projects<br/>(Standard Projects and Priority Development Projects)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | <b>Form I-5<br/>Model BMP Design<br/>Manual<br/>[August 31, 2015]</b> |                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Project Identification</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                       |                                                                     |
| Project Name: Santee Schoolyard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                       |                                                                     |
| Permit Application Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                                       |                                                                     |
| <b>Site Design BMPs</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                       |                                                                     |
| <p>All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the Model BMP Design Manual for information to implement site design BMPs shown in this checklist.</p> <p>Answer each category below pursuant to the following.</p> <ul style="list-style-type: none"> <li>• "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.</li> <li>• "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.</li> <li>• "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.</li> </ul> |  |                                                                       |                                                                     |
| <b>Site Design Requirement</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | <b>Applied?</b>                                                       |                                                                     |
| <b>SD-1</b> Maintain Natural Drainage Pathways and Hydrologic Features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | <input checked="" type="checkbox"/> Yes                               | <input type="checkbox"/> No <input type="checkbox"/> N/A            |
| Discussion / justification if SD-1 not implemented:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                       |                                                                     |
| <b>SD-2</b> Conserve Natural Areas, Soils, and Vegetation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | <input type="checkbox"/> Yes                                          | <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A |
| Discussion / justification if SD-2 not implemented:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                       |                                                                     |
| Site is intended as a car dealership and will require paving to fulfill its intended use. Site design requirement largely infeasible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                       |                                                                     |
| <b>SD-3</b> Minimize Impervious Area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | <input checked="" type="checkbox"/> Yes                               | <input type="checkbox"/> No <input type="checkbox"/> N/A            |
| Discussion / justification if SD-3 not implemented:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                       |                                                                     |
| Site is intended as a car dealership and will require paving to fulfill its intended use. However, landscape areas and low impact development will be implemented where possible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                       |                                                                     |
| <b>SD-4</b> Minimize Soil Compaction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | <input checked="" type="checkbox"/> Yes                               | <input type="checkbox"/> No <input type="checkbox"/> N/A            |
| Discussion / justification if SD-4 not implemented:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                       |                                                                     |
| As per the geotechnical report, the site falls under a no infiltration condition. Infiltration BMPs will not be considered for this project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                       |                                                                     |

|                                                     |                                         |                             |                              |
|-----------------------------------------------------|-----------------------------------------|-----------------------------|------------------------------|
| <b>SD-5</b> Impervious Area Dispersion              | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> 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?                                |                             |                                         |
| <b>SD-6</b> Runoff Collection                                   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            |
| Discussion / justification if SD-6 not implemented:             |                                         |                             |                                         |
| <b>SD-7</b> Landscaping with Native or Drought Tolerant Species | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            |
| Discussion / justification if SD-7 not implemented:             |                                         |                             |                                         |
| <b>SD-8</b> Harvesting and Using Precipitation                  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| Discussion / justification if SD-8 not implemented:             |                                         |                             |                                         |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Summary of PDP Structural BMPs</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Form I-6 (PDPs)</b><br>Model BMP Design Manual<br>[August 31, 2015] |
| <b>Project Identification</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                        |
| Project Name: Santee Schoolyard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                        |
| Permit Application Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                        |
| <b>PDP Structural BMPs</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                        |
| <p>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).</p> <p>PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative 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).</p> <p>Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).</p> |                                                                        |



**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 is divided into four (4) drainage management areas (DMAs) that drain from the site similarly to the existing condition. DMA – A, DMA – B, DMA – C1, and DMA-C2 consist of parking areas, commercial buildings, and landscaped areas. These DMAs require both flow control and pollutant control BMPs. The fifth, offsite DMA (DMA – GS) remains unchanged between pre- and post-project conditions and is representative of the portion of Cottonwood Ave. that will undergo road widening as part of public improvements.

Each of the four on-site DMAs will drain to a biofiltration basin that will provide water quality treatment, HMP storage, and detention storage. The widened portion of Cottonwood Ave. will be treated by a bioswale. Please refer to the separate green streets letter dated April 21, 2023 for information on public stormwater quality improvements. At this time, infiltration is not considered feasible due to the presence of type D soil on the site as specified by the Web Soil Survey (United States Department of Agriculture).

(Continue on page 2 as necessary.)

**Structural BMP Summary Information**

**(Copy this page as needed to provide information for each individual proposed structural BMP)**

Structural BMP ID No. BMP – A, B, C1, C2

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

Who will be the final owner of this BMP?

The Schoolyard, LLC

Who will maintain this BMP into perpetuity?

The Schoolyard, LLC

What is the funding mechanism for maintenance?

The Schoolyard, LLC

## ATTACHMENT 1 BACKUP FOR PDP POLLUTANT CONTROL BMPS

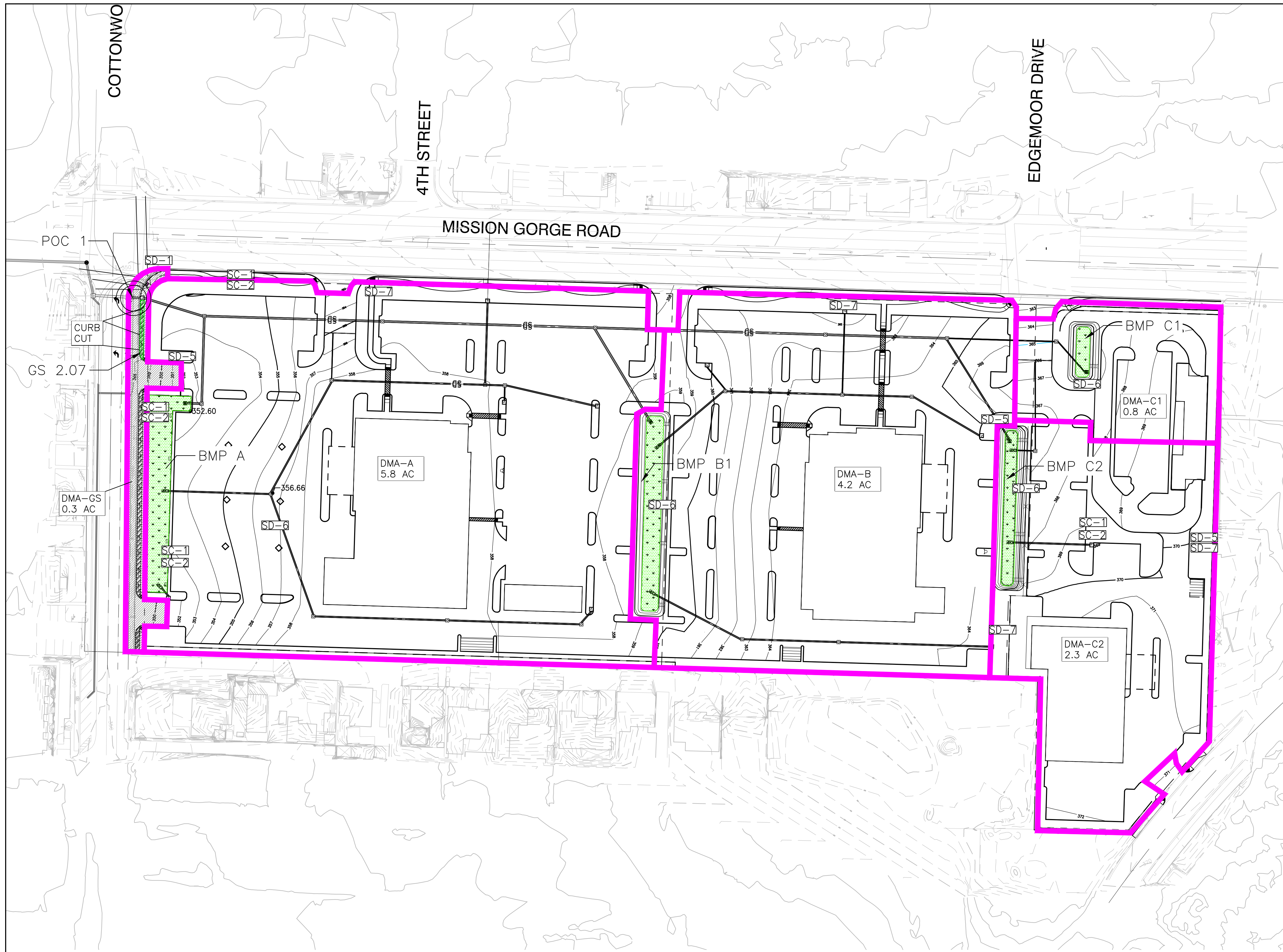
*This is the cover sheet for Attachment 1.*

**Indicate which Items are Included behind this cover sheet:**

| Attachment Sequence | Contents                                                                                                                                                                                                     | Checklist                                                                                                                                                     |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Attachment 1a       | DMA Exhibit (Required)<br><br>See DMA Exhibit Checklist on the back of this Attachment cover sheet.                                                                                                          | <input checked="" type="checkbox"/> Included                                                                                                                  |
| Attachment 1b       | Tabular Summary of DMAs Showing DMA ID matching DMA Exhibit, DMA Area, and DMA Type (Required)*<br><br>*Provide table in this Attachment OR on DMA Exhibit in Attachment 1a                                  | <input type="checkbox"/> Included on DMA Exhibit in Attachment 1a<br><input checked="" type="checkbox"/> 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)<br><br>Refer to Appendix B.3-1 of the BMP Design Manual to complete Form I-7.      | <input checked="" type="checkbox"/> Included<br><input type="checkbox"/> 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)<br><br>Refer to Appendices C and D of the BMP Design Manual to complete Form I-8. | <input checked="" type="checkbox"/> Included<br><input type="checkbox"/> Not included because the entire project will use harvest and use BMPs                |
| Attachment 1e       | Pollutant Control BMP Design Worksheets / Calculations (Required)<br><br>Refer to Appendices B and E of the BMP Design Manual for structural pollutant control BMP design guidelines                         | <input checked="" type="checkbox"/> Included                                                                                                                  |

**Attachment 1A**



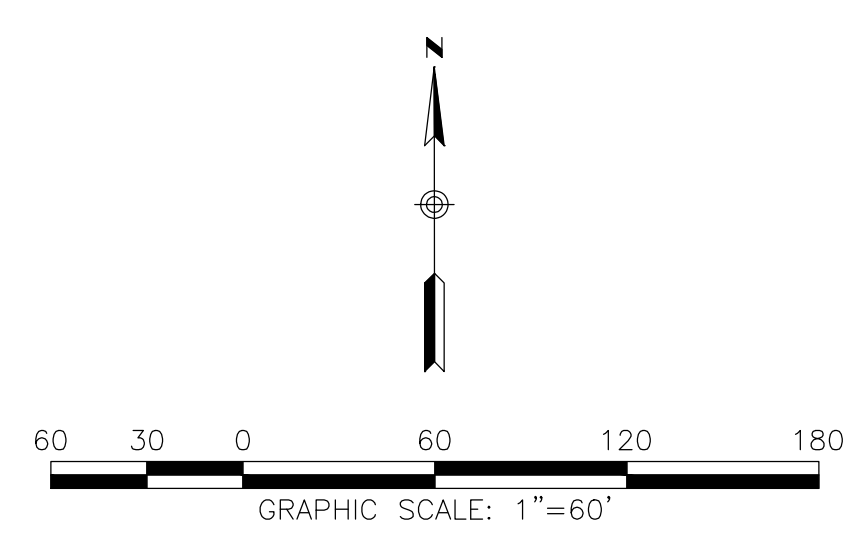


**LEGEND**

- DMA ID DMA-X  
1.0 AC
- MAJOR DRAINAGE BOUNDARY
- POINT OF COMPLIANCE (POC)
- POC ID  POC X
- BMP ID  BMP X
- BIOFILTRATION
- AREA TO BE TREATED BY GREEN STREET ELEMENT

**SITE DESIGN/SOURCE CONTROL**

- PREVENTION OF ILLICIT DISCHARGES INTO MS4 SC-1
- STORM DRAIN STENCILING/SIGNAGE SC-2
- ADDITIONAL BMPS SC-6
- MAINTAIN NATURAL DRAINAGE PATHWAYS AND FEATURES SD-1
- IMPERVIOUS AREA DISPERSION SD-5
- RUNOFF COLLECTION SD-6
- LANDSCAPING WITH NATIVE/DROUGHT TOLERANT SPECIES SD-7



**DRAINAGE MANAGEMENT AREA EXHIBIT  
AND HYDROMODIFICATION EXHIBIT  
FOR  
SANTEE SCHOOLYARD**

DATE: APRIL 21, 2023

JN-19644

**RICK**  
ENGINEERING COMPANY  
San Diego  
5620 FRIARS ROAD  
SAN DIEGO, CA 92110  
619.291.0707  
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rickengineering.com  
Riverside - Orange - San Luis Obispo - Denver - Sacramento - Phoenix - Tucson

**Attachment 1B**

| TABULAR SUMMARY OF DMAs, (SANTEE SCHOOLYARD)                                    |                        |                              |                               |                               |             |     |                          |                        |                                                                                         |                                                            |                            |                        |                    |
|---------------------------------------------------------------------------------|------------------------|------------------------------|-------------------------------|-------------------------------|-------------|-----|--------------------------|------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------|------------------------|--------------------|
| DMA ID                                                                          | AREA (ACRES)           | TRIBUTARY AREA (SQUARE FEET) | IMPERVIOUS AREA (ACRES)       | IMPERVIOUS AREA (SQUARE FEET) | %IMPERVIOUS | HSG | IMPERVIOUS RUNOFF FACTOR | PERVIOUS RUNOFF FACTOR | AREA WEIGHTED RUNOFF FACTOR (%Imp * Imp Runoff Factor + Perv. Runoff Factor * (1-%Imp)) | DCV (Cubic Feet) (3630 * Runoff Factor * 0.52 * Area (ac)) | TREATED BY                 | POLLUTANT CONTROL TYPE | DRAINS TO (POC ID) |
| A                                                                               | 5.8                    | 252648                       | 4.93                          | 214751                        | 85%         | D   | 0.9                      | 0.10                   | 0.78                                                                                    | 8540                                                       | BMP A                      | BIOFILTRATION          | POC1               |
| B                                                                               | 4.2                    | 182952                       | 3.57                          | 155509                        | 85%         | D   | 0.9                      | 0.10                   | 0.78                                                                                    | 6184                                                       | BMP B                      | BIOFILTRATION          | POC1               |
| C1                                                                              | 0.8                    | 34848                        | 0.68                          | 29621                         | 85%         | D   | 0.9                      | 0.10                   | 0.78                                                                                    | 1178                                                       | BMP C1                     | BIOFILTRATION          | POC1               |
| C2                                                                              | 2.3                    | 101930                       | 1.99                          | 86641                         | 85%         | D   | 0.9                      | 0.10                   | 0.78                                                                                    | 3445                                                       | BMP C2                     | BIOFILTRATION          | POC1               |
| G5                                                                              | 0.3                    | 13068                        | 0.29                          | 12415                         | 95%         | D   | 0.9                      | 0.10                   | 0.86                                                                                    | 487                                                        | BMP-G5                     | Prop. Biofil.          | POC1               |
| <b>SUM</b>                                                                      | <b>13.4</b>            | <b>585446</b>                | <b>11.5</b>                   | <b>498936</b>                 | <b>85%</b>  |     |                          |                        |                                                                                         | <b>19833</b>                                               |                            |                        |                    |
| SUMMARY OF DMA INFORMATION (MUST MATCH PROJECT DESCRIPTION AND SWQMP NARRATIVE) |                        |                              |                               |                               |             |     |                          |                        |                                                                                         |                                                            |                            |                        |                    |
| NO OF DMA                                                                       | TOTAL DMA AREA (ACRES) | AREA (SQUARE FEET)           | TOTAL IMPERVIOUS AREA (ACRES) | IMPERVIOUS AREA (SQUARE FEET) | % IMP       |     |                          |                        | AREA WEIGHTED RUNOFF COEFFICIENT                                                        | TOTAL DCV (CUBIC FEET)                                     | TOTAL AREA TREATED (ACRES) |                        | NO. OF POCS        |
| 6                                                                               | 13.4                   | 585446                       | 11.5                          | 498936                        | 85%         |     |                          |                        | 0.00                                                                                    | 19833                                                      | 13.4                       |                        | 1                  |

**Attachment 1C**



**Worksheet 0-2. Harvest and Use Feasibility Screening**

| Harvest and Use Feasibility Screening                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                | Worksheet B.3-1                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <p>1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?</p> <p><input checked="" type="checkbox"/> Toilet and urinal flushing</p> <p><input checked="" type="checkbox"/> Landscape irrigation</p> <p><input type="checkbox"/> Other: <u>VEHICLE WASHING</u></p>                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                |                                                                                                |
| <p>2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.</p> <p>7 gal/person/day * 300 people/day = 2100 gal * 1.5 days = 3150 gal/36 hours<br/>           Moderate plant water use = 1470 gal/acre * 2 acres = 2940 gal/36 hours<br/>           Total Demand = 6090 gallons = 814 cubic feet</p> |                                                                                                                                                                                                                                                                                                                                |                                                                                                |
| <p>3. Calculate the DCV using worksheet B-2.1.</p> <p>DCV = 19840 Cubic Feet</p>                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                |                                                                                                |
| <p>3a. Is the 36-hour demand greater than or equal to the DCV?</p> <p style="text-align: center;">Yes / (No) ⇒<br/>           ↓</p>                                                                                                                                                                                                                                                                                                                                                  | <p>3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV?</p> <p style="text-align: center;">Yes / (No) ⇒<br/>           ↓</p>                                                                                                                                                                             | <p>3c. Is the 36-hour demand less than 0.25DCV?</p> <p style="text-align: center;">(Yes) ↓</p> |
| <p>Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.</p>                                                                                                                                                                                                                                                                                               | <p>Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.</p> | <p>Harvest and use is considered to be infeasible.</p>                                         |

## Worksheet 0-1. DCV

| Design Capture Volume |                                                                       | Worksheet B-2.1 |      |            |
|-----------------------|-----------------------------------------------------------------------|-----------------|------|------------|
| 1                     | 85 <sup>th</sup> percentile 24-hr storm depth from Figure B.1-1       | d=              | 0.52 | inches     |
| 2                     | Area tributary to BMP (s)                                             | A=              | 5.9  | acres      |
| 3                     | Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1) | C=              | 0.84 | unitless   |
| 4                     | Street trees volume reduction                                         | TCV=            | 0    | cubic-feet |
| 5                     | Rain barrels volume reduction                                         | RCV=            | 0    | cubic-feet |
| 6                     | Calculate DCV =<br>(3630 x C x d x A) – TCV - RCV                     | DCV=            | 9355 | cubic-feet |

## Worksheet 0-1. DCV

| Design Capture Volume |                                                                       | Worksheet B-2.1 |      |            |
|-----------------------|-----------------------------------------------------------------------|-----------------|------|------------|
| 1                     | 85 <sup>th</sup> percentile 24-hr storm depth from Figure B.1-1       | d=              | 0.52 | inches     |
| 2                     | Area tributary to BMP (s)                                             | A=              | 4.1  | acres      |
| 3                     | Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1) | C=              | 0.74 | unitless   |
| 4                     | Street trees volume reduction                                         | TCV=            | 0    | cubic-feet |
| 5                     | Rain barrels volume reduction                                         | RCV=            | 0    | cubic-feet |
| 6                     | Calculate DCV =<br>(3630 x C x d x A) – TCV - RCV                     | DCV=            | 5712 | cubic-feet |

Worksheet 0-1. DCV

| Design Capture Volume |                                                                       | Worksheet B-2.1 |      |            |
|-----------------------|-----------------------------------------------------------------------|-----------------|------|------------|
| 1                     | 85 <sup>th</sup> percentile 24-hr storm depth from Figure B.1-1       | d=              | 0.52 | inches     |
| 2                     | Area tributary to BMP (s)                                             | A=              | 0.8  | acres      |
| 3                     | Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1) | C=              | 0.81 | unitless   |
| 4                     | Street trees volume reduction                                         | TCV=            | 0    | cubic-feet |
| 5                     | Rain barrels volume reduction                                         | RCV=            | 0    | cubic-feet |
| 6                     | Calculate DCV =<br>(3630 x C x d x A) – TCV - RCV                     | DCV=            | 1223 | cubic-feet |

## Worksheet 0-1. DCV

| Design Capture Volume |                                                                       | Worksheet B-2.1 |      |            |
|-----------------------|-----------------------------------------------------------------------|-----------------|------|------------|
| 1                     | 85 <sup>th</sup> percentile 24-hr storm depth from Figure B.1-1       | d=              | 0.52 | inches     |
| 2                     | Area tributary to BMP (s)                                             | A=              | 2.3  | acres      |
| 3                     | Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1) | C=              | 0.81 | unitless   |
| 4                     | Street trees volume reduction                                         | TCV=            | 0    | cubic-feet |
| 5                     | Rain barrels volume reduction                                         | RCV=            | 0    | cubic-feet |
| 6                     | Calculate DCV =<br>(3630 x C x d x A) – TCV - RCV                     | DCV=            | 3578 | cubic-feet |

**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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?</b> The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.                                                                                                     |     | X  |
| <p>Provide basis:<br/>                     We performed 7 Aardvark percolation tests within the Older Alluvium in the west and southwest areas of the site within the proposed infiltration areas. The results of the percolation tests are summarized in our storm water report. The average test results are outlined below:<br/>                     Average Field-Saturated Infiltration Rate (in/hr): 0.025<br/>                     Average Rate with Applied Factor of Safety of 2 (in/hr): 0.012<br/>                     The infiltration rate is below the 0.5 in/hr rate required for full infiltration.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p> |                                                                                                                                                                                                                                                                                                                                                                          |     |    |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>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?</b> The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2. | X   |    |
| <p>Provide basis:<br/>                     Infiltration can be allowed without increasing risk of geotechnical hazards at the site. Our summary of each hazard is in our storm water report.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                          |     |    |

**Form I-8 Page 2 of 4**

| Criteria                                                                                                                                                                                                                                                                                                                                                                                                                            | Screening Question                                                                                                                                                                                                                                                                                                                                                                | Yes | No        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------|
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>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?</b> The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.           | X   |           |
| <p>Provide basis:</p> <p>Infiltration can be allowed without increasing risk of groundwater contamination. We expect the groundwater elevation to be 50 feet or greater below the ground surface.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>                                                   |                                                                                                                                                                                                                                                                                                                                                                                   |     |           |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>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?</b> The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.        | X   |           |
| <p>Provide basis:</p> <p>Infiltration can be allowed without increasing risk of water balance issues. We did not identify an ephemeral streams in the vicinity of the site. Groundwater is anticipated to be 50 feet or deeper from existing grade.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p> |                                                                                                                                                                                                                                                                                                                                                                                   |     |           |
| <b>Part 1 Result *</b>                                                                                                                                                                                                                                                                                                                                                                                                              | <p>If all answers to rows 1 - 4 are “<b>Yes</b>” a full infiltration design is potentially feasible. The feasibility screening category is <b>Full Infiltration</b></p> <p>If any answer from row 1-4 is “<b>No</b>”, infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a “full infiltration” design. Proceed to Part 2</p> |     | <b>No</b> |

\*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        | <b>Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?</b> The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D. |     | X  |

Provide basis:

In addition, we performed 7 Aardvark percolation tests within the Older Alluvium in the west and southwest areas of the site within the proposed infiltration areas. The results of the percolation tests are summarized in our storm water report. The average test results are outlined below:  
 Average Field-Saturated Infiltration Rate (in/hr): 0.025  
 Average Rate with Applied Factor of Safety of 2 (in/hr): 0.012  
 The infiltration rate is below the 0.05 in/hr rate required for partial infiltration.

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 | <b>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?</b> The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2. | X |  |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--|

Provide basis:

Infiltration can be allowed without increasing risk of geotechnical hazards at the site. Our summary of each hazard is in our storm water report.

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                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p><b>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)?</b><br/>The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>                                      | X   |                        |
| <p>Provide basis:<br/>Infiltration can be allowed without increasing risk of groundwater contamination. We expect the groundwater elevation to be 50 feet or greater below the ground surface.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p> |                                                                                                                                                                                                                                                                                                                                                                                |     |                        |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p><b>Can infiltration be allowed without violating downstream water rights?</b> The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>                                                                                                                                                            | X   |                        |
| <p>Provide basis:<br/>Infiltration can be allowed without violating downstream water rights due to the lack of a nearby runoff source.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>                                                         |                                                                                                                                                                                                                                                                                                                                                                                |     |                        |
| <b>Part 2 Result*</b>                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is <b>Partial Infiltration.</b></p> <p>If any answer from row 5-8 is no, then infiltration of any volume is considered to be <b>infeasible</b> within the drainage area. The feasibility screening category is <b>No Infiltration.</b></p> |     | <b>No Infiltration</b> |

\*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

**Attachment 1E**

# Attachment 1E - Water Quality Pollutant Control Calculations

**WATER QUALITY - TC-BMP SIZING CALCULATIONS**

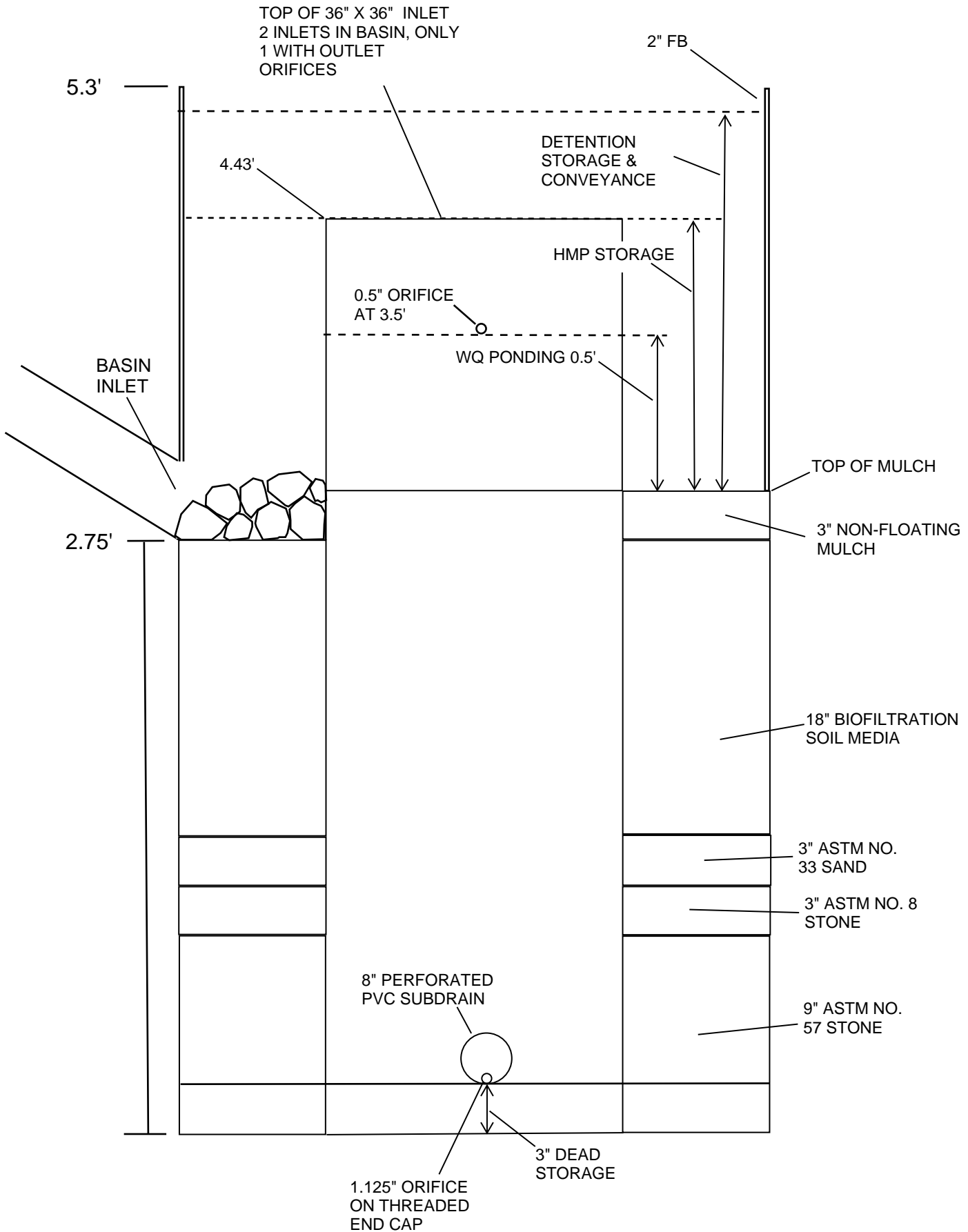
**Simple Sizing Method for Biofiltration BMPs - Required**

| DMA/BMP Name | BMP Type      | Drainage Management Area (acres) | Drainage Management Area (ft <sup>2</sup> ) | % Impervious | Impervious Area (ft <sup>2</sup> ) | Pervious Area (ft <sup>2</sup> ) | Impervious Area Type | Pervious Area Type | Runoff Factor for Impervious Area <sup>3</sup> | Runoff Factor for Pervious Area <sup>3,4</sup> | Area Weighted Runoff Factor | 24-hour 85th Percentile Precipitation (inches) | DCV (ft <sup>3</sup> ) | Target DCV                                                             | Partial Retention                                             |                                                                              |                                                  |                         |                                                    |                                                                      |                                       |                                               |                                       |  |
|--------------|---------------|----------------------------------|---------------------------------------------|--------------|------------------------------------|----------------------------------|----------------------|--------------------|------------------------------------------------|------------------------------------------------|-----------------------------|------------------------------------------------|------------------------|------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------|-------------------------|----------------------------------------------------|----------------------------------------------------------------------|---------------------------------------|-----------------------------------------------|---------------------------------------|--|
|              |               |                                  |                                             |              |                                    |                                  |                      |                    |                                                |                                                |                             |                                                |                        | Remaining DCV after Implementing Retention BMPs (ft <sup>3</sup> ) (1) | Infiltration Rate (for Partial Infiltration) <sup>5</sup> (2) | Allowable Drawdown Time for Aggregate Storage Below the Underdrain (hrs) (3) | Depth of Runoff that can be Infiltrated (in) (4) | Porosity for Gravel (5) | Required Depth of Gravel Below Underdrain (in) (6) | Assumed Surface area of the Biofiltration BMP (ft <sup>2</sup> ) (7) | Media Retained Pore Space (in/in) (8) | Volume Retained by BMP (ft <sup>3</sup> ) (9) | Remaining DCV (ft <sup>3</sup> ) (10) |  |
| A            | BIOFILTRATION | 5.80                             | 257,004                                     | 85%          | 218,453                            | 38,551                           | Concrete or Asphalt  | Natural (D Soil)   | 0.9                                            | 0.10                                           | 0.78                        | 0.52                                           | 8,540                  | 8,540                                                                  | 0.00                                                          | 36                                                                           | 0                                                | 0.40                    | 3                                                  | 6,068                                                                | 0.1                                   | 1,214                                         | 7,326                                 |  |
| B            | BIOFILTRATION | 4.20                             | 178,596                                     | 85%          | 151,807                            | 26,789                           | Concrete or Asphalt  | Natural (D Soil)   | 0.9                                            | 0.10                                           | 0.78                        | 0.52                                           | 6,184                  | 6,184                                                                  | 0.00                                                          | 36                                                                           | 0                                                | 0.40                    | 3                                                  | 4,443                                                                | 0.1                                   | 889                                           | 5,295                                 |  |
| C1           | BIOFILTRATION | 0.80                             | 34,848                                      | 85%          | 29,621                             | 5,227                            | Concrete or Asphalt  | Natural (D Soil)   | 0.9                                            | 0.10                                           | 0.78                        | 0.52                                           | 1,178                  | 1,178                                                                  | 0.00                                                          | 36                                                                           | 0                                                | 0.40                    | 3                                                  | 871                                                                  | 0.1                                   | 174                                           | 1,004                                 |  |
| C2           | BIOFILTRATION | 2.34                             | 101,930                                     | 85%          | 86,641                             | 15,290                           | Concrete or Asphalt  | Natural (D Soil)   | 0.9                                            | 0.10                                           | 0.78                        | 0.52                                           | 3,445                  | 3,445                                                                  | 0.00                                                          | 36                                                                           | 0                                                | 0.40                    | 3                                                  | 2,691                                                                | 0.1                                   | 538                                           | 2,907                                 |  |

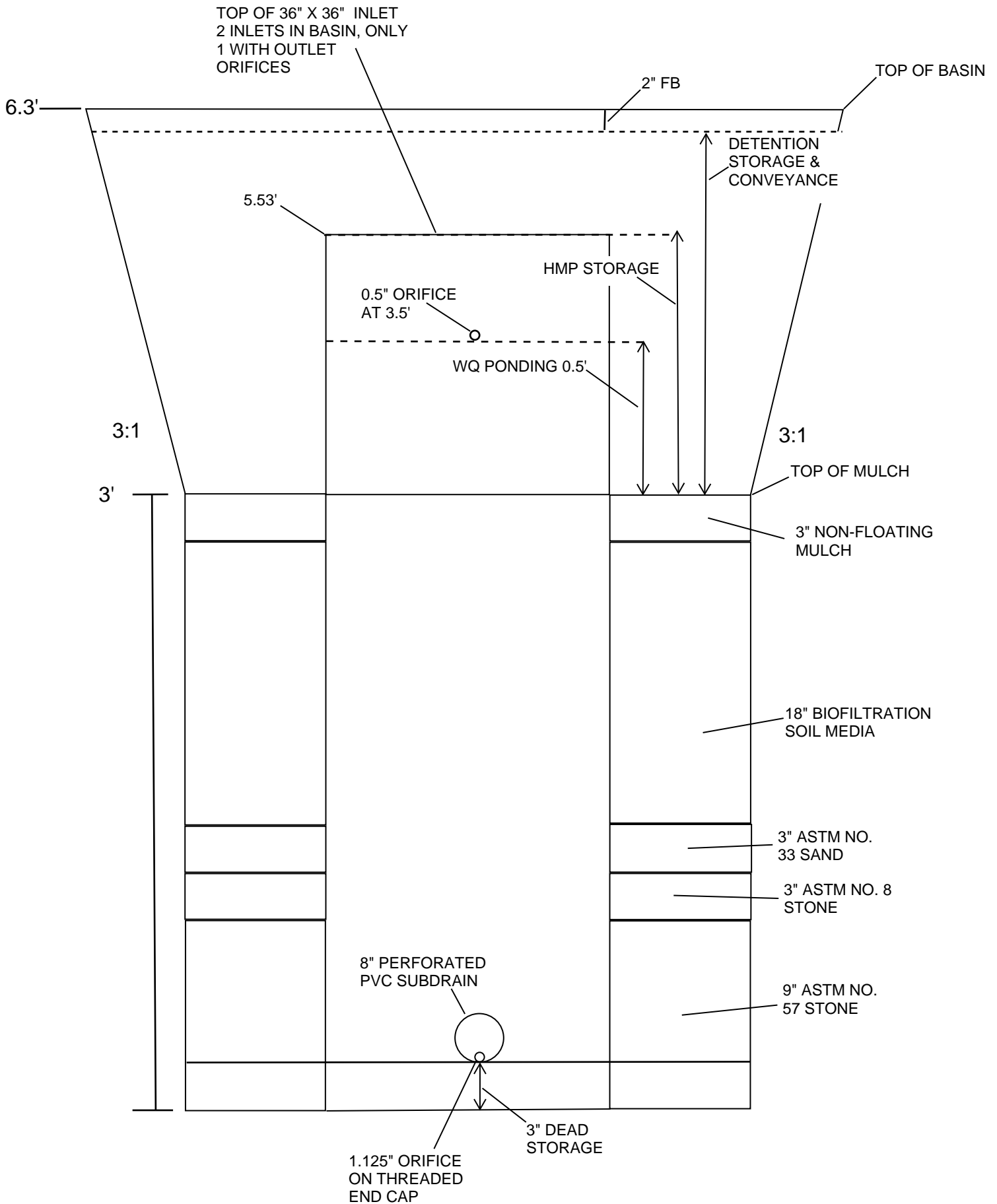
Simple Sizing Method for Biofiltration BMPs - Required

| BMP Parameters                     |                              |                                                 | Baseline Calculations              |                                                                          |                                 |                                          |                                         |                                  | Option 1 - Biofilter 1.5xDCV                           | Option 2 - Store 0.75 of remaining DCV in Pores and Ponding |                                                          | Footprint of the BMP                          |                                                 |                                                  |                                     |                                                             | Provided BMP Parameters        |                                                  |         |
|------------------------------------|------------------------------|-------------------------------------------------|------------------------------------|--------------------------------------------------------------------------|---------------------------------|------------------------------------------|-----------------------------------------|----------------------------------|--------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------|-------------------------------------------------|--------------------------------------------------|-------------------------------------|-------------------------------------------------------------|--------------------------------|--------------------------------------------------|---------|
| Surface Ponding Depth (ft)<br>(11) | Media Thickness (ft)<br>(12) | Aggregate Storage Above Underdrain (ft)<br>(13) | Media Available Pore Space<br>(14) | Media Filtration rate to be used for sizing (in/hr) <sup>3</sup><br>(15) | Allowable Routing (hrs)<br>(16) | Depth Filtered during Storm (in)<br>(17) | Depth of Detention Storage (in)<br>(18) | Total Depth Treated (in)<br>(19) | Required Biofiltered Volume (ft <sup>3</sup> )<br>(20) | Required Footprint (ft <sup>2</sup> )<br>(21)               | Required Storage <sup>2</sup> (ft <sup>3</sup> )<br>(22) | Required Footprint (ft <sup>2</sup> )<br>(23) | Area Draining to BMP (ft <sup>2</sup> )<br>(24) | Adjusted Runoff Factor for Drainage Area<br>(25) | BMP Footprint Sizing Factor<br>(25) | Minimum BMP Footprint (3% Check) (ft <sup>2</sup> )<br>(27) | Required BMP Footprint<br>(28) | Provided BMP Bottom Footprint (ft <sup>2</sup> ) | BMP OK? |
| 1.00                               | 2.0                          | 1.25                                            | 0.20                               | 5                                                                        | 6                               | 30                                       | 23                                      | 53                               | 10989                                                  | 2497                                                        | 5,494                                                    | 2892                                          | 257,004                                         | 0.78                                             | 0.03                                | 6014                                                        | 6014                           | 6,068                                            | YES     |
| 1.00                               | 2.0                          | 1.25                                            | 0.20                               | 5                                                                        | 6                               | 30                                       | 23                                      | 53                               | 7943                                                   | 1805                                                        | 3,971                                                    | 2090                                          | 178,596                                         | 0.78                                             | 0.03                                | 4179                                                        | 4179                           | 4,443                                            | YES     |
| 1.00                               | 2.0                          | 1.25                                            | 0.20                               | 5                                                                        | 6                               | 30                                       | 23                                      | 53                               | 1505                                                   | 342                                                         | 753                                                      | 396                                           | 34,848                                          | 0.78                                             | 0.03                                | 815                                                         | 815                            | 871                                              | YES     |
| 1.00                               | 2.0                          | 1.25                                            | 0.20                               | 5                                                                        | 6                               | 30                                       | 23                                      | 53                               | 4361                                                   | 991                                                         | 2,180                                                    | 1148                                          | 101,930                                         | 0.78                                             | 0.03                                | 2385                                                        | 2385                           | 2,691                                            | YES     |

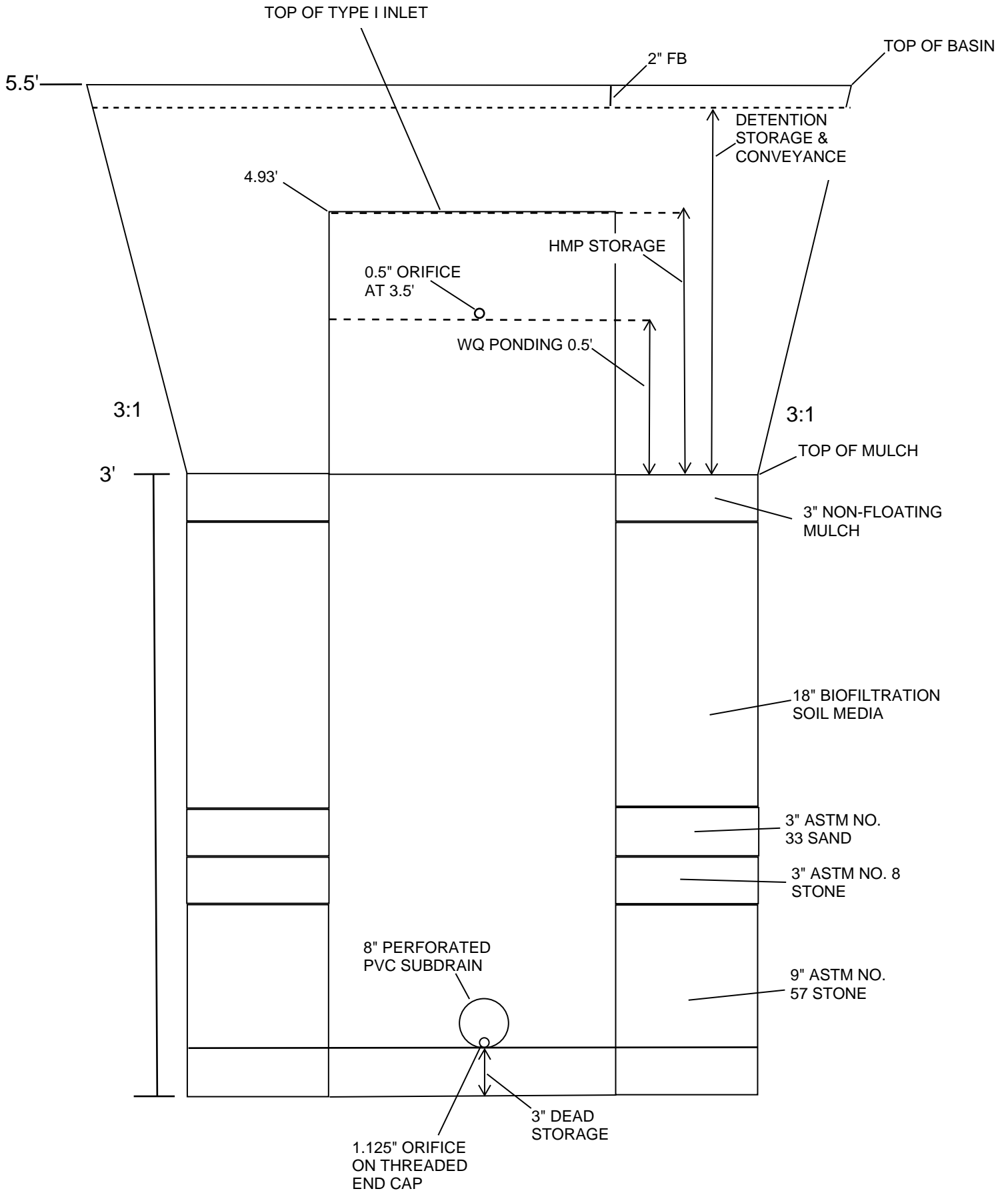
# BMP-A CROSS SECTION



# BMP-B CROSS SECTION

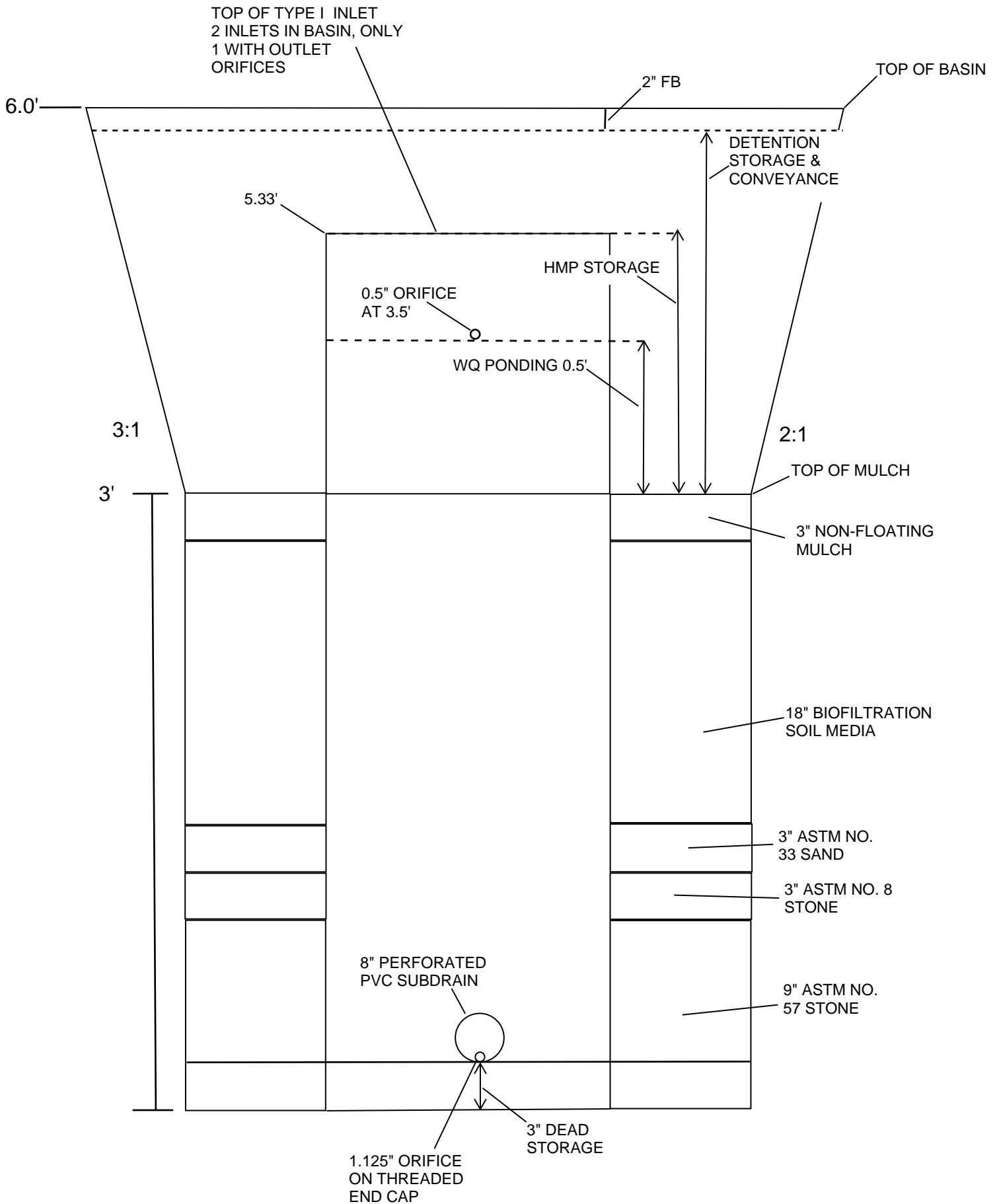


# BMP-C1 CROSS SECTION





# BMP-C2 CROSS SECTION



## 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)                                                                                                                              | <input checked="" type="checkbox"/> Included<br><br>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)<br><br>See Section 6.2 of the BMP Design Manual.             | <input checked="" type="checkbox"/> Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required)<br><br>Optional analyses for Critical Coarse Sediment Yield Area Determination<br><input type="checkbox"/> 6.2.1 Verification of Geomorphic Landscape Units Onsite<br><input type="checkbox"/> 6.2.2 Downstream Systems Sensitivity to Coarse Sediment<br><input type="checkbox"/> 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite |
| Attachment 2c       | Geomorphic Assessment of Receiving Channels (Optional)<br>See Section 6.3.4 of the BMP Design Manual.                                                                        | <input checked="" type="checkbox"/> Not performed<br><input type="checkbox"/> Included<br><input type="checkbox"/> Submitted as separate stand-alone document                                                                                                                                                                                                                                                                                                                                                                    |
| Attachment 2d       | Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required)<br>See Chapter 6 and Appendix G of the BMP Design Manual | <input checked="" type="checkbox"/> Included<br><input type="checkbox"/> Submitted as separate stand-alone document                                                                                                                                                                                                                                                                                                                                                                                                              |
| Attachment 2e       | Vector Control Plan (Required when structural BMPs will not drain in 96 hours)                                                                                               | <input checked="" type="checkbox"/> Included<br><input type="checkbox"/> Not required because BMPs will drain in less than 96 hours                                                                                                                                                                                                                                                                                                                                                                                              |

## **Attachment 2A**

**Reference Attachment 1A for HMP Specifications**

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

The Hydromodification Management Exhibit must identify:

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

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

**Attachment 2B**



**Legend**

- PCCSYA
- Parcels

**PROJECT AREA**

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

\\cp.rickeng.com\projects\C19500\19644\_Santee\_Schoolyard\GIS\19644\_Hydrology\_PCCSY.mxd



Date of Exhibit: 7/15/2022  
DigitalGlobe Aerial Image: 2017

**Santee Schoolyard**  
Potential Critical Course Sediment Yield Areas  
J-19644

**Attachment 2D**

Santee Schoolyard SWMM Inputs

| Pre-Project HMP Inputs  |           |        |              |           |             |       |         |       |       |        |             |              |              |                 |                |              |              |              |                 |
|-------------------------|-----------|--------|--------------|-----------|-------------|-------|---------|-------|-------|--------|-------------|--------------|--------------|-----------------|----------------|--------------|--------------|--------------|-----------------|
| Name                    | Rain Gage | Outlet | Area (sq ft) | Area (ac) | Length (ft) | Width | % Slope | % Imp | N-imp | N-Perv | Dstore- Imp | Dstore- Perv | %Zero Imperv | Subarea Routing | Percent Routed | Infiltration | Suction Head | Conductivity | Initial Deficit |
| Onsite Pervious         | Santee    | POC 1  | 483516       | 11.1      | 60          | 8059  | 3%      | 0     | 0.012 | 0.15   | 0.05        | 0.1          | 25%          | Outlet          | 100            | GA           | 9            | 0.025        | 0.33            |
| Onsite Impervious       | Santee    | POC 1  | 87120        | 2.0       | 60          | 1452  | 3%      | 0     | 0.012 | 0.15   | 0.05        | 0.1          | 25%          | Outlet          | 100            | GA           | 9            | 0.01875      | 0.33            |
| Offsite                 | Santee    | POC 1  | 187308       | 4.3       | 60          | 3122  | 1%      | 25    | 0.012 | 0.15   | 0.05        | 0.1          | 25%          | Outlet          | 100            | GA           | 9            | 0.025        | 0.33            |
|                         |           |        | <b>SUM</b>   | 17.4      |             |       |         |       |       |        |             |              |              |                 |                |              |              |              |                 |
| Post-Project HMP Inputs |           |        |              |           |             |       |         |       |       |        |             |              |              |                 |                |              |              |              |                 |
| Name                    | Rain Gage | Outlet | Area (sq ft) | Area (ac) | Length (ft) | Width | % Slope | % Imp | N-imp | N-Perv | Dstore- Imp | Dstore- Perv | %Zero Imperv | Subarea Routing | Percent Routed | Infiltration | Suction Head | Conductivity | Initial Deficit |
| DMA-A                   | Santee    | POC-1  | 252648       | 5.8       | 120         | 2105  | 1%      | 85%   | 0.012 | 0.15   | 0.05        | 0.1          | 25%          | Outlet          | 100            | GA           | 9            | 0.025        | 0.33            |
| DMA-B                   | Santee    | POC-2  | 182952       | 4.2       | 120         | 1525  | 1%      | 85%   | 0.012 | 0.15   | 0.05        | 0.1          | 25%          | Outlet          | 100            | GA           | 9            | 0.025        | 0.33            |
| DMA-C1                  | Santee    | POC-3  | 34848        | 0.8       | 120         | 290   | 1%      | 85%   | 0.012 | 0.15   | 0.05        | 0.1          | 25%          | Outlet          | 100            | GA           | 9            | 0.025        | 0.33            |
| DMA-C2                  | Santee    | POC-4  | 100188       | 2.3       | 120         | 835   | 1%      | 85%   | 0.012 | 0.15   | 0.05        | 0.1          | 25%          | Outlet          | 100            | GA           | 9            | 0.025        | 0.33            |
| Offsite                 | Santee    | POC-5  | 187308       | 4.3       | 60          | 3122  | 1%      | 25%   | 0.012 | 0.15   | 0.05        | 0.1          | 25%          | Outlet          | 100            | GA           | 9            | 0.025        | 0.33            |
|                         |           |        | <b>SUM</b>   | 17.4      |             |       |         |       |       |        |             |              |              |                 |                |              |              |              |                 |

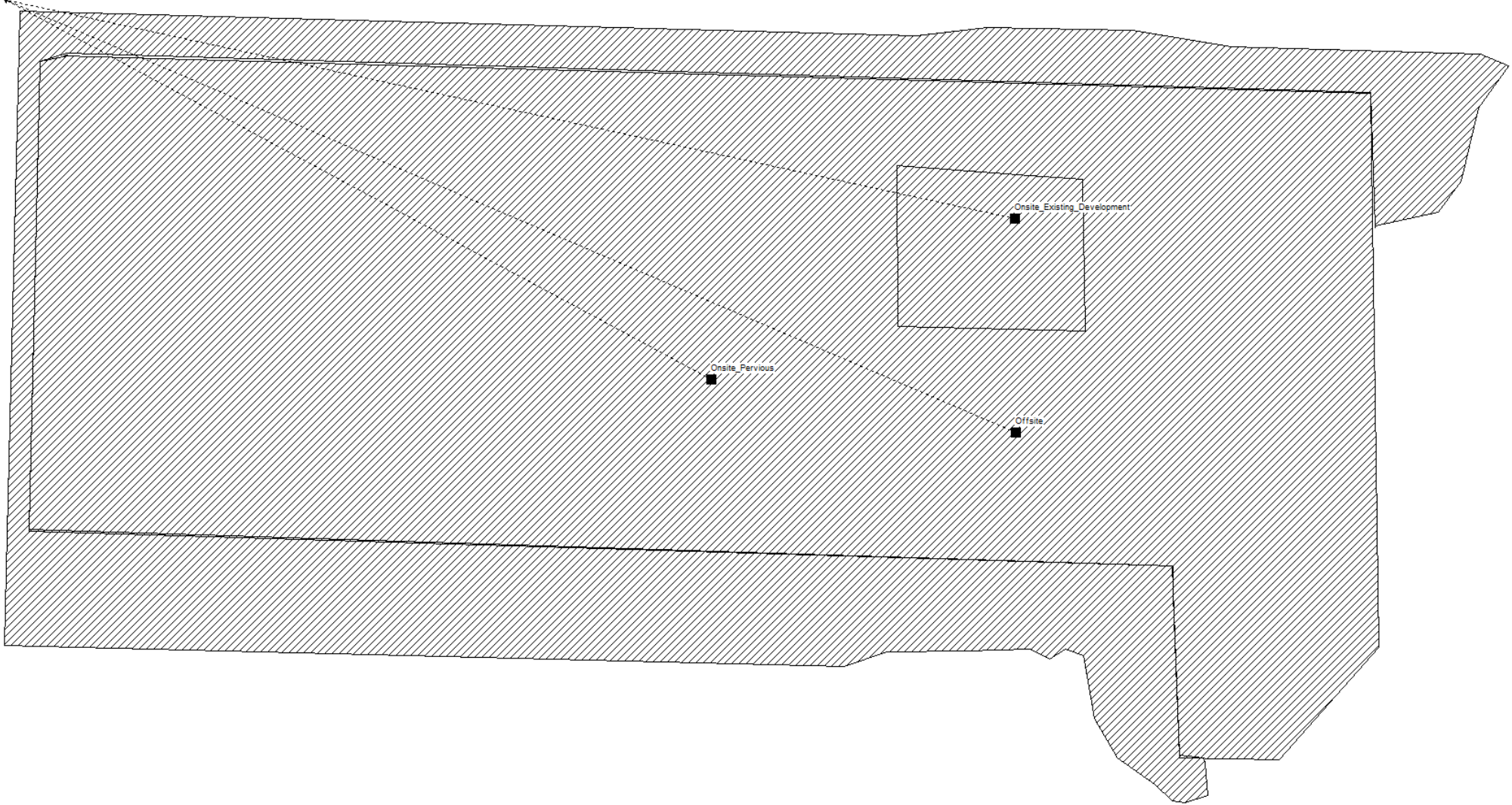


SANTEERAINGAGE



01/03/1973 13:00:00

POC1



```
;;Project Title/Notes
19644
Santee Schoolyard
Pre-Project
4/21/2023
```

```
[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
```

```
[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
;;-----
Onsite_Pervious SANTEERAINGAGE POC1  11.1  0  8059  3  0
Offsite SANTEERAINGAGE POC1  4.3  25  3122  1  0
Onsite_Existing_Development SANTEERAINGAGE POC1  2  0  1452  3  0
```

```
[SUBAREAS]
;;Subcatchment N-Imperv N-Perv S-Imperv S-Perv PctZero RouteTo PctRouted
;;-----
Onsite_Pervious 0.012 .15 .05 .1 25 OUTLET
Offsite 0.012 .15 0.05 .1 25 OUTLET
Onsite_Existing_Development 0.012 .15 0.05 .1 25 OUTLET
```

```
[INFILTRATION]
;;Subcatchment Suction Ksat IMD
;;-----
Onsite_Pervious 9 .025 .33
Offsite 9 .025 .33
Onsite_Existing_Development 9 .01875 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\19644_Santee_Schoolyard\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 -3276.619 9407.245
```

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

```
[Polygons]  
;;Subcatchment X-Coord Y-Coord  
;;-----  
Onsite_Pervious -2596.942 8798.931  
Onsite_Pervious -2596.942 8788.800  
Onsite_Pervious -2900.893 8728.009  
Onsite_Pervious -3022.474 3520.309  
Onsite_Pervious 9652.299 3135.304  
Onsite_Pervious 9652.299 2811.089  
Onsite_Pervious 9723.220 1007.645  
Onsite_Pervious 10827.577 987.381  
Onsite_Pervious 11931.934 2233.582  
Onsite_Pervious 11840.748 8373.399  
Onsite_Pervious -2637.468 8788.800  
Offsite 11891.352 6875.260  
Offsite 11840.693 8374.754  
Offsite -2607.128 8810.417  
Offsite -2900.948 8719.232  
Offsite -3022.529 3531.795  
Offsite 9642.112 3126.527  
Offsite 9723.165 1029.262  
Offsite 9986.590 998.867  
Offsite 10006.853 948.209  
Offsite 10037.249 583.467  
Offsite 9783.956 502.413  
Offsite 9642.112 522.677  
Offsite 9449.609 705.047  
Offsite 9034.209 998.867  
Offsite 8780.916 1434.531  
Offsite 8659.336 2133.619  
Offsite 8456.701 2204.541  
Offsite 8284.462 2093.092  
Offsite 8061.565 2204.541  
Offsite 7372.608 2184.277  
Offsite 6481.018 2174.146  
Offsite 6004.827 2012.038  
Offsite -3296.085 2245.068  
Offsite -3123.846 9276.476  
Offsite 6805.232 9002.920  
Offsite 7595.506 9094.105  
Offsite 9196.316 9063.710  
Offsite 10290.541 8881.339  
Offsite 13056.499 8800.286  
Offsite 13370.582 8668.573  
Offsite 13036.235 8202.515  
Offsite 12843.733 7391.978  
Offsite 12590.440 7047.499  
Offsite 11891.352 6895.524  
Onsite_Existing_Development 8059.777 7456.940  
Onsite_Existing_Development 8059.777 7456.940  
Onsite_Existing_Development 8647.416 7416.413  
Onsite_Existing_Development 8647.416 7416.413  
Onsite_Existing_Development 8677.812 5734.549  
Onsite_Existing_Development 6600.811 5785.208  
Onsite_Existing_Development 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)

19644  
 Santee Schoolyard  
 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<br>acre-feet | Depth<br>inches |
|----------------------------|---------------------|-----------------|
| Total Precipitation .....  | 678.455             | 467.900         |
| Evaporation Loss .....     | 30.079              | 20.744          |
| Infiltration Loss .....    | 503.804             | 347.451         |
| Surface Runoff .....       | 157.353             | 108.519         |
| Final Storage .....        | 0.000               | 0.000           |
| Continuity Error (%) ..... | -1.884              |                 |

\*\*\*\*\*  
 Flow Routing Continuity  
 \*\*\*\*\*

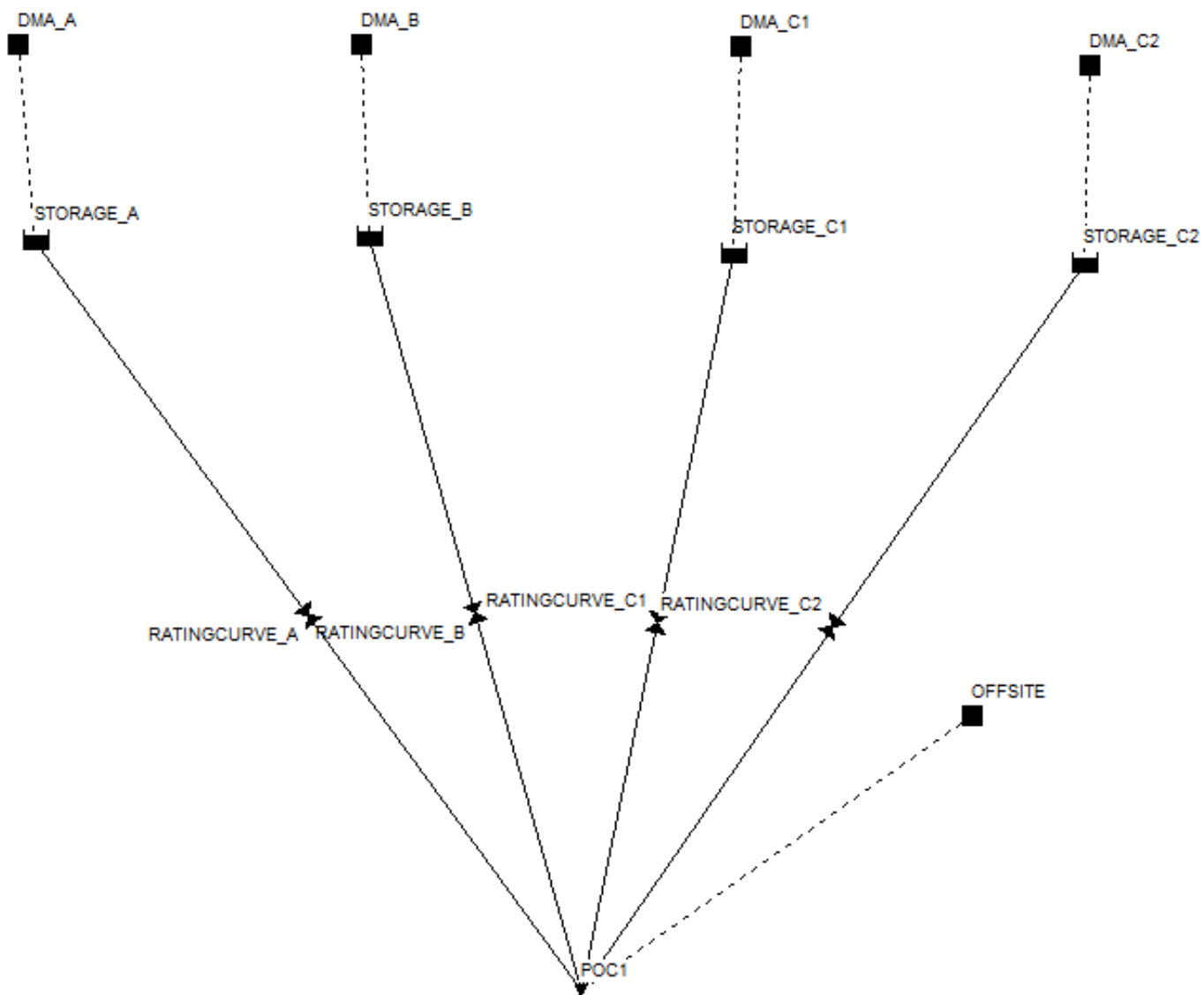
|                            | Volume<br>acre-feet | Volume<br>10 <sup>6</sup> gal |
|----------------------------|---------------------|-------------------------------|
| Dry Weather Inflow .....   | 0.000               | 0.000                         |
| Wet Weather Inflow .....   | 157.353             | 51.276                        |
| Groundwater Inflow .....   | 0.000               | 0.000                         |
| RDII Inflow .....          | 0.000               | 0.000                         |
| External Inflow .....      | 0.000               | 0.000                         |
| External Outflow .....     | 157.353             | 51.276                        |
| 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<br>Precip<br>in | Total<br>Runon<br>in | Total<br>Evap<br>in | Total<br>Infil<br>in | Total<br>Runoff<br>in | Total<br>Runoff<br>10 <sup>6</sup> gal | Peak<br>Runoff<br>CFS | Runoff<br>Coeff |
|-----------------------------|-----------------------|----------------------|---------------------|----------------------|-----------------------|----------------------------------------|-----------------------|-----------------|
| Onsite_Pervious             | 467.90                | 0.00                 | 16.99               | 373.55               | 85.96                 | 25.91                                  | 10.51                 | 0.184           |
| Offsite                     | 467.90                | 0.00                 | 30.06               | 280.86               | 165.66                | 19.34                                  | 4.13                  | 0.354           |
| Onsite_Existing_Development | 467.90                | 0.00                 | 21.56               | 345.77               | 110.90                |                                        | 6.02                  | 1.87 0.237      |

Analysis begun on: Wed Apr 26 13:03:13 2023  
 Analysis ended on: Wed Apr 26 13:03:22 2023  
 Total elapsed time: 00:00:09

SANTEE\_RAIN\_GAGE



```
;;Project Title/Notes
19644
Santee Schoolyard
Post-Project
4/21/2023
```

```
[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     12.566
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
-----
SANTEE_RAIN_GAGE INTENSITY 1:00   1.0   TIMESERIES SANTEE_RAIN_GAGE
```

```
[SUBCATCHMENTS]
;;Name      Rain Gage      Outlet      Area   %Imperv Width   %Slope CurbLen SnowPack
-----
DMA_A      SANTEE_RAIN_GAGE STORAGE_A    5.8    85     2105   .5     0
DMA_B      SANTEE_RAIN_GAGE STORAGE_B    4.2    85     1525   .5     0
DMA_C1     SANTEE_RAIN_GAGE STORAGE_C1    .8     85     290    .5     0
DMA_C2     SANTEE_RAIN_GAGE STORAGE_C2    2.3    85     835    .5     0
OFFSITE    SANTEE_RAIN_GAGE POC1        4.3    25     1561   1     0
```

```
[SUBAREAS]
;;Subcatchment N-Imperv N-Perv S-Imperv S-Perv PctZero RouteTo PctRouted
-----
DMA_A .012 .15 0.05 .1 25 PERVIOUS 10
DMA_B .012 .15 0.05 .1 25 PERVIOUS 10
DMA_C1 .012 .15 0.05 .1 25 PERVIOUS 10
DMA_C2 .012 .15 0.05 .1 25 PERVIOUS 10
OFFSITE .012 .15 0.05 .1 25 OUTLET
```

```
[INFILTRATION]
;;Subcatchment Suction Ksat IMD
-----
DMA_A 6 .1 .32
DMA_B 6 .1 .32
DMA_C1 6 .1 .32
DMA_C2 6 .1 .32
OFFSITE 9 .025 .33
```

```
[OUTFALLS]
```

```

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

```

```

[STORAGE]
;;Name      Elev.      MaxDepth  InitDepth  Shape      Curve Name/Params  N/A  Fevap  Psi  Ksat  IMD
-----
STORAGE_C1  0          10        0          TABULAR    STORAGE_C1         0    0      0   0     0
STORAGE_B   0          10        0          TABULAR    STORAGE_B          0    0      0   0     0
STORAGE_A   0          10        0          TABULAR    STORAGE_A          0    0      0   0     0
STORAGE_C2  0          10        0          TABULAR    STORAGE_C2         0    0      0   0     0

```

```

[OUTLETS]
;;Name      From Node  To Node    Offset      Type      QTable/Qcoeff  Qexpon  Gated
-----
RATINGCURVE_C1  STORAGE_C1  POC1      0          TABULAR/DEPTH  RC_C1         NO
RATINGCURVE_B   STORAGE_B   POC1      0          TABULAR/DEPTH  RC_B          NO
RATINGCURVE_A   STORAGE_A   POC1      0          TABULAR/DEPTH  RC_A          NO
RATINGCURVE_C2  STORAGE_C2  POC1      0          TABULAR/DEPTH  RC_C2         NO

```

```

[CURVES]
;;Name      Type      X-Value  Y-Value
-----
RC_A        Rating    0.00     0.000
RC_A        Rating    0.04     0.002
RC_A        Rating    0.08     0.005
RC_A        Rating    0.13     0.009
RC_A        Rating    0.17     0.012
RC_A        Rating    0.21     0.013
RC_A        Rating    0.25     0.015
RC_A        Rating    0.29     0.016
RC_A        Rating    0.33     0.018
RC_A        Rating    0.38     0.019
RC_A        Rating    0.42     0.020
RC_A        Rating    0.46     0.021
RC_A        Rating    0.50     0.022
RC_A        Rating    0.54     0.023
RC_A        Rating    0.58     0.024
RC_A        Rating    0.63     0.025
RC_A        Rating    0.67     0.026
RC_A        Rating    0.71     0.027
RC_A        Rating    0.75     0.028
RC_A        Rating    0.79     0.029
RC_A        Rating    0.83     0.029
RC_A        Rating    0.88     0.030
RC_A        Rating    0.92     0.031
RC_A        Rating    0.96     0.032
RC_A        Rating    1.00     0.032
RC_A        Rating    1.04     0.033
RC_A        Rating    1.08     0.034
RC_A        Rating    1.13     0.035
RC_A        Rating    1.17     0.035
RC_A        Rating    1.21     0.036
RC_A        Rating    1.25     0.036
RC_A        Rating    1.29     0.037
RC_A        Rating    1.33     0.038
RC_A        Rating    1.38     0.038
RC_A        Rating    1.42     0.039
RC_A        Rating    1.46     0.039
RC_A        Rating    1.50     0.040
RC_A        Rating    1.54     0.041
RC_A        Rating    1.58     0.041
RC_A        Rating    1.63     0.042
RC_A        Rating    1.67     0.042
RC_A        Rating    1.71     0.043
RC_A        Rating    1.75     0.043
RC_A        Rating    1.79     0.044
RC_A        Rating    1.83     0.044
RC_A        Rating    1.88     0.045
RC_A        Rating    1.92     0.045
RC_A        Rating    1.96     0.046
RC_A        Rating    2.00     0.046
RC_A        Rating    2.04     0.047
RC_A        Rating    2.08     0.047
RC_A        Rating    2.13     0.048
RC_A        Rating    2.17     0.048
RC_A        Rating    2.21     0.049
RC_A        Rating    2.25     0.049
RC_A        Rating    2.29     0.050
RC_A        Rating    2.33     0.050
RC_A        Rating    2.38     0.051
RC_A        Rating    2.42     0.051
RC_A        Rating    2.46     0.052

```



|      |        |      |        |
|------|--------|------|--------|
| RC_A |        | 2.50 | 0.052  |
| RC_A |        | 2.54 | 0.052  |
| RC_A |        | 2.58 | 0.053  |
| RC_A |        | 2.63 | 0.053  |
| RC_A |        | 2.67 | 0.054  |
| RC_A |        | 2.71 | 0.054  |
| RC_A |        | 2.75 | 0.055  |
| RC_A |        | 2.79 | 0.055  |
| RC_A |        | 2.83 | 0.055  |
| RC_A |        | 2.88 | 0.056  |
| RC_A |        | 2.92 | 0.056  |
| RC_A |        | 2.96 | 0.057  |
| RC_A |        | 3.00 | 0.057  |
| RC_A |        | 3.04 | 0.058  |
| RC_A |        | 3.08 | 0.058  |
| RC_A |        | 3.13 | 0.058  |
| RC_A |        | 3.17 | 0.059  |
| RC_A |        | 3.21 | 0.059  |
| RC_A |        | 3.25 | 0.059  |
| RC_A |        | 3.29 | 0.060  |
| RC_A |        | 3.33 | 0.060  |
| RC_A |        | 3.38 | 0.061  |
| RC_A |        | 3.42 | 0.061  |
| RC_A |        | 3.46 | 0.061  |
| RC_A |        | 3.50 | 0.062  |
| RC_A |        | 3.54 | 0.063  |
| RC_A |        | 3.58 | 0.064  |
| RC_A |        | 3.63 | 0.065  |
| RC_A |        | 3.67 | 0.066  |
| RC_A |        | 3.71 | 0.066  |
| RC_A |        | 3.75 | 0.067  |
| RC_A |        | 3.79 | 0.068  |
| RC_A |        | 3.83 | 0.068  |
| RC_A |        | 3.88 | 0.069  |
| RC_A |        | 3.92 | 0.070  |
| RC_A |        | 3.96 | 0.070  |
| RC_A |        | 4.00 | 0.071  |
| RC_A |        | 4.04 | 0.071  |
| RC_A |        | 4.08 | 0.072  |
| RC_A |        | 4.13 | 0.072  |
| RC_A |        | 4.17 | 0.073  |
| RC_A |        | 4.21 | 0.073  |
| RC_A |        | 4.25 | 0.074  |
| RC_A |        | 4.29 | 0.074  |
| RC_A |        | 4.33 | 0.075  |
| RC_A |        | 4.38 | 0.075  |
| RC_A |        | 4.42 | 0.076  |
| RC_A |        | 4.46 | 0.248  |
| RC_A |        | 4.50 | 0.743  |
| RC_A |        | 4.54 | 1.421  |
| RC_A |        | 4.58 | 2.239  |
| RC_A |        | 4.63 | 3.178  |
| RC_A |        | 4.67 | 4.223  |
| RC_A |        | 4.71 | 5.365  |
| RC_A |        | 4.75 | 6.596  |
| RC_A |        | 4.79 | 7.910  |
| RC_A |        | 4.83 | 9.302  |
| RC_A |        | 4.88 | 10.767 |
| RC_A |        | 4.92 | 12.303 |
| RC_A |        | 4.96 | 13.906 |
| RC_A |        | 5.00 | 15.574 |
| RC_A |        | 5.04 | 17.304 |
| RC_A |        | 5.08 | 19.094 |
| RC_A |        | 5.13 | 20.942 |
| RC_A |        | 5.17 | 22.846 |
| RC_A |        | 5.21 | 24.804 |
| RC_A |        | 5.25 | 26.816 |
| RC_A |        | 5.29 | 28.880 |
| RC_A |        | 5.30 | 29.298 |
| ;    |        |      |        |
| RC_B | Rating | 0.00 | 0.000  |
| RC_B |        | 0.04 | 0.002  |
| RC_B |        | 0.08 | 0.005  |
| RC_B |        | 0.13 | 0.009  |
| RC_B |        | 0.17 | 0.012  |
| RC_B |        | 0.21 | 0.013  |
| RC_B |        | 0.25 | 0.015  |
| RC_B |        | 0.29 | 0.016  |
| RC_B |        | 0.33 | 0.018  |
| RC_B |        | 0.38 | 0.019  |
| RC_B |        | 0.42 | 0.020  |
| RC_B |        | 0.46 | 0.021  |
| RC_B |        | 0.50 | 0.022  |

|      |      |       |
|------|------|-------|
| RC_B | 0.54 | 0.023 |
| RC_B | 0.58 | 0.024 |
| RC_B | 0.63 | 0.025 |
| RC_B | 0.67 | 0.026 |
| RC_B | 0.71 | 0.027 |
| RC_B | 0.75 | 0.028 |
| RC_B | 0.79 | 0.029 |
| RC_B | 0.83 | 0.029 |
| RC_B | 0.88 | 0.030 |
| RC_B | 0.92 | 0.031 |
| RC_B | 0.96 | 0.032 |
| RC_B | 1.00 | 0.032 |
| RC_B | 1.04 | 0.033 |
| RC_B | 1.08 | 0.034 |
| RC_B | 1.13 | 0.035 |
| RC_B | 1.17 | 0.035 |
| RC_B | 1.21 | 0.036 |
| RC_B | 1.25 | 0.036 |
| RC_B | 1.29 | 0.037 |
| RC_B | 1.33 | 0.038 |
| RC_B | 1.38 | 0.038 |
| RC_B | 1.42 | 0.039 |
| RC_B | 1.46 | 0.039 |
| RC_B | 1.50 | 0.040 |
| RC_B | 1.54 | 0.041 |
| RC_B | 1.58 | 0.041 |
| RC_B | 1.63 | 0.042 |
| RC_B | 1.67 | 0.042 |
| RC_B | 1.71 | 0.043 |
| RC_B | 1.75 | 0.043 |
| RC_B | 1.79 | 0.044 |
| RC_B | 1.83 | 0.044 |
| RC_B | 1.88 | 0.045 |
| RC_B | 1.92 | 0.045 |
| RC_B | 1.96 | 0.046 |
| RC_B | 2.00 | 0.046 |
| RC_B | 2.04 | 0.047 |
| RC_B | 2.08 | 0.047 |
| RC_B | 2.13 | 0.048 |
| RC_B | 2.17 | 0.048 |
| RC_B | 2.21 | 0.049 |
| RC_B | 2.25 | 0.049 |
| RC_B | 2.29 | 0.050 |
| RC_B | 2.33 | 0.050 |
| RC_B | 2.38 | 0.051 |
| RC_B | 2.42 | 0.051 |
| RC_B | 2.46 | 0.052 |
| RC_B | 2.50 | 0.052 |
| RC_B | 2.54 | 0.052 |
| RC_B | 2.58 | 0.053 |
| RC_B | 2.63 | 0.053 |
| RC_B | 2.67 | 0.054 |
| RC_B | 2.71 | 0.054 |
| RC_B | 2.75 | 0.055 |
| RC_B | 2.79 | 0.055 |
| RC_B | 2.83 | 0.055 |
| RC_B | 2.88 | 0.056 |
| RC_B | 2.92 | 0.056 |
| RC_B | 2.96 | 0.057 |
| RC_B | 3.00 | 0.057 |
| RC_B | 3.04 | 0.058 |
| RC_B | 3.08 | 0.058 |
| RC_B | 3.13 | 0.058 |
| RC_B | 3.17 | 0.059 |
| RC_B | 3.21 | 0.059 |
| RC_B | 3.25 | 0.059 |
| RC_B | 3.29 | 0.060 |
| RC_B | 3.33 | 0.060 |
| RC_B | 3.38 | 0.061 |
| RC_B | 3.42 | 0.061 |
| RC_B | 3.46 | 0.061 |
| RC_B | 3.50 | 0.062 |
| RC_B | 3.54 | 0.063 |
| RC_B | 3.58 | 0.064 |
| RC_B | 3.63 | 0.065 |
| RC_B | 3.67 | 0.066 |
| RC_B | 3.71 | 0.066 |
| RC_B | 3.75 | 0.067 |
| RC_B | 3.79 | 0.068 |
| RC_B | 3.83 | 0.068 |
| RC_B | 3.88 | 0.069 |
| RC_B | 3.92 | 0.070 |
| RC_B | 3.96 | 0.070 |

|       |        |      |        |
|-------|--------|------|--------|
| RC_B  |        | 4.00 | 0.071  |
| RC_B  |        | 4.04 | 0.071  |
| RC_B  |        | 4.08 | 0.072  |
| RC_B  |        | 4.13 | 0.072  |
| RC_B  |        | 4.17 | 0.073  |
| RC_B  |        | 4.21 | 0.073  |
| RC_B  |        | 4.25 | 0.074  |
| RC_B  |        | 4.29 | 0.074  |
| RC_B  |        | 4.33 | 0.075  |
| RC_B  |        | 4.38 | 0.075  |
| RC_B  |        | 4.42 | 0.076  |
| RC_B  |        | 4.46 | 0.076  |
| RC_B  |        | 4.50 | 0.077  |
| RC_B  |        | 4.54 | 0.077  |
| RC_B  |        | 4.58 | 0.078  |
| RC_B  |        | 4.63 | 0.078  |
| RC_B  |        | 4.67 | 0.078  |
| RC_B  |        | 4.71 | 0.079  |
| RC_B  |        | 4.75 | 0.079  |
| RC_B  |        | 4.79 | 0.080  |
| RC_B  |        | 4.83 | 0.080  |
| RC_B  |        | 4.88 | 0.081  |
| RC_B  |        | 4.92 | 0.081  |
| RC_B  |        | 4.96 | 0.082  |
| RC_B  |        | 5.00 | 0.082  |
| RC_B  |        | 5.04 | 0.082  |
| RC_B  |        | 5.08 | 0.083  |
| RC_B  |        | 5.13 | 0.083  |
| RC_B  |        | 5.17 | 0.084  |
| RC_B  |        | 5.21 | 0.084  |
| RC_B  |        | 5.25 | 0.084  |
| RC_B  |        | 5.29 | 0.085  |
| RC_B  |        | 5.33 | 0.085  |
| RC_B  |        | 5.38 | 0.086  |
| RC_B  |        | 5.42 | 0.086  |
| RC_B  |        | 5.46 | 0.086  |
| RC_B  |        | 5.50 | 0.087  |
| RC_B  |        | 5.54 | 0.133  |
| RC_B  |        | 5.58 | 0.531  |
| RC_B  |        | 5.63 | 1.142  |
| RC_B  |        | 5.67 | 1.907  |
| RC_B  |        | 5.71 | 2.800  |
| RC_B  |        | 5.75 | 3.804  |
| RC_B  |        | 5.83 | 6.104  |
| RC_B  |        | 5.92 | 8.747  |
| RC_B  |        | 6.00 | 11.691 |
| RC_B  |        | 6.08 | 14.910 |
| RC_B  |        | 6.17 | 18.381 |
| RC_B  |        | 6.25 | 22.087 |
| RC_B  |        | 6.30 | 24.418 |
| ;     |        |      |        |
| RC_C1 | Rating | 0.00 | 0.000  |
| RC_C1 |        | 0.04 | 0.002  |
| RC_C1 |        | 0.08 | 0.005  |
| RC_C1 |        | 0.13 | 0.009  |
| RC_C1 |        | 0.17 | 0.012  |
| RC_C1 |        | 0.21 | 0.013  |
| RC_C1 |        | 0.25 | 0.015  |
| RC_C1 |        | 0.29 | 0.016  |
| RC_C1 |        | 0.33 | 0.018  |
| RC_C1 |        | 0.38 | 0.019  |
| RC_C1 |        | 0.42 | 0.020  |
| RC_C1 |        | 0.46 | 0.021  |
| RC_C1 |        | 0.50 | 0.022  |
| RC_C1 |        | 0.54 | 0.023  |
| RC_C1 |        | 0.58 | 0.024  |
| RC_C1 |        | 0.63 | 0.025  |
| RC_C1 |        | 0.67 | 0.026  |
| RC_C1 |        | 0.71 | 0.027  |
| RC_C1 |        | 0.75 | 0.028  |
| RC_C1 |        | 0.79 | 0.029  |
| RC_C1 |        | 0.83 | 0.029  |
| RC_C1 |        | 0.88 | 0.030  |
| RC_C1 |        | 0.92 | 0.031  |
| RC_C1 |        | 0.96 | 0.032  |
| RC_C1 |        | 1.00 | 0.032  |
| RC_C1 |        | 1.04 | 0.033  |
| RC_C1 |        | 1.08 | 0.034  |
| RC_C1 |        | 1.13 | 0.035  |
| RC_C1 |        | 1.17 | 0.035  |
| RC_C1 |        | 1.21 | 0.036  |
| RC_C1 |        | 1.25 | 0.036  |
| RC_C1 |        | 1.29 | 0.037  |

|       |      |       |
|-------|------|-------|
| RC_C1 | 1.33 | 0.038 |
| RC_C1 | 1.38 | 0.038 |
| RC_C1 | 1.42 | 0.039 |
| RC_C1 | 1.46 | 0.039 |
| RC_C1 | 1.50 | 0.040 |
| RC_C1 | 1.54 | 0.041 |
| RC_C1 | 1.58 | 0.041 |
| RC_C1 | 1.63 | 0.042 |
| RC_C1 | 1.67 | 0.042 |
| RC_C1 | 1.71 | 0.043 |
| RC_C1 | 1.75 | 0.043 |
| RC_C1 | 1.79 | 0.044 |
| RC_C1 | 1.83 | 0.044 |
| RC_C1 | 1.88 | 0.045 |
| RC_C1 | 1.92 | 0.045 |
| RC_C1 | 1.96 | 0.046 |
| RC_C1 | 2.00 | 0.046 |
| RC_C1 | 2.04 | 0.047 |
| RC_C1 | 2.08 | 0.047 |
| RC_C1 | 2.13 | 0.048 |
| RC_C1 | 2.17 | 0.048 |
| RC_C1 | 2.21 | 0.049 |
| RC_C1 | 2.25 | 0.049 |
| RC_C1 | 2.29 | 0.050 |
| RC_C1 | 2.33 | 0.050 |
| RC_C1 | 2.38 | 0.051 |
| RC_C1 | 2.42 | 0.051 |
| RC_C1 | 2.46 | 0.052 |
| RC_C1 | 2.50 | 0.052 |
| RC_C1 | 2.54 | 0.052 |
| RC_C1 | 2.58 | 0.053 |
| RC_C1 | 2.63 | 0.053 |
| RC_C1 | 2.67 | 0.054 |
| RC_C1 | 2.71 | 0.054 |
| RC_C1 | 2.75 | 0.055 |
| RC_C1 | 2.79 | 0.055 |
| RC_C1 | 2.83 | 0.055 |
| RC_C1 | 2.88 | 0.056 |
| RC_C1 | 2.92 | 0.056 |
| RC_C1 | 2.96 | 0.057 |
| RC_C1 | 3.00 | 0.057 |
| RC_C1 | 3.04 | 0.058 |
| RC_C1 | 3.08 | 0.058 |
| RC_C1 | 3.13 | 0.058 |
| RC_C1 | 3.17 | 0.059 |
| RC_C1 | 3.21 | 0.059 |
| RC_C1 | 3.25 | 0.059 |
| RC_C1 | 3.29 | 0.060 |
| RC_C1 | 3.33 | 0.060 |
| RC_C1 | 3.38 | 0.061 |
| RC_C1 | 3.42 | 0.061 |
| RC_C1 | 3.46 | 0.061 |
| RC_C1 | 3.50 | 0.062 |
| RC_C1 | 3.54 | 0.063 |
| RC_C1 | 3.58 | 0.064 |
| RC_C1 | 3.63 | 0.065 |
| RC_C1 | 3.67 | 0.066 |
| RC_C1 | 3.71 | 0.066 |
| RC_C1 | 3.75 | 0.067 |
| RC_C1 | 3.79 | 0.068 |
| RC_C1 | 3.83 | 0.068 |
| RC_C1 | 3.88 | 0.069 |
| RC_C1 | 3.92 | 0.070 |
| RC_C1 | 3.96 | 0.070 |
| RC_C1 | 4.00 | 0.071 |
| RC_C1 | 4.04 | 0.071 |
| RC_C1 | 4.08 | 0.072 |
| RC_C1 | 4.13 | 0.072 |
| RC_C1 | 4.17 | 0.073 |
| RC_C1 | 4.21 | 0.073 |
| RC_C1 | 4.25 | 0.074 |
| RC_C1 | 4.29 | 0.074 |
| RC_C1 | 4.33 | 0.075 |
| RC_C1 | 4.38 | 0.075 |
| RC_C1 | 4.42 | 0.076 |
| RC_C1 | 4.46 | 0.076 |
| RC_C1 | 4.50 | 0.077 |
| RC_C1 | 4.54 | 0.077 |
| RC_C1 | 4.58 | 0.078 |
| RC_C1 | 4.63 | 0.078 |
| RC_C1 | 4.67 | 0.078 |
| RC_C1 | 4.71 | 0.079 |
| RC_C1 | 4.75 | 0.079 |

|       |        |      |        |
|-------|--------|------|--------|
| RC_C1 |        | 4.79 | 0.080  |
| RC_C1 |        | 4.83 | 0.080  |
| RC_C1 |        | 4.88 | 0.081  |
| RC_C1 |        | 4.92 | 0.081  |
| RC_C1 |        | 4.96 | 0.253  |
| RC_C1 |        | 5.00 | 0.749  |
| RC_C1 |        | 5.04 | 1.426  |
| RC_C1 |        | 5.08 | 2.244  |
| RC_C1 |        | 5.13 | 3.183  |
| RC_C1 |        | 5.17 | 4.229  |
| RC_C1 |        | 5.21 | 5.370  |
| RC_C1 |        | 5.25 | 6.601  |
| RC_C1 |        | 5.29 | 7.915  |
| RC_C1 |        | 5.33 | 9.307  |
| RC_C1 |        | 5.38 | 10.772 |
| RC_C1 |        | 5.42 | 12.308 |
| RC_C1 |        | 5.46 | 13.911 |
| RC_C1 |        | 5.50 | 15.579 |
| ;     |        |      |        |
| RC_C2 | Rating | 0.00 | 0.000  |
| RC_C2 |        | 0.04 | 0.002  |
| RC_C2 |        | 0.08 | 0.005  |
| RC_C2 |        | 0.13 | 0.009  |
| RC_C2 |        | 0.17 | 0.012  |
| RC_C2 |        | 0.21 | 0.013  |
| RC_C2 |        | 0.25 | 0.015  |
| RC_C2 |        | 0.29 | 0.016  |
| RC_C2 |        | 0.33 | 0.018  |
| RC_C2 |        | 0.38 | 0.019  |
| RC_C2 |        | 0.42 | 0.020  |
| RC_C2 |        | 0.46 | 0.021  |
| RC_C2 |        | 0.50 | 0.022  |
| RC_C2 |        | 0.54 | 0.023  |
| RC_C2 |        | 0.58 | 0.024  |
| RC_C2 |        | 0.63 | 0.025  |
| RC_C2 |        | 0.67 | 0.026  |
| RC_C2 |        | 0.71 | 0.027  |
| RC_C2 |        | 0.75 | 0.028  |
| RC_C2 |        | 0.79 | 0.029  |
| RC_C2 |        | 0.83 | 0.029  |
| RC_C2 |        | 0.88 | 0.030  |
| RC_C2 |        | 0.92 | 0.031  |
| RC_C2 |        | 0.96 | 0.032  |
| RC_C2 |        | 1.00 | 0.032  |
| RC_C2 |        | 1.04 | 0.033  |
| RC_C2 |        | 1.08 | 0.034  |
| RC_C2 |        | 1.13 | 0.035  |
| RC_C2 |        | 1.17 | 0.035  |
| RC_C2 |        | 1.21 | 0.036  |
| RC_C2 |        | 1.25 | 0.036  |
| RC_C2 |        | 1.29 | 0.037  |
| RC_C2 |        | 1.33 | 0.038  |
| RC_C2 |        | 1.38 | 0.038  |
| RC_C2 |        | 1.42 | 0.039  |
| RC_C2 |        | 1.46 | 0.039  |
| RC_C2 |        | 1.50 | 0.040  |
| RC_C2 |        | 1.54 | 0.041  |
| RC_C2 |        | 1.58 | 0.041  |
| RC_C2 |        | 1.63 | 0.042  |
| RC_C2 |        | 1.67 | 0.042  |
| RC_C2 |        | 1.71 | 0.043  |
| RC_C2 |        | 1.75 | 0.043  |
| RC_C2 |        | 1.79 | 0.044  |
| RC_C2 |        | 1.83 | 0.044  |
| RC_C2 |        | 1.88 | 0.045  |
| RC_C2 |        | 1.92 | 0.045  |
| RC_C2 |        | 1.96 | 0.046  |
| RC_C2 |        | 2.00 | 0.046  |
| RC_C2 |        | 2.04 | 0.047  |
| RC_C2 |        | 2.08 | 0.047  |
| RC_C2 |        | 2.13 | 0.048  |
| RC_C2 |        | 2.17 | 0.048  |
| RC_C2 |        | 2.21 | 0.049  |
| RC_C2 |        | 2.25 | 0.049  |
| RC_C2 |        | 2.29 | 0.050  |
| RC_C2 |        | 2.33 | 0.050  |
| RC_C2 |        | 2.38 | 0.051  |
| RC_C2 |        | 2.42 | 0.051  |
| RC_C2 |        | 2.46 | 0.052  |
| RC_C2 |        | 2.50 | 0.052  |
| RC_C2 |        | 2.54 | 0.052  |
| RC_C2 |        | 2.58 | 0.053  |
| RC_C2 |        | 2.63 | 0.053  |

|           |         |       |        |
|-----------|---------|-------|--------|
| RC_C2     |         | 2.67  | 0.054  |
| RC_C2     |         | 2.71  | 0.054  |
| RC_C2     |         | 2.75  | 0.055  |
| RC_C2     |         | 2.79  | 0.055  |
| RC_C2     |         | 2.83  | 0.055  |
| RC_C2     |         | 2.88  | 0.056  |
| RC_C2     |         | 2.92  | 0.056  |
| RC_C2     |         | 2.96  | 0.057  |
| RC_C2     |         | 3.00  | 0.057  |
| RC_C2     |         | 3.04  | 0.058  |
| RC_C2     |         | 3.08  | 0.058  |
| RC_C2     |         | 3.13  | 0.058  |
| RC_C2     |         | 3.17  | 0.059  |
| RC_C2     |         | 3.21  | 0.059  |
| RC_C2     |         | 3.25  | 0.059  |
| RC_C2     |         | 3.29  | 0.060  |
| RC_C2     |         | 3.33  | 0.060  |
| RC_C2     |         | 3.38  | 0.061  |
| RC_C2     |         | 3.42  | 0.061  |
| RC_C2     |         | 3.46  | 0.061  |
| RC_C2     |         | 3.50  | 0.062  |
| RC_C2     |         | 3.54  | 0.063  |
| RC_C2     |         | 3.58  | 0.064  |
| RC_C2     |         | 3.63  | 0.065  |
| RC_C2     |         | 3.67  | 0.066  |
| RC_C2     |         | 3.71  | 0.066  |
| RC_C2     |         | 3.75  | 0.067  |
| RC_C2     |         | 3.79  | 0.068  |
| RC_C2     |         | 3.83  | 0.068  |
| RC_C2     |         | 3.88  | 0.069  |
| RC_C2     |         | 3.92  | 0.070  |
| RC_C2     |         | 3.96  | 0.070  |
| RC_C2     |         | 4.00  | 0.071  |
| RC_C2     |         | 4.04  | 0.071  |
| RC_C2     |         | 4.08  | 0.072  |
| RC_C2     |         | 4.13  | 0.072  |
| RC_C2     |         | 4.17  | 0.073  |
| RC_C2     |         | 4.21  | 0.073  |
| RC_C2     |         | 4.25  | 0.074  |
| RC_C2     |         | 4.29  | 0.074  |
| RC_C2     |         | 4.33  | 0.075  |
| RC_C2     |         | 4.38  | 0.075  |
| RC_C2     |         | 4.42  | 0.076  |
| RC_C2     |         | 4.46  | 0.076  |
| RC_C2     |         | 4.50  | 0.077  |
| RC_C2     |         | 4.54  | 0.077  |
| RC_C2     |         | 4.58  | 0.078  |
| RC_C2     |         | 4.63  | 0.078  |
| RC_C2     |         | 4.67  | 0.078  |
| RC_C2     |         | 4.71  | 0.079  |
| RC_C2     |         | 4.75  | 0.079  |
| RC_C2     |         | 4.79  | 0.080  |
| RC_C2     |         | 4.83  | 0.080  |
| RC_C2     |         | 4.88  | 0.081  |
| RC_C2     |         | 4.92  | 0.081  |
| RC_C2     |         | 4.96  | 0.082  |
| RC_C2     |         | 5.00  | 0.082  |
| RC_C2     |         | 5.04  | 0.082  |
| RC_C2     |         | 5.08  | 0.083  |
| RC_C2     |         | 5.13  | 0.083  |
| RC_C2     |         | 5.17  | 0.084  |
| RC_C2     |         | 5.21  | 0.084  |
| RC_C2     |         | 5.25  | 0.084  |
| RC_C2     |         | 5.29  | 0.085  |
| RC_C2     |         | 5.33  | 0.092  |
| RC_C2     |         | 5.38  | 0.429  |
| RC_C2     |         | 5.42  | 1.005  |
| RC_C2     |         | 5.46  | 1.741  |
| RC_C2     |         | 5.50  | 2.610  |
| RC_C2     |         | 5.54  | 3.593  |
| RC_C2     |         | 5.58  | 4.678  |
| RC_C2     |         | 5.63  | 5.856  |
| RC_C2     |         | 5.67  | 7.121  |
| RC_C2     |         | 5.71  | 8.466  |
| RC_C2     |         | 5.75  | 9.888  |
| RC_C2     |         | 5.83  | 12.945 |
| RC_C2     |         | 5.92  | 16.268 |
| RC_C2     |         | 6.00  | 19.835 |
| ;         |         |       |        |
| STORAGE_A | Storage | 0     | 2427   |
| STORAGE_A |         | 1     | 2427   |
| STORAGE_A |         | 1.001 | 1214   |
| STORAGE_A |         | 2.75  | 1214   |

|            |         |       |      |
|------------|---------|-------|------|
| STORAGE_A  |         | 2.751 | 1820 |
| STORAGE_A  |         | 3     | 1820 |
| STORAGE_A  |         | 5.3   | 6068 |
| ;          |         |       |      |
| STORAGE_B  | Storage | 0     | 1777 |
| STORAGE_B  |         | 1     | 1777 |
| STORAGE_B  |         | 1.001 | 889  |
| STORAGE_B  |         | 2.75  | 889  |
| STORAGE_B  |         | 2.751 | 1333 |
| STORAGE_B  |         | 3     | 1333 |
| STORAGE_B  |         | 6.3   | 8278 |
| ;          |         |       |      |
| STORAGE_C1 | Storage | 0     | 348  |
| STORAGE_C1 |         | 1     | 348  |
| STORAGE_C1 |         | 1.001 | 174  |
| STORAGE_C1 |         | 2.75  | 174  |
| STORAGE_C1 |         | 2.751 | 261  |
| STORAGE_C1 |         | 3     | 261  |
| STORAGE_C1 |         | 5.5   | 2401 |
| ;          |         |       |      |
| STORAGE_C2 | Storage | 0     | 925  |
| STORAGE_C2 |         | 1     | 925  |
| STORAGE_C2 |         | 1.001 | 462  |
| STORAGE_C2 |         | 2.75  | 462  |
| STORAGE_C2 |         | 2.751 | 694  |
| STORAGE_C2 |         | 3     | 694  |
| STORAGE_C2 |         | 6     | 6255 |

[TIMESERIES]

;;Name Date Time Value

;;-----  
 SANTEERINGAGE FILE "\\cp.rickeng.com\projects\C19500\19644\_Santee\_Schoolyard\WaterRes\Hydromodification\RAIN GAGE\santee.dat"  
 ;  
 SANTEE\_RAIN\_GAGE FILE "\\cp.rickeng.com\projects\C19500\19644\_Santee\_Schoolyard\WaterRes\Hydromodification\RAIN GAGE\santee.dat"

[REPORT]

;;Reporting Options  
 INPUT NO  
 CONTROLS NO  
 SUBCATCHMENTS ALL  
 NODES ALL  
 LINKS ALL

[TAGS]

[MAP]

DIMENSIONS -2077.836 0.000 12077.836 10000.000  
 Units None

[COORDINATES]

| ;;Node     | X-Coord  | Y-Coord  |
|------------|----------|----------|
| ;;-----    |          |          |
| POC1       | 4766.971 | 1428.571 |
| STORAGE_C1 | 5577.508 | 5359.676 |
| STORAGE_B  | 3632.219 | 5450.861 |
| STORAGE_A  | 1849.037 | 5430.598 |
| STORAGE_C2 | 7451.874 | 5309.017 |

[VERTICES]

| ;;Link  | X-Coord | Y-Coord |
|---------|---------|---------|
| ;;----- |         |         |

[Polygons]

| ;;Subcatchment | X-Coord  | Y-Coord  |
|----------------|----------|----------|
| ;;-----        |          |          |
| DMA_A          | 1757.852 | 6513.425 |
| DMA_A          | 1757.852 | 6523.556 |
| DMA_A          | 1757.852 | 6472.898 |
| DMA_A          | 1757.852 | 6472.898 |
| DMA_A          | 1757.852 | 6472.898 |
| DMA_A          | 1757.852 | 6472.898 |
| DMA_A          | 1757.852 | 6472.898 |
| DMA_A          | 1757.852 | 6472.898 |
| DMA_B          | 3591.692 | 6484.296 |
| DMA_C1         | 5618.034 | 6474.164 |
| DMA_C2         | 7482.270 | 6372.847 |
| OFFSITE        | 6854.103 | 2897.670 |

[SYMBOLS]

| ;;Gage           | X-Coord  | Y-Coord  |
|------------------|----------|----------|
| ;;-----          |          |          |
| SANTEE_RAIN_GAGE | 4321.175 | 9250.253 |

19644  
 Santee Schoolyard  
 Post-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 ..... 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

| *****                      | Volume    | Depth   |
|----------------------------|-----------|---------|
| Runoff Quantity Continuity | acre-feet | inches  |
| *****                      | -----     | -----   |
| Total Precipitation .....  | 678.455   | 467.900 |
| Evaporation Loss .....     | 79.348    | 54.723  |
| Infiltration Loss .....    | 200.012   | 137.939 |
| Surface Runoff .....       | 408.268   | 281.564 |
| Final Storage .....        | 0.000     | 0.000   |
| Continuity Error (%) ..... | -1.352    |         |

| *****                      | Volume    | Volume   |
|----------------------------|-----------|----------|
| Flow Routing Continuity    | acre-feet | 10^6 gal |
| *****                      | -----     | -----    |
| Dry Weather Inflow .....   | 0.000     | 0.000    |
| Wet Weather Inflow .....   | 408.268   | 133.040  |
| Groundwater Inflow .....   | 0.000     | 0.000    |
| RDII Inflow .....          | 0.000     | 0.000    |
| External Inflow .....      | 0.000     | 0.000    |
| External Outflow .....     | 408.076   | 132.978  |
| 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 .....  | 0.076     | 0.025    |
| Continuity Error (%) ..... | 0.028     |          |

\*\*\*\*\*  
 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 |
| Percent in Steady State     | : | 0.00      |
| Average Iterations per Step | : | 1.00      |
| Percent Not Converging      | : | 0.00      |



\*\*\*\*\*  
 Subcatchment Runoff Summary  
 \*\*\*\*\*

| Subcatchment | Total Precip<br>in | Total Runon<br>in | Total Evap<br>in | Total Infil<br>in | Total Runoff<br>in | Total Runoff<br>10 <sup>6</sup> gal | Peak Runoff<br>CFS | Runoff<br>Coeff |
|--------------|--------------------|-------------------|------------------|-------------------|--------------------|-------------------------------------|--------------------|-----------------|
| DMA_A        | 467.90             | 0.00              | 63.07            | 90.41             | 320.79             | 50.52                               | 5.63               | 0.686           |
| DMA_B        | 467.90             | 0.00              | 63.06            | 90.41             | 320.80             | 36.59                               | 4.08               | 0.686           |
| DMA_C1       | 467.90             | 0.00              | 63.07            | 90.42             | 320.79             | 6.97                                | 0.78               | 0.686           |
| DMA_C2       | 467.90             | 0.00              | 63.07            | 90.41             | 320.80             | 20.03                               | 2.23               | 0.686           |
| OFFSITE      | 467.90             | 0.00              | 29.31            | 282.72            | 162.04             | 18.92                               | 4.07               | 0.346           |

\*\*\*\*\*  
 Node Depth Summary  
 \*\*\*\*\*

| Node       | Type    | Average<br>Depth<br>Feet | Maximum<br>Depth<br>Feet | Maximum<br>HGL<br>Feet | Time of Max<br>Occurrence<br>days hr:min | Reported<br>Max Depth<br>Feet |
|------------|---------|--------------------------|--------------------------|------------------------|------------------------------------------|-------------------------------|
| POC1       | OUTFALL | 0.00                     | 0.00                     | 0.00                   | 0 00:00                                  | 0.00                          |
| STORAGE_C1 | STORAGE | 0.03                     | 5.00                     | 5.00                   | 1388 04:33                               | 5.00                          |
| STORAGE_B  | STORAGE | 0.18                     | 5.75                     | 5.75                   | 2604 07:01                               | 5.75                          |
| STORAGE_A  | STORAGE | 0.18                     | 4.72                     | 4.72                   | 1827 08:54                               | 4.72                          |
| STORAGE_C2 | STORAGE | 0.10                     | 5.47                     | 5.47                   | 2604 06:56                               | 5.47                          |

\*\*\*\*\*  
 Node Inflow Summary  
 \*\*\*\*\*

| Node       | Type    | Maximum<br>Lateral<br>Inflow<br>CFS | Maximum<br>Total<br>Inflow<br>CFS | Time of Max<br>Occurrence<br>days hr:min | Lateral<br>Inflow<br>Volume<br>10 <sup>6</sup> gal | Total<br>Inflow<br>Volume<br>10 <sup>6</sup> gal | Flow<br>Balance<br>Error<br>Percent |
|------------|---------|-------------------------------------|-----------------------------------|------------------------------------------|----------------------------------------------------|--------------------------------------------------|-------------------------------------|
| POC1       | OUTFALL | 4.07                                | 14.76                             | 2604 07:01                               | 18.9                                               | 133                                              | 0.000                               |
| STORAGE_C1 | STORAGE | 0.78                                | 0.78                              | 1827 09:01                               | 6.97                                               | 6.97                                             | 0.042                               |
| STORAGE_B  | STORAGE | 4.08                                | 4.08                              | 1827 09:01                               | 36.6                                               | 36.6                                             | 0.022                               |
| STORAGE_A  | STORAGE | 5.63                                | 5.63                              | 1827 09:01                               | 50.5                                               | 50.5                                             | 0.042                               |
| STORAGE_C2 | STORAGE | 2.23                                | 2.23                              | 1827 09:01                               | 20                                                 | 20                                               | 0.027                               |

\*\*\*\*\*  
 Node Flooding Summary  
 \*\*\*\*\*

No nodes were flooded.

\*\*\*\*\*  
 Storage Volume Summary  
 \*\*\*\*\*

| Storage Unit | Average<br>Volume<br>1000 ft3 | Avg<br>Pcnt<br>Full | Evap<br>Pcnt<br>Loss | Exfil<br>Pcnt<br>Loss | Maximum<br>Volume<br>1000 ft3 | Max<br>Pcnt<br>Full | Time of Max<br>Occurrence<br>days hr:min | Maximum<br>Outflow<br>CFS |
|--------------|-------------------------------|---------------------|----------------------|-----------------------|-------------------------------|---------------------|------------------------------------------|---------------------------|
| STORAGE_C1   | 0.009                         | 0                   | 0                    | 0                     | 2.944                         | 13                  | 1388 04:32                               | 0.69                      |
| STORAGE_B    | 0.307                         | 0                   | 0                    | 0                     | 15.270                        | 24                  | 2604 07:01                               | 3.73                      |
| STORAGE_A    | 0.362                         | 1                   | 0                    | 0                     | 10.864                        | 17                  | 1827 08:52                               | 5.63                      |
| STORAGE_C2   | 0.092                         | 0                   | 0                    | 0                     | 9.297                         | 18                  | 2604 06:55                               | 2.05                      |

\*\*\*\*\*  
 Outfall Loading Summary  
 \*\*\*\*\*

| Outfall Node | Flow<br>Freq<br>Pcnt | Avg<br>Flow<br>CFS | Max<br>Flow<br>CFS | Total<br>Volume<br>10 <sup>6</sup> gal |
|--------------|----------------------|--------------------|--------------------|----------------------------------------|
| POC1         | 16.09                | 0.10               | 14.76              | 132.968                                |
| System       | 16.09                | 0.10               | 14.76              | 132.968                                |

\*\*\*\*\*  
Link Flow Summary  
\*\*\*\*\*

| Link           | Type  | Maximum<br> Flow <br>CFS | Time of Max<br>Occurrence<br>days hr:min | Maximum<br> Veloc <br>ft/sec | Max/<br>Full<br>Flow | Max/<br>Full<br>Depth |
|----------------|-------|--------------------------|------------------------------------------|------------------------------|----------------------|-----------------------|
| RATINGCURVE_C1 | DUMMY | 0.69                     | 1388 04:33                               |                              |                      |                       |
| RATINGCURVE_B  | DUMMY | 3.73                     | 2604 07:01                               |                              |                      |                       |
| RATINGCURVE_A  | DUMMY | 5.63                     | 1827 08:54                               |                              |                      |                       |
| RATINGCURVE_C2 | DUMMY | 2.05                     | 2604 06:56                               |                              |                      |                       |

\*\*\*\*\*  
Conduit Surcharge Summary  
\*\*\*\*\*

No conduits were surcharged.

Analysis begun on: Wed Apr 26 15:42:40 2023  
Analysis ended on: Wed Apr 26 15:42:59 2023  
Total elapsed time: 00:00:19

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

### BMP-A

| Vault Characteristics         |       |
|-------------------------------|-------|
| Basin Depth (ft) =            | 5.3   |
| Basin Width (ft) =            |       |
| Basin Length (ft) =           |       |
| Low Flow Orifice (Underdrain) |       |
| Num. of Orifices =            | 1     |
| Orifice Invert (ft) =         | 0     |
| Orifice Diameter (in) =       | 1.125 |
| Cg =                          | 0.6   |
| Mid-flow Orifice (1st)        |       |
| Num. of Orifices =            | 1     |
| Orifice Invert (ft) =         | 3.5   |
| Orifice Diameter (in) =       | 0.5   |
| Cg =                          | 0.6   |
| Mid-flow Orifice (2nd)        |       |
| Num. of Orifices =            | 0     |
| Orifice Invert (ft) =         | 4.25  |
| Orifice Diameter (in) =       | 2     |
| Cg =                          | 0.6   |
| Weir Overflow                 |       |
| Upper Weir Inv (ft) =         | 4.43  |
| B (ft) =                      | 12    |
| Cs =                          | 3     |

| BMP A Rating and Storage Table |        |                     |                       |                       |                           |                        |               |                  |                                           |                |                                       |                                      |
|--------------------------------|--------|---------------------|-----------------------|-----------------------|---------------------------|------------------------|---------------|------------------|-------------------------------------------|----------------|---------------------------------------|--------------------------------------|
| h (in)                         | h (ft) | Underdrain Orifices | Midflow Orifice (1st) | Midflow Orifice (2nd) | Upper Orifice (weir calc) | Mid-flow Orifice Upper | Overflow Weir | Total Flow (cfs) | Effective Surface Area (ft <sup>2</sup> ) | Porosity (N/A) | Incremental Volume (ft <sup>3</sup> ) | Cumulative Volume (ft <sup>3</sup> ) |
| 0.0                            | 0.00   | 0.000               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.000            | 2427                                      | 1.00           | 0                                     | 0                                    |
| 0.5                            | 0.04   | 0.002               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.002            | 2427                                      | 1.00           | 101                                   | 101                                  |
| 1.0                            | 0.08   | 0.005               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.005            | 2427                                      | 1.00           | 101                                   | 202                                  |
| 1.5                            | 0.13   | 0.009               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.009            | 2427                                      | 1.00           | 101                                   | 303                                  |
| 2.0                            | 0.17   | 0.012               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.012            | 2427                                      | 1.00           | 101                                   | 405                                  |
| 2.5                            | 0.21   | 0.013               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.013            | 2427                                      | 1.00           | 101                                   | 506                                  |
| 3.0                            | 0.25   | 0.015               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.015            | 2427                                      | 1.00           | 101                                   | 607                                  |
| 3.5                            | 0.29   | 0.016               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.016            | 2427                                      | 1.00           | 101                                   | 708                                  |
| 4.0                            | 0.33   | 0.018               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.018            | 2427                                      | 1.00           | 101                                   | 809                                  |
| 4.5                            | 0.38   | 0.019               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.019            | 2427                                      | 1.00           | 101                                   | 910                                  |
| 5.0                            | 0.42   | 0.020               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.020            | 2427                                      | 1.00           | 101                                   | 1011                                 |
| 5.5                            | 0.46   | 0.021               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.021            | 2427                                      | 1.00           | 101                                   | 1112                                 |
| 6.0                            | 0.50   | 0.022               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.022            | 2427                                      | 1.00           | 101                                   | 1214                                 |
| 6.5                            | 0.54   | 0.023               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.023            | 2427                                      | 1.00           | 101                                   | 1315                                 |
| 7.0                            | 0.58   | 0.024               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.024            | 2427                                      | 1.00           | 101                                   | 1416                                 |
| 7.5                            | 0.63   | 0.025               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.025            | 2427                                      | 1.00           | 101                                   | 1517                                 |
| 8.0                            | 0.67   | 0.026               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.026            | 2427                                      | 1.00           | 101                                   | 1618                                 |
| 8.5                            | 0.71   | 0.027               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.027            | 2427                                      | 1.00           | 101                                   | 1719                                 |
| 9.0                            | 0.75   | 0.028               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.028            | 2427                                      | 1.00           | 101                                   | 1820                                 |
| 9.5                            | 0.79   | 0.029               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.029            | 2427                                      | 1.00           | 101                                   | 1922                                 |
| 10.0                           | 0.83   | 0.029               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.029            | 2427                                      | 1.00           | 101                                   | 2023                                 |
| 10.5                           | 0.88   | 0.030               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.030            | 2427                                      | 1.00           | 101                                   | 2124                                 |
| 11.0                           | 0.92   | 0.031               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.031            | 2427                                      | 1.00           | 101                                   | 2225                                 |
| 11.5                           | 0.96   | 0.032               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.032            | 2427                                      | 1.00           | 101                                   | 2326                                 |
| 12.0                           | 1.00   | 0.032               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.032            | 2427                                      | 1.00           | 101                                   | 2427                                 |
| 12.5                           | 1.04   | 0.033               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.033            | 1214                                      | 1.00           | 51                                    | 2478                                 |
| 13.0                           | 1.08   | 0.034               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.034            | 1214                                      | 1.00           | 51                                    | 2528                                 |
| 13.5                           | 1.13   | 0.035               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.035            | 1214                                      | 1.00           | 51                                    | 2579                                 |
| 14.0                           | 1.17   | 0.035               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.035            | 1214                                      | 1.00           | 51                                    | 2629                                 |
| 14.5                           | 1.21   | 0.036               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.036            | 1214                                      | 1.00           | 51                                    | 2680                                 |
| 15.0                           | 1.25   | 0.036               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.036            | 1214                                      | 1.00           | 51                                    | 2731                                 |
| 15.5                           | 1.29   | 0.037               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.037            | 1214                                      | 1.00           | 51                                    | 2781                                 |
| 16.0                           | 1.33   | 0.038               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.038            | 1214                                      | 1.00           | 51                                    | 2832                                 |
| 16.5                           | 1.38   | 0.038               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.038            | 1214                                      | 1.00           | 51                                    | 2882                                 |
| 17.0                           | 1.42   | 0.039               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.039            | 1214                                      | 1.00           | 51                                    | 2933                                 |
| 17.5                           | 1.46   | 0.039               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.039            | 1214                                      | 1.00           | 51                                    | 2983                                 |
| 18.0                           | 1.50   | 0.040               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.040            | 1214                                      | 1.00           | 51                                    | 3034                                 |
| 18.5                           | 1.54   | 0.041               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.041            | 1214                                      | 1.00           | 51                                    | 3085                                 |
| 19.0                           | 1.58   | 0.041               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.041            | 1214                                      | 1.00           | 51                                    | 3135                                 |
| 19.5                           | 1.63   | 0.042               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.042            | 1214                                      | 1.00           | 51                                    | 3186                                 |
| 20.0                           | 1.67   | 0.042               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.042            | 1214                                      | 1.00           | 51                                    | 3236                                 |
| 20.5                           | 1.71   | 0.043               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.043            | 1214                                      | 1.00           | 51                                    | 3287                                 |
| 21.0                           | 1.75   | 0.043               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.043            | 1214                                      | 1.00           | 51                                    | 3337                                 |
| 21.5                           | 1.79   | 0.044               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.044            | 1214                                      | 1.00           | 51                                    | 3388                                 |
| 22.0                           | 1.83   | 0.044               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.044            | 1214                                      | 1.00           | 51                                    | 3439                                 |

|      |      |       |       |       |       |       |        |        |      |      |     |       |
|------|------|-------|-------|-------|-------|-------|--------|--------|------|------|-----|-------|
| 22.5 | 1.88 | 0.045 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.045  | 1214 | 1.00 | 51  | 3489  |
| 23.0 | 1.92 | 0.045 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.045  | 1214 | 1.00 | 51  | 3540  |
| 23.5 | 1.96 | 0.046 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.046  | 1214 | 1.00 | 51  | 3590  |
| 24.0 | 2.00 | 0.046 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.046  | 1214 | 1.00 | 51  | 3641  |
| 24.5 | 2.04 | 0.047 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.047  | 1214 | 1.00 | 51  | 3691  |
| 25.0 | 2.08 | 0.047 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.047  | 1214 | 1.00 | 51  | 3742  |
| 25.5 | 2.13 | 0.048 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.048  | 1214 | 1.00 | 51  | 3793  |
| 26.0 | 2.17 | 0.048 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.048  | 1214 | 1.00 | 51  | 3843  |
| 26.5 | 2.21 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.049  | 1214 | 1.00 | 51  | 3894  |
| 27.0 | 2.25 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.049  | 1214 | 1.00 | 51  | 3944  |
| 27.5 | 2.29 | 0.050 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.050  | 1214 | 1.00 | 51  | 3995  |
| 28.0 | 2.33 | 0.050 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.050  | 1214 | 1.00 | 51  | 4045  |
| 28.5 | 2.38 | 0.051 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.051  | 1214 | 1.00 | 51  | 4096  |
| 29.0 | 2.42 | 0.051 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.051  | 1214 | 1.00 | 51  | 4146  |
| 29.5 | 2.46 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.052  | 1214 | 1.00 | 51  | 4197  |
| 30.0 | 2.50 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.052  | 1214 | 1.00 | 51  | 4248  |
| 30.5 | 2.54 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.052  | 1214 | 1.00 | 51  | 4298  |
| 31.0 | 2.58 | 0.053 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.053  | 1214 | 1.00 | 51  | 4349  |
| 31.5 | 2.63 | 0.053 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.053  | 1214 | 1.00 | 51  | 4399  |
| 32.0 | 2.67 | 0.054 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.054  | 1214 | 1.00 | 51  | 4450  |
| 32.5 | 2.71 | 0.054 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.054  | 1214 | 1.00 | 51  | 4500  |
| 33.0 | 2.75 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.055  | 1214 | 1.00 | 51  | 4551  |
| 33.5 | 2.79 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.055  | 1820 | 1.00 | 76  | 4627  |
| 34.0 | 2.83 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.055  | 1820 | 1.00 | 76  | 4703  |
| 34.5 | 2.88 | 0.056 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.056  | 1820 | 1.00 | 76  | 4779  |
| 35.0 | 2.92 | 0.056 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.056  | 1820 | 1.00 | 76  | 4854  |
| 35.5 | 2.96 | 0.057 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.057  | 1820 | 1.00 | 76  | 4930  |
| 36.0 | 3.00 | 0.057 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.057  | 1820 | 1.00 | 76  | 5006  |
| 36.5 | 3.04 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.058  | 6068 | 1.00 | 253 | 5259  |
| 37.0 | 3.08 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.058  | 6068 | 1.00 | 253 | 5512  |
| 37.5 | 3.13 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.058  | 6068 | 1.00 | 253 | 5765  |
| 38.0 | 3.17 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.059  | 6068 | 1.00 | 253 | 6017  |
| 38.5 | 3.21 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.059  | 6068 | 1.00 | 253 | 6270  |
| 39.0 | 3.25 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.059  | 6068 | 1.00 | 253 | 6523  |
| 39.5 | 3.29 | 0.060 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.060  | 6068 | 1.00 | 253 | 6776  |
| 40.0 | 3.33 | 0.060 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.060  | 6068 | 1.00 | 253 | 7029  |
| 40.5 | 3.38 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.061  | 6068 | 1.00 | 253 | 7282  |
| 41.0 | 3.42 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.061  | 6068 | 1.00 | 253 | 7534  |
| 41.5 | 3.46 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.061  | 6068 | 1.00 | 253 | 7787  |
| 42.0 | 3.50 | 0.062 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.062  | 6068 | 1.00 | 253 | 8040  |
| 42.5 | 3.54 | 0.062 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000  | 0.063  | 6068 | 1.00 | 253 | 8293  |
| 43.0 | 3.58 | 0.063 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000  | 0.064  | 6068 | 1.00 | 253 | 8546  |
| 43.5 | 3.63 | 0.063 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000  | 0.065  | 6068 | 1.00 | 253 | 8799  |
| 44.0 | 3.67 | 0.063 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000  | 0.066  | 6068 | 1.00 | 253 | 9051  |
| 44.5 | 3.71 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000  | 0.066  | 6068 | 1.00 | 253 | 9304  |
| 45.0 | 3.75 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000  | 0.067  | 6068 | 1.00 | 253 | 9557  |
| 45.5 | 3.79 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000  | 0.068  | 6068 | 1.00 | 253 | 9810  |
| 46.0 | 3.83 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000  | 0.068  | 6068 | 1.00 | 253 | 10063 |
| 46.5 | 3.88 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000  | 0.069  | 6068 | 1.00 | 253 | 10316 |
| 47.0 | 3.92 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000  | 0.070  | 6068 | 1.00 | 253 | 10568 |
| 47.5 | 3.96 | 0.066 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000  | 0.070  | 6068 | 1.00 | 253 | 10821 |
| 48.0 | 4.00 | 0.066 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.071  | 6068 | 1.00 | 253 | 11074 |
| 48.5 | 4.04 | 0.066 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.071  | 6068 | 1.00 | 253 | 11327 |
| 49.0 | 4.08 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.072  | 6068 | 1.00 | 253 | 11580 |
| 49.5 | 4.13 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.072  | 6068 | 1.00 | 253 | 11833 |
| 50.0 | 4.17 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.073  | 6068 | 1.00 | 253 | 12085 |
| 50.5 | 4.21 | 0.068 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.073  | 6068 | 1.00 | 253 | 12338 |
| 51.0 | 4.25 | 0.068 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000  | 0.074  | 6068 | 1.00 | 253 | 12591 |
| 51.5 | 4.29 | 0.068 | 0.006 | 0.003 | 0.000 | 0.000 | 0.000  | 0.074  | 6068 | 1.00 | 253 | 12844 |
| 52.0 | 4.33 | 0.069 | 0.006 | 0.010 | 0.000 | 0.000 | 0.000  | 0.075  | 6068 | 1.00 | 253 | 13097 |
| 52.5 | 4.38 | 0.069 | 0.006 | 0.018 | 0.000 | 0.000 | 0.000  | 0.075  | 6068 | 1.00 | 253 | 13350 |
| 53.0 | 4.42 | 0.069 | 0.006 | 0.030 | 0.000 | 0.000 | 0.000  | 0.076  | 6068 | 1.00 | 253 | 13602 |
| 53.5 | 4.46 | 0.070 | 0.006 | 0.037 | 0.000 | 0.000 | 0.172  | 0.248  | 6068 | 1.00 | 253 | 13855 |
| 54.0 | 4.50 | 0.070 | 0.006 | 0.043 | 0.000 | 0.000 | 0.667  | 0.743  | 6068 | 1.00 | 253 | 14108 |
| 54.5 | 4.54 | 0.070 | 0.007 | 0.048 | 0.000 | 0.000 | 1.343  | 1.421  | 6068 | 1.00 | 253 | 14361 |
| 55.0 | 4.58 | 0.071 | 0.007 | 0.053 | 0.000 | 0.000 | 2.161  | 2.239  | 6068 | 1.00 | 253 | 14614 |
| 55.5 | 4.63 | 0.071 | 0.007 | 0.057 | 0.000 | 0.000 | 3.100  | 3.178  | 6068 | 1.00 | 253 | 14867 |
| 56.0 | 4.67 | 0.071 | 0.007 | 0.061 | 0.000 | 0.000 | 4.145  | 4.223  | 6068 | 1.00 | 253 | 15119 |
| 56.5 | 4.71 | 0.072 | 0.007 | 0.064 | 0.000 | 0.000 | 5.286  | 5.365  | 6068 | 1.00 | 253 | 15372 |
| 57.0 | 4.75 | 0.072 | 0.007 | 0.068 | 0.000 | 0.000 | 6.517  | 6.596  | 6068 | 1.00 | 253 | 15625 |
| 57.5 | 4.79 | 0.072 | 0.007 | 0.071 | 0.000 | 0.000 | 7.830  | 7.910  | 6068 | 1.00 | 253 | 15878 |
| 58.0 | 4.83 | 0.073 | 0.008 | 0.074 | 0.000 | 0.000 | 9.221  | 9.302  | 6068 | 1.00 | 253 | 16131 |
| 58.5 | 4.88 | 0.073 | 0.008 | 0.077 | 0.000 | 0.000 | 10.687 | 10.767 | 6068 | 1.00 | 253 | 16384 |
| 59.0 | 4.92 | 0.073 | 0.008 | 0.080 | 0.000 | 0.000 | 12.222 | 12.303 | 6068 | 1.00 | 253 | 16636 |
| 59.5 | 4.96 | 0.074 | 0.008 | 0.083 | 0.000 | 0.000 | 13.825 | 13.906 | 6068 | 1.00 | 253 | 16889 |
| 60.0 | 5.00 | 0.074 | 0.008 | 0.086 | 0.000 | 0.000 | 15.492 | 15.574 | 6068 | 1.00 | 253 | 17142 |
| 60.5 | 5.04 | 0.074 | 0.008 | 0.088 | 0.000 | 0.000 | 17.222 | 17.304 | 6068 | 1.00 | 253 | 17395 |
| 61.0 | 5.08 | 0.075 | 0.008 | 0.091 | 0.000 | 0.000 | 19.011 | 19.094 | 6068 | 1.00 | 253 | 17648 |
| 61.5 | 5.13 | 0.075 | 0.008 | 0.093 | 0.000 | 0.000 | 20.858 | 20.942 | 6068 | 1.00 | 253 | 17901 |
| 62.0 | 5.17 | 0.075 | 0.008 | 0.096 | 0.000 | 0.000 | 22.762 | 22.846 | 6068 | 1.00 | 253 | 18153 |
| 62.5 | 5.21 | 0.076 | 0.009 | 0.098 | 0.000 | 0.000 | 24.720 | 24.804 | 6068 | 1.00 | 253 | 18406 |
| 63.0 | 5.25 | 0.076 | 0.009 | 0.101 | 0.000 | 0.000 | 26.731 | 26.816 | 6068 | 1.00 | 253 | 18659 |
| 63.5 | 5.29 | 0.076 | 0.009 | 0.103 | 0.000 | 0.000 | 28.795 | 28.880 | 6068 | 1.00 | 253 | 18912 |
| 63.6 | 5.30 | 0.076 | 0.009 | 0.103 | 0.000 | 0.000 | 29.213 | 29.298 | 6068 | 1.00 | 51  | 18963 |

| BMP-A  |                                  |                                 |                  | CALCULATED                     |                               |
|--------|----------------------------------|---------------------------------|------------------|--------------------------------|-------------------------------|
| h (ft) | STORAGE                          |                                 | DISCHARGE        | DRAWDOWN TIME                  |                               |
|        | Incremental storage volume (ft³) | Cumulative storage volume (ft³) | Total Flow (cfs) | Incremental Drawdown Time (hr) | Cumulative Drawdown Time (hr) |
| 0.000  | 0                                | 0                               | 0.000            | 0.00                           | 0.00                          |
| 0.042  | 101                              | 101                             | 0.002            | 29.36                          | 29.36                         |
| 0.083  | 101                              | 202                             | 0.005            | 7.67                           | 37.03                         |
| 0.125  | 101                              | 303                             | 0.009            | 3.82                           | 40.85                         |
| 0.167  | 101                              | 405                             | 0.012            | 2.70                           | 43.55                         |
| 0.208  | 101                              | 506                             | 0.013            | 2.26                           | 45.81                         |
| 0.250  | 101                              | 607                             | 0.015            | 1.98                           | 47.79                         |
| 0.292  | 101                              | 708                             | 0.016            | 1.79                           | 49.58                         |
| 0.333  | 101                              | 809                             | 0.018            | 1.64                           | 51.22                         |
| 0.375  | 101                              | 910                             | 0.019            | 1.53                           | 52.75                         |
| 0.417  | 101                              | 1,011                           | 0.020            | 1.43                           | 54.18                         |
| 0.458  | 101                              | 1,112                           | 0.021            | 1.35                           | 55.53                         |
| 0.500  | 101                              | 1,214                           | 0.022            | 1.29                           | 56.82                         |
| 0.542  | 101                              | 1,315                           | 0.023            | 1.23                           | 58.05                         |
| 0.583  | 101                              | 1,416                           | 0.024            | 1.18                           | 59.22                         |
| 0.625  | 101                              | 1,517                           | 0.025            | 1.13                           | 60.36                         |
| 0.667  | 101                              | 1,618                           | 0.026            | 1.09                           | 61.45                         |
| 0.708  | 101                              | 1,719                           | 0.027            | 1.06                           | 62.50                         |
| 0.750  | 101                              | 1,820                           | 0.028            | 1.02                           | 63.53                         |
| 0.792  | 101                              | 1,922                           | 0.029            | 0.99                           | 64.52                         |
| 0.833  | 101                              | 2,023                           | 0.029            | 0.97                           | 65.49                         |
| 0.875  | 101                              | 2,124                           | 0.030            | 0.94                           | 66.43                         |
| 0.917  | 101                              | 2,225                           | 0.031            | 0.92                           | 67.35                         |
| 0.958  | 101                              | 2,326                           | 0.032            | 0.90                           | 68.24                         |
| 1.000  | 101                              | 2,427                           | 0.032            | 0.88                           | 69.12                         |
| 1.042  | 51                               | 2,478                           | 0.033            | 0.43                           | 69.54                         |
| 1.083  | 51                               | 2,528                           | 0.034            | 0.42                           | 69.96                         |
| 1.125  | 51                               | 2,579                           | 0.035            | 0.41                           | 70.38                         |
| 1.167  | 51                               | 2,629                           | 0.035            | 0.40                           | 70.78                         |
| 1.208  | 51                               | 2,680                           | 0.036            | 0.40                           | 71.17                         |
| 1.250  | 51                               | 2,731                           | 0.036            | 0.39                           | 71.56                         |
| 1.292  | 51                               | 2,781                           | 0.037            | 0.38                           | 71.94                         |
| 1.333  | 51                               | 2,832                           | 0.038            | 0.38                           | 72.32                         |
| 1.375  | 51                               | 2,882                           | 0.038            | 0.37                           | 72.69                         |
| 1.417  | 51                               | 2,933                           | 0.039            | 0.36                           | 73.05                         |
| 1.458  | 51                               | 2,983                           | 0.039            | 0.36                           | 73.41                         |
| 1.500  | 51                               | 3,034                           | 0.040            | 0.35                           | 73.77                         |
| 1.542  | 51                               | 3,085                           | 0.041            | 0.35                           | 74.11                         |
| 1.583  | 51                               | 3,135                           | 0.041            | 0.34                           | 74.46                         |
| 1.625  | 51                               | 3,186                           | 0.042            | 0.34                           | 74.80                         |
| 1.667  | 51                               | 3,236                           | 0.042            | 0.33                           | 75.13                         |
| 1.708  | 51                               | 3,287                           | 0.043            | 0.33                           | 75.46                         |
| 1.750  | 51                               | 3,337                           | 0.043            | 0.33                           | 75.79                         |
| 1.792  | 51                               | 3,388                           | 0.044            | 0.32                           | 76.11                         |
| 1.833  | 51                               | 3,439                           | 0.044            | 0.32                           | 76.43                         |
| 1.875  | 51                               | 3,489                           | 0.045            | 0.31                           | 76.74                         |
| 1.917  | 51                               | 3,540                           | 0.045            | 0.31                           | 77.05                         |
| 1.958  | 51                               | 3,590                           | 0.046            | 0.31                           | 77.36                         |
| 2.000  | 51                               | 3,641                           | 0.046            | 0.30                           | 77.66                         |
| 2.042  | 51                               | 3,691                           | 0.047            | 0.30                           | 77.96                         |
| 2.083  | 51                               | 3,742                           | 0.047            | 0.30                           | 78.26                         |
| 2.125  | 51                               | 3,793                           | 0.048            | 0.29                           | 78.56                         |
| 2.167  | 51                               | 3,843                           | 0.048            | 0.29                           | 78.85                         |
| 2.208  | 51                               | 3,894                           | 0.049            | 0.29                           | 79.14                         |
| 2.250  | 51                               | 3,944                           | 0.049            | 0.29                           | 79.42                         |
| 2.292  | 51                               | 3,995                           | 0.050            | 0.28                           | 79.71                         |
| 2.333  | 51                               | 4,045                           | 0.050            | 0.28                           | 79.99                         |
| 2.375  | 51                               | 4,096                           | 0.051            | 0.28                           | 80.26                         |
| 2.417  | 51                               | 4,146                           | 0.051            | 0.28                           | 80.54                         |
| 2.458  | 51                               | 4,197                           | 0.052            | 0.27                           | 80.81                         |
| 2.500  | 51                               | 4,248                           | 0.052            | 0.27                           | 81.08                         |
| 2.542  | 51                               | 4,298                           | 0.052            | 0.27                           | 81.35                         |
| 2.583  | 51                               | 4,349                           | 0.053            | 0.27                           | 81.62                         |
| 2.625  | 51                               | 4,399                           | 0.053            | 0.26                           | 81.88                         |
| 2.667  | 51                               | 4,450                           | 0.054            | 0.26                           | 82.15                         |
| 2.708  | 51                               | 4,500                           | 0.054            | 0.26                           | 82.41                         |
| 2.750  | 51                               | 4,551                           | 0.055            | 0.26                           | 82.66                         |
| 2.792  | 76                               | 4,627                           | 0.055            | 0.38                           | 83.05                         |
| 2.833  | 76                               | 4,703                           | 0.055            | 0.38                           | 83.43                         |
| 2.875  | 76                               | 4,779                           | 0.056            | 0.38                           | 83.81                         |
| 2.917  | 76                               | 4,854                           | 0.056            | 0.38                           | 84.18                         |
| 2.958  | 76                               | 4,930                           | 0.057            | 0.37                           | 84.56                         |
| 3.000  | 76                               | 5,006                           | 0.057            | 0.37                           | 84.93                         |
| 3.042  | 253                              | 5,259                           | 0.058            | 1.23                           | 86.15                         |
| 3.083  | 253                              | 5,512                           | 0.058            | 1.22                           | 87.37                         |
| 3.125  | 253                              | 5,765                           | 0.058            | 1.21                           | 88.58                         |
| 3.167  | 253                              | 6,017                           | 0.059            | 1.20                           | 89.78                         |
| 3.208  | 253                              | 6,270                           | 0.059            | 1.19                           | 90.97                         |
| 3.250  | 253                              | 6,523                           | 0.059            | 1.18                           | 92.15                         |
| 3.292  | 253                              | 6,776                           | 0.060            | 1.18                           | 93.33                         |
| 3.333  | 253                              | 7,029                           | 0.060            | 1.17                           | 94.50                         |
| 3.375  | 253                              | 7,282                           | 0.061            | 1.16                           | 95.66                         |
| 3.417  | 253                              | 7,534                           | 0.061            | 1.15                           | 96.82                         |
| 3.458  | 253                              | 7,787                           | 0.061            | 1.15                           | 97.96                         |
| 3.500  | 253                              | 8,040                           | 0.062            | 1.14                           | 99.10                         |
| 3.542  | 253                              | 8,293                           | 0.063            | 1.13                           | 100.23                        |
| 3.583  | 253                              | 8,546                           | 0.064            | 1.10                           | 101.33                        |

Drawdown (ft)

5.

4.

3.

2.

1.

0.

|       |     |        |        |      |        |
|-------|-----|--------|--------|------|--------|
| 3.625 | 253 | 8,799  | 0.065  | 1.09 | 102.42 |
| 3.667 | 253 | 9,051  | 0.066  | 1.07 | 103.50 |
| 3.708 | 253 | 9,304  | 0.066  | 1.06 | 104.56 |
| 3.750 | 253 | 9,557  | 0.067  | 1.05 | 105.61 |
| 3.792 | 253 | 9,810  | 0.068  | 1.04 | 106.65 |
| 3.833 | 253 | 10,063 | 0.068  | 1.03 | 107.68 |
| 3.875 | 253 | 10,316 | 0.069  | 1.02 | 108.71 |
| 3.917 | 253 | 10,568 | 0.070  | 1.01 | 109.72 |
| 3.958 | 253 | 10,821 | 0.070  | 1.01 | 110.73 |
| 4.000 | 253 | 11,074 | 0.071  | 1.00 | 111.73 |
| 4.042 | 253 | 11,327 | 0.071  | 0.99 | 112.72 |
| 4.083 | 253 | 11,580 | 0.072  | 0.98 | 113.70 |
| 4.125 | 253 | 11,833 | 0.072  | 0.98 | 114.68 |
| 4.167 | 253 | 12,085 | 0.073  | 0.97 | 115.64 |
| 4.208 | 253 | 12,338 | 0.073  | 0.96 | 116.61 |
| 4.250 | 253 | 12,591 | 0.074  | 0.96 | 117.56 |
| 4.292 | 253 | 12,844 | 0.074  | 0.95 | 118.51 |
| 4.333 | 253 | 13,097 | 0.075  | 0.94 | 119.45 |
| 4.375 | 253 | 13,350 | 0.075  | 0.94 | 120.39 |
| 4.417 | 253 | 13,602 | 0.076  | 0.93 | 121.32 |
| 4.458 | 253 | 13,855 | 0.248  | 0.43 | 121.76 |
| 4.500 | 253 | 14,108 | 0.743  | 0.14 | 121.90 |
| 4.542 | 253 | 14,361 | 1.421  | 0.06 | 121.96 |
| 4.583 | 253 | 14,614 | 2.239  | 0.04 | 122.00 |
| 4.625 | 253 | 14,867 | 3.178  | 0.03 | 122.03 |
| 4.667 | 253 | 15,119 | 4.223  | 0.02 | 122.05 |
| 4.708 | 253 | 15,372 | 5.365  | 0.01 | 122.06 |
| 4.750 | 253 | 15,625 | 6.596  | 0.01 | 122.07 |
| 4.792 | 253 | 15,878 | 7.910  | 0.01 | 122.08 |
| 4.833 | 253 | 16,131 | 9.302  | 0.01 | 122.09 |
| 4.875 | 253 | 16,384 | 10.767 | 0.01 | 122.10 |
| 4.917 | 253 | 16,636 | 12.303 | 0.01 | 122.10 |
| 4.958 | 253 | 16,889 | 13.906 | 0.01 | 122.11 |
| 5.000 | 253 | 17,142 | 15.574 | 0.00 | 122.11 |

**BMP B (Stage-Storage-Discharge Rating Curve)**

**BMP B**

| Vault Characteristics         |       |
|-------------------------------|-------|
| Basin Depth (ft) =            | 6.3   |
| Basin Width (ft) =            |       |
| Basin Length (ft) =           |       |
| Low Flow Orifice (Underdrain) |       |
| Num. of Orifices =            | 1     |
| Orifice Invert (ft) =         | 0     |
| Orifice Diameter (in) =       | 1.125 |
| Cg =                          | 0.6   |
| Mid-flow Orifice (1st)        |       |
| Num. of Orifices =            | 1     |
| Orifice Invert (ft) =         | 3.5   |
| Orifice Diameter (in) =       | 0.5   |
| Cg =                          | 0.6   |
| Mid-flow Orifice (2nd)        |       |
| Num. of Orifices =            | 0     |
| Orifice Invert (ft) =         | 4.25  |
| Orifice Diameter (in) =       | 2     |
| Cg =                          | 0.6   |
| Weir Overflow                 |       |
| Upper Weir Inv (ft) =         | 5.53  |
| B (ft) =                      | 12    |
| Cs =                          | 3     |

| BMP B Rating and Storage Table |        |                     |                       |                       |                           |                        |               |                  |                              |                |                          |                         |
|--------------------------------|--------|---------------------|-----------------------|-----------------------|---------------------------|------------------------|---------------|------------------|------------------------------|----------------|--------------------------|-------------------------|
| h (in)                         | h (ft) | Underdrain Orifices | Midflow Orifice (1st) | Midflow Orifice (2nd) | Upper Orifice (weir calc) | Mid-flow Orifice Upper | Overflow Weir | Total Flow (cfs) | Effective Surface Area (ft2) | Porosity (N/A) | Incremental Volume (ft3) | Cumulative Volume (ft3) |
| 0.0                            | 0.00   | 0.000               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.000            | 1777                         | 1.00           | 0                        | 0                       |
| 0.5                            | 0.04   | 0.002               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.002            | 1777                         | 1.00           | 74                       | 74                      |
| 1.0                            | 0.08   | 0.005               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.005            | 1777                         | 1.00           | 74                       | 148                     |
| 1.5                            | 0.13   | 0.009               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.009            | 1777                         | 1.00           | 74                       | 222                     |
| 2.0                            | 0.17   | 0.012               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.012            | 1777                         | 1.00           | 74                       | 296                     |
| 2.5                            | 0.21   | 0.013               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.013            | 1777                         | 1.00           | 74                       | 370                     |
| 3.0                            | 0.25   | 0.015               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.015            | 1777                         | 1.00           | 74                       | 444                     |
| 3.5                            | 0.29   | 0.016               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.016            | 1777                         | 1.00           | 74                       | 518                     |
| 4.0                            | 0.33   | 0.018               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.018            | 1777                         | 1.00           | 74                       | 592                     |
| 4.5                            | 0.38   | 0.019               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.019            | 1777                         | 1.00           | 74                       | 666                     |
| 5.0                            | 0.42   | 0.020               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.020            | 1777                         | 1.00           | 74                       | 741                     |
| 5.5                            | 0.46   | 0.021               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.021            | 1777                         | 1.00           | 74                       | 815                     |
| 6.0                            | 0.50   | 0.022               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.022            | 1777                         | 1.00           | 74                       | 889                     |
| 6.5                            | 0.54   | 0.023               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.023            | 1777                         | 1.00           | 74                       | 963                     |
| 7.0                            | 0.58   | 0.024               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.024            | 1777                         | 1.00           | 74                       | 1037                    |
| 7.5                            | 0.63   | 0.025               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.025            | 1777                         | 1.00           | 74                       | 1111                    |
| 8.0                            | 0.67   | 0.026               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.026            | 1777                         | 1.00           | 74                       | 1185                    |
| 8.5                            | 0.71   | 0.027               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.027            | 1777                         | 1.00           | 74                       | 1259                    |
| 9.0                            | 0.75   | 0.028               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.028            | 1777                         | 1.00           | 74                       | 1333                    |
| 9.5                            | 0.79   | 0.029               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.029            | 1777                         | 1.00           | 74                       | 1407                    |
| 10.0                           | 0.83   | 0.029               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.029            | 1777                         | 1.00           | 74                       | 1481                    |
| 10.5                           | 0.88   | 0.030               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.030            | 1777                         | 1.00           | 74                       | 1555                    |
| 11.0                           | 0.92   | 0.031               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.031            | 1777                         | 1.00           | 74                       | 1629                    |
| 11.5                           | 0.96   | 0.032               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.032            | 1777                         | 1.00           | 74                       | 1703                    |
| 12.0                           | 1.00   | 0.032               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.032            | 1777                         | 1.00           | 74                       | 1777                    |
| 12.5                           | 1.04   | 0.033               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.033            | 889                          | 1.00           | 37                       | 1814                    |
| 13.0                           | 1.08   | 0.034               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.034            | 889                          | 1.00           | 37                       | 1851                    |
| 13.5                           | 1.13   | 0.035               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.035            | 889                          | 1.00           | 37                       | 1888                    |
| 14.0                           | 1.17   | 0.035               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.035            | 889                          | 1.00           | 37                       | 1925                    |
| 14.5                           | 1.21   | 0.036               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.036            | 889                          | 1.00           | 37                       | 1962                    |
| 15.0                           | 1.25   | 0.036               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.036            | 889                          | 1.00           | 37                       | 1999                    |
| 15.5                           | 1.29   | 0.037               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.037            | 889                          | 1.00           | 37                       | 2036                    |
| 16.0                           | 1.33   | 0.038               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.038            | 889                          | 1.00           | 37                       | 2073                    |
| 16.5                           | 1.38   | 0.038               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.038            | 889                          | 1.00           | 37                       | 2110                    |
| 17.0                           | 1.42   | 0.039               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.039            | 889                          | 1.00           | 37                       | 2147                    |
| 17.5                           | 1.46   | 0.039               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.039            | 889                          | 1.00           | 37                       | 2184                    |
| 18.0                           | 1.50   | 0.040               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.040            | 889                          | 1.00           | 37                       | 2222                    |
| 18.5                           | 1.54   | 0.041               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.041            | 889                          | 1.00           | 37                       | 2259                    |
| 19.0                           | 1.58   | 0.041               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.041            | 889                          | 1.00           | 37                       | 2296                    |
| 19.5                           | 1.63   | 0.042               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.042            | 889                          | 1.00           | 37                       | 2333                    |
| 20.0                           | 1.67   | 0.042               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.042            | 889                          | 1.00           | 37                       | 2370                    |
| 20.5                           | 1.71   | 0.043               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.043            | 889                          | 1.00           | 37                       | 2407                    |
| 21.0                           | 1.75   | 0.043               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.043            | 889                          | 1.00           | 37                       | 2444                    |
| 21.5                           | 1.79   | 0.044               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.044            | 889                          | 1.00           | 37                       | 2481                    |
| 22.0                           | 1.83   | 0.044               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.044            | 889                          | 1.00           | 37                       | 2518                    |

|      |      |       |       |       |       |       |       |       |      |      |     |       |
|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|-----|-------|
| 22.5 | 1.88 | 0.045 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.045 | 889  | 1.00 | 37  | 2555  |
| 23.0 | 1.92 | 0.045 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.045 | 889  | 1.00 | 37  | 2592  |
| 23.5 | 1.96 | 0.046 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.046 | 889  | 1.00 | 37  | 2629  |
| 24.0 | 2.00 | 0.046 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.046 | 889  | 1.00 | 37  | 2666  |
| 24.5 | 2.04 | 0.047 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.047 | 889  | 1.00 | 37  | 2703  |
| 25.0 | 2.08 | 0.047 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.047 | 889  | 1.00 | 37  | 2740  |
| 25.5 | 2.13 | 0.048 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.048 | 889  | 1.00 | 37  | 2777  |
| 26.0 | 2.17 | 0.048 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.048 | 889  | 1.00 | 37  | 2814  |
| 26.5 | 2.21 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.049 | 889  | 1.00 | 37  | 2851  |
| 27.0 | 2.25 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.049 | 889  | 1.00 | 37  | 2888  |
| 27.5 | 2.29 | 0.050 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.050 | 889  | 1.00 | 37  | 2925  |
| 28.0 | 2.33 | 0.050 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.050 | 889  | 1.00 | 37  | 2962  |
| 28.5 | 2.38 | 0.051 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.051 | 889  | 1.00 | 37  | 2999  |
| 29.0 | 2.42 | 0.051 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.051 | 889  | 1.00 | 37  | 3036  |
| 29.5 | 2.46 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.052 | 889  | 1.00 | 37  | 3073  |
| 30.0 | 2.50 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.052 | 889  | 1.00 | 37  | 3110  |
| 30.5 | 2.54 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.052 | 889  | 1.00 | 37  | 3147  |
| 31.0 | 2.58 | 0.053 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.053 | 889  | 1.00 | 37  | 3184  |
| 31.5 | 2.63 | 0.053 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.053 | 889  | 1.00 | 37  | 3221  |
| 32.0 | 2.67 | 0.054 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.054 | 889  | 1.00 | 37  | 3258  |
| 32.5 | 2.71 | 0.054 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.054 | 889  | 1.00 | 37  | 3295  |
| 33.0 | 2.75 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.055 | 889  | 1.00 | 37  | 3332  |
| 33.5 | 2.79 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.055 | 1333 | 1.00 | 56  | 3388  |
| 34.0 | 2.83 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.055 | 1333 | 1.00 | 56  | 3443  |
| 34.5 | 2.88 | 0.056 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.056 | 1333 | 1.00 | 56  | 3499  |
| 35.0 | 2.92 | 0.056 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.056 | 1333 | 1.00 | 56  | 3554  |
| 35.5 | 2.96 | 0.057 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.057 | 1333 | 1.00 | 56  | 3610  |
| 36.0 | 3.00 | 0.057 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.057 | 1333 | 1.00 | 56  | 3665  |
| 36.5 | 3.04 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.058 | 4491 | 1.00 | 187 | 3853  |
| 37.0 | 3.08 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.058 | 4540 | 1.00 | 189 | 4042  |
| 37.5 | 3.13 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.058 | 4588 | 1.00 | 191 | 4233  |
| 38.0 | 3.17 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.059 | 4637 | 1.00 | 193 | 4426  |
| 38.5 | 3.21 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.059 | 4685 | 1.00 | 195 | 4621  |
| 39.0 | 3.25 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.059 | 4734 | 1.00 | 197 | 4819  |
| 39.5 | 3.29 | 0.060 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.060 | 4782 | 1.00 | 199 | 5018  |
| 40.0 | 3.33 | 0.060 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.060 | 4830 | 1.00 | 201 | 5219  |
| 40.5 | 3.38 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.061 | 4879 | 1.00 | 203 | 5422  |
| 41.0 | 3.42 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.061 | 4927 | 1.00 | 205 | 5628  |
| 41.5 | 3.46 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.061 | 4976 | 1.00 | 207 | 5835  |
| 42.0 | 3.50 | 0.062 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.062 | 5024 | 1.00 | 209 | 6044  |
| 42.5 | 3.54 | 0.062 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.063 | 5072 | 1.00 | 211 | 6256  |
| 43.0 | 3.58 | 0.063 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.064 | 5121 | 1.00 | 213 | 6469  |
| 43.5 | 3.63 | 0.063 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.065 | 5169 | 1.00 | 215 | 6684  |
| 44.0 | 3.67 | 0.063 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.066 | 5218 | 1.00 | 217 | 6902  |
| 44.5 | 3.71 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.066 | 5266 | 1.00 | 219 | 7121  |
| 45.0 | 3.75 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.067 | 5315 | 1.00 | 221 | 7343  |
| 45.5 | 3.79 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.068 | 5363 | 1.00 | 223 | 7566  |
| 46.0 | 3.83 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.068 | 5411 | 1.00 | 225 | 7792  |
| 46.5 | 3.88 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.069 | 5460 | 1.00 | 228 | 8019  |
| 47.0 | 3.92 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.070 | 5508 | 1.00 | 230 | 8249  |
| 47.5 | 3.96 | 0.066 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.070 | 5557 | 1.00 | 231 | 8480  |
| 48.0 | 4.00 | 0.066 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.071 | 5605 | 1.00 | 234 | 8714  |
| 48.5 | 4.04 | 0.066 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.071 | 5654 | 1.00 | 236 | 8949  |
| 49.0 | 4.08 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.072 | 5702 | 1.00 | 238 | 9187  |
| 49.5 | 4.13 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.072 | 5750 | 1.00 | 240 | 9426  |
| 50.0 | 4.17 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.073 | 5799 | 1.00 | 242 | 9668  |
| 50.5 | 4.21 | 0.068 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.073 | 5847 | 1.00 | 244 | 9912  |
| 51.0 | 4.25 | 0.068 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.074 | 5896 | 1.00 | 246 | 10157 |
| 51.5 | 4.29 | 0.068 | 0.006 | 0.003 | 0.000 | 0.000 | 0.000 | 0.074 | 5944 | 1.00 | 248 | 10405 |
| 52.0 | 4.33 | 0.069 | 0.006 | 0.010 | 0.000 | 0.000 | 0.000 | 0.075 | 5992 | 1.00 | 250 | 10655 |
| 52.5 | 4.38 | 0.069 | 0.006 | 0.018 | 0.000 | 0.000 | 0.000 | 0.075 | 6041 | 1.00 | 252 | 10906 |
| 53.0 | 4.42 | 0.069 | 0.006 | 0.030 | 0.000 | 0.000 | 0.000 | 0.076 | 6089 | 1.00 | 254 | 11160 |
| 53.5 | 4.46 | 0.070 | 0.006 | 0.037 | 0.000 | 0.000 | 0.000 | 0.076 | 6138 | 1.00 | 256 | 11416 |
| 54.0 | 4.50 | 0.070 | 0.006 | 0.043 | 0.000 | 0.000 | 0.000 | 0.077 | 6186 | 1.00 | 258 | 11674 |
| 54.5 | 4.54 | 0.070 | 0.007 | 0.048 | 0.000 | 0.000 | 0.000 | 0.077 | 6235 | 1.00 | 260 | 11933 |
| 55.0 | 4.58 | 0.071 | 0.007 | 0.053 | 0.000 | 0.000 | 0.000 | 0.078 | 6283 | 1.00 | 262 | 12195 |
| 55.5 | 4.63 | 0.071 | 0.007 | 0.057 | 0.000 | 0.000 | 0.000 | 0.078 | 6331 | 1.00 | 264 | 12459 |
| 56.0 | 4.67 | 0.071 | 0.007 | 0.061 | 0.000 | 0.000 | 0.000 | 0.078 | 6380 | 1.00 | 266 | 12725 |
| 56.5 | 4.71 | 0.072 | 0.007 | 0.064 | 0.000 | 0.000 | 0.000 | 0.079 | 6428 | 1.00 | 268 | 12993 |
| 57.0 | 4.75 | 0.072 | 0.007 | 0.068 | 0.000 | 0.000 | 0.000 | 0.079 | 6477 | 1.00 | 270 | 13263 |
| 57.5 | 4.79 | 0.072 | 0.007 | 0.071 | 0.000 | 0.000 | 0.000 | 0.080 | 6525 | 1.00 | 272 | 13534 |
| 58.0 | 4.83 | 0.073 | 0.008 | 0.074 | 0.000 | 0.000 | 0.000 | 0.080 | 6574 | 1.00 | 274 | 13808 |
| 58.5 | 4.88 | 0.073 | 0.008 | 0.077 | 0.000 | 0.000 | 0.000 | 0.081 | 6622 | 1.00 | 276 | 14084 |
| 59.0 | 4.92 | 0.073 | 0.008 | 0.080 | 0.000 | 0.000 | 0.000 | 0.081 | 6670 | 1.00 | 278 | 14362 |
| 59.5 | 4.96 | 0.074 | 0.008 | 0.083 | 0.000 | 0.000 | 0.000 | 0.082 | 6719 | 1.00 | 280 | 14642 |
| 60.0 | 5.00 | 0.074 | 0.008 | 0.086 | 0.000 | 0.000 | 0.000 | 0.082 | 6767 | 1.00 | 282 | 14924 |
| 60.5 | 5.04 | 0.074 | 0.008 | 0.088 | 0.000 | 0.000 | 0.000 | 0.082 | 6816 | 1.00 | 284 | 15208 |
| 61.0 | 5.08 | 0.075 | 0.008 | 0.091 | 0.000 | 0.000 | 0.000 | 0.083 | 6864 | 1.00 | 286 | 15494 |
| 61.5 | 5.13 | 0.075 | 0.008 | 0.093 | 0.000 | 0.000 | 0.000 | 0.083 | 6913 | 1.00 | 288 | 15782 |
| 62.0 | 5.17 | 0.075 | 0.008 | 0.096 | 0.000 | 0.000 | 0.000 | 0.084 | 6961 | 1.00 | 290 | 16072 |
| 62.5 | 5.21 | 0.076 | 0.009 | 0.098 | 0.000 | 0.000 | 0.000 | 0.084 | 7009 | 1.00 | 292 | 16364 |
| 63.0 | 5.25 | 0.076 | 0.009 | 0.101 | 0.000 | 0.000 | 0.000 | 0.084 | 7058 | 1.00 | 294 | 16658 |
| 63.5 | 5.29 | 0.076 | 0.009 | 0.103 | 0.000 | 0.000 | 0.000 | 0.085 | 7106 | 1.00 | 296 | 16954 |
| 64.0 | 5.33 | 0.076 | 0.009 | 0.105 | 0.000 | 0.000 | 0.000 | 0.085 | 7155 | 1.00 | 298 | 17252 |
| 64.5 | 5.38 | 0.077 | 0.009 | 0.107 | 0.000 | 0.000 | 0.000 | 0.086 | 7203 | 1.00 | 300 | 17553 |



|      |      |       |       |       |       |       |        |        |      |      |     |       |
|------|------|-------|-------|-------|-------|-------|--------|--------|------|------|-----|-------|
| 65.0 | 5.42 | 0.077 | 0.009 | 0.109 | 0.000 | 0.000 | 0.000  | 0.086  | 7251 | 1.00 | 302 | 17855 |
| 65.5 | 5.46 | 0.077 | 0.009 | 0.111 | 0.000 | 0.000 | 0.000  | 0.086  | 7300 | 1.00 | 304 | 18159 |
| 66.0 | 5.50 | 0.078 | 0.009 | 0.113 | 0.000 | 0.000 | 0.000  | 0.087  | 7348 | 1.00 | 306 | 18465 |
| 66.5 | 5.54 | 0.078 | 0.009 | 0.115 | 0.000 | 0.000 | 0.045  | 0.133  | 7397 | 1.00 | 308 | 18773 |
| 67.0 | 5.58 | 0.078 | 0.009 | 0.117 | 0.000 | 0.000 | 0.443  | 0.531  | 7445 | 1.00 | 310 | 19084 |
| 67.5 | 5.63 | 0.079 | 0.010 | 0.119 | 0.000 | 0.000 | 1.054  | 1.142  | 7494 | 1.00 | 312 | 19396 |
| 68.0 | 5.67 | 0.079 | 0.010 | 0.121 | 0.000 | 0.000 | 1.819  | 1.907  | 7542 | 1.00 | 314 | 19710 |
| 68.5 | 5.71 | 0.079 | 0.010 | 0.123 | 0.000 | 0.000 | 2.711  | 2.800  | 7590 | 1.00 | 316 | 20026 |
| 69.0 | 5.75 | 0.079 | 0.010 | 0.125 | 0.000 | 0.000 | 3.715  | 3.804  | 7639 | 1.00 | 318 | 20345 |
| 70.0 | 5.83 | 0.080 | 0.010 | 0.129 | 0.000 | 0.000 | 6.014  | 6.104  | 7736 | 1.00 | 645 | 20989 |
| 71.0 | 5.92 | 0.081 | 0.010 | 0.132 | 0.000 | 0.000 | 8.656  | 8.747  | 7833 | 1.00 | 653 | 21642 |
| 72.0 | 6.00 | 0.081 | 0.010 | 0.136 | 0.000 | 0.000 | 11.600 | 11.691 | 7929 | 1.00 | 661 | 22303 |
| 73.0 | 6.08 | 0.082 | 0.011 | 0.139 | 0.000 | 0.000 | 14.818 | 14.910 | 8026 | 1.00 | 669 | 22972 |
| 74.0 | 6.17 | 0.082 | 0.011 | 0.142 | 0.000 | 0.000 | 18.288 | 18.381 | 8123 | 1.00 | 677 | 23649 |
| 75.0 | 6.25 | 0.083 | 0.011 | 0.145 | 0.000 | 0.000 | 21.994 | 22.087 | 8220 | 1.00 | 685 | 24333 |
| 75.6 | 6.30 | 0.083 | 0.011 | 0.147 | 0.000 | 0.000 | 24.324 | 24.418 | 8278 | 1.00 | 414 | 24747 |

| BMP-B  |                                  |                                 |                  | CALCULATED                     |                               |
|--------|----------------------------------|---------------------------------|------------------|--------------------------------|-------------------------------|
| h (ft) | STORAGE                          |                                 | DISCHARGE        | DRAWDOWN TIME                  |                               |
|        | Incremental storage volume (ft³) | Cumulative storage volume (ft³) | Total Flow (cfs) | Incremental Drawdown Time (hr) | Cumulative Drawdown Time (hr) |
| 0.000  | 0                                | 0                               | 0.000            | 0.00                           | 0.00                          |
| 0.042  | 74                               | 74                              | 0.002            | 21.50                          | 21.50                         |
| 0.083  | 74                               | 148                             | 0.005            | 5.61                           | 27.11                         |
| 0.125  | 74                               | 222                             | 0.009            | 2.80                           | 29.91                         |
| 0.167  | 74                               | 296                             | 0.012            | 1.98                           | 31.89                         |
| 0.208  | 74                               | 370                             | 0.013            | 1.65                           | 33.54                         |
| 0.250  | 74                               | 444                             | 0.015            | 1.45                           | 34.99                         |
| 0.292  | 74                               | 518                             | 0.016            | 1.31                           | 36.30                         |
| 0.333  | 74                               | 592                             | 0.018            | 1.20                           | 37.51                         |
| 0.375  | 74                               | 666                             | 0.019            | 1.12                           | 38.62                         |
| 0.417  | 74                               | 741                             | 0.020            | 1.05                           | 39.67                         |
| 0.458  | 74                               | 815                             | 0.021            | 0.99                           | 40.66                         |
| 0.500  | 74                               | 889                             | 0.022            | 0.94                           | 41.60                         |
| 0.542  | 74                               | 963                             | 0.023            | 0.90                           | 42.50                         |
| 0.583  | 74                               | 1,037                           | 0.024            | 0.86                           | 43.36                         |
| 0.625  | 74                               | 1,111                           | 0.025            | 0.83                           | 44.19                         |
| 0.667  | 74                               | 1,185                           | 0.026            | 0.80                           | 44.99                         |
| 0.708  | 74                               | 1,259                           | 0.027            | 0.77                           | 45.77                         |
| 0.750  | 74                               | 1,333                           | 0.028            | 0.75                           | 46.52                         |
| 0.792  | 74                               | 1,407                           | 0.029            | 0.73                           | 47.24                         |
| 0.833  | 74                               | 1,481                           | 0.029            | 0.71                           | 47.95                         |
| 0.875  | 74                               | 1,555                           | 0.030            | 0.69                           | 48.64                         |
| 0.917  | 74                               | 1,629                           | 0.031            | 0.67                           | 49.31                         |
| 0.958  | 74                               | 1,703                           | 0.032            | 0.66                           | 49.97                         |
| 1.000  | 74                               | 1,777                           | 0.032            | 0.64                           | 50.61                         |
| 1.042  | 37                               | 1,814                           | 0.033            | 0.31                           | 50.92                         |
| 1.083  | 37                               | 1,851                           | 0.034            | 0.31                           | 51.23                         |
| 1.125  | 37                               | 1,888                           | 0.035            | 0.30                           | 51.53                         |
| 1.167  | 37                               | 1,925                           | 0.035            | 0.30                           | 51.82                         |
| 1.208  | 37                               | 1,962                           | 0.036            | 0.29                           | 52.11                         |
| 1.250  | 37                               | 1,999                           | 0.036            | 0.28                           | 52.40                         |
| 1.292  | 37                               | 2,036                           | 0.037            | 0.28                           | 52.68                         |
| 1.333  | 37                               | 2,073                           | 0.038            | 0.28                           | 52.95                         |
| 1.375  | 37                               | 2,110                           | 0.038            | 0.27                           | 53.22                         |
| 1.417  | 37                               | 2,147                           | 0.039            | 0.27                           | 53.49                         |
| 1.458  | 37                               | 2,184                           | 0.039            | 0.26                           | 53.75                         |
| 1.500  | 37                               | 2,222                           | 0.040            | 0.26                           | 54.01                         |
| 1.542  | 37                               | 2,259                           | 0.041            | 0.25                           | 54.27                         |
| 1.583  | 37                               | 2,296                           | 0.041            | 0.25                           | 54.52                         |
| 1.625  | 37                               | 2,333                           | 0.042            | 0.25                           | 54.77                         |
| 1.667  | 37                               | 2,370                           | 0.042            | 0.24                           | 55.01                         |
| 1.708  | 37                               | 2,407                           | 0.043            | 0.24                           | 55.25                         |
| 1.750  | 37                               | 2,444                           | 0.043            | 0.24                           | 55.49                         |
| 1.792  | 37                               | 2,481                           | 0.044            | 0.24                           | 55.73                         |
| 1.833  | 37                               | 2,518                           | 0.044            | 0.23                           | 55.96                         |
| 1.875  | 37                               | 2,555                           | 0.045            | 0.23                           | 56.19                         |
| 1.917  | 37                               | 2,592                           | 0.045            | 0.23                           | 56.42                         |
| 1.958  | 37                               | 2,629                           | 0.046            | 0.23                           | 56.64                         |
| 2.000  | 37                               | 2,666                           | 0.046            | 0.22                           | 56.86                         |
| 2.042  | 37                               | 2,703                           | 0.047            | 0.22                           | 57.08                         |
| 2.083  | 37                               | 2,740                           | 0.047            | 0.22                           | 57.30                         |
| 2.125  | 37                               | 2,777                           | 0.048            | 0.22                           | 57.52                         |
| 2.167  | 37                               | 2,814                           | 0.048            | 0.21                           | 57.73                         |
| 2.208  | 37                               | 2,851                           | 0.049            | 0.21                           | 57.94                         |
| 2.250  | 37                               | 2,888                           | 0.049            | 0.21                           | 58.15                         |
| 2.292  | 37                               | 2,925                           | 0.050            | 0.21                           | 58.36                         |
| 2.333  | 37                               | 2,962                           | 0.050            | 0.21                           | 58.57                         |
| 2.375  | 37                               | 2,999                           | 0.051            | 0.20                           | 58.77                         |
| 2.417  | 37                               | 3,036                           | 0.051            | 0.20                           | 58.97                         |
| 2.458  | 37                               | 3,073                           | 0.052            | 0.20                           | 59.17                         |
| 2.500  | 37                               | 3,110                           | 0.052            | 0.20                           | 59.37                         |
| 2.542  | 37                               | 3,147                           | 0.052            | 0.20                           | 59.57                         |
| 2.583  | 37                               | 3,184                           | 0.053            | 0.20                           | 59.76                         |
| 2.625  | 37                               | 3,221                           | 0.053            | 0.19                           | 59.96                         |
| 2.667  | 37                               | 3,258                           | 0.054            | 0.19                           | 60.15                         |
| 2.708  | 37                               | 3,295                           | 0.054            | 0.19                           | 60.34                         |
| 2.750  | 37                               | 3,332                           | 0.055            | 0.19                           | 60.53                         |
| 2.792  | 56                               | 3,388                           | 0.055            | 0.28                           | 60.81                         |
| 2.833  | 56                               | 3,443                           | 0.055            | 0.28                           | 61.09                         |
| 2.875  | 56                               | 3,499                           | 0.056            | 0.28                           | 61.36                         |
| 2.917  | 56                               | 3,554                           | 0.056            | 0.28                           | 61.64                         |
| 2.958  | 56                               | 3,610                           | 0.057            | 0.27                           | 61.91                         |
| 3.000  | 56                               | 3,665                           | 0.057            | 0.27                           | 62.18                         |
| 3.042  | 187                              | 3,853                           | 0.058            | 0.91                           | 63.09                         |
| 3.083  | 189                              | 4,042                           | 0.058            | 0.91                           | 64.00                         |
| 3.125  | 191                              | 4,233                           | 0.058            | 0.91                           | 64.91                         |
| 3.167  | 193                              | 4,426                           | 0.059            | 0.92                           | 65.83                         |
| 3.208  | 195                              | 4,621                           | 0.059            | 0.92                           | 66.75                         |
| 3.250  | 197                              | 4,819                           | 0.059            | 0.92                           | 67.68                         |
| 3.292  | 199                              | 5,018                           | 0.060            | 0.93                           | 68.60                         |
| 3.333  | 201                              | 5,219                           | 0.060            | 0.93                           | 69.53                         |
| 3.375  | 203                              | 5,422                           | 0.061            | 0.93                           | 70.47                         |
| 3.417  | 205                              | 5,628                           | 0.061            | 0.94                           | 71.41                         |
| 3.458  | 207                              | 5,835                           | 0.061            | 0.94                           | 72.35                         |
| 3.500  | 209                              | 6,044                           | 0.062            | 0.94                           | 73.29                         |
| 3.542  | 211                              | 6,256                           | 0.063            | 0.94                           | 74.23                         |
| 3.583  | 213                              | 6,469                           | 0.064            | 0.93                           | 75.16                         |

|       |     |        |       |      |        |
|-------|-----|--------|-------|------|--------|
| 3.625 | 215 | 6,684  | 0.065 | 0.93 | 76.09  |
| 3.667 | 217 | 6,902  | 0.066 | 0.92 | 77.01  |
| 3.708 | 219 | 7,121  | 0.066 | 0.92 | 77.94  |
| 3.750 | 221 | 7,343  | 0.067 | 0.92 | 78.86  |
| 3.792 | 223 | 7,566  | 0.068 | 0.92 | 79.78  |
| 3.833 | 225 | 7,792  | 0.068 | 0.92 | 80.70  |
| 3.875 | 228 | 8,019  | 0.069 | 0.92 | 81.62  |
| 3.917 | 230 | 8,249  | 0.070 | 0.92 | 82.54  |
| 3.958 | 231 | 8,480  | 0.070 | 0.92 | 83.46  |
| 4.000 | 234 | 8,714  | 0.071 | 0.92 | 84.38  |
| 4.042 | 236 | 8,949  | 0.071 | 0.92 | 85.31  |
| 4.083 | 238 | 9,187  | 0.072 | 0.92 | 86.23  |
| 4.125 | 240 | 9,426  | 0.072 | 0.92 | 87.16  |
| 4.167 | 242 | 9,668  | 0.073 | 0.93 | 88.08  |
| 4.208 | 244 | 9,912  | 0.073 | 0.93 | 89.01  |
| 4.250 | 246 | 10,157 | 0.074 | 0.93 | 89.94  |
| 4.292 | 248 | 10,405 | 0.074 | 0.93 | 90.87  |
| 4.333 | 250 | 10,655 | 0.075 | 0.93 | 91.80  |
| 4.375 | 252 | 10,906 | 0.075 | 0.93 | 92.73  |
| 4.417 | 254 | 11,160 | 0.076 | 0.93 | 93.66  |
| 4.458 | 256 | 11,416 | 0.076 | 0.94 | 94.60  |
| 4.500 | 258 | 11,674 | 0.077 | 0.94 | 95.54  |
| 4.542 | 260 | 11,933 | 0.077 | 0.94 | 96.48  |
| 4.583 | 262 | 12,195 | 0.078 | 0.94 | 97.42  |
| 4.625 | 264 | 12,459 | 0.078 | 0.94 | 98.36  |
| 4.667 | 266 | 12,725 | 0.078 | 0.94 | 99.30  |
| 4.708 | 268 | 12,993 | 0.079 | 0.95 | 100.25 |
| 4.750 | 270 | 13,263 | 0.079 | 0.95 | 101.19 |
| 4.792 | 272 | 13,534 | 0.080 | 0.95 | 102.14 |
| 4.833 | 274 | 13,808 | 0.080 | 0.95 | 103.09 |
| 4.875 | 276 | 14,084 | 0.081 | 0.95 | 104.05 |
| 4.917 | 278 | 14,362 | 0.081 | 0.95 | 105.00 |
| 4.958 | 280 | 14,642 | 0.082 | 0.96 | 105.96 |
| 5.000 | 282 | 14,924 | 0.082 | 0.96 | 106.92 |

**BMP C1 (Stage-Storage-Discharge Rating Curve)**

**BMP C1**

| Vault Characteristics         |       |
|-------------------------------|-------|
| Basin Depth (ft) =            | 5.5   |
| Basin Width (ft) =            |       |
| Basin Length (ft) =           |       |
| Low Flow Orifice (Underdrain) |       |
| Num. of Orifices =            | 1     |
| Orifice Invert (ft) =         | 0     |
| Orifice Diameter (in) =       | 1.125 |
| C <sub>g</sub> =              | 0.6   |
| Mid-flow Orifice (1st)        |       |
| Num. of Orifices =            | 1     |
| Orifice Invert (ft) =         | 3.5   |
| Orifice Diameter (in) =       | 0.5   |
| C <sub>g</sub> =              | 0.6   |
| Mid-flow Orifice (2nd)        |       |
| Num. of Orifices =            | 0     |
| Orifice Invert (ft) =         | 4.25  |
| Orifice Diameter (in) =       | 2     |
| C <sub>g</sub> =              | 0.6   |
| Weir Overflow                 |       |
| Upper Weir Inv (ft) =         | 4.93  |
| B (ft) =                      | 12    |
| C <sub>s</sub> =              | 3     |

**BMP C1 Rating and Storage Table**

| h (in) | h (ft) | Underdrain Orifices | Midflow Orifice (1st) | Midflow Orifice (2nd) | Upper Orifice (weir calc) | Mid-flow Orifice Upper | Overflow Weir | 4.96  | Effective Surface Area (ft <sup>2</sup> ) | Porosity (N/A) | Incremental Volume (ft <sup>3</sup> ) | Cumulative Volume (ft <sup>3</sup> ) |
|--------|--------|---------------------|-----------------------|-----------------------|---------------------------|------------------------|---------------|-------|-------------------------------------------|----------------|---------------------------------------|--------------------------------------|
| 0.0    | 0.00   | 0.000               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.000 | 348                                       | 1.00           | 0                                     | 0                                    |
| 0.5    | 0.04   | 0.002               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.002 | 348                                       | 1.00           | 15                                    | 15                                   |
| 1.0    | 0.08   | 0.005               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.005 | 348                                       | 1.00           | 15                                    | 29                                   |
| 1.5    | 0.13   | 0.009               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.009 | 348                                       | 1.00           | 15                                    | 44                                   |
| 2.0    | 0.17   | 0.012               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.012 | 348                                       | 1.00           | 15                                    | 58                                   |
| 2.5    | 0.21   | 0.013               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.013 | 348                                       | 1.00           | 15                                    | 73                                   |
| 3.0    | 0.25   | 0.015               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.015 | 348                                       | 1.00           | 15                                    | 87                                   |
| 3.5    | 0.29   | 0.016               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.016 | 348                                       | 1.00           | 15                                    | 102                                  |
| 4.0    | 0.33   | 0.018               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.018 | 348                                       | 1.00           | 15                                    | 116                                  |
| 4.5    | 0.38   | 0.019               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.019 | 348                                       | 1.00           | 15                                    | 131                                  |
| 5.0    | 0.42   | 0.020               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.020 | 348                                       | 1.00           | 15                                    | 145                                  |
| 5.5    | 0.46   | 0.021               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.021 | 348                                       | 1.00           | 15                                    | 160                                  |
| 6.0    | 0.50   | 0.022               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.022 | 348                                       | 1.00           | 15                                    | 174                                  |
| 6.5    | 0.54   | 0.023               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.023 | 348                                       | 1.00           | 15                                    | 189                                  |
| 7.0    | 0.58   | 0.024               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.024 | 348                                       | 1.00           | 15                                    | 203                                  |
| 7.5    | 0.63   | 0.025               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.025 | 348                                       | 1.00           | 15                                    | 218                                  |
| 8.0    | 0.67   | 0.026               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.026 | 348                                       | 1.00           | 15                                    | 232                                  |
| 8.5    | 0.71   | 0.027               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.027 | 348                                       | 1.00           | 15                                    | 247                                  |
| 9.0    | 0.75   | 0.028               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.028 | 348                                       | 1.00           | 15                                    | 261                                  |
| 9.5    | 0.79   | 0.029               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.029 | 348                                       | 1.00           | 15                                    | 276                                  |
| 10.0   | 0.83   | 0.029               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.029 | 348                                       | 1.00           | 15                                    | 290                                  |
| 10.5   | 0.88   | 0.030               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.030 | 348                                       | 1.00           | 15                                    | 305                                  |
| 11.0   | 0.92   | 0.031               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.031 | 348                                       | 1.00           | 15                                    | 319                                  |
| 11.5   | 0.96   | 0.032               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.032 | 348                                       | 1.00           | 15                                    | 334                                  |
| 12.0   | 1.00   | 0.032               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.032 | 348                                       | 1.00           | 15                                    | 348                                  |
| 12.5   | 1.04   | 0.033               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.033 | 174                                       | 1.00           | 7                                     | 356                                  |
| 13.0   | 1.08   | 0.034               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.034 | 174                                       | 1.00           | 7                                     | 363                                  |
| 13.5   | 1.13   | 0.035               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.035 | 174                                       | 1.00           | 7                                     | 370                                  |
| 14.0   | 1.17   | 0.035               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.035 | 174                                       | 1.00           | 7                                     | 377                                  |
| 14.5   | 1.21   | 0.036               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.036 | 174                                       | 1.00           | 7                                     | 385                                  |
| 15.0   | 1.25   | 0.036               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.036 | 174                                       | 1.00           | 7                                     | 392                                  |
| 15.5   | 1.29   | 0.037               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.037 | 174                                       | 1.00           | 7                                     | 399                                  |
| 16.0   | 1.33   | 0.038               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.038 | 174                                       | 1.00           | 7                                     | 406                                  |
| 16.5   | 1.38   | 0.038               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.038 | 174                                       | 1.00           | 7                                     | 414                                  |
| 17.0   | 1.42   | 0.039               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.039 | 174                                       | 1.00           | 7                                     | 421                                  |
| 17.5   | 1.46   | 0.039               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.039 | 174                                       | 1.00           | 7                                     | 428                                  |
| 18.0   | 1.50   | 0.040               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.040 | 174                                       | 1.00           | 7                                     | 436                                  |
| 18.5   | 1.54   | 0.041               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.041 | 174                                       | 1.00           | 7                                     | 443                                  |
| 19.0   | 1.58   | 0.041               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.041 | 174                                       | 1.00           | 7                                     | 450                                  |
| 19.5   | 1.63   | 0.042               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.042 | 174                                       | 1.00           | 7                                     | 457                                  |
| 20.0   | 1.67   | 0.042               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.042 | 174                                       | 1.00           | 7                                     | 465                                  |
| 20.5   | 1.71   | 0.043               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.043 | 174                                       | 1.00           | 7                                     | 472                                  |
| 21.0   | 1.75   | 0.043               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.043 | 174                                       | 1.00           | 7                                     | 479                                  |
| 21.5   | 1.79   | 0.044               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.044 | 174                                       | 1.00           | 7                                     | 486                                  |
| 22.0   | 1.83   | 0.044               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.044 | 174                                       | 1.00           | 7                                     | 494                                  |
| 22.5   | 1.88   | 0.045               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.045 | 174                                       | 1.00           | 7                                     | 501                                  |
| 23.0   | 1.92   | 0.045               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.045 | 174                                       | 1.00           | 7                                     | 508                                  |

|      |      |       |       |       |       |       |        |        |      |      |     |      |
|------|------|-------|-------|-------|-------|-------|--------|--------|------|------|-----|------|
| 23.5 | 1.96 | 0.046 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.046  | 174  | 1.00 | 7   | 515  |
| 24.0 | 2.00 | 0.046 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.046  | 174  | 1.00 | 7   | 523  |
| 24.5 | 2.04 | 0.047 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.047  | 174  | 1.00 | 7   | 530  |
| 25.0 | 2.08 | 0.047 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.047  | 174  | 1.00 | 7   | 537  |
| 25.5 | 2.13 | 0.048 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.048  | 174  | 1.00 | 7   | 544  |
| 26.0 | 2.17 | 0.048 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.048  | 174  | 1.00 | 7   | 552  |
| 26.5 | 2.21 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.049  | 174  | 1.00 | 7   | 559  |
| 27.0 | 2.25 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.049  | 174  | 1.00 | 7   | 566  |
| 27.5 | 2.29 | 0.050 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.050  | 174  | 1.00 | 7   | 573  |
| 28.0 | 2.33 | 0.050 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.050  | 174  | 1.00 | 7   | 581  |
| 28.5 | 2.38 | 0.051 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.051  | 174  | 1.00 | 7   | 588  |
| 29.0 | 2.42 | 0.051 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.051  | 174  | 1.00 | 7   | 595  |
| 29.5 | 2.46 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.052  | 174  | 1.00 | 7   | 602  |
| 30.0 | 2.50 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.052  | 174  | 1.00 | 7   | 610  |
| 30.5 | 2.54 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.052  | 174  | 1.00 | 7   | 617  |
| 31.0 | 2.58 | 0.053 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.053  | 174  | 1.00 | 7   | 624  |
| 31.5 | 2.63 | 0.053 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.053  | 174  | 1.00 | 7   | 631  |
| 32.0 | 2.67 | 0.054 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.054  | 174  | 1.00 | 7   | 639  |
| 32.5 | 2.71 | 0.054 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.054  | 174  | 1.00 | 7   | 646  |
| 33.0 | 2.75 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.055  | 174  | 1.00 | 7   | 653  |
| 33.5 | 2.79 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.055  | 261  | 1.00 | 11  | 664  |
| 34.0 | 2.83 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.055  | 261  | 1.00 | 11  | 675  |
| 34.5 | 2.88 | 0.056 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.056  | 261  | 1.00 | 11  | 686  |
| 35.0 | 2.92 | 0.056 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.056  | 261  | 1.00 | 11  | 697  |
| 35.5 | 2.96 | 0.057 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.057  | 261  | 1.00 | 11  | 708  |
| 36.0 | 3.00 | 0.057 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.057  | 261  | 1.00 | 11  | 719  |
| 36.5 | 3.04 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.058  | 897  | 1.00 | 37  | 756  |
| 37.0 | 3.08 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.058  | 922  | 1.00 | 38  | 794  |
| 37.5 | 3.13 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.058  | 948  | 1.00 | 39  | 834  |
| 38.0 | 3.17 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.059  | 973  | 1.00 | 41  | 874  |
| 38.5 | 3.21 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.059  | 998  | 1.00 | 42  | 916  |
| 39.0 | 3.25 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.059  | 1024 | 1.00 | 43  | 959  |
| 39.5 | 3.29 | 0.060 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.060  | 1050 | 1.00 | 44  | 1002 |
| 40.0 | 3.33 | 0.060 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.060  | 1075 | 1.00 | 45  | 1047 |
| 40.5 | 3.38 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.061  | 1101 | 1.00 | 46  | 1093 |
| 41.0 | 3.42 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.061  | 1126 | 1.00 | 47  | 1140 |
| 41.5 | 3.46 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.061  | 1151 | 1.00 | 48  | 1188 |
| 42.0 | 3.50 | 0.062 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000  | 0.062  | 1177 | 1.00 | 49  | 1237 |
| 42.5 | 3.54 | 0.062 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000  | 0.063  | 1203 | 1.00 | 50  | 1287 |
| 43.0 | 3.58 | 0.063 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000  | 0.064  | 1228 | 1.00 | 51  | 1338 |
| 43.5 | 3.63 | 0.063 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000  | 0.065  | 1254 | 1.00 | 52  | 1390 |
| 44.0 | 3.67 | 0.063 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000  | 0.066  | 1279 | 1.00 | 53  | 1444 |
| 44.5 | 3.71 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000  | 0.066  | 1304 | 1.00 | 54  | 1498 |
| 45.0 | 3.75 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000  | 0.067  | 1330 | 1.00 | 55  | 1554 |
| 45.5 | 3.79 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000  | 0.068  | 1356 | 1.00 | 56  | 1610 |
| 46.0 | 3.83 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000  | 0.068  | 1381 | 1.00 | 58  | 1668 |
| 46.5 | 3.88 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000  | 0.069  | 1407 | 1.00 | 59  | 1726 |
| 47.0 | 3.92 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000  | 0.070  | 1432 | 1.00 | 60  | 1786 |
| 47.5 | 3.96 | 0.066 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000  | 0.070  | 1457 | 1.00 | 61  | 1847 |
| 48.0 | 4.00 | 0.066 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.071  | 1483 | 1.00 | 62  | 1908 |
| 48.5 | 4.04 | 0.066 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.071  | 1509 | 1.00 | 63  | 1971 |
| 49.0 | 4.08 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.072  | 1534 | 1.00 | 64  | 2035 |
| 49.5 | 4.13 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.072  | 1560 | 1.00 | 65  | 2100 |
| 50.0 | 4.17 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.073  | 1585 | 1.00 | 66  | 2166 |
| 50.5 | 4.21 | 0.068 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000  | 0.073  | 1610 | 1.00 | 67  | 2233 |
| 51.0 | 4.25 | 0.068 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000  | 0.074  | 1636 | 1.00 | 68  | 2301 |
| 51.5 | 4.29 | 0.068 | 0.006 | 0.003 | 0.000 | 0.000 | 0.000  | 0.074  | 1662 | 1.00 | 69  | 2371 |
| 52.0 | 4.33 | 0.069 | 0.006 | 0.010 | 0.000 | 0.000 | 0.000  | 0.075  | 1687 | 1.00 | 70  | 2441 |
| 52.5 | 4.38 | 0.069 | 0.006 | 0.018 | 0.000 | 0.000 | 0.000  | 0.075  | 1713 | 1.00 | 71  | 2512 |
| 53.0 | 4.42 | 0.069 | 0.006 | 0.030 | 0.000 | 0.000 | 0.000  | 0.076  | 1738 | 1.00 | 72  | 2585 |
| 53.5 | 4.46 | 0.070 | 0.006 | 0.037 | 0.000 | 0.000 | 0.000  | 0.076  | 1763 | 1.00 | 73  | 2658 |
| 54.0 | 4.50 | 0.070 | 0.006 | 0.043 | 0.000 | 0.000 | 0.000  | 0.077  | 1789 | 1.00 | 75  | 2733 |
| 54.5 | 4.54 | 0.070 | 0.007 | 0.048 | 0.000 | 0.000 | 0.000  | 0.077  | 1815 | 1.00 | 76  | 2808 |
| 55.0 | 4.58 | 0.071 | 0.007 | 0.053 | 0.000 | 0.000 | 0.000  | 0.078  | 1840 | 1.00 | 77  | 2885 |
| 55.5 | 4.63 | 0.071 | 0.007 | 0.057 | 0.000 | 0.000 | 0.000  | 0.078  | 1866 | 1.00 | 78  | 2963 |
| 56.0 | 4.67 | 0.071 | 0.007 | 0.061 | 0.000 | 0.000 | 0.000  | 0.078  | 1891 | 1.00 | 79  | 3041 |
| 56.5 | 4.71 | 0.072 | 0.007 | 0.064 | 0.000 | 0.000 | 0.000  | 0.079  | 1916 | 1.00 | 80  | 3121 |
| 57.0 | 4.75 | 0.072 | 0.007 | 0.068 | 0.000 | 0.000 | 0.000  | 0.079  | 1942 | 1.00 | 81  | 3202 |
| 57.5 | 4.79 | 0.072 | 0.007 | 0.071 | 0.000 | 0.000 | 0.000  | 0.080  | 1968 | 1.00 | 82  | 3284 |
| 58.0 | 4.83 | 0.073 | 0.008 | 0.074 | 0.000 | 0.000 | 0.000  | 0.080  | 1993 | 1.00 | 83  | 3367 |
| 58.5 | 4.88 | 0.073 | 0.008 | 0.077 | 0.000 | 0.000 | 0.000  | 0.081  | 2019 | 1.00 | 84  | 3451 |
| 59.0 | 4.92 | 0.073 | 0.008 | 0.080 | 0.000 | 0.000 | 0.000  | 0.081  | 2044 | 1.00 | 85  | 3537 |
| 59.5 | 4.96 | 0.074 | 0.008 | 0.083 | 0.000 | 0.000 | 0.172  | 0.253  | 2069 | 1.00 | 86  | 3623 |
| 60.0 | 5.00 | 0.074 | 0.008 | 0.086 | 0.000 | 0.000 | 0.667  | 0.749  | 2095 | 1.00 | 87  | 3710 |
| 60.5 | 5.04 | 0.074 | 0.008 | 0.088 | 0.000 | 0.000 | 1.343  | 1.426  | 2121 | 1.00 | 88  | 3798 |
| 61.0 | 5.08 | 0.075 | 0.008 | 0.091 | 0.000 | 0.000 | 2.161  | 2.244  | 2146 | 1.00 | 89  | 3888 |
| 61.5 | 5.13 | 0.075 | 0.008 | 0.093 | 0.000 | 0.000 | 3.100  | 3.183  | 2172 | 1.00 | 90  | 3978 |
| 62.0 | 5.17 | 0.075 | 0.008 | 0.096 | 0.000 | 0.000 | 4.145  | 4.229  | 2197 | 1.00 | 92  | 4070 |
| 62.5 | 5.21 | 0.076 | 0.009 | 0.098 | 0.000 | 0.000 | 5.286  | 5.370  | 2222 | 1.00 | 93  | 4162 |
| 63.0 | 5.25 | 0.076 | 0.009 | 0.101 | 0.000 | 0.000 | 6.517  | 6.601  | 2248 | 1.00 | 94  | 4256 |
| 63.5 | 5.29 | 0.076 | 0.009 | 0.103 | 0.000 | 0.000 | 7.830  | 7.915  | 2274 | 1.00 | 95  | 4351 |
| 64.0 | 5.33 | 0.076 | 0.009 | 0.105 | 0.000 | 0.000 | 9.221  | 9.307  | 2299 | 1.00 | 96  | 4447 |
| 64.5 | 5.38 | 0.077 | 0.009 | 0.107 | 0.000 | 0.000 | 10.687 | 10.772 | 2325 | 1.00 | 97  | 4544 |
| 65.0 | 5.42 | 0.077 | 0.009 | 0.109 | 0.000 | 0.000 | 12.222 | 12.308 | 2350 | 1.00 | 98  | 4641 |
| 65.5 | 5.46 | 0.077 | 0.009 | 0.111 | 0.000 | 0.000 | 13.825 | 13.911 | 2375 | 1.00 | 99  | 4740 |
| 66.0 | 5.50 | 0.078 | 0.009 | 0.113 | 0.000 | 0.000 | 15.492 | 15.579 | 2401 | 1.00 | 100 | 4840 |

| BMP-C1 |                                  |                                 |                  | CALCULATED                     |                               |
|--------|----------------------------------|---------------------------------|------------------|--------------------------------|-------------------------------|
| h (ft) | STORAGE                          |                                 | DISCHARGE        | DRAWDOWN TIME                  |                               |
|        | Incremental storage volume (ft³) | Cumulative storage volume (ft³) | Total Flow (cfs) | Incremental Drawdown Time (hr) | Cumulative Drawdown Time (hr) |
| 0.000  | 0                                | 0                               | 0.000            | 0.00                           | 0.00                          |
| 0.042  | 15                               | 15                              | 0.002            | 4.21                           | 4.21                          |
| 0.083  | 15                               | 29                              | 0.005            | 1.10                           | 5.31                          |
| 0.125  | 15                               | 44                              | 0.009            | 0.55                           | 5.86                          |
| 0.167  | 15                               | 58                              | 0.012            | 0.39                           | 6.25                          |
| 0.208  | 15                               | 73                              | 0.013            | 0.32                           | 6.58                          |
| 0.250  | 15                               | 87                              | 0.015            | 0.28                           | 6.86                          |
| 0.292  | 15                               | 102                             | 0.016            | 0.26                           | 7.12                          |
| 0.333  | 15                               | 116                             | 0.018            | 0.24                           | 7.35                          |
| 0.375  | 15                               | 131                             | 0.019            | 0.22                           | 7.57                          |
| 0.417  | 15                               | 145                             | 0.020            | 0.21                           | 7.78                          |
| 0.458  | 15                               | 160                             | 0.021            | 0.19                           | 7.97                          |
| 0.500  | 15                               | 174                             | 0.022            | 0.18                           | 8.16                          |
| 0.542  | 15                               | 189                             | 0.023            | 0.18                           | 8.33                          |
| 0.583  | 15                               | 203                             | 0.024            | 0.17                           | 8.50                          |
| 0.625  | 15                               | 218                             | 0.025            | 0.16                           | 8.66                          |
| 0.667  | 15                               | 232                             | 0.026            | 0.16                           | 8.82                          |
| 0.708  | 15                               | 247                             | 0.027            | 0.15                           | 8.97                          |
| 0.750  | 15                               | 261                             | 0.028            | 0.15                           | 9.12                          |
| 0.792  | 15                               | 276                             | 0.029            | 0.14                           | 9.26                          |
| 0.833  | 15                               | 290                             | 0.029            | 0.14                           | 9.40                          |
| 0.875  | 15                               | 305                             | 0.030            | 0.14                           | 9.54                          |
| 0.917  | 15                               | 319                             | 0.031            | 0.13                           | 9.67                          |
| 0.958  | 15                               | 334                             | 0.032            | 0.13                           | 9.80                          |
| 1.000  | 15                               | 348                             | 0.032            | 0.13                           | 9.92                          |
| 1.042  | 7                                | 356                             | 0.033            | 0.06                           | 9.98                          |
| 1.083  | 7                                | 363                             | 0.034            | 0.06                           | 10.04                         |
| 1.125  | 7                                | 370                             | 0.035            | 0.06                           | 10.10                         |
| 1.167  | 7                                | 377                             | 0.035            | 0.06                           | 10.16                         |
| 1.208  | 7                                | 385                             | 0.036            | 0.06                           | 10.22                         |
| 1.250  | 7                                | 392                             | 0.036            | 0.06                           | 10.27                         |
| 1.292  | 7                                | 399                             | 0.037            | 0.05                           | 10.33                         |
| 1.333  | 7                                | 406                             | 0.038            | 0.05                           | 10.38                         |
| 1.375  | 7                                | 414                             | 0.038            | 0.05                           | 10.43                         |
| 1.417  | 7                                | 421                             | 0.039            | 0.05                           | 10.49                         |
| 1.458  | 7                                | 428                             | 0.039            | 0.05                           | 10.54                         |
| 1.500  | 7                                | 436                             | 0.040            | 0.05                           | 10.59                         |
| 1.542  | 7                                | 443                             | 0.041            | 0.05                           | 10.64                         |
| 1.583  | 7                                | 450                             | 0.041            | 0.05                           | 10.69                         |
| 1.625  | 7                                | 457                             | 0.042            | 0.05                           | 10.74                         |
| 1.667  | 7                                | 465                             | 0.042            | 0.05                           | 10.78                         |
| 1.708  | 7                                | 472                             | 0.043            | 0.05                           | 10.83                         |
| 1.750  | 7                                | 479                             | 0.043            | 0.05                           | 10.88                         |
| 1.792  | 7                                | 486                             | 0.044            | 0.05                           | 10.92                         |
| 1.833  | 7                                | 494                             | 0.044            | 0.05                           | 10.97                         |
| 1.875  | 7                                | 501                             | 0.045            | 0.05                           | 11.02                         |
| 1.917  | 7                                | 508                             | 0.045            | 0.04                           | 11.06                         |
| 1.958  | 7                                | 515                             | 0.046            | 0.04                           | 11.10                         |
| 2.000  | 7                                | 523                             | 0.046            | 0.04                           | 11.15                         |
| 2.042  | 7                                | 530                             | 0.047            | 0.04                           | 11.19                         |
| 2.083  | 7                                | 537                             | 0.047            | 0.04                           | 11.23                         |
| 2.125  | 7                                | 544                             | 0.048            | 0.04                           | 11.28                         |
| 2.167  | 7                                | 552                             | 0.048            | 0.04                           | 11.32                         |
| 2.208  | 7                                | 559                             | 0.049            | 0.04                           | 11.36                         |
| 2.250  | 7                                | 566                             | 0.049            | 0.04                           | 11.40                         |
| 2.292  | 7                                | 573                             | 0.050            | 0.04                           | 11.44                         |
| 2.333  | 7                                | 581                             | 0.050            | 0.04                           | 11.48                         |
| 2.375  | 7                                | 588                             | 0.051            | 0.04                           | 11.52                         |
| 2.417  | 7                                | 595                             | 0.051            | 0.04                           | 11.56                         |
| 2.458  | 7                                | 602                             | 0.052            | 0.04                           | 11.60                         |
| 2.500  | 7                                | 610                             | 0.052            | 0.04                           | 11.64                         |
| 2.542  | 7                                | 617                             | 0.052            | 0.04                           | 11.68                         |
| 2.583  | 7                                | 624                             | 0.053            | 0.04                           | 11.72                         |
| 2.625  | 7                                | 631                             | 0.053            | 0.04                           | 11.75                         |
| 2.667  | 7                                | 639                             | 0.054            | 0.04                           | 11.79                         |
| 2.708  | 7                                | 646                             | 0.054            | 0.04                           | 11.83                         |
| 2.750  | 7                                | 653                             | 0.055            | 0.04                           | 11.87                         |
| 2.792  | 11                               | 664                             | 0.055            | 0.06                           | 11.92                         |
| 2.833  | 11                               | 675                             | 0.055            | 0.05                           | 11.98                         |
| 2.875  | 11                               | 686                             | 0.056            | 0.05                           | 12.03                         |
| 2.917  | 11                               | 697                             | 0.056            | 0.05                           | 12.08                         |
| 2.958  | 11                               | 708                             | 0.057            | 0.05                           | 12.14                         |
| 3.000  | 11                               | 719                             | 0.057            | 0.05                           | 12.19                         |
| 3.042  | 37                               | 756                             | 0.058            | 0.18                           | 12.37                         |
| 3.083  | 38                               | 794                             | 0.058            | 0.18                           | 12.56                         |
| 3.125  | 39                               | 834                             | 0.058            | 0.19                           | 12.74                         |
| 3.167  | 41                               | 874                             | 0.059            | 0.19                           | 12.94                         |
| 3.208  | 42                               | 916                             | 0.059            | 0.20                           | 13.13                         |
| 3.250  | 43                               | 959                             | 0.059            | 0.20                           | 13.33                         |
| 3.292  | 44                               | 1,002                           | 0.060            | 0.20                           | 13.54                         |
| 3.333  | 45                               | 1,047                           | 0.060            | 0.21                           | 13.74                         |
| 3.375  | 46                               | 1,093                           | 0.061            | 0.21                           | 13.95                         |
| 3.417  | 47                               | 1,140                           | 0.061            | 0.21                           | 14.17                         |
| 3.458  | 48                               | 1,188                           | 0.061            | 0.22                           | 14.39                         |
| 3.500  | 49                               | 1,237                           | 0.062            | 0.22                           | 14.61                         |
| 3.542  | 50                               | 1,287                           | 0.063            | 0.22                           | 14.83                         |
| 3.583  | 51                               | 1,338                           | 0.064            | 0.22                           | 15.05                         |

Drawdown (hr)

|       |     |       |        |      |       |
|-------|-----|-------|--------|------|-------|
| 3.625 | 52  | 1,390 | 0.065  | 0.22 | 15.28 |
| 3.667 | 53  | 1,444 | 0.066  | 0.23 | 15.51 |
| 3.708 | 54  | 1,498 | 0.066  | 0.23 | 15.73 |
| 3.750 | 55  | 1,554 | 0.067  | 0.23 | 15.96 |
| 3.792 | 56  | 1,610 | 0.068  | 0.23 | 16.20 |
| 3.833 | 58  | 1,668 | 0.068  | 0.23 | 16.43 |
| 3.875 | 59  | 1,726 | 0.069  | 0.24 | 16.67 |
| 3.917 | 60  | 1,786 | 0.070  | 0.24 | 16.91 |
| 3.958 | 61  | 1,847 | 0.070  | 0.24 | 17.15 |
| 4.000 | 62  | 1,908 | 0.071  | 0.24 | 17.39 |
| 4.042 | 63  | 1,971 | 0.071  | 0.25 | 17.64 |
| 4.083 | 64  | 2,035 | 0.072  | 0.25 | 17.89 |
| 4.125 | 65  | 2,100 | 0.072  | 0.25 | 18.14 |
| 4.167 | 66  | 2,166 | 0.073  | 0.25 | 18.39 |
| 4.208 | 67  | 2,233 | 0.073  | 0.26 | 18.65 |
| 4.250 | 68  | 2,301 | 0.074  | 0.26 | 18.91 |
| 4.292 | 69  | 2,371 | 0.074  | 0.26 | 19.17 |
| 4.333 | 70  | 2,441 | 0.075  | 0.26 | 19.43 |
| 4.375 | 71  | 2,512 | 0.075  | 0.26 | 19.69 |
| 4.417 | 72  | 2,585 | 0.076  | 0.27 | 19.96 |
| 4.458 | 73  | 2,658 | 0.076  | 0.27 | 20.23 |
| 4.500 | 75  | 2,733 | 0.077  | 0.27 | 20.50 |
| 4.542 | 76  | 2,808 | 0.077  | 0.27 | 20.77 |
| 4.583 | 77  | 2,885 | 0.078  | 0.28 | 21.05 |
| 4.625 | 78  | 2,963 | 0.078  | 0.28 | 21.33 |
| 4.667 | 79  | 3,041 | 0.078  | 0.28 | 21.60 |
| 4.708 | 80  | 3,121 | 0.079  | 0.28 | 21.89 |
| 4.750 | 81  | 3,202 | 0.079  | 0.28 | 22.17 |
| 4.792 | 82  | 3,284 | 0.080  | 0.29 | 22.46 |
| 4.833 | 83  | 3,367 | 0.080  | 0.29 | 22.75 |
| 4.875 | 84  | 3,451 | 0.081  | 0.29 | 23.04 |
| 4.917 | 85  | 3,537 | 0.081  | 0.29 | 23.33 |
| 4.958 | 86  | 3,623 | 0.253  | 0.14 | 23.47 |
| 5.000 | 87  | 3,710 | 0.749  | 0.05 | 23.52 |
| 5.042 | 88  | 3,798 | 1.426  | 0.02 | 23.54 |
| 5.083 | 89  | 3,888 | 2.244  | 0.01 | 23.56 |
| 5.125 | 90  | 3,978 | 3.183  | 0.01 | 23.57 |
| 5.167 | 92  | 4,070 | 4.229  | 0.01 | 23.57 |
| 5.208 | 93  | 4,162 | 5.370  | 0.01 | 23.58 |
| 5.250 | 94  | 4,256 | 6.601  | 0.00 | 23.58 |
| 5.292 | 95  | 4,351 | 7.915  | 0.00 | 23.59 |
| 5.333 | 96  | 4,447 | 9.307  | 0.00 | 23.59 |
| 5.375 | 97  | 4,544 | 10.772 | 0.00 | 23.59 |
| 5.417 | 98  | 4,641 | 12.308 | 0.00 | 23.59 |
| 5.458 | 99  | 4,740 | 13.911 | 0.00 | 23.60 |
| 5.500 | 100 | 4,840 | 15.579 | 0.00 | 23.60 |

**BMP C2 (Stage-Storage-Discharge Rating Curve)**

**BMP C2**

| Vault Characteristics         |       |
|-------------------------------|-------|
| Basin Depth (ft) =            | 6     |
| Basin Width (ft) =            |       |
| Basin Length (ft) =           |       |
| Low Flow Orifice (Underdrain) |       |
| Num. of Orifices =            | 1     |
| Orifice Invert (ft) =         | 0     |
| Orifice Diameter (in) =       | 1.125 |
| Cg =                          | 0.6   |
| Mid-flow Orifice (1st)        |       |
| Num. of Orifices =            | 1     |
| Orifice Invert (ft) =         | 3.5   |
| Orifice Diameter (in) =       | 0.5   |
| Cg =                          | 0.6   |
| Mid-flow Orifice (2nd)        |       |
| Num. of Orifices =            | 0     |
| Orifice Invert (ft) =         | 4.25  |
| Orifice Diameter (in) =       | 2     |
| Cg =                          | 0.6   |
| Weir Overflow                 |       |
| Upper Weir Inv (ft) =         | 5.33  |
| B (ft) =                      | 12    |
| Cs =                          | 3     |

| BMP C2 Rating and Storage Table |        |                     |                       |                       |                           |                        |               |                  |                              |                |                          |                         |
|---------------------------------|--------|---------------------|-----------------------|-----------------------|---------------------------|------------------------|---------------|------------------|------------------------------|----------------|--------------------------|-------------------------|
| h (in)                          | h (ft) | Underdrain Orifices | Midflow Orifice (1st) | Midflow Orifice (2nd) | Upper Orifice (weir calc) | Mid-flow Orifice Upper | Overflow Weir | Total Flow (cfs) | Effective Surface Area (ft2) | Porosity (N/A) | Incremental Volume (ft3) | Cumulative Volume (ft3) |
| 0.0                             | 0.00   | 0.000               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.000            | 925                          | 1.00           | 0                        | 0                       |
| 0.5                             | 0.04   | 0.002               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.002            | 925                          | 1.00           | 39                       | 39                      |
| 1.0                             | 0.08   | 0.005               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.005            | 925                          | 1.00           | 39                       | 77                      |
| 1.5                             | 0.13   | 0.009               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.009            | 925                          | 1.00           | 39                       | 116                     |
| 2.0                             | 0.17   | 0.012               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.012            | 925                          | 1.00           | 39                       | 154                     |
| 2.5                             | 0.21   | 0.013               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.013            | 925                          | 1.00           | 39                       | 193                     |
| 3.0                             | 0.25   | 0.015               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.015            | 925                          | 1.00           | 39                       | 231                     |
| 3.5                             | 0.29   | 0.016               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.016            | 925                          | 1.00           | 39                       | 270                     |
| 4.0                             | 0.33   | 0.018               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.018            | 925                          | 1.00           | 39                       | 308                     |
| 4.5                             | 0.38   | 0.019               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.019            | 925                          | 1.00           | 39                       | 347                     |
| 5.0                             | 0.42   | 0.020               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.020            | 925                          | 1.00           | 39                       | 385                     |
| 5.5                             | 0.46   | 0.021               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.021            | 925                          | 1.00           | 39                       | 424                     |
| 6.0                             | 0.50   | 0.022               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.022            | 925                          | 1.00           | 39                       | 462                     |
| 6.5                             | 0.54   | 0.023               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.023            | 925                          | 1.00           | 39                       | 501                     |
| 7.0                             | 0.58   | 0.024               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.024            | 925                          | 1.00           | 39                       | 539                     |
| 7.5                             | 0.63   | 0.025               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.025            | 925                          | 1.00           | 39                       | 578                     |
| 8.0                             | 0.67   | 0.026               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.026            | 925                          | 1.00           | 39                       | 617                     |
| 8.5                             | 0.71   | 0.027               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.027            | 925                          | 1.00           | 39                       | 655                     |
| 9.0                             | 0.75   | 0.028               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.028            | 925                          | 1.00           | 39                       | 694                     |
| 9.5                             | 0.79   | 0.029               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.029            | 925                          | 1.00           | 39                       | 732                     |
| 10.0                            | 0.83   | 0.029               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.029            | 925                          | 1.00           | 39                       | 771                     |
| 10.5                            | 0.88   | 0.030               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.030            | 925                          | 1.00           | 39                       | 809                     |
| 11.0                            | 0.92   | 0.031               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.031            | 925                          | 1.00           | 39                       | 848                     |
| 11.5                            | 0.96   | 0.032               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.032            | 925                          | 1.00           | 39                       | 886                     |
| 12.0                            | 1.00   | 0.032               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.032            | 925                          | 1.00           | 39                       | 925                     |
| 12.5                            | 1.04   | 0.033               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.033            | 462                          | 1.00           | 19                       | 944                     |
| 13.0                            | 1.08   | 0.034               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.034            | 462                          | 1.00           | 19                       | 963                     |
| 13.5                            | 1.13   | 0.035               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.035            | 462                          | 1.00           | 19                       | 983                     |
| 14.0                            | 1.17   | 0.035               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.035            | 462                          | 1.00           | 19                       | 1002                    |
| 14.5                            | 1.21   | 0.036               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.036            | 462                          | 1.00           | 19                       | 1021                    |
| 15.0                            | 1.25   | 0.036               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.036            | 462                          | 1.00           | 19                       | 1040                    |
| 15.5                            | 1.29   | 0.037               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.037            | 462                          | 1.00           | 19                       | 1060                    |
| 16.0                            | 1.33   | 0.038               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.038            | 462                          | 1.00           | 19                       | 1079                    |
| 16.5                            | 1.38   | 0.038               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.038            | 462                          | 1.00           | 19                       | 1098                    |
| 17.0                            | 1.42   | 0.039               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.039            | 462                          | 1.00           | 19                       | 1117                    |
| 17.5                            | 1.46   | 0.039               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.039            | 462                          | 1.00           | 19                       | 1137                    |
| 18.0                            | 1.50   | 0.040               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.040            | 462                          | 1.00           | 19                       | 1156                    |
| 18.5                            | 1.54   | 0.041               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.041            | 462                          | 1.00           | 19                       | 1175                    |
| 19.0                            | 1.58   | 0.041               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.041            | 462                          | 1.00           | 19                       | 1195                    |
| 19.5                            | 1.63   | 0.042               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.042            | 462                          | 1.00           | 19                       | 1214                    |
| 20.0                            | 1.67   | 0.042               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.042            | 462                          | 1.00           | 19                       | 1233                    |
| 20.5                            | 1.71   | 0.043               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.043            | 462                          | 1.00           | 19                       | 1252                    |
| 21.0                            | 1.75   | 0.043               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.043            | 462                          | 1.00           | 19                       | 1272                    |
| 21.5                            | 1.79   | 0.044               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.044            | 462                          | 1.00           | 19                       | 1291                    |
| 22.0                            | 1.83   | 0.044               | 0.000                 | 0.000                 | 0.000                     | 0.000                  | 0.000         | 0.044            | 462                          | 1.00           | 19                       | 1310                    |



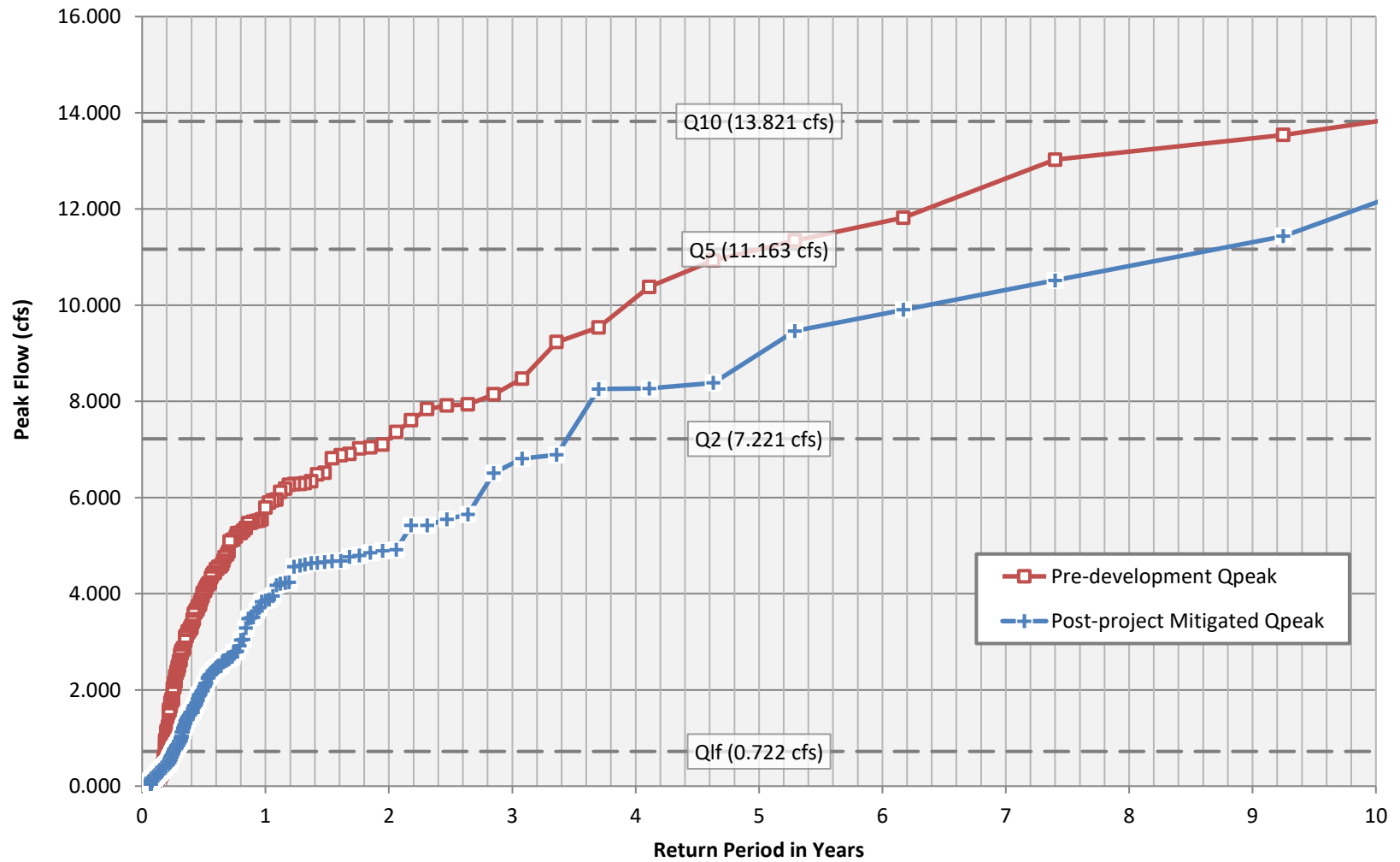
|      |      |       |       |       |       |       |       |       |      |      |     |       |
|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|-----|-------|
| 22.5 | 1.88 | 0.045 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.045 | 462  | 1.00 | 19  | 1329  |
| 23.0 | 1.92 | 0.045 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.045 | 462  | 1.00 | 19  | 1349  |
| 23.5 | 1.96 | 0.046 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.046 | 462  | 1.00 | 19  | 1368  |
| 24.0 | 2.00 | 0.046 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.046 | 462  | 1.00 | 19  | 1387  |
| 24.5 | 2.04 | 0.047 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.047 | 462  | 1.00 | 19  | 1406  |
| 25.0 | 2.08 | 0.047 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.047 | 462  | 1.00 | 19  | 1426  |
| 25.5 | 2.13 | 0.048 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.048 | 462  | 1.00 | 19  | 1445  |
| 26.0 | 2.17 | 0.048 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.048 | 462  | 1.00 | 19  | 1464  |
| 26.5 | 2.21 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.049 | 462  | 1.00 | 19  | 1484  |
| 27.0 | 2.25 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.049 | 462  | 1.00 | 19  | 1503  |
| 27.5 | 2.29 | 0.050 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.050 | 462  | 1.00 | 19  | 1522  |
| 28.0 | 2.33 | 0.050 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.050 | 462  | 1.00 | 19  | 1541  |
| 28.5 | 2.38 | 0.051 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.051 | 462  | 1.00 | 19  | 1561  |
| 29.0 | 2.42 | 0.051 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.051 | 462  | 1.00 | 19  | 1580  |
| 29.5 | 2.46 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.052 | 462  | 1.00 | 19  | 1599  |
| 30.0 | 2.50 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.052 | 462  | 1.00 | 19  | 1618  |
| 30.5 | 2.54 | 0.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.052 | 462  | 1.00 | 19  | 1638  |
| 31.0 | 2.58 | 0.053 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.053 | 462  | 1.00 | 19  | 1657  |
| 31.5 | 2.63 | 0.053 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.053 | 462  | 1.00 | 19  | 1676  |
| 32.0 | 2.67 | 0.054 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.054 | 462  | 1.00 | 19  | 1695  |
| 32.5 | 2.71 | 0.054 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.054 | 462  | 1.00 | 19  | 1715  |
| 33.0 | 2.75 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.055 | 462  | 1.00 | 19  | 1734  |
| 33.5 | 2.79 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.055 | 694  | 1.00 | 29  | 1763  |
| 34.0 | 2.83 | 0.055 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.055 | 694  | 1.00 | 29  | 1792  |
| 34.5 | 2.88 | 0.056 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.056 | 694  | 1.00 | 29  | 1821  |
| 35.0 | 2.92 | 0.056 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.056 | 694  | 1.00 | 29  | 1850  |
| 35.5 | 2.96 | 0.057 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.057 | 694  | 1.00 | 29  | 1878  |
| 36.0 | 3.00 | 0.057 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.057 | 694  | 1.00 | 29  | 1907  |
| 36.5 | 3.04 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.058 | 2367 | 1.00 | 99  | 2006  |
| 37.0 | 3.08 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.058 | 2422 | 1.00 | 101 | 2107  |
| 37.5 | 3.13 | 0.058 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.058 | 2476 | 1.00 | 103 | 2210  |
| 38.0 | 3.17 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.059 | 2531 | 1.00 | 105 | 2316  |
| 38.5 | 3.21 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.059 | 2586 | 1.00 | 108 | 2423  |
| 39.0 | 3.25 | 0.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.059 | 2641 | 1.00 | 110 | 2533  |
| 39.5 | 3.29 | 0.060 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.060 | 2695 | 1.00 | 112 | 2646  |
| 40.0 | 3.33 | 0.060 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.060 | 2750 | 1.00 | 115 | 2760  |
| 40.5 | 3.38 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.061 | 2805 | 1.00 | 117 | 2877  |
| 41.0 | 3.42 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.061 | 2860 | 1.00 | 119 | 2996  |
| 41.5 | 3.46 | 0.061 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.061 | 2914 | 1.00 | 121 | 3118  |
| 42.0 | 3.50 | 0.062 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.062 | 2969 | 1.00 | 124 | 3241  |
| 42.5 | 3.54 | 0.062 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.063 | 3024 | 1.00 | 126 | 3367  |
| 43.0 | 3.58 | 0.063 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.064 | 3079 | 1.00 | 128 | 3496  |
| 43.5 | 3.63 | 0.063 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.065 | 3133 | 1.00 | 131 | 3626  |
| 44.0 | 3.67 | 0.063 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.066 | 3188 | 1.00 | 133 | 3759  |
| 44.5 | 3.71 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.066 | 3243 | 1.00 | 135 | 3894  |
| 45.0 | 3.75 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.067 | 3298 | 1.00 | 137 | 4032  |
| 45.5 | 3.79 | 0.064 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.068 | 3353 | 1.00 | 140 | 4171  |
| 46.0 | 3.83 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.068 | 3407 | 1.00 | 142 | 4313  |
| 46.5 | 3.88 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.069 | 3462 | 1.00 | 144 | 4458  |
| 47.0 | 3.92 | 0.065 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.070 | 3517 | 1.00 | 147 | 4604  |
| 47.5 | 3.96 | 0.066 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.070 | 3572 | 1.00 | 149 | 4753  |
| 48.0 | 4.00 | 0.066 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.071 | 3626 | 1.00 | 151 | 4904  |
| 48.5 | 4.04 | 0.066 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.071 | 3681 | 1.00 | 153 | 5057  |
| 49.0 | 4.08 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.072 | 3736 | 1.00 | 156 | 5213  |
| 49.5 | 4.13 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.072 | 3791 | 1.00 | 158 | 5371  |
| 50.0 | 4.17 | 0.067 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.073 | 3845 | 1.00 | 160 | 5531  |
| 50.5 | 4.21 | 0.068 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.073 | 3900 | 1.00 | 162 | 5694  |
| 51.0 | 4.25 | 0.068 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.074 | 3955 | 1.00 | 165 | 5858  |
| 51.5 | 4.29 | 0.068 | 0.006 | 0.003 | 0.000 | 0.000 | 0.000 | 0.074 | 4010 | 1.00 | 167 | 6026  |
| 52.0 | 4.33 | 0.069 | 0.006 | 0.010 | 0.000 | 0.000 | 0.000 | 0.075 | 4064 | 1.00 | 169 | 6195  |
| 52.5 | 4.38 | 0.069 | 0.006 | 0.018 | 0.000 | 0.000 | 0.000 | 0.075 | 4119 | 1.00 | 172 | 6367  |
| 53.0 | 4.42 | 0.069 | 0.006 | 0.030 | 0.000 | 0.000 | 0.000 | 0.076 | 4174 | 1.00 | 174 | 6540  |
| 53.5 | 4.46 | 0.070 | 0.006 | 0.037 | 0.000 | 0.000 | 0.000 | 0.076 | 4229 | 1.00 | 176 | 6717  |
| 54.0 | 4.50 | 0.070 | 0.006 | 0.043 | 0.000 | 0.000 | 0.000 | 0.077 | 4284 | 1.00 | 178 | 6895  |
| 54.5 | 4.54 | 0.070 | 0.007 | 0.048 | 0.000 | 0.000 | 0.000 | 0.077 | 4338 | 1.00 | 181 | 7076  |
| 55.0 | 4.58 | 0.071 | 0.007 | 0.053 | 0.000 | 0.000 | 0.000 | 0.078 | 4393 | 1.00 | 183 | 7259  |
| 55.5 | 4.63 | 0.071 | 0.007 | 0.057 | 0.000 | 0.000 | 0.000 | 0.078 | 4448 | 1.00 | 185 | 7444  |
| 56.0 | 4.67 | 0.071 | 0.007 | 0.061 | 0.000 | 0.000 | 0.000 | 0.078 | 4503 | 1.00 | 188 | 7632  |
| 56.5 | 4.71 | 0.072 | 0.007 | 0.064 | 0.000 | 0.000 | 0.000 | 0.079 | 4557 | 1.00 | 190 | 7822  |
| 57.0 | 4.75 | 0.072 | 0.007 | 0.068 | 0.000 | 0.000 | 0.000 | 0.079 | 4612 | 1.00 | 192 | 8014  |
| 57.5 | 4.79 | 0.072 | 0.007 | 0.071 | 0.000 | 0.000 | 0.000 | 0.080 | 4667 | 1.00 | 194 | 8208  |
| 58.0 | 4.83 | 0.073 | 0.008 | 0.074 | 0.000 | 0.000 | 0.000 | 0.080 | 4722 | 1.00 | 197 | 8405  |
| 58.5 | 4.88 | 0.073 | 0.008 | 0.077 | 0.000 | 0.000 | 0.000 | 0.081 | 4776 | 1.00 | 199 | 8604  |
| 59.0 | 4.92 | 0.073 | 0.008 | 0.080 | 0.000 | 0.000 | 0.000 | 0.081 | 4831 | 1.00 | 201 | 8805  |
| 59.5 | 4.96 | 0.074 | 0.008 | 0.083 | 0.000 | 0.000 | 0.000 | 0.082 | 4886 | 1.00 | 204 | 9009  |
| 60.0 | 5.00 | 0.074 | 0.008 | 0.086 | 0.000 | 0.000 | 0.000 | 0.082 | 4941 | 1.00 | 206 | 9215  |
| 60.5 | 5.04 | 0.074 | 0.008 | 0.088 | 0.000 | 0.000 | 0.000 | 0.082 | 4995 | 1.00 | 208 | 9423  |
| 61.0 | 5.08 | 0.075 | 0.008 | 0.091 | 0.000 | 0.000 | 0.000 | 0.083 | 5050 | 1.00 | 210 | 9633  |
| 61.5 | 5.13 | 0.075 | 0.008 | 0.093 | 0.000 | 0.000 | 0.000 | 0.083 | 5105 | 1.00 | 213 | 9846  |
| 62.0 | 5.17 | 0.075 | 0.008 | 0.096 | 0.000 | 0.000 | 0.000 | 0.084 | 5160 | 1.00 | 215 | 10061 |
| 62.5 | 5.21 | 0.076 | 0.009 | 0.098 | 0.000 | 0.000 | 0.000 | 0.084 | 5214 | 1.00 | 217 | 10278 |
| 63.0 | 5.25 | 0.076 | 0.009 | 0.101 | 0.000 | 0.000 | 0.000 | 0.084 | 5269 | 1.00 | 220 | 10498 |
| 63.5 | 5.29 | 0.076 | 0.009 | 0.103 | 0.000 | 0.000 | 0.000 | 0.085 | 5324 | 1.00 | 222 | 10720 |
| 64.0 | 5.33 | 0.076 | 0.009 | 0.105 | 0.000 | 0.000 | 0.007 | 0.092 | 5379 | 1.00 | 224 | 10944 |
| 64.5 | 5.38 | 0.077 | 0.009 | 0.107 | 0.000 | 0.000 | 0.344 | 0.429 | 5434 | 1.00 | 226 | 11170 |

|      |      |       |       |       |       |       |        |        |      |      |     |       |
|------|------|-------|-------|-------|-------|-------|--------|--------|------|------|-----|-------|
| 65.0 | 5.42 | 0.077 | 0.009 | 0.109 | 0.000 | 0.000 | 0.919  | 1.005  | 5488 | 1.00 | 229 | 11399 |
| 65.5 | 5.46 | 0.077 | 0.009 | 0.111 | 0.000 | 0.000 | 1.655  | 1.741  | 5543 | 1.00 | 231 | 11630 |
| 66.0 | 5.50 | 0.078 | 0.009 | 0.113 | 0.000 | 0.000 | 2.523  | 2.610  | 5598 | 1.00 | 233 | 11863 |
| 66.5 | 5.54 | 0.078 | 0.009 | 0.115 | 0.000 | 0.000 | 3.506  | 3.593  | 5653 | 1.00 | 236 | 12099 |
| 67.0 | 5.58 | 0.078 | 0.009 | 0.117 | 0.000 | 0.000 | 4.590  | 4.678  | 5707 | 1.00 | 238 | 12336 |
| 67.5 | 5.63 | 0.079 | 0.010 | 0.119 | 0.000 | 0.000 | 5.768  | 5.856  | 5762 | 1.00 | 240 | 12577 |
| 68.0 | 5.67 | 0.079 | 0.010 | 0.121 | 0.000 | 0.000 | 7.032  | 7.121  | 5817 | 1.00 | 242 | 12819 |
| 68.5 | 5.71 | 0.079 | 0.010 | 0.123 | 0.000 | 0.000 | 8.377  | 8.466  | 5872 | 1.00 | 245 | 13064 |
| 69.0 | 5.75 | 0.079 | 0.010 | 0.125 | 0.000 | 0.000 | 9.799  | 9.888  | 5926 | 1.00 | 247 | 13311 |
| 70.0 | 5.83 | 0.080 | 0.010 | 0.129 | 0.000 | 0.000 | 12.855 | 12.945 | 6036 | 1.00 | 503 | 13813 |
| 71.0 | 5.92 | 0.081 | 0.010 | 0.132 | 0.000 | 0.000 | 16.177 | 16.268 | 6145 | 1.00 | 512 | 14326 |
| 72.0 | 6.00 | 0.081 | 0.010 | 0.136 | 0.000 | 0.000 | 19.743 | 19.835 | 6255 | 1.00 | 521 | 14847 |

| BMP-C2 |                                  |                                 |                  | CALCULATED                     |                               |
|--------|----------------------------------|---------------------------------|------------------|--------------------------------|-------------------------------|
| h (ft) | STORAGE                          |                                 | DISCHARGE        | DRAWDOWN TIME                  |                               |
|        | Incremental storage volume (ft³) | Cumulative storage volume (ft³) | Total Flow (cfs) | Incremental Drawdown Time (hr) | Cumulative Drawdown Time (hr) |
| 0.000  | 0                                | 0                               | 0.000            | 0.00                           | 0.00                          |
| 0.042  | 39                               | 39                              | 0.002            | 11.19                          | 11.19                         |
| 0.083  | 39                               | 77                              | 0.005            | 2.92                           | 14.11                         |
| 0.125  | 39                               | 116                             | 0.009            | 1.46                           | 15.56                         |
| 0.167  | 39                               | 154                             | 0.012            | 1.03                           | 16.59                         |
| 0.208  | 39                               | 193                             | 0.013            | 0.86                           | 17.45                         |
| 0.250  | 39                               | 231                             | 0.015            | 0.76                           | 18.21                         |
| 0.292  | 39                               | 270                             | 0.016            | 0.68                           | 18.89                         |
| 0.333  | 39                               | 308                             | 0.018            | 0.63                           | 19.52                         |
| 0.375  | 39                               | 347                             | 0.019            | 0.58                           | 20.10                         |
| 0.417  | 39                               | 385                             | 0.020            | 0.55                           | 20.64                         |
| 0.458  | 39                               | 424                             | 0.021            | 0.52                           | 21.16                         |
| 0.500  | 39                               | 462                             | 0.022            | 0.49                           | 21.65                         |
| 0.542  | 39                               | 501                             | 0.023            | 0.47                           | 22.12                         |
| 0.583  | 39                               | 539                             | 0.024            | 0.45                           | 22.57                         |
| 0.625  | 39                               | 578                             | 0.025            | 0.43                           | 23.00                         |
| 0.667  | 39                               | 617                             | 0.026            | 0.42                           | 23.41                         |
| 0.708  | 39                               | 655                             | 0.027            | 0.40                           | 23.82                         |
| 0.750  | 39                               | 694                             | 0.028            | 0.39                           | 24.21                         |
| 0.792  | 39                               | 732                             | 0.029            | 0.38                           | 24.58                         |
| 0.833  | 39                               | 771                             | 0.029            | 0.37                           | 24.95                         |
| 0.875  | 39                               | 809                             | 0.030            | 0.36                           | 25.31                         |
| 0.917  | 39                               | 848                             | 0.031            | 0.35                           | 25.66                         |
| 0.958  | 39                               | 886                             | 0.032            | 0.34                           | 26.00                         |
| 1.000  | 39                               | 925                             | 0.032            | 0.33                           | 26.33                         |
| 1.042  | 19                               | 944                             | 0.033            | 0.16                           | 26.50                         |
| 1.083  | 19                               | 963                             | 0.034            | 0.16                           | 26.66                         |
| 1.125  | 19                               | 983                             | 0.035            | 0.16                           | 26.81                         |
| 1.167  | 19                               | 1,002                           | 0.035            | 0.15                           | 26.97                         |
| 1.208  | 19                               | 1,021                           | 0.036            | 0.15                           | 27.12                         |
| 1.250  | 19                               | 1,040                           | 0.036            | 0.15                           | 27.27                         |
| 1.292  | 19                               | 1,060                           | 0.037            | 0.15                           | 27.41                         |
| 1.333  | 19                               | 1,079                           | 0.038            | 0.14                           | 27.56                         |
| 1.375  | 19                               | 1,098                           | 0.038            | 0.14                           | 27.70                         |
| 1.417  | 19                               | 1,117                           | 0.039            | 0.14                           | 27.83                         |
| 1.458  | 19                               | 1,137                           | 0.039            | 0.14                           | 27.97                         |
| 1.500  | 19                               | 1,156                           | 0.040            | 0.13                           | 28.11                         |
| 1.542  | 19                               | 1,175                           | 0.041            | 0.13                           | 28.24                         |
| 1.583  | 19                               | 1,195                           | 0.041            | 0.13                           | 28.37                         |
| 1.625  | 19                               | 1,214                           | 0.042            | 0.13                           | 28.50                         |
| 1.667  | 19                               | 1,233                           | 0.042            | 0.13                           | 28.63                         |
| 1.708  | 19                               | 1,252                           | 0.043            | 0.13                           | 28.75                         |
| 1.750  | 19                               | 1,272                           | 0.043            | 0.12                           | 28.88                         |
| 1.792  | 19                               | 1,291                           | 0.044            | 0.12                           | 29.00                         |
| 1.833  | 19                               | 1,310                           | 0.044            | 0.12                           | 29.12                         |
| 1.875  | 19                               | 1,329                           | 0.045            | 0.12                           | 29.24                         |
| 1.917  | 19                               | 1,349                           | 0.045            | 0.12                           | 29.36                         |
| 1.958  | 19                               | 1,368                           | 0.046            | 0.12                           | 29.47                         |
| 2.000  | 19                               | 1,387                           | 0.046            | 0.12                           | 29.59                         |
| 2.042  | 19                               | 1,406                           | 0.047            | 0.11                           | 29.70                         |
| 2.083  | 19                               | 1,426                           | 0.047            | 0.11                           | 29.82                         |
| 2.125  | 19                               | 1,445                           | 0.048            | 0.11                           | 29.93                         |
| 2.167  | 19                               | 1,464                           | 0.048            | 0.11                           | 30.04                         |
| 2.208  | 19                               | 1,484                           | 0.049            | 0.11                           | 30.15                         |
| 2.250  | 19                               | 1,503                           | 0.049            | 0.11                           | 30.26                         |
| 2.292  | 19                               | 1,522                           | 0.050            | 0.11                           | 30.37                         |
| 2.333  | 19                               | 1,541                           | 0.050            | 0.11                           | 30.48                         |
| 2.375  | 19                               | 1,561                           | 0.051            | 0.11                           | 30.58                         |
| 2.417  | 19                               | 1,580                           | 0.051            | 0.11                           | 30.69                         |
| 2.458  | 19                               | 1,599                           | 0.052            | 0.10                           | 30.79                         |
| 2.500  | 19                               | 1,618                           | 0.052            | 0.10                           | 30.89                         |
| 2.542  | 19                               | 1,638                           | 0.052            | 0.10                           | 31.00                         |
| 2.583  | 19                               | 1,657                           | 0.053            | 0.10                           | 31.10                         |
| 2.625  | 19                               | 1,676                           | 0.053            | 0.10                           | 31.20                         |
| 2.667  | 19                               | 1,695                           | 0.054            | 0.10                           | 31.30                         |
| 2.708  | 19                               | 1,715                           | 0.054            | 0.10                           | 31.40                         |
| 2.750  | 19                               | 1,734                           | 0.055            | 0.10                           | 31.50                         |
| 2.792  | 29                               | 1,763                           | 0.055            | 0.15                           | 31.64                         |
| 2.833  | 29                               | 1,792                           | 0.055            | 0.15                           | 31.79                         |
| 2.875  | 29                               | 1,821                           | 0.056            | 0.14                           | 31.93                         |
| 2.917  | 29                               | 1,850                           | 0.056            | 0.14                           | 32.07                         |
| 2.958  | 29                               | 1,878                           | 0.057            | 0.14                           | 32.22                         |
| 3.000  | 29                               | 1,907                           | 0.057            | 0.14                           | 32.36                         |
| 3.042  | 99                               | 2,006                           | 0.058            | 0.48                           | 32.84                         |
| 3.083  | 101                              | 2,107                           | 0.058            | 0.49                           | 33.32                         |
| 3.125  | 103                              | 2,210                           | 0.058            | 0.49                           | 33.81                         |
| 3.167  | 105                              | 2,316                           | 0.059            | 0.50                           | 34.32                         |
| 3.208  | 108                              | 2,423                           | 0.059            | 0.51                           | 34.82                         |
| 3.250  | 110                              | 2,533                           | 0.059            | 0.52                           | 35.34                         |
| 3.292  | 112                              | 2,646                           | 0.060            | 0.52                           | 35.86                         |
| 3.333  | 115                              | 2,760                           | 0.060            | 0.53                           | 36.39                         |
| 3.375  | 117                              | 2,877                           | 0.061            | 0.54                           | 36.93                         |
| 3.417  | 119                              | 2,996                           | 0.061            | 0.54                           | 37.47                         |
| 3.458  | 121                              | 3,118                           | 0.061            | 0.55                           | 38.02                         |
| 3.500  | 124                              | 3,241                           | 0.062            | 0.56                           | 38.58                         |
| 3.542  | 126                              | 3,367                           | 0.063            | 0.56                           | 39.14                         |
| 3.583  | 128                              | 3,496                           | 0.064            | 0.56                           | 39.70                         |

|       |     |       |       |      |       |
|-------|-----|-------|-------|------|-------|
| 3.625 | 131 | 3,626 | 0.065 | 0.56 | 40.26 |
| 3.667 | 133 | 3,759 | 0.066 | 0.56 | 40.83 |
| 3.708 | 135 | 3,894 | 0.066 | 0.57 | 41.40 |
| 3.750 | 137 | 4,032 | 0.067 | 0.57 | 41.97 |
| 3.792 | 140 | 4,171 | 0.068 | 0.58 | 42.54 |
| 3.833 | 142 | 4,313 | 0.068 | 0.58 | 43.12 |
| 3.875 | 144 | 4,458 | 0.069 | 0.58 | 43.71 |
| 3.917 | 147 | 4,604 | 0.070 | 0.59 | 44.30 |
| 3.958 | 149 | 4,753 | 0.070 | 0.59 | 44.89 |
| 4.000 | 151 | 4,904 | 0.071 | 0.60 | 45.48 |
| 4.042 | 153 | 5,057 | 0.071 | 0.60 | 46.09 |
| 4.083 | 156 | 5,213 | 0.072 | 0.61 | 46.69 |
| 4.125 | 158 | 5,371 | 0.072 | 0.61 | 47.30 |
| 4.167 | 160 | 5,531 | 0.073 | 0.61 | 47.91 |
| 4.208 | 162 | 5,694 | 0.073 | 0.62 | 48.53 |
| 4.250 | 165 | 5,858 | 0.074 | 0.62 | 49.16 |
| 4.292 | 167 | 6,026 | 0.074 | 0.63 | 49.78 |
| 4.333 | 169 | 6,195 | 0.075 | 0.63 | 50.41 |
| 4.375 | 172 | 6,367 | 0.075 | 0.64 | 51.05 |
| 4.417 | 174 | 6,540 | 0.076 | 0.64 | 51.69 |
| 4.458 | 176 | 6,717 | 0.076 | 0.64 | 52.33 |
| 4.500 | 178 | 6,895 | 0.077 | 0.65 | 52.98 |
| 4.542 | 181 | 7,076 | 0.077 | 0.65 | 53.64 |
| 4.583 | 183 | 7,259 | 0.078 | 0.66 | 54.29 |
| 4.625 | 185 | 7,444 | 0.078 | 0.66 | 54.96 |
| 4.667 | 188 | 7,632 | 0.078 | 0.67 | 55.62 |
| 4.708 | 190 | 7,822 | 0.079 | 0.67 | 56.29 |
| 4.750 | 192 | 8,014 | 0.079 | 0.67 | 56.97 |
| 4.792 | 194 | 8,208 | 0.080 | 0.68 | 57.65 |
| 4.833 | 197 | 8,405 | 0.080 | 0.68 | 58.33 |
| 4.875 | 199 | 8,604 | 0.081 | 0.69 | 59.02 |
| 4.917 | 201 | 8,805 | 0.081 | 0.69 | 59.71 |
| 4.958 | 204 | 9,009 | 0.082 | 0.70 | 60.40 |
| 5.000 | 206 | 9,215 | 0.082 | 0.70 | 61.10 |

# Peak Flow Frequency Curves - POC 1



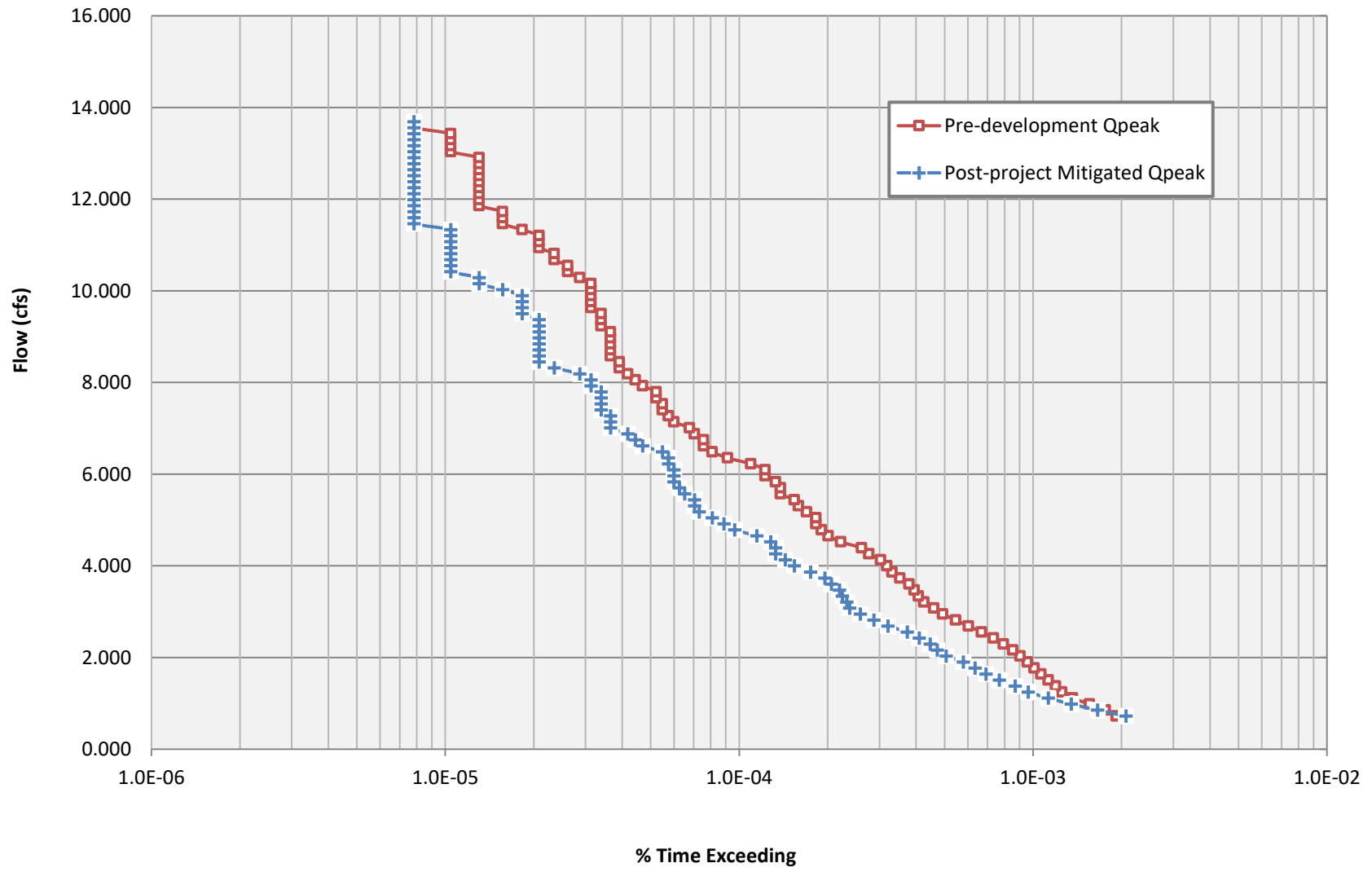
Low-flow Threshold: 10%  
 0.1xQ2 (Pre): 0.722 cfs  
 Q10 (Pre): 13.821 cfs  
 Ordinate #: 100  
 Incremental Q (Pre): 0.13099 cfs  
 Total Hourly Data: 383126 hours

The proposed BMP: **PASSED**

| Beginning of Interval | Pre-develop. Flow (cfs) | Pre-develop. Hours | Pre-develop. % Time Exceeding | Post-project Hours | Post-project % Time Exceeding | Percentage | Pass/Fail         |
|-----------------------|-------------------------|--------------------|-------------------------------|--------------------|-------------------------------|------------|-------------------|
| 1                     | 0.722                   | 736                | 1.92E-03                      | 793                | 2.07E-03                      | 107.74%    | Pass <sup>^</sup> |
| 2                     | 0.853                   | 675                | 1.76E-03                      | 635                | 1.66E-03                      | 94%        | Pass              |
| 3                     | 0.984                   | 596                | 1.56E-03                      | 517                | 1.35E-03                      | 87%        | Pass              |
| 4                     | 1.115                   | 522                | 1.36E-03                      | 432                | 1.13E-03                      | 83%        | Pass              |
| 5                     | 1.246                   | 480                | 1.25E-03                      | 369                | 9.63E-04                      | 77%        | Pass              |
| 6                     | 1.377                   | 457                | 1.19E-03                      | 333                | 8.69E-04                      | 73%        | Pass              |
| 7                     | 1.508                   | 432                | 1.13E-03                      | 294                | 7.67E-04                      | 68%        | Pass              |
| 8                     | 1.639                   | 408                | 1.06E-03                      | 265                | 6.92E-04                      | 65%        | Pass              |
| 9                     | 1.770                   | 387                | 1.01E-03                      | 243                | 6.34E-04                      | 63%        | Pass              |
| 10                    | 1.901                   | 367                | 9.58E-04                      | 222                | 5.79E-04                      | 60%        | Pass              |
| 11                    | 2.032                   | 346                | 9.03E-04                      | 194                | 5.06E-04                      | 56%        | Pass              |
| 12                    | 2.163                   | 327                | 8.54E-04                      | 181                | 4.72E-04                      | 55%        | Pass              |
| 13                    | 2.294                   | 304                | 7.93E-04                      | 171                | 4.46E-04                      | 56%        | Pass              |
| 14                    | 2.425                   | 281                | 7.33E-04                      | 157                | 4.10E-04                      | 56%        | Pass              |
| 15                    | 2.556                   | 256                | 6.68E-04                      | 143                | 3.73E-04                      | 56%        | Pass              |
| 16                    | 2.687                   | 231                | 6.03E-04                      | 123                | 3.21E-04                      | 53%        | Pass              |
| 17                    | 2.818                   | 209                | 5.46E-04                      | 110                | 2.87E-04                      | 53%        | Pass              |
| 18                    | 2.949                   | 189                | 4.93E-04                      | 99                 | 2.58E-04                      | 52%        | Pass              |
| 19                    | 3.080                   | 176                | 4.59E-04                      | 91                 | 2.38E-04                      | 52%        | Pass              |
| 20                    | 3.211                   | 163                | 4.25E-04                      | 89                 | 2.32E-04                      | 55%        | Pass              |
| 21                    | 3.342                   | 156                | 4.07E-04                      | 86                 | 2.24E-04                      | 55%        | Pass              |
| 22                    | 3.473                   | 151                | 3.94E-04                      | 84                 | 2.19E-04                      | 56%        | Pass              |
| 23                    | 3.604                   | 145                | 3.78E-04                      | 79                 | 2.06E-04                      | 54%        | Pass              |
| 24                    | 3.735                   | 135                | 3.52E-04                      | 75                 | 1.96E-04                      | 56%        | Pass              |
| 25                    | 3.866                   | 127                | 3.31E-04                      | 67                 | 1.75E-04                      | 53%        | Pass              |
| 26                    | 3.997                   | 122                | 3.18E-04                      | 59                 | 1.54E-04                      | 48%        | Pass              |
| 27                    | 4.128                   | 116                | 3.03E-04                      | 55                 | 1.44E-04                      | 47%        | Pass              |
| 28                    | 4.259                   | 106                | 2.77E-04                      | 51                 | 1.33E-04                      | 48%        | Pass              |
| 29                    | 4.390                   | 100                | 2.61E-04                      | 51                 | 1.33E-04                      | 51%        | Pass              |
| 30                    | 4.521                   | 85                 | 2.22E-04                      | 49                 | 1.28E-04                      | 58%        | Pass              |
| 31                    | 4.652                   | 77                 | 2.01E-04                      | 44                 | 1.15E-04                      | 57%        | Pass              |
| 32                    | 4.783                   | 73                 | 1.91E-04                      | 37                 | 9.66E-05                      | 51%        | Pass              |
| 33                    | 4.914                   | 70                 | 1.83E-04                      | 34                 | 8.87E-05                      | 49%        | Pass              |
| 34                    | 5.045                   | 70                 | 1.83E-04                      | 31                 | 8.09E-05                      | 44%        | Pass              |
| 35                    | 5.176                   | 65                 | 1.70E-04                      | 28                 | 7.31E-05                      | 43%        | Pass              |
| 36                    | 5.307                   | 61                 | 1.59E-04                      | 27                 | 7.05E-05                      | 44%        | Pass              |
| 37                    | 5.438                   | 59                 | 1.54E-04                      | 27                 | 7.05E-05                      | 46%        | Pass              |
| 38                    | 5.569                   | 53                 | 1.38E-04                      | 25                 | 6.53E-05                      | 47%        | Pass              |
| 39                    | 5.700                   | 53                 | 1.38E-04                      | 24                 | 6.26E-05                      | 45%        | Pass              |
| 40                    | 5.831                   | 51                 | 1.33E-04                      | 23                 | 6.00E-05                      | 45%        | Pass              |
| 41                    | 5.962                   | 47                 | 1.23E-04                      | 23                 | 6.00E-05                      | 49%        | Pass              |
| 42                    | 6.093                   | 47                 | 1.23E-04                      | 23                 | 6.00E-05                      | 49%        | Pass              |
| 43                    | 6.224                   | 42                 | 1.10E-04                      | 22                 | 5.74E-05                      | 52%        | Pass              |
| 44                    | 6.355                   | 35                 | 9.14E-05                      | 22                 | 5.74E-05                      | 63%        | Pass              |
| 45                    | 6.486                   | 31                 | 8.09E-05                      | 21                 | 5.48E-05                      | 68%        | Pass              |
| 46                    | 6.617                   | 29                 | 7.57E-05                      | 18                 | 4.70E-05                      | 62%        | Pass              |
| 47                    | 6.748                   | 29                 | 7.57E-05                      | 17                 | 4.44E-05                      | 59%        | Pass              |
| 48                    | 6.879                   | 27                 | 7.05E-05                      | 16                 | 4.18E-05                      | 59%        | Pass              |
| 49                    | 7.010                   | 26                 | 6.79E-05                      | 14                 | 3.65E-05                      | 54%        | Pass              |
| 50                    | 7.141                   | 23                 | 6.00E-05                      | 14                 | 3.65E-05                      | 61%        | Pass              |
| 51                    | 7.272                   | 22                 | 5.74E-05                      | 14                 | 3.65E-05                      | 64%        | Pass              |
| 52                    | 7.403                   | 21                 | 5.48E-05                      | 13                 | 3.39E-05                      | 62%        | Pass              |
| 53                    | 7.534                   | 21                 | 5.48E-05                      | 13                 | 3.39E-05                      | 62%        | Pass              |

| Beginning of Interval | Pre-develop. Flow (cfs) | Pre-develop. Hours | Pre-develop. % Time Exceeding | Post-project Hours | Post-project % Time Exceeding | Percentage | Pass/Fail |
|-----------------------|-------------------------|--------------------|-------------------------------|--------------------|-------------------------------|------------|-----------|
| 54                    | 7.665                   | 20                 | 5.22E-05                      | 13                 | 3.39E-05                      | 65%        | Pass      |
| 55                    | 7.796                   | 20                 | 5.22E-05                      | 13                 | 3.39E-05                      | 65%        | Pass      |
| 56                    | 7.927                   | 18                 | 4.70E-05                      | 12                 | 3.13E-05                      | 67%        | Pass      |
| 57                    | 8.058                   | 17                 | 4.44E-05                      | 12                 | 3.13E-05                      | 71%        | Pass      |
| 58                    | 8.189                   | 16                 | 4.18E-05                      | 11                 | 2.87E-05                      | 69%        | Pass      |
| 59                    | 8.320                   | 15                 | 3.92E-05                      | 9                  | 2.35E-05                      | 60%        | Pass      |
| 60                    | 8.451                   | 15                 | 3.92E-05                      | 8                  | 2.09E-05                      | 53%        | Pass      |
| 61                    | 8.582                   | 14                 | 3.65E-05                      | 8                  | 2.09E-05                      | 57%        | Pass      |
| 62                    | 8.713                   | 14                 | 3.65E-05                      | 8                  | 2.09E-05                      | 57%        | Pass      |
| 63                    | 8.844                   | 14                 | 3.65E-05                      | 8                  | 2.09E-05                      | 57%        | Pass      |
| 64                    | 8.975                   | 14                 | 3.65E-05                      | 8                  | 2.09E-05                      | 57%        | Pass      |
| 65                    | 9.106                   | 14                 | 3.65E-05                      | 8                  | 2.09E-05                      | 57%        | Pass      |
| 66                    | 9.237                   | 13                 | 3.39E-05                      | 8                  | 2.09E-05                      | 62%        | Pass      |
| 67                    | 9.368                   | 13                 | 3.39E-05                      | 8                  | 2.09E-05                      | 62%        | Pass      |
| 68                    | 9.499                   | 13                 | 3.39E-05                      | 7                  | 1.83E-05                      | 54%        | Pass      |
| 69                    | 9.630                   | 12                 | 3.13E-05                      | 7                  | 1.83E-05                      | 58%        | Pass      |
| 70                    | 9.761                   | 12                 | 3.13E-05                      | 7                  | 1.83E-05                      | 58%        | Pass      |
| 71                    | 9.892                   | 12                 | 3.13E-05                      | 7                  | 1.83E-05                      | 58%        | Pass      |
| 72                    | 10.023                  | 12                 | 3.13E-05                      | 6                  | 1.57E-05                      | 50%        | Pass      |
| 73                    | 10.154                  | 12                 | 3.13E-05                      | 5                  | 1.31E-05                      | 42%        | Pass      |
| 74                    | 10.285                  | 11                 | 2.87E-05                      | 5                  | 1.31E-05                      | 45%        | Pass      |
| 75                    | 10.416                  | 10                 | 2.61E-05                      | 4                  | 1.04E-05                      | 40%        | Pass      |
| 76                    | 10.547                  | 10                 | 2.61E-05                      | 4                  | 1.04E-05                      | 40%        | Pass      |
| 77                    | 10.678                  | 9                  | 2.35E-05                      | 4                  | 1.04E-05                      | 44%        | Pass      |
| 78                    | 10.809                  | 9                  | 2.35E-05                      | 4                  | 1.04E-05                      | 44%        | Pass      |
| 79                    | 10.940                  | 8                  | 2.09E-05                      | 4                  | 1.04E-05                      | 50%        | Pass      |
| 80                    | 11.071                  | 8                  | 2.09E-05                      | 4                  | 1.04E-05                      | 50%        | Pass      |
| 81                    | 11.202                  | 8                  | 2.09E-05                      | 4                  | 1.04E-05                      | 50%        | Pass      |
| 82                    | 11.333                  | 7                  | 1.83E-05                      | 4                  | 1.04E-05                      | 57%        | Pass      |
| 83                    | 11.464                  | 6                  | 1.57E-05                      | 3                  | 7.83E-06                      | 50%        | Pass      |
| 84                    | 11.595                  | 6                  | 1.57E-05                      | 3                  | 7.83E-06                      | 50%        | Pass      |
| 85                    | 11.726                  | 6                  | 1.57E-05                      | 3                  | 7.83E-06                      | 50%        | Pass      |
| 86                    | 11.857                  | 5                  | 1.31E-05                      | 3                  | 7.83E-06                      | 60%        | Pass      |
| 87                    | 11.988                  | 5                  | 1.31E-05                      | 3                  | 7.83E-06                      | 60%        | Pass      |
| 88                    | 12.119                  | 5                  | 1.31E-05                      | 3                  | 7.83E-06                      | 60%        | Pass      |
| 89                    | 12.250                  | 5                  | 1.31E-05                      | 3                  | 7.83E-06                      | 60%        | Pass      |
| 90                    | 12.381                  | 5                  | 1.31E-05                      | 3                  | 7.83E-06                      | 60%        | Pass      |
| 91                    | 12.512                  | 5                  | 1.31E-05                      | 3                  | 7.83E-06                      | 60%        | Pass      |
| 92                    | 12.643                  | 5                  | 1.31E-05                      | 3                  | 7.83E-06                      | 60%        | Pass      |
| 93                    | 12.774                  | 5                  | 1.31E-05                      | 3                  | 7.83E-06                      | 60%        | Pass      |
| 94                    | 12.905                  | 5                  | 1.31E-05                      | 3                  | 7.83E-06                      | 60%        | Pass      |
| 95                    | 13.036                  | 4                  | 1.04E-05                      | 3                  | 7.83E-06                      | 75%        | Pass      |
| 96                    | 13.167                  | 4                  | 1.04E-05                      | 3                  | 7.83E-06                      | 75%        | Pass      |
| 97                    | 13.298                  | 4                  | 1.04E-05                      | 3                  | 7.83E-06                      | 75%        | Pass      |
| 98                    | 13.429                  | 4                  | 1.04E-05                      | 3                  | 7.83E-06                      | 75%        | Pass      |
| 99                    | 13.560                  | 3                  | 7.83E-06                      | 3                  | 7.83E-06                      | 100%       | Pass^     |
| 100                   | 13.690                  | 3                  | 7.83E-06                      | 3                  | 7.83E-06                      | 100%       | Pass^     |

# Flow Duration Curves - POC 1

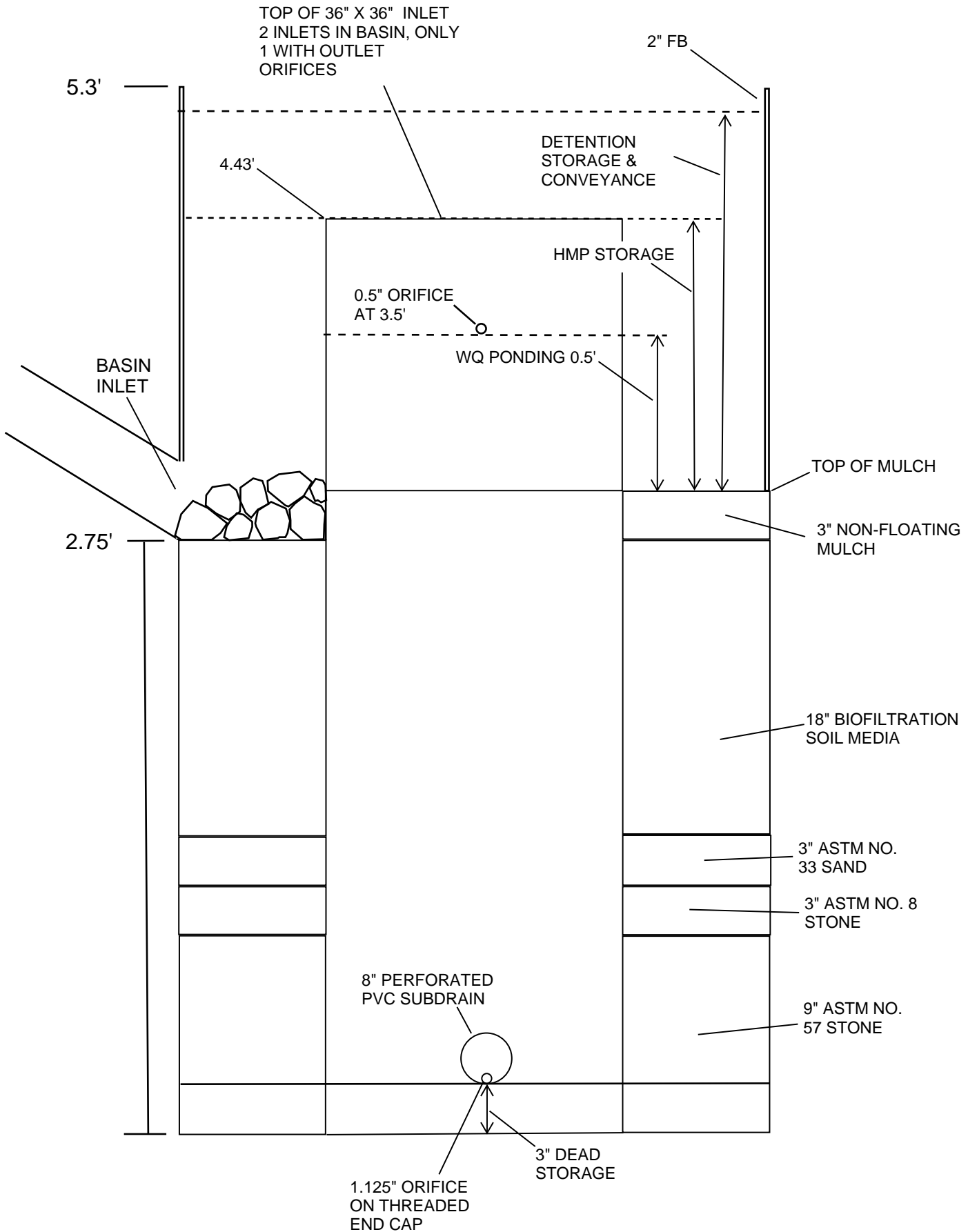




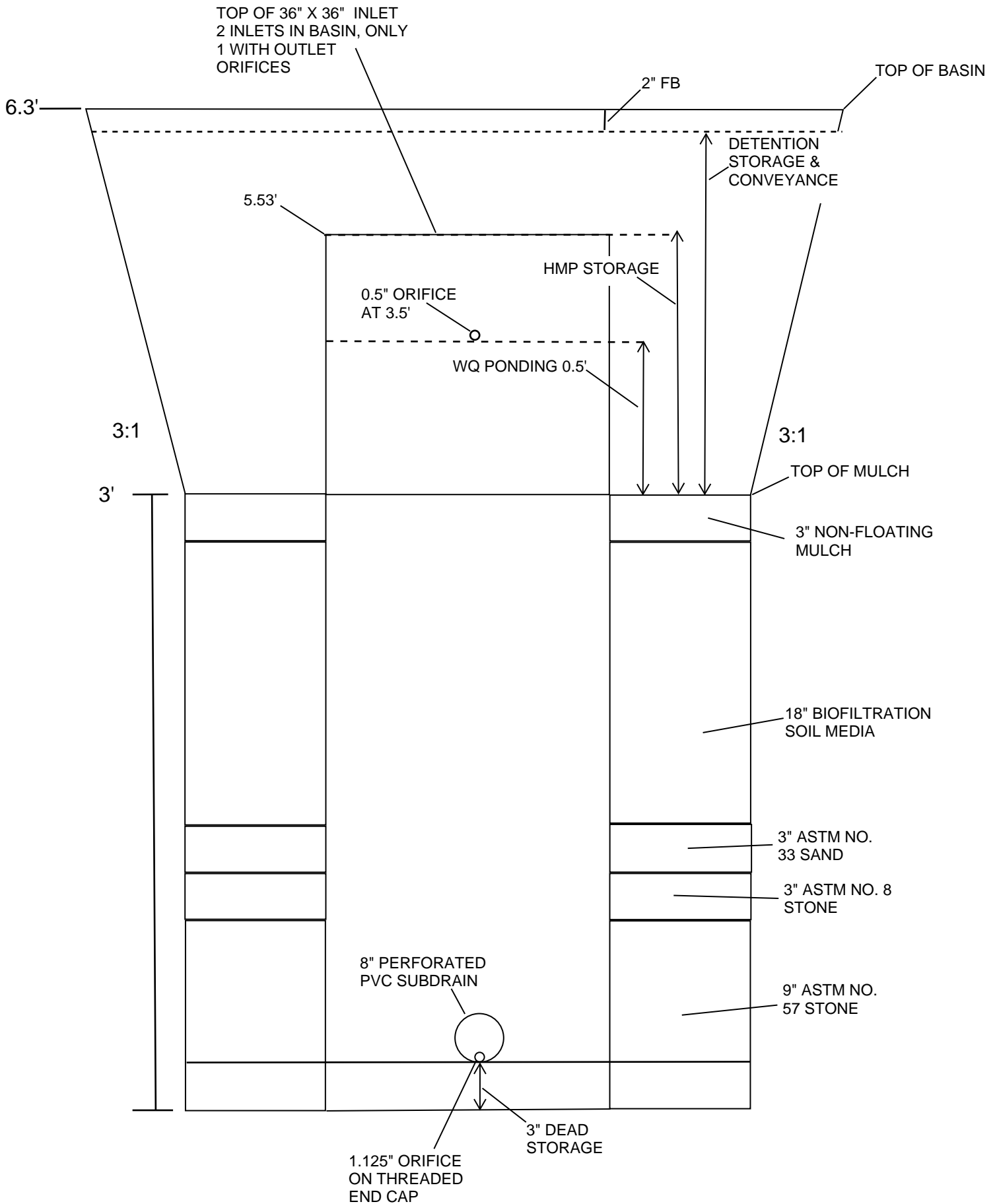
Peak Flow Frequency Summary

| Return Period | Pre-development Qpeak<br>(cfs) | Post-project - Mitigated Q<br>(cfs) | Check |
|---------------|--------------------------------|-------------------------------------|-------|
| LF = 0.1*Q2   | 0.722                          | 0.490                               | Ok!   |
| 2-year        | 7.221                          | 4.905                               | Ok!   |
| 3-year        | 8.359                          | 6.707                               | Ok!   |
| 4-year        | 10.154                         | 8.264                               | Ok!   |
| 5-year        | 11.163                         | 8.989                               | Ok!   |
| 6-year        | 11.726                         | 9.818                               | Ok!   |
| 7-year        | 12.632                         | 10.317                              | Ok!   |
| 8-year        | 13.192                         | 10.814                              | Ok!   |
| 9-year        | 13.470                         | 11.311                              | Ok!   |
| 10-year       | 13.821                         | 12.135                              | Ok!   |

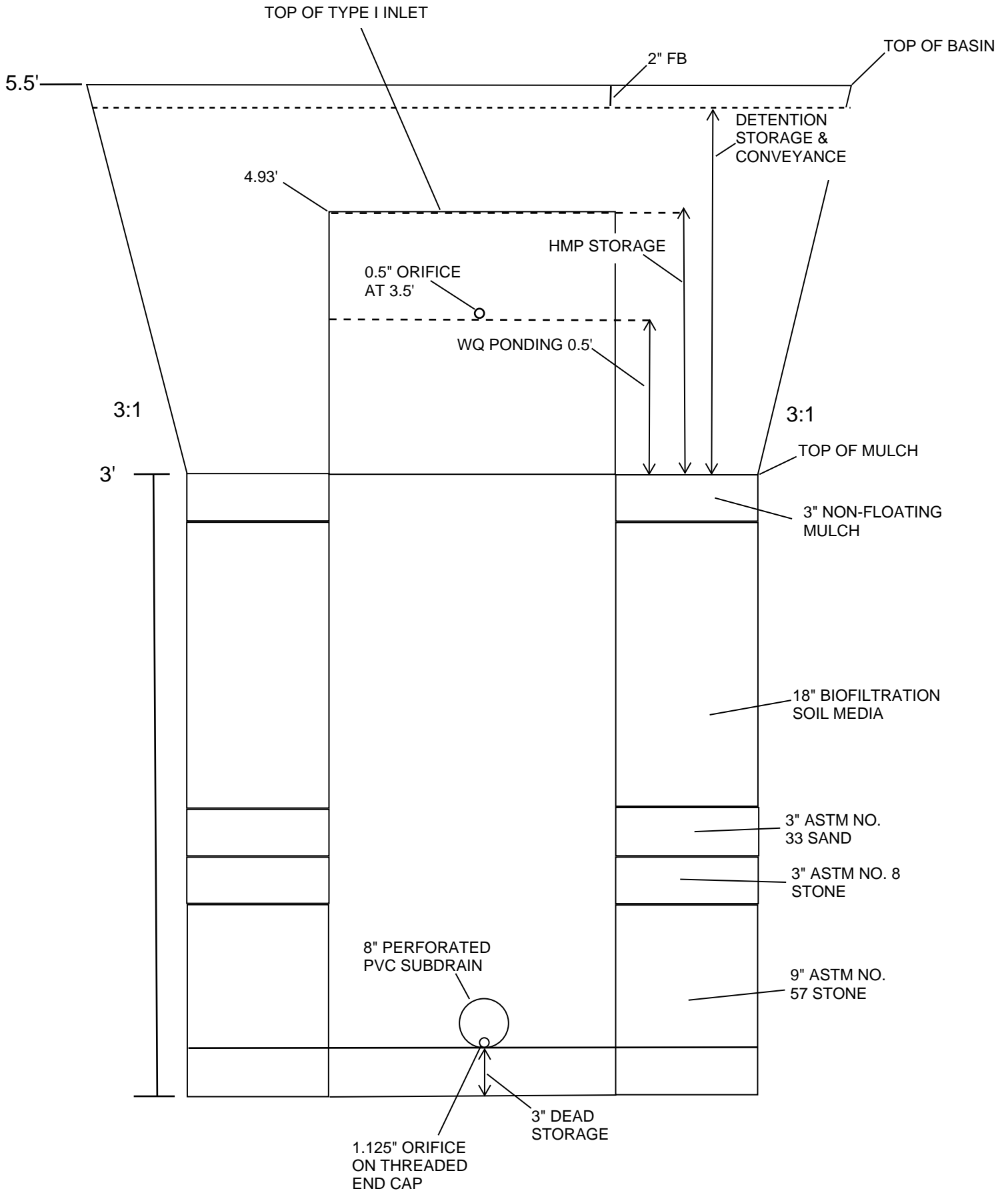
# BMP-A CROSS SECTION



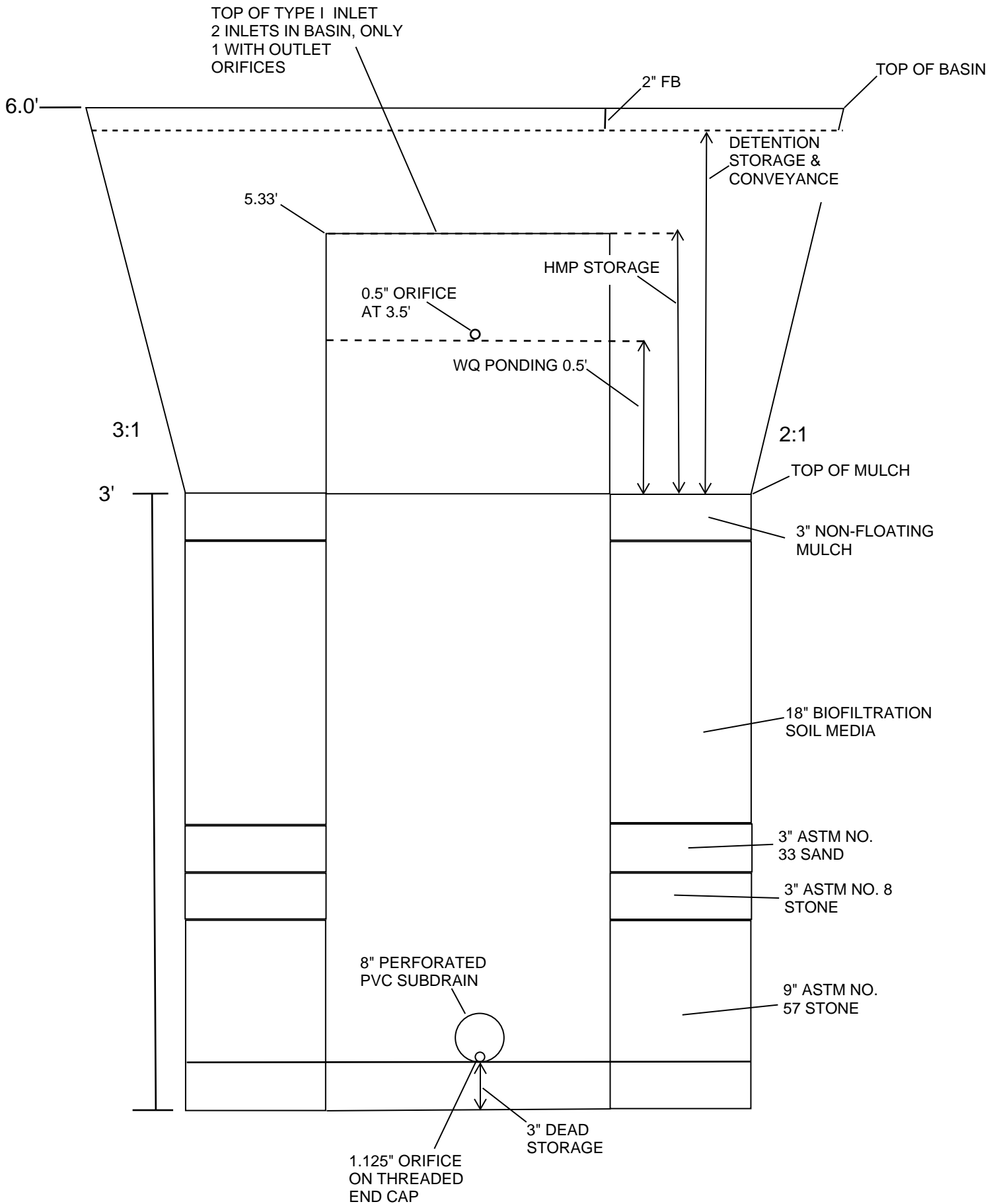
# BMP-B CROSS SECTION



# BMP-C1 CROSS SECTION



# BMP-C2 CROSS SECTION



**ATTACHMENT 3**  
**Structural BMP Maintenance Information**

*This is the cover sheet for Attachment 3.*

**Indicate which Items are Included behind this cover sheet:**

| <b>Attachment Sequence</b> | <b>Contents</b>                                              | <b>Checklist</b>                                                                                                                                     |
|----------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Attachment 3a              | Structural BMP Maintenance Thresholds and Actions (Required) | <input checked="" type="checkbox"/> Included<br><br>See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet. |
| Attachment 3b              | Draft Maintenance Agreement (when applicable)                | <input type="checkbox"/> Included<br><input checked="" type="checkbox"/> Not Applicable                                                              |

***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 |
|-----------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>SITE DESIGN</b>    | 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<br>2. ON OR BEFORE SEPTEMBER 30TH.                                                                                                                                                                                                                                                            | 1. FILL AND COMPACT AREAS OF RUTS, RILLS, OR GULLIES;<br>2. RE-SEED AND/OR PLANT SLOPES AND AREAS OF EXPOSED SOILS; AND<br>3. ROUTINE MOWING AND TRIMMING AND TRASH REMOVAL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | YES                    |
|                       | OUTLET PROTECTION                         | 1. MONTHLY;<br>2. WITHIN 24 HOURS AFTER EACH "SIGNIFICANT RAIN EVENT" AND<br>3. WITHIN 24 HOURS FOLLOWING CONSTRUCTION IN IMMEDIATE AREA OF OUTLET PROTECTION                                                                                                                                                                                   | 1. AS DETERMINED BY INSPECTION;<br>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<br>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                    |
|                       | INTEGRATED PEST MANAGEMENT                | MONTHLY (NOTE: INSPECTOR SHALL CHECK FOR INDICATIONS OF THE PRESENCE OF PESTS ON-SITE)                                                                                                                                                                                                                                                          | WHEN THE PEST OR PESTS, OBSERVED IN GREATEST ABUNDANCE OR CAUSE THE MOST OBSERVED SYMPTOMS, ARE IDENTIFIED.                                                                                                                                                                                                                       | CHECK FREQUENTLY FOR PESTS, AND TREAT WITH A PESTICIDE ONLY WHEN A PEST IS PRESENT, ETC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 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                    |
| <b>SOURCE CONTROL</b> | TRASH STORAGE AREAS                       | WEEKLY                                                                                                                                                                                                                                                                                                                                          | 1. AS DETERMINED BY INSPECTION;<br>2. STANDING WATER IN TRASH STORAGE AREA.<br>3. LOOSE TRASH OR DEBRIS.<br>4. LEAKED OR SPILLED MATERIALS.<br>5. COMPROMISED FENCE, SCREEN, GATE, WALL, BIN, LID OR ROOF AWNING (WHERE APPLICABLE).<br>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;<br>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<br>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<br>2. MAKE SURE THAT THEY ARE PLACED AT ALL REQUIRED LOCATIONS (I.E.- ALL INLETS).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | YES                    |
| <b>STRUCTURAL BMP</b> | BIOFILTRATION FACILITY (BMP-A, B, C1, C2) | 1. TWICE A YEAR (ON OR BEFORE SEPTEMBER 15TH AND FOLLOWING THE RAINY SEASON AFTER MAY 1ST); AND<br>2. AFTER EACH "SIGNIFICANT RAIN EVENT" (NOTE: INSPECTOR SHALL CHECK FOR THE FOLLOWING MAINTENANCE INDICATORS: 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<br>2. ON OR BEFORE SEPTEMBER 30TH AND FOLLOWING THE RAINY SEASON AFTER MAY 1ST;<br>AND<br>3. AFTER EACH "SIGNIFICANT RAIN EVENT" <sup>2</sup>                                                                                                                                                 | 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; AND 5. DEPENDING ON POLLUTANT LOADS, SOILS MAY NEED TO BE REPLACED EVERY 5 TO 10 YEARS.<br>6. THE RISER STRUCTURE SHOULD BE MAINTAINED TO AVOID CLOGGING AND ANY LEAKAGE THROUGH BOLTHOLES.                                                                                                                                                                                                                         | YES                    |

**NOTES:**

1. REFER TO THE "PRIORITY DEVELOPMENT PROJECT (PDP) STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) SD TECH CENTER", DATED JULY 20, 2020 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.

## **ATTACHMENT 4**

### **Copy of Plan Sheets Showing Permanent Storm Water BMPs**

This is the cover sheet for Attachment 4.

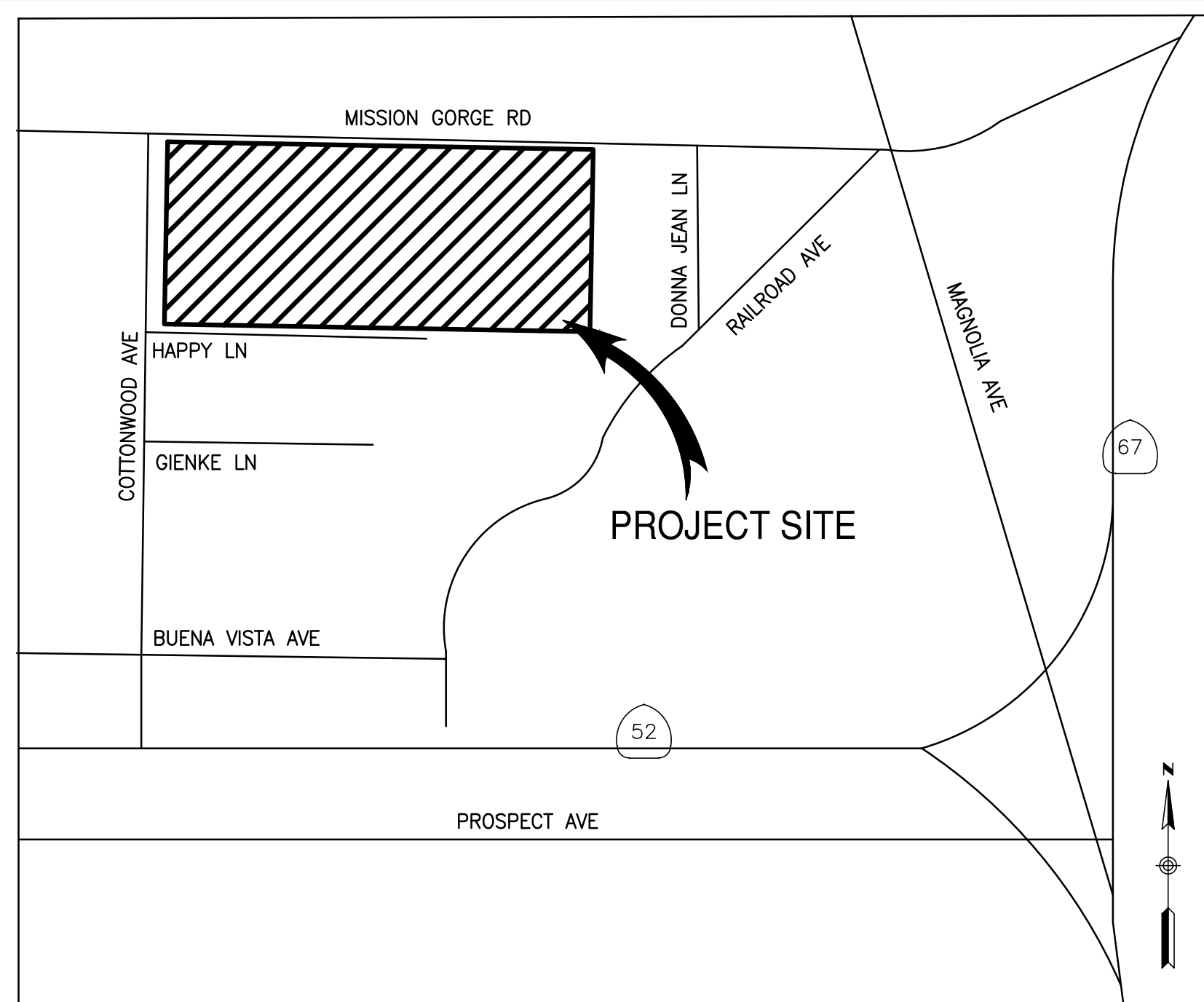
**Use this checklist to ensure the required information has been included on the plans:**

**The plans must identify:**

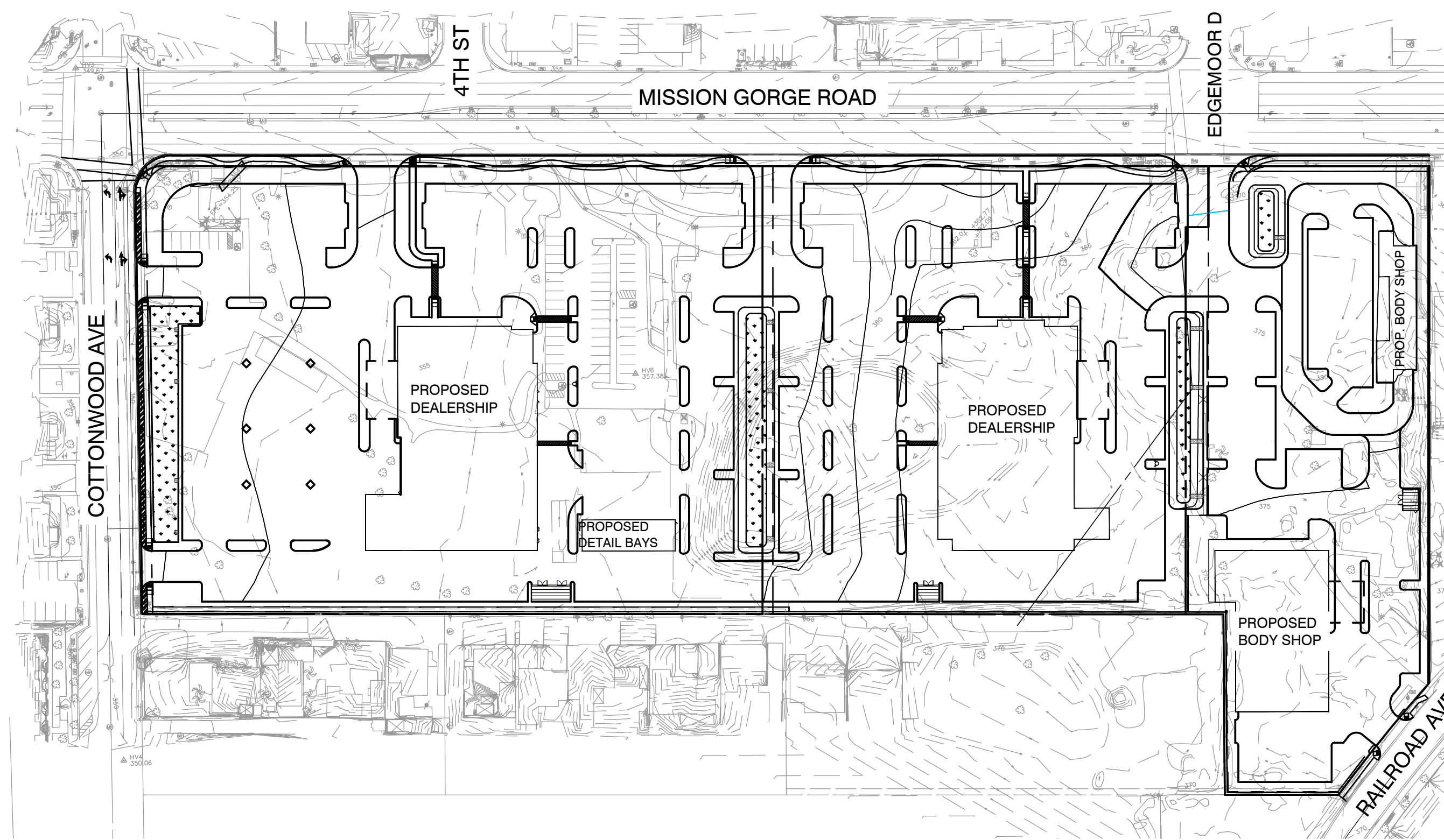
- Structural BMP(s) with ID numbers matching Form I-6 Summary of PDP Structural BMPs
- The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- Details and specifications for construction of structural BMP(s)
- Signage indicating the 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.



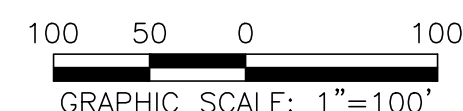
# CUP NO. XXXX SANTEE AUTO CENTER



VICINITY MAP



SITE MAP



### LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF SANTEE, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:  
ALL THAT PORTION OF LOTS 3, 4, 5, 6 AND 7 IN BLOCK 14 OF THE SUBDIVISION OF LOTS "H" AND "O" OF RANCHO EL CAJON, IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 817, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, APRIL 2, 1896, TOGETHER WITH A PORTION OF MISSION GORGE RD AND COTTONWOOD AVENUE LYING WITHIN THE FOLLOWING DESCRIBED BOUNDARY:

BEGINNING AT THE INTERSECTION OF THE CENTER LINE OF MISSION AVENUE WITH THE CENTER LINE OF COTTONWOOD AVENUE; THENCE EAST ALONG SAID CENTER LINE OF MISSION AVENUE 1085.70 FEET TO THE NORTHEASTERLY CORNER OF A PARCEL OF LAND CONVEYED TO THE SANTEE SCHOOL DISTRICT OF SAN DIEGO BY DEED RECORDED DECEMBER 23, 1948 IN BOOK 3509, PAGE 109 OF OFFICIAL RECORDS; THENCE SOUTH TO AN INTERSECTION WITH THE SOUTHERLY LINE OF MISSION AVENUE; THENCE ALONG THE SOUTHERLY LINE OF MISSION AVENUE EAST 198.00 FEET TO THE NORTHEASTERLY CORNER OF LOT 3 OF SAID BLOCK 14; THENCE SOUTHERLY ALONG THE EASTERLY LINE OF SAID LOT 3 AND THE SOUTHERLY PROLONGATION THEREOF TO THE SOUTHEASTERLY BOUNDARY OF LOT 7 IN BLOCK 14; THENCE ALONG THE SOUTHEASTERLY BOUNDARY, SOUTHWESTERLY TO THE SOUTHERLY LINE OF SAID LOT; THENCE ALONG THE SOUTHERLY LINE, WESTERLY TO AN INTERSECTION WITH THE SOUTHERLY PROLONGATION OF THE EASTERLY LINE OF LOT 4 IN SAID BLOCK 14; THENCE NORTHERLY ALONG SAID PROLONGATION 175.00 FEET TO THE SOUTHEASTERLY CORNER OF LAND DESCRIBED IN DEED TO THE SANTEE SCHOOL DISTRICT OF SAN DIEGO COUNTY BY DEED RECORDED AUGUST 4, 1949 IN BOOK 3277, PAGE 84 OF OFFICIAL RECORDS; THENCE ALONG THE SOUTHERLY LINE OF THE LAST MENTIONED LAND AND ALONG A LINE DRAWN PARALLEL WITH AND 175.00 FEET NORTHERLY FROM THE SOUTH LINE OF SAID LOTS 4, 5, 6, AND 7 WEST 1035.70 FEET TO THE WEST LINE OF SAID LOT 6; THENCE NORTHERLY ALONG SAID WEST LINE 83.00 FEET; THENCE WESTERLY ALONG A LINE PARALLEL WITH THE CENTER LINE OF MISSION AVENUE 30.00 FEET TO AN INTERSECTION WITH THE CENTER LINE OF COTTONWOOD AVENUE; THENCE NORTHERLY ALONG SAID CENTER LINE TO THE POINT OF BEGINNING.

### GENERAL NOTES

- ASSESSORS PARCEL NUMBERS: 384-091-01, 384-091-13 AND 384-091-14
- PUBLIC WATER SYSTEM TO BE INSTALLED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE WATER AGENCY STANDARDS (WAS).
- 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.
- PRIVATE SEWER MAINS ARE 8" MINIMUM P.V.C. UNLESS OTHERWISE SHOWN.
- EVIDENCE SHALL BE PROVIDED OF HAVING OBTAINED GRADING RIGHTS ON ADJACENT PROPERTY WHERE REQUIRED.
- UTILITIES SHALL BE UNDERGROUND. EASEMENTS TO BE PROVIDED AS NECESSARY.
- FIRE HYDRANTS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF SANTEE FIRE DEPARTMENT DESIGN STANDARDS.
- GRADING MAY BE BUILT PRIOR TO FINAL MAP RECORDATION.
- GRADING SHOWN HEREON IS PRELIMINARY AND SUBJECT TO MODIFICATION IN FINAL DESIGN SUBJECT TO SUBSTANTIAL CONFORMANCE APPROVAL BY THE CITY OF SANTEE.
- STORM DRAIN AND SEWER SHOWN IS PRELIMINARY AND IS SUBJECT TO MODIFICATION WITH FINAL DESIGN.
- TEMPORARY AND PERMANENT STRUCTURAL BEST MANAGEMENT PRACTICES WILL BE INCORPORATED IN THE DESIGN AND IMPLEMENTATION OF THE DEVELOPMENT.
- GRADING REQUESTED TO BEGIN PRIOR TO FINAL MAP RECORDATION.
- TRASH COLLECTION TO BE CURB SIDE.

### TOPOGRAPHY

TOPO SOURCE: TOPO SOURCE RICK ENGINEERING COMPANY  
FLOWN: 01.24.2020  
DATUM: NGVD 29 MSL

#### BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM ZONE 6, EPOCH 1991.35 AND IS DETERMINED BY RTK G.P.S. MEASUREMENTS TAKEN ON AUGUST 25, 2010 AT STA. NO. 2109 AND STA. NO. 2113 AS SHOWN HEREON, PER RECORD OF SURVEY MAP NO. 11252.

BEARING AND DISTANCE STA. NO. 2109 TO STA. NO. 2113: S79°30'49" E 3541.73' GRID  
QUOTED BEARINGS FROM REFERENCE MAPS/DEEDS MAY OR MAY NOT BE IN TERMS OF SAID SYSTEM.  
BENCHMARK:  
THE BENCHMARK FOR THIS SURVEY IS THE STREET SURVEY MONUMENT WITH A 3" BRASS DISK AT THE CENTER LINE INTERSECTION OF PROSPECT AVENUE AND COTTONWOOD AVENUE, PER RECORD OF SURVEY MAP NO. 11252. ELEVATION = 359.58, NGVD 29 MSL

### ADDRESS

10335 MISSION GORGE RD  
SANTEE, CA 92071

### ASSESSOR PARCEL NUMBER

384-091-01, 384-091-13 AND 384-091-14

### EARTHWORK/GRADING QUANTITIES

CUT: 23,000 CY FILL: 20,500 CY EXPORT: 2,500 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.

### ABBREVIATIONS

|          |                                                |        |                                    |
|----------|------------------------------------------------|--------|------------------------------------|
| AC       | ACRES / ASBESTOS-CEMENT                        | MAX    | MAXIMUM                            |
| ADT      | AVERAGE DAILY TRAFFIC                          | MIN    | MINIMUM                            |
| APN      | ASSESSOR'S PARCEL NUMBER                       | N.T.S. | NOT TO SCALE                       |
| ASTM     | AMERICAN SOCIETY OF TESTING AND MATERIALS      | NO.    | NUMBER                             |
| BLDG     | BUILDING                                       | PERF   | PERFORATED                         |
| BMP      | BEST MANAGEMENT PRACTICE                       | PIP    | PROTECT IN PLACE                   |
| BOT      | BOTTOM                                         | PL     | PROPERTY LINE                      |
| C&G      | CURB AND GUTTER                                | PM     | PARCEL MAP                         |
| C.B.     | CATCH BASIN                                    | PROP   | PROPOSED                           |
| C.O.     | CLEANOUT                                       | PVC    | POLYVINYL CHLORIDE                 |
| CL       | CENTERLINE                                     | PVT    | PRIVATE                            |
| CMLTC    | CEMENT-MORTAR LINED TAPE COATING               | ROW    | RIGHT-OF-WAY                       |
| CYD      | CUBIC YARD OF DEBRIS                           | RPDA   | REDUCED PRESSURE DETECTOR ASSEMBLY |
| DG       | DECOMPOSED GRANITE                             | RT     | RIGHT                              |
| DMA      | DRAINAGE MANAGEMENT AREA                       | S      | SEWER                              |
| DWY      | DRIVEWAY                                       | S/W    | SIDEWALK                           |
| EMRA     | ENCROACHMENT MAINTENANCE AND REMOVAL AGREEMENT | SD     | STORM DRAIN                        |
| ESMT     | EASEMENT                                       | SF     | SQUARE FEET                        |
| EX/EXIST | EXISTING                                       | SHT    | SHEET                              |
| FF       | FINISH FLOOR                                   | ST     | STREET                             |
| FG       | FINISH GRADE                                   | TB     | THRUST BLOCK                       |
| FL       | FLOWLINE                                       | TC     | TOP OF CURB                        |
| FS       | FINISH SURFACE / FIRE SERVICE                  | TCO    | TOP OF CLEANOUT                    |
| FT       | FEET                                           | TG     | TOP OF GRATE                       |
| HDPE     | HIGH DENSITY POLY ETHYLENE                     | TW     | TOP OF WALL                        |
| HMP      | HYDROMODIFICATION MANAGEMENT PLAN              | TYP    | TYPICAL                            |
| ID       | IDENTIFICATION                                 | W      | WATER                              |
| IE       | INVERT ELEVATION                               | W/     | WITH                               |

### LEGEND

|                                                 | EXISTING | PROPOSED |
|-------------------------------------------------|----------|----------|
| BOUNDARY                                        | ---      | ---      |
| PROPERTY LINE                                   | ---      | ---      |
| RIGHT-OF-WAY                                    | ---      | ---      |
| CENTERLINE                                      | ---      | ---      |
| CURB                                            | ---      | ---      |
| CURB & GUTTER                                   | ---      | ---      |
| FENCE-GENERAL USE                               | ---      | ---      |
| FENCE-CHAINLINK                                 | ---      | ---      |
| EASEMENT                                        | ---      | ---      |
| FLOWLINE                                        | ---      | ---      |
| RETAINING WALL                                  | ---      | ---      |
| SLOPE                                           | ---      | ---      |
| CONTOURS                                        | ---      | ---      |
| WATER LINE                                      | W        | W        |
| FIRE SERVICE                                    | FS       | FS       |
| SANITARY SEWER LINE                             | S        | S        |
| STORM DRAIN LINE                                | SD       | SD       |
| GAS LINE                                        | G        | G        |
| ELECTRIC LINE                                   | E        | E        |
| OVERHEAD WIRES                                  | OHE      | OHE      |
| FIBER OPTICS                                    | FO       | FO       |
| TELEPHONE                                       | T        | T        |
| TELEPHONE OVERHEAD                              | OHT      | OHT      |
| JOINT TRENCH                                    | JT       | JT       |
| ASPHALT LIMIT                                   | ---      | ---      |
| U-TYPE HEADWALL (PVT.)                          | ---      | ---      |
| CATCH BASIN, TYPE I (PVT.)                      | ---      | ---      |
| 18" CATCH BASIN (PVT.)                          | ---      | ---      |
| TYPE A-4 C.O. (PVT.)                            | ---      | ---      |
| FIRE HYDRANT                                    | ---      | ---      |
| SANITARY SEWER MANHOLE                          | ---      | ---      |
| LIGHT POST/STREET LIGHT                         | ---      | ---      |
| SIGNAGE                                         | ---      | ---      |
| 8" TRENCH DRAIN WITH TRAFFIC RATED GRATE (PVT.) | ---      | ---      |
| TRAFFIC SIGNAL                                  | ---      | ---      |

### SHEET INDEX

| NO.   | DESCRIPTION         |
|-------|---------------------|
| C-001 | TITLE SHEET         |
| C-002 | GENERAL NOTES       |
| C-003 | EXISTING CONDITIONS |
| C-004 | SITE GRADING PLAN   |
| C-005 | SITE GRADING PLAN   |
| C-006 | FIRE ACCESS         |

### PUBLIC UTILITIES

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

ENGINEER OF WORK:



KELLY L. DRUSE R.C.E. NO. 70998 EXP 12-31-22 DATE



CAMERON  
BROTHERS COMPANY LLC

Cameron Brothers  
Company LLC

Santee Auto  
Center

10335 Mission Gorge Road  
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12/16/2022 CUP Submittal

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TITLE SHEET

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C-001





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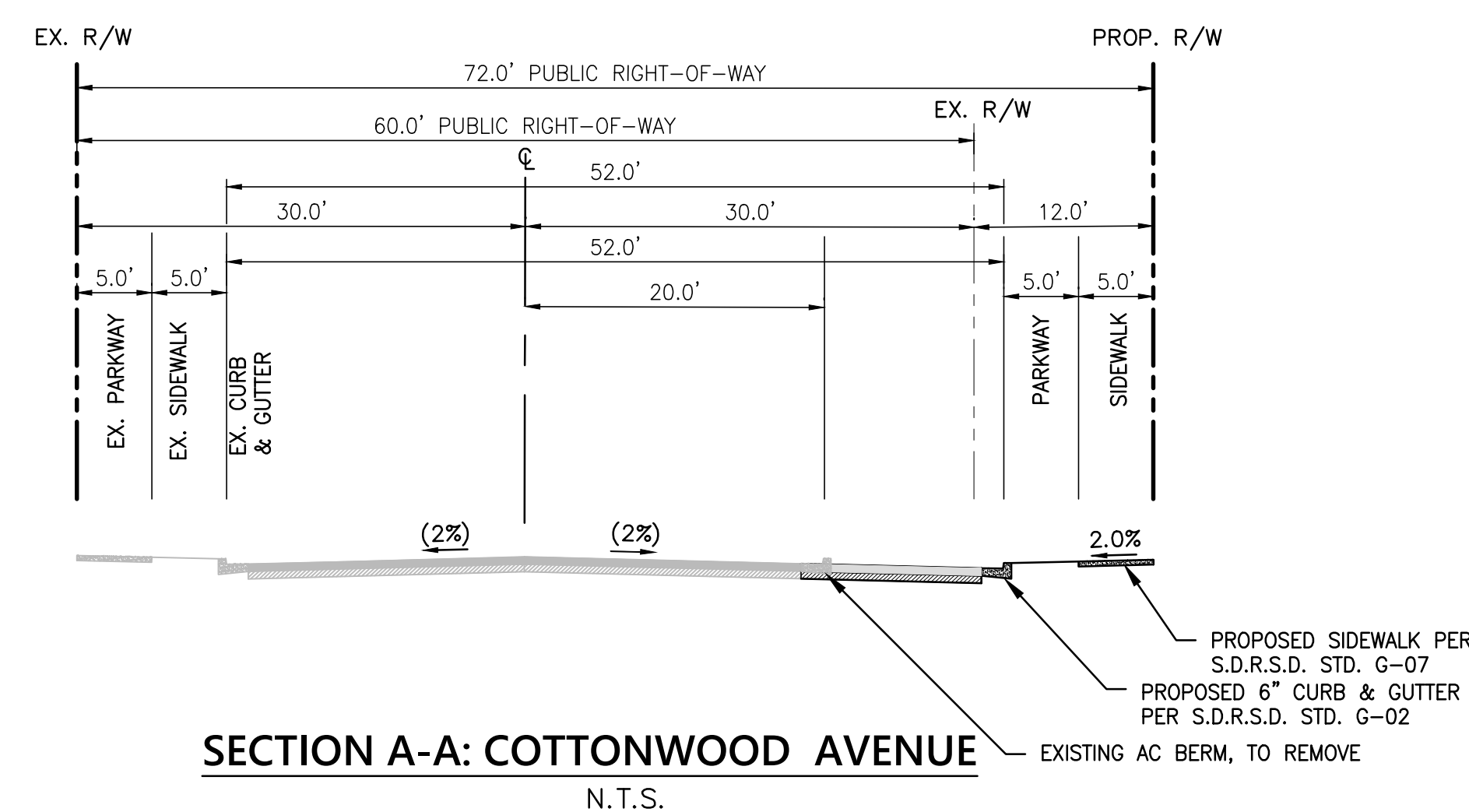
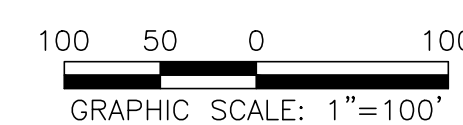
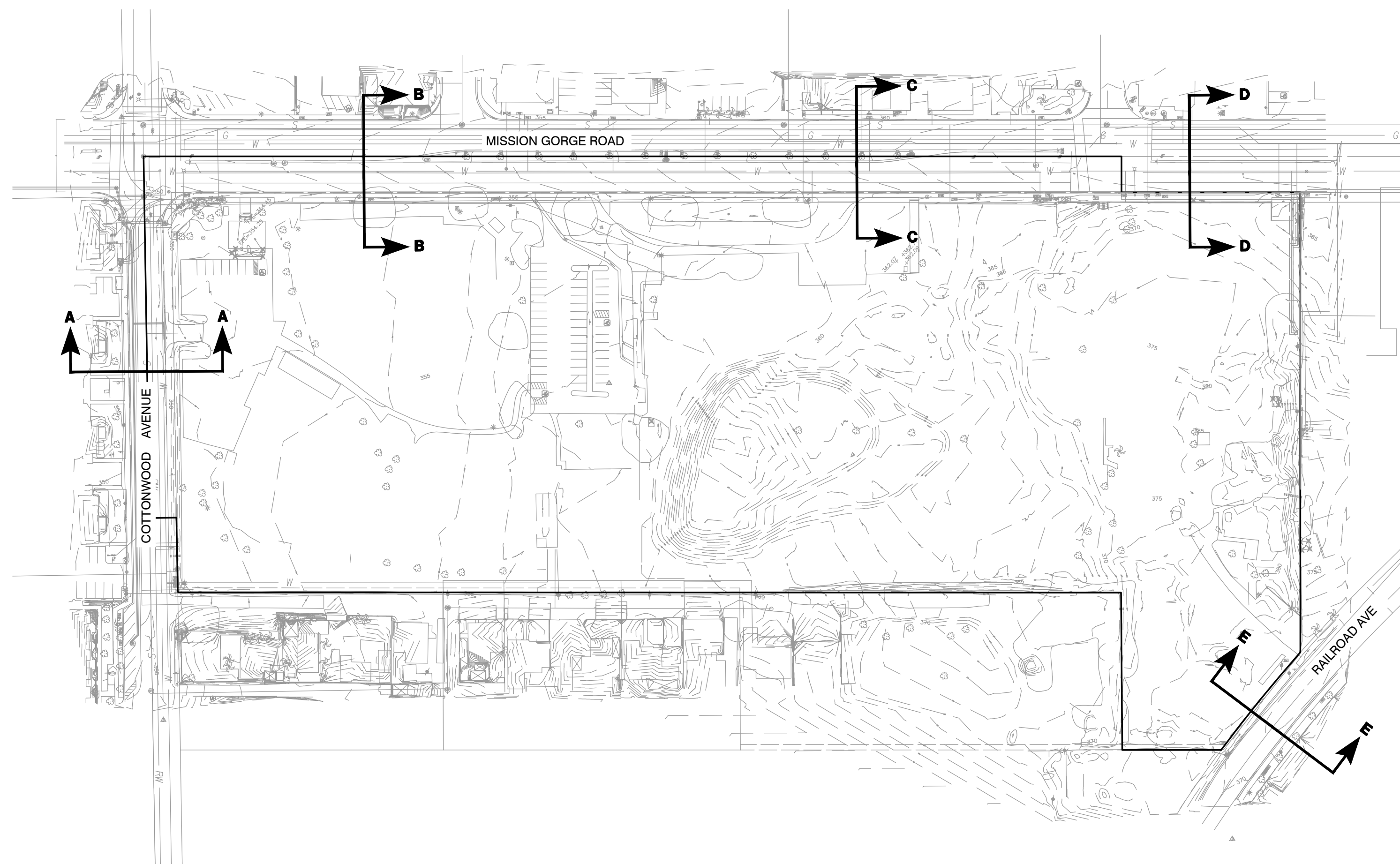
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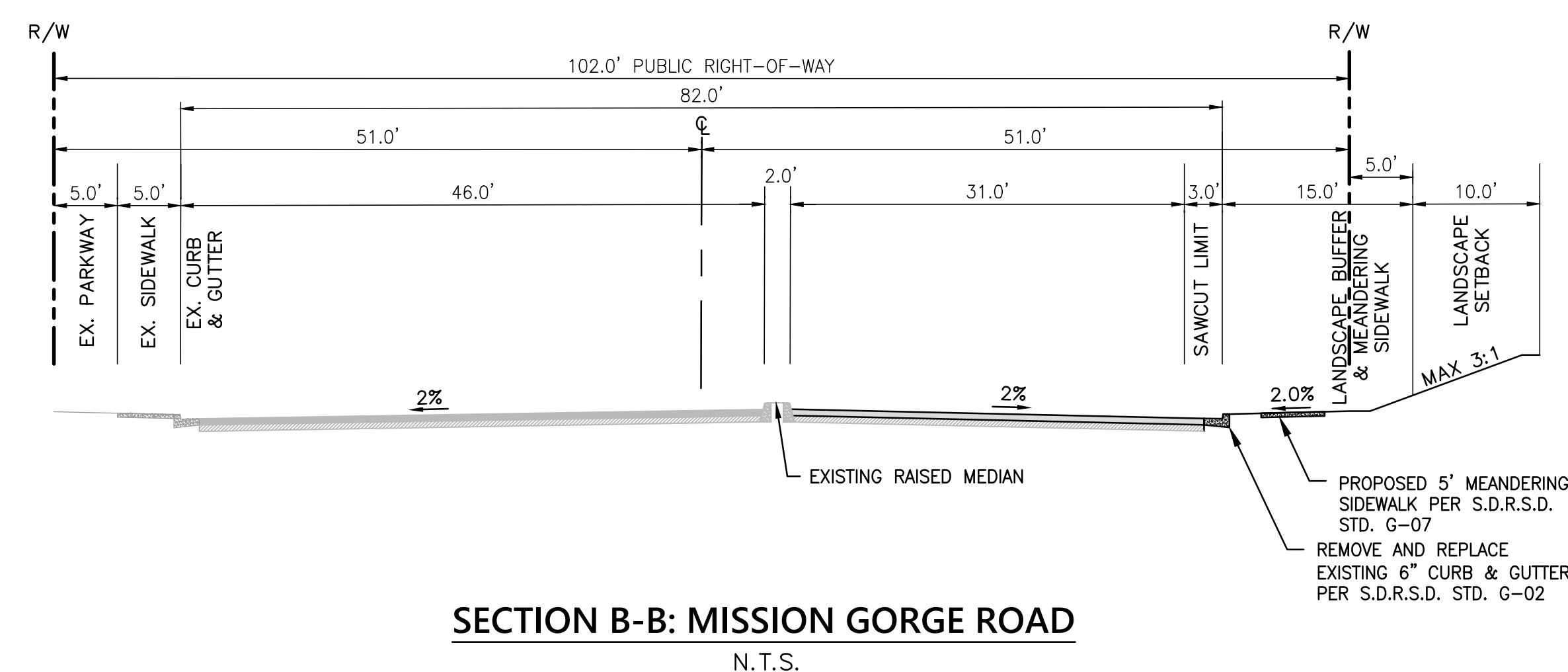
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NOTES & DETAILS

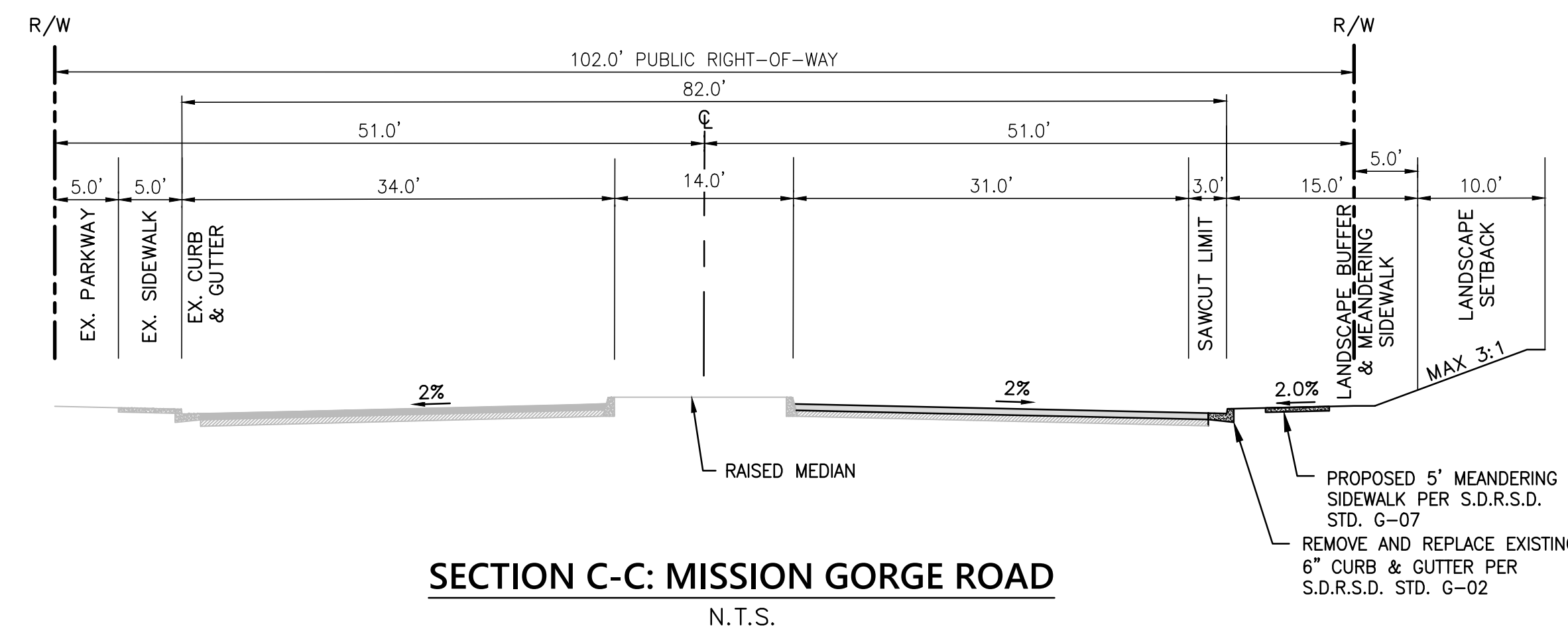
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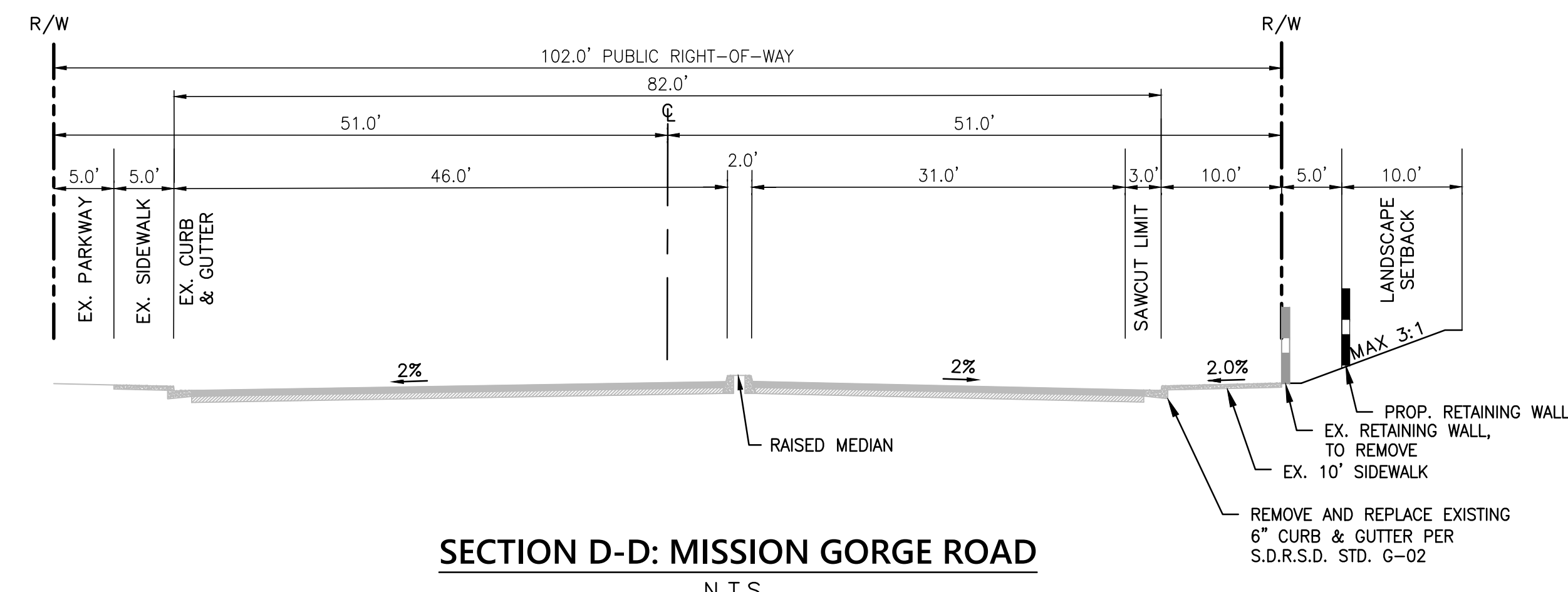
NOTE:  
REPLACE FAILED OR INADEQUATE PAVEMENT TO THE CENTERLINE AND/OR SIDEWALK ADJACENT TO THE SITE ON COTTONWOOD AVENUE TO THE SATISFACTION OF THE DIRECTOR OF DEVELOPMENT SERVICES



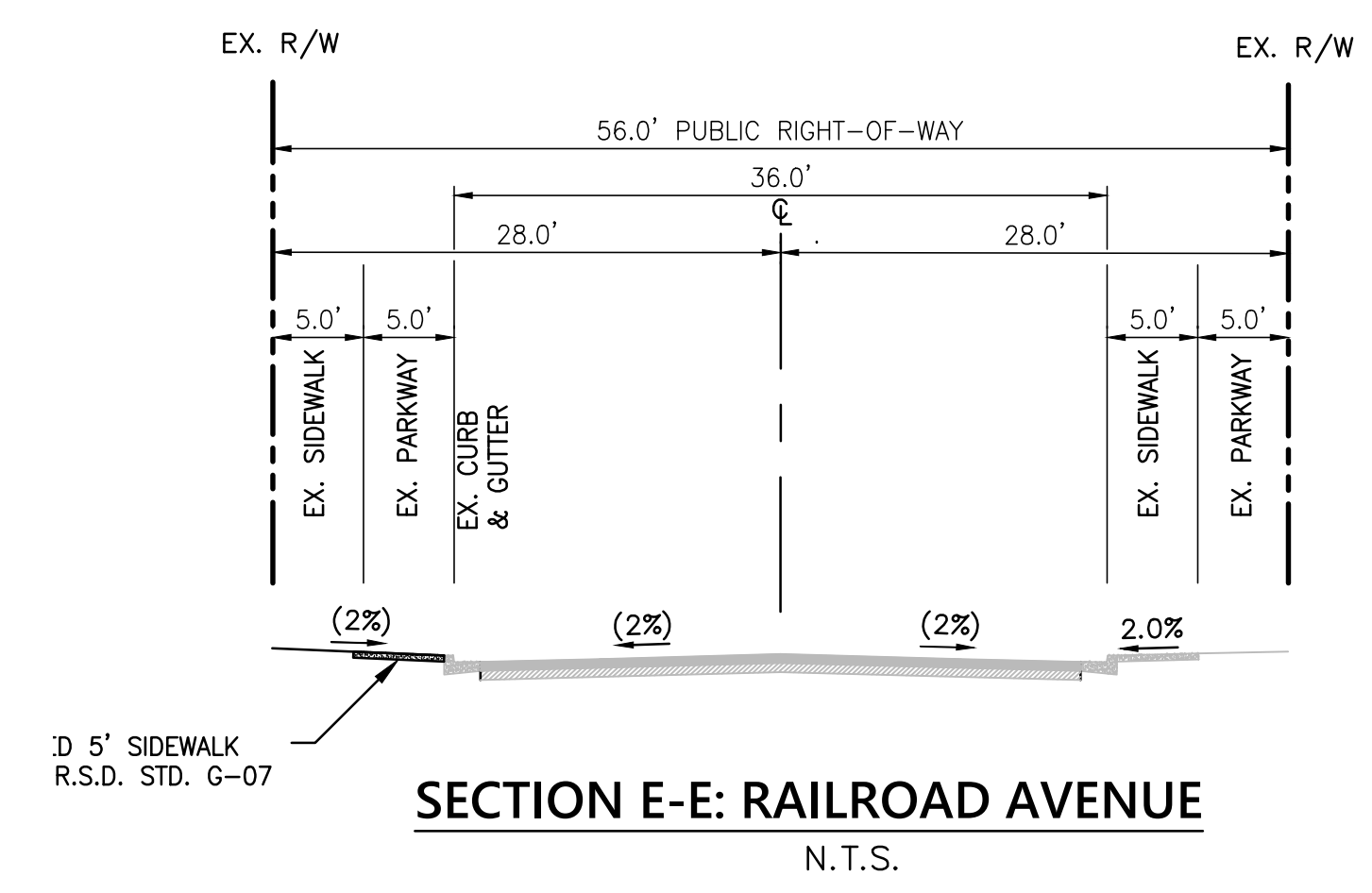
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NOTE:  
REPLACE FAILED OR INADEQUATE PAVEMENT TO THE CENTERLINE AND/OR SIDEWALK ADJACENT TO THE SITE ON RAILROAD AVENUE TO THE SATISFACTION OF THE DIRECTOR OF DEVELOPMENT SERVICES

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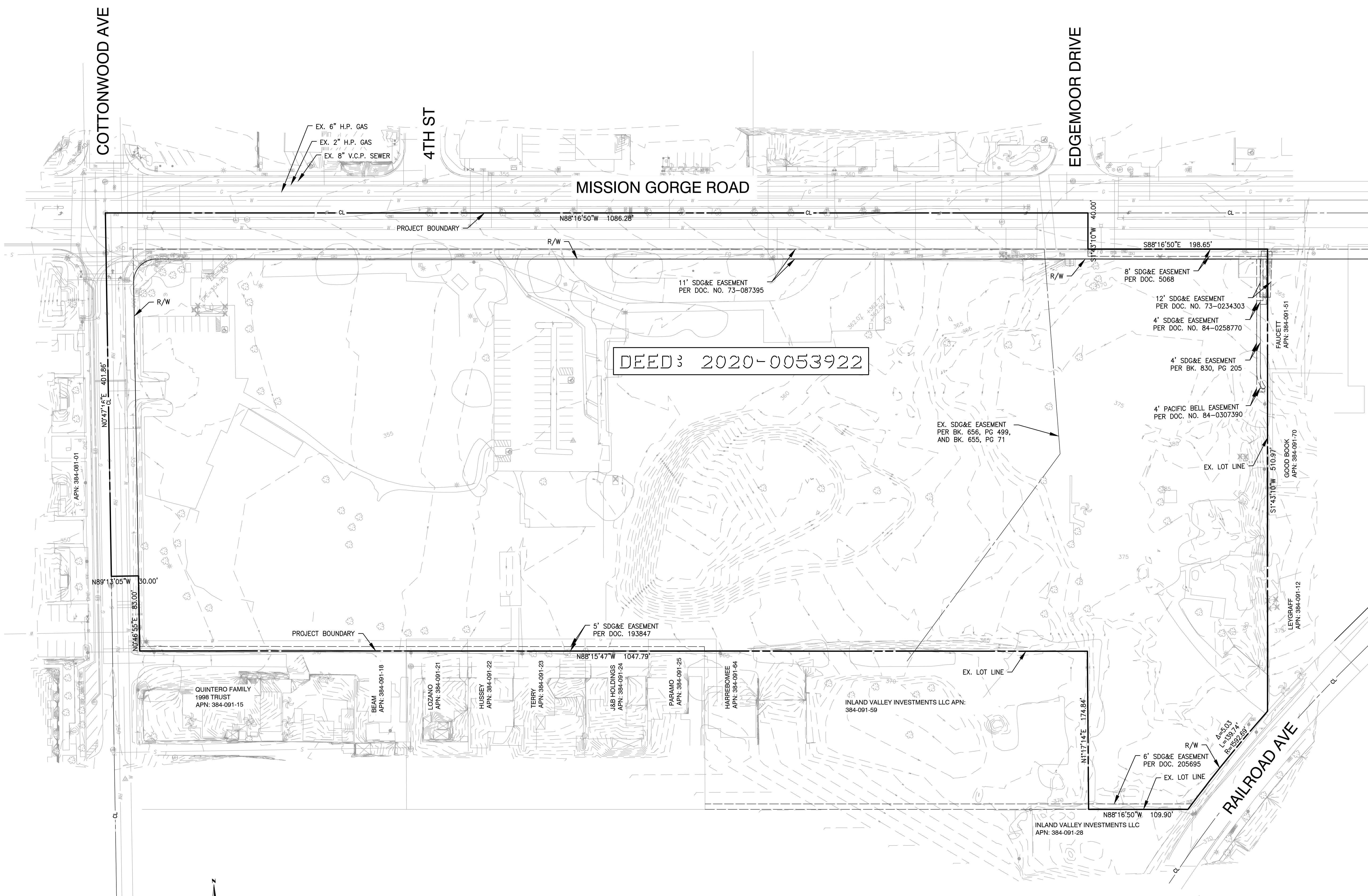
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EXISTING  
CONDITIONS

**C-003**



COTTONWOOD AVE

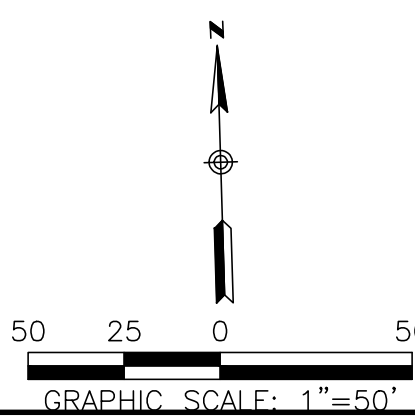
4TH ST

MISSION GORGE ROAD

EDGEMOOR DRIVE

RAILROAD AVE

DEED: 2020-0053922



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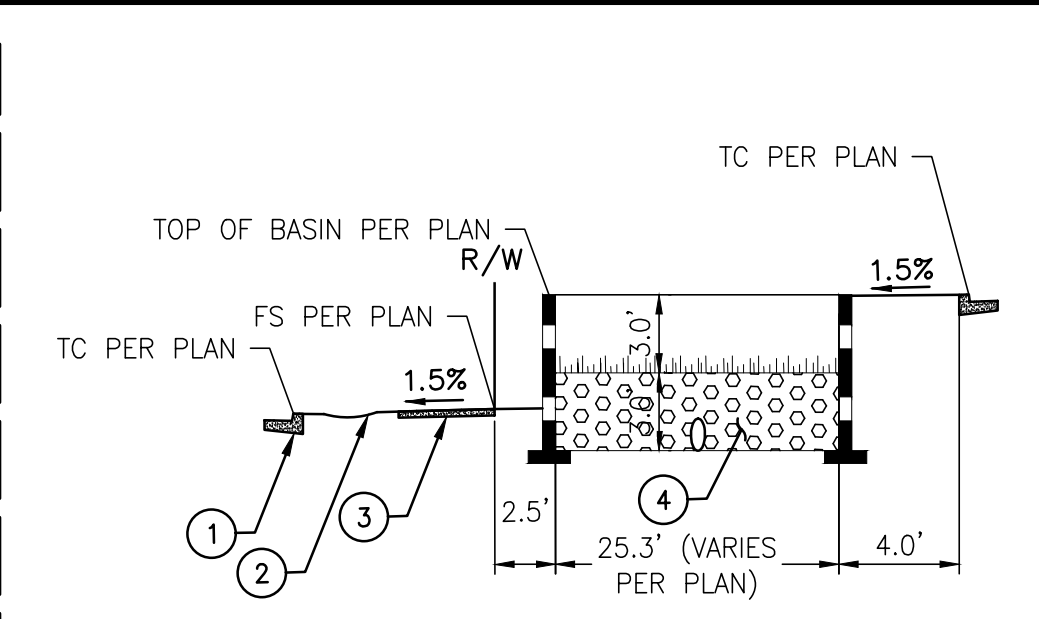
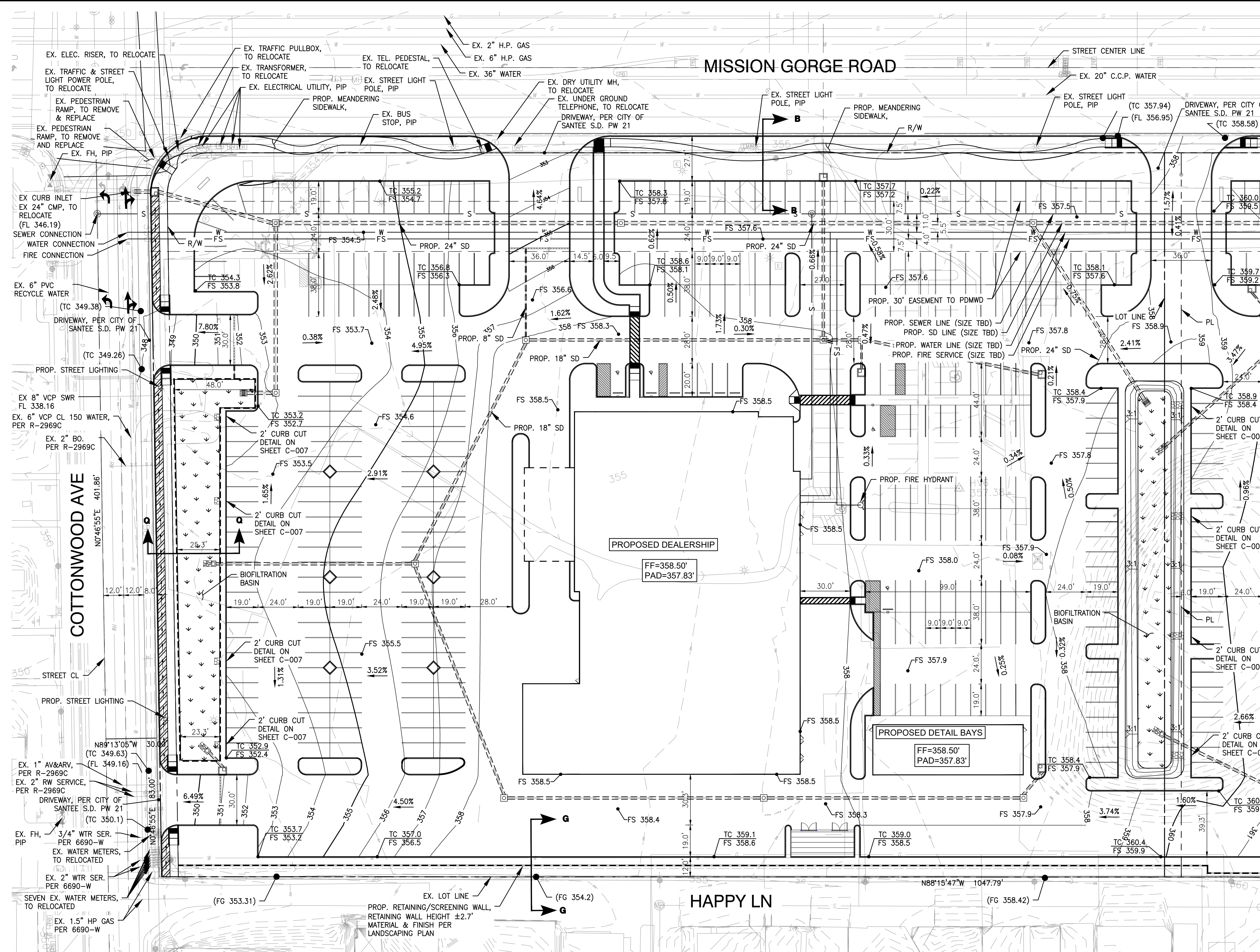
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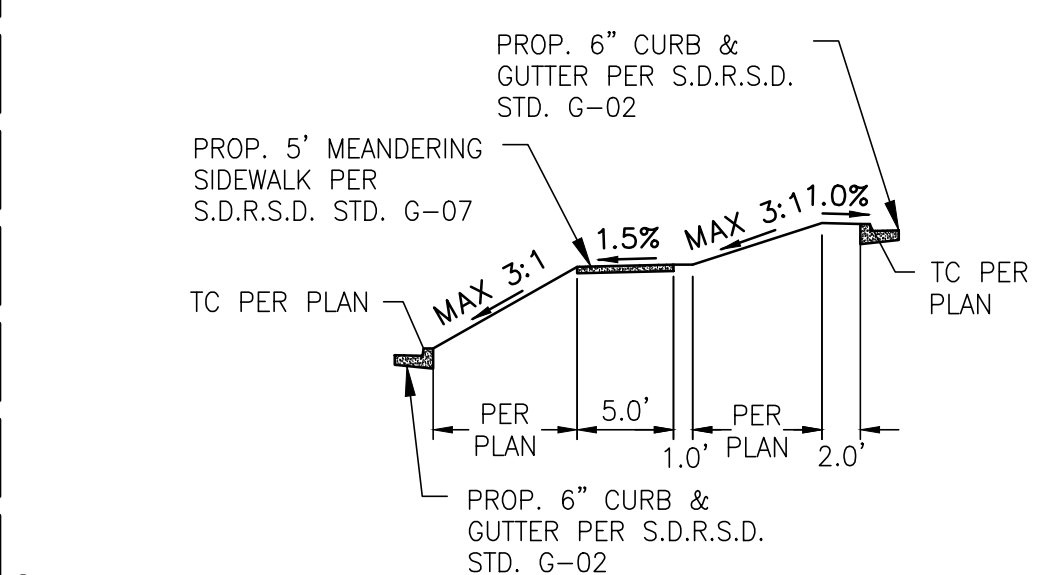
SITE GRADING  
PLAN

C-004

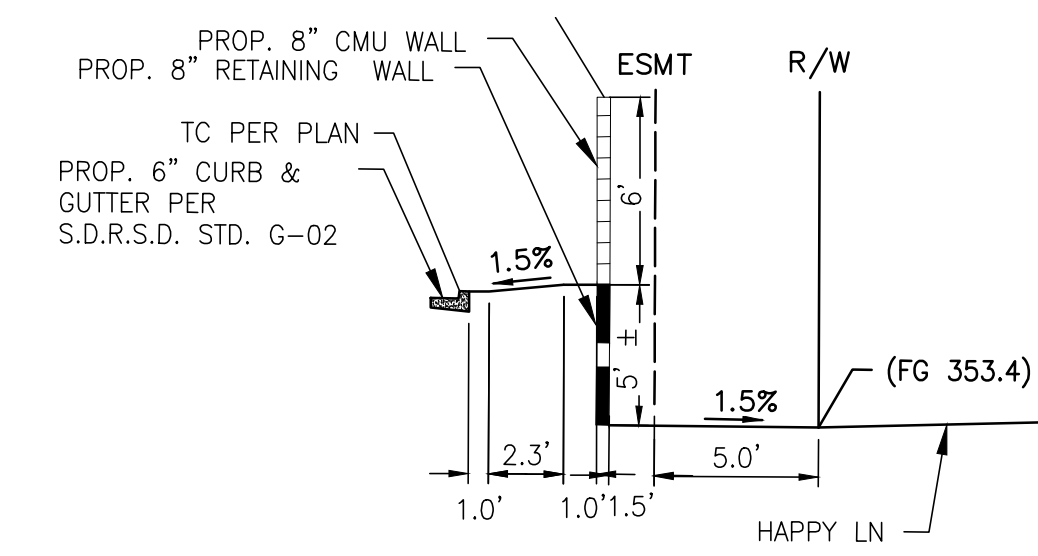


- CONSTRUCTION NOTE:
- 1. PROP. 6" CURB & GUTTER PER S.D.R.S.D. STD. G-02
  - 2. PROP. 5' GREEN STREET BMP FEATURE
  - 3. PROP. 5' SIDEWALK PER S.D.R.S.D. STD. G-07
  - 4. BIOFILTRATION SOIL MEDIA

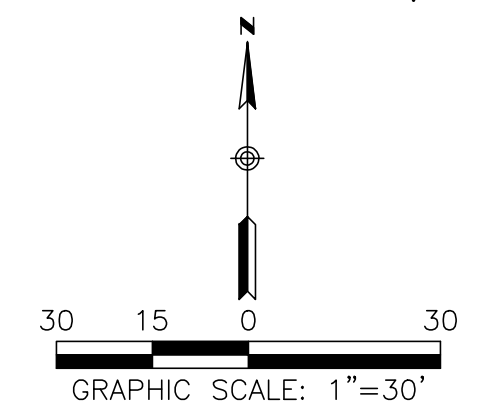
SECTION A-A  
N.T.S.



SECTION B-B  
N.T.S.



SECTION G-G  
N.T.S.

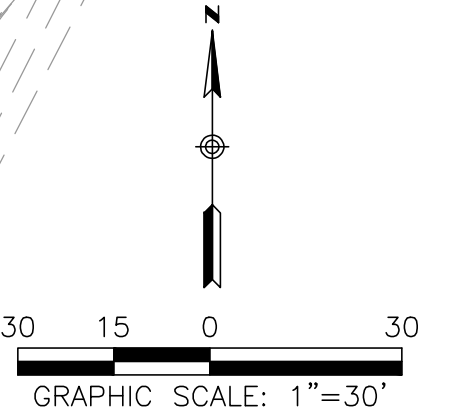
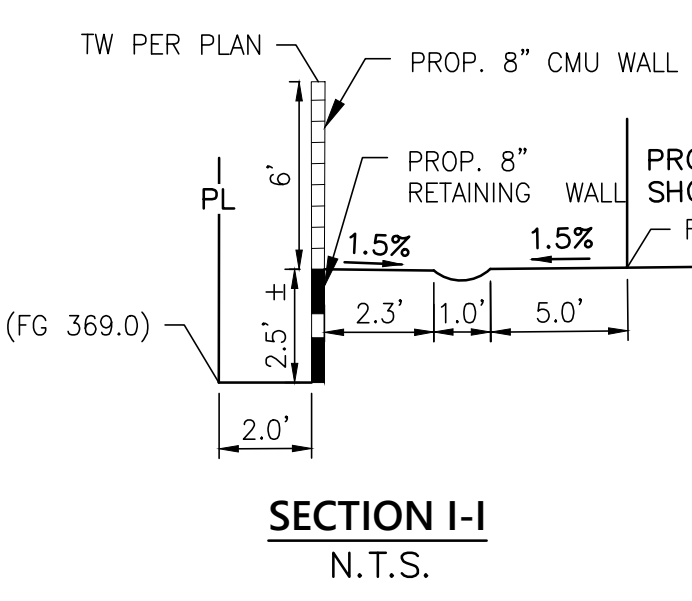
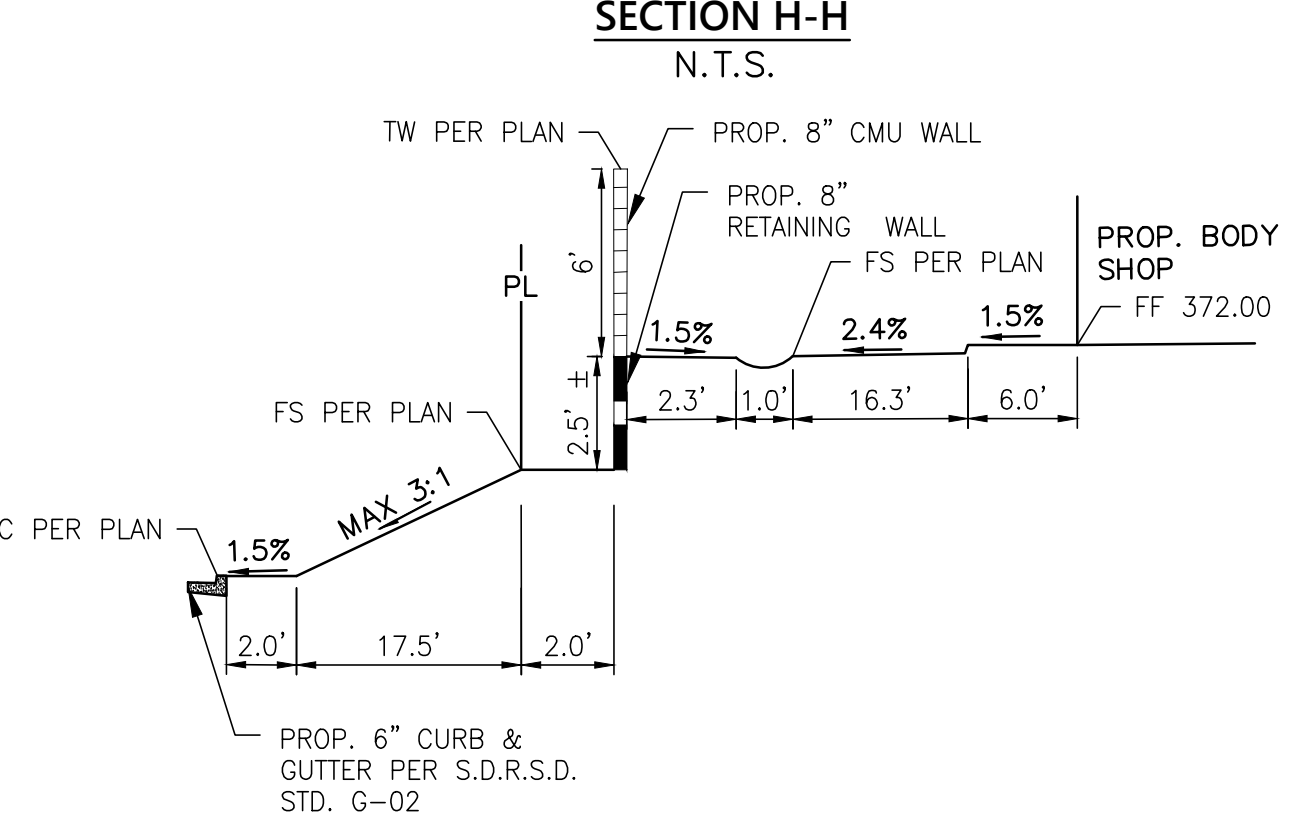
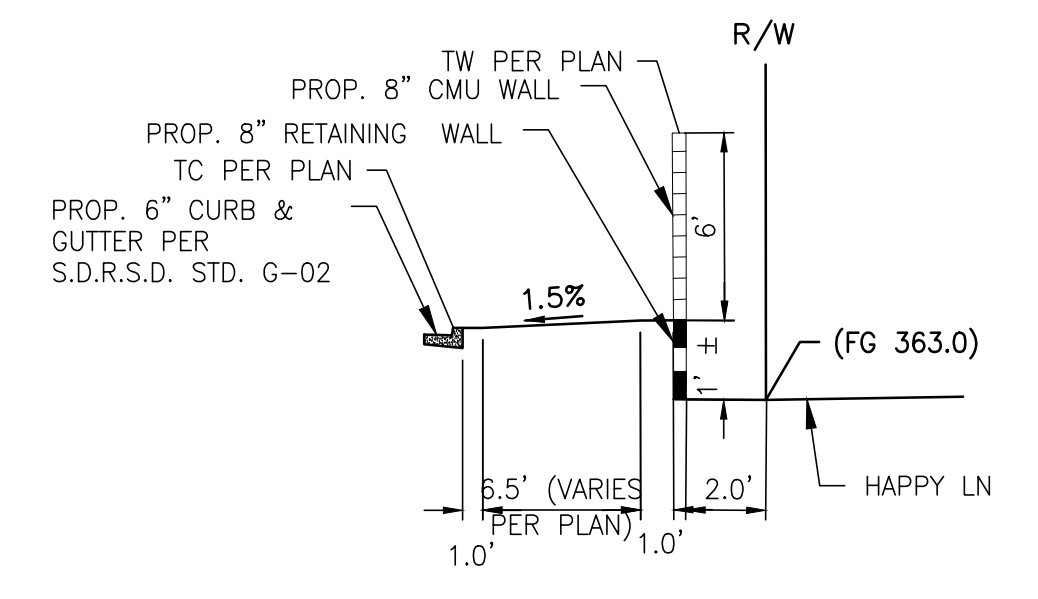
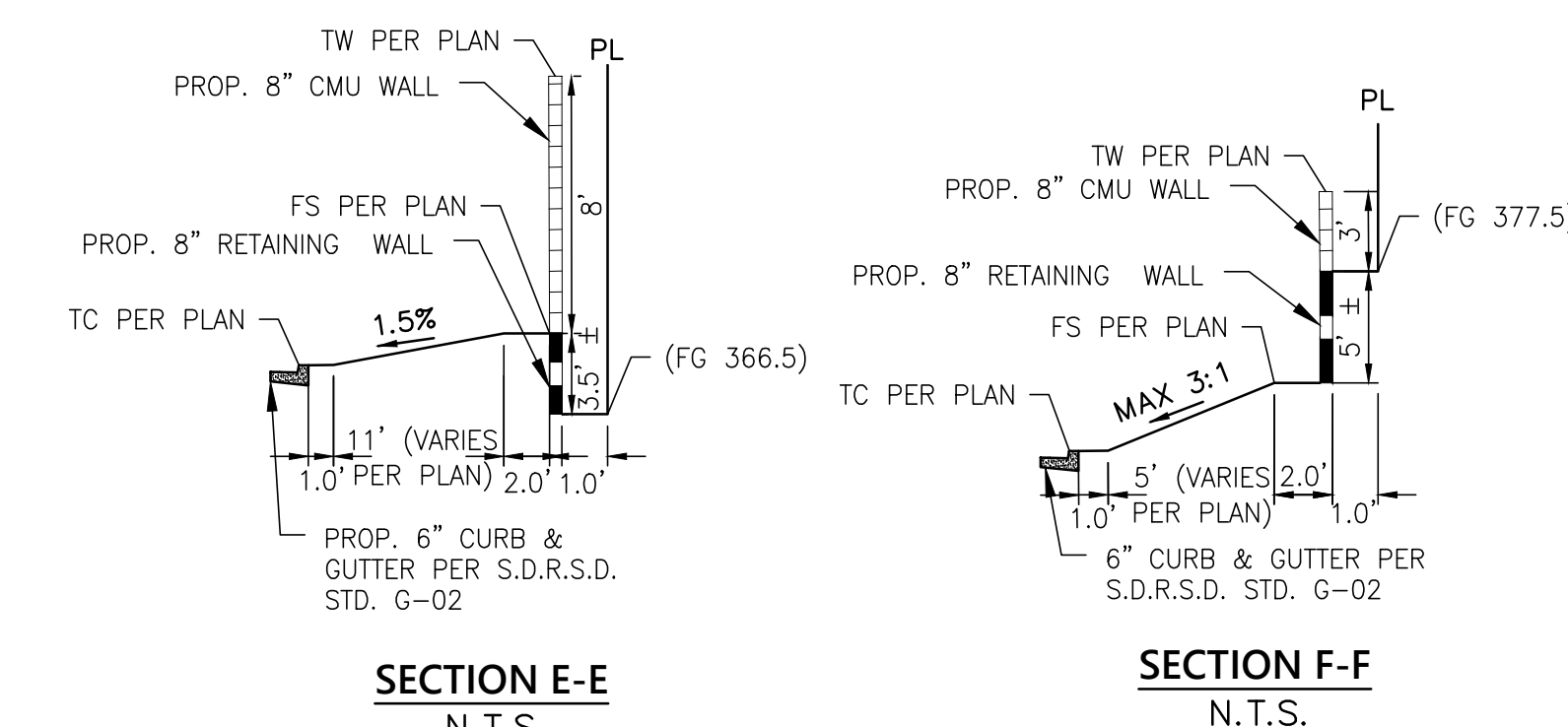
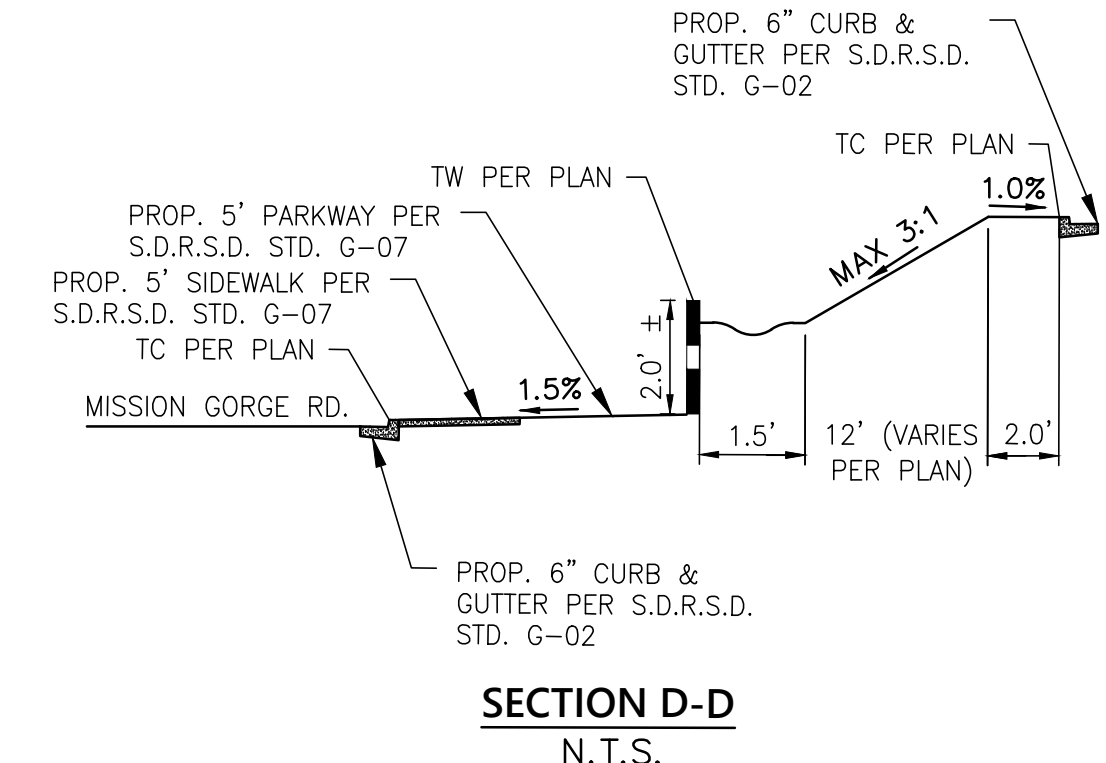
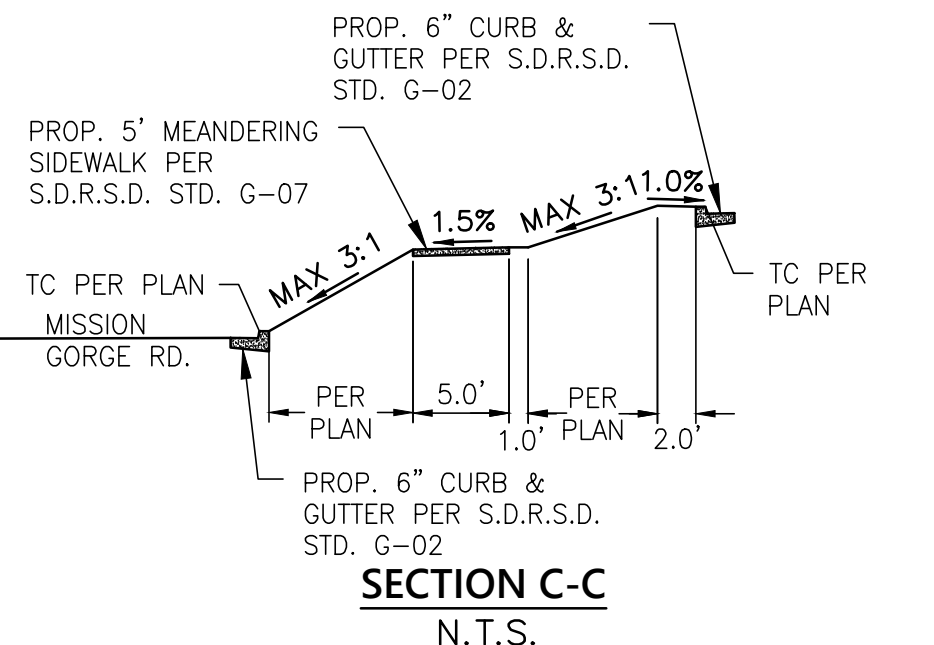
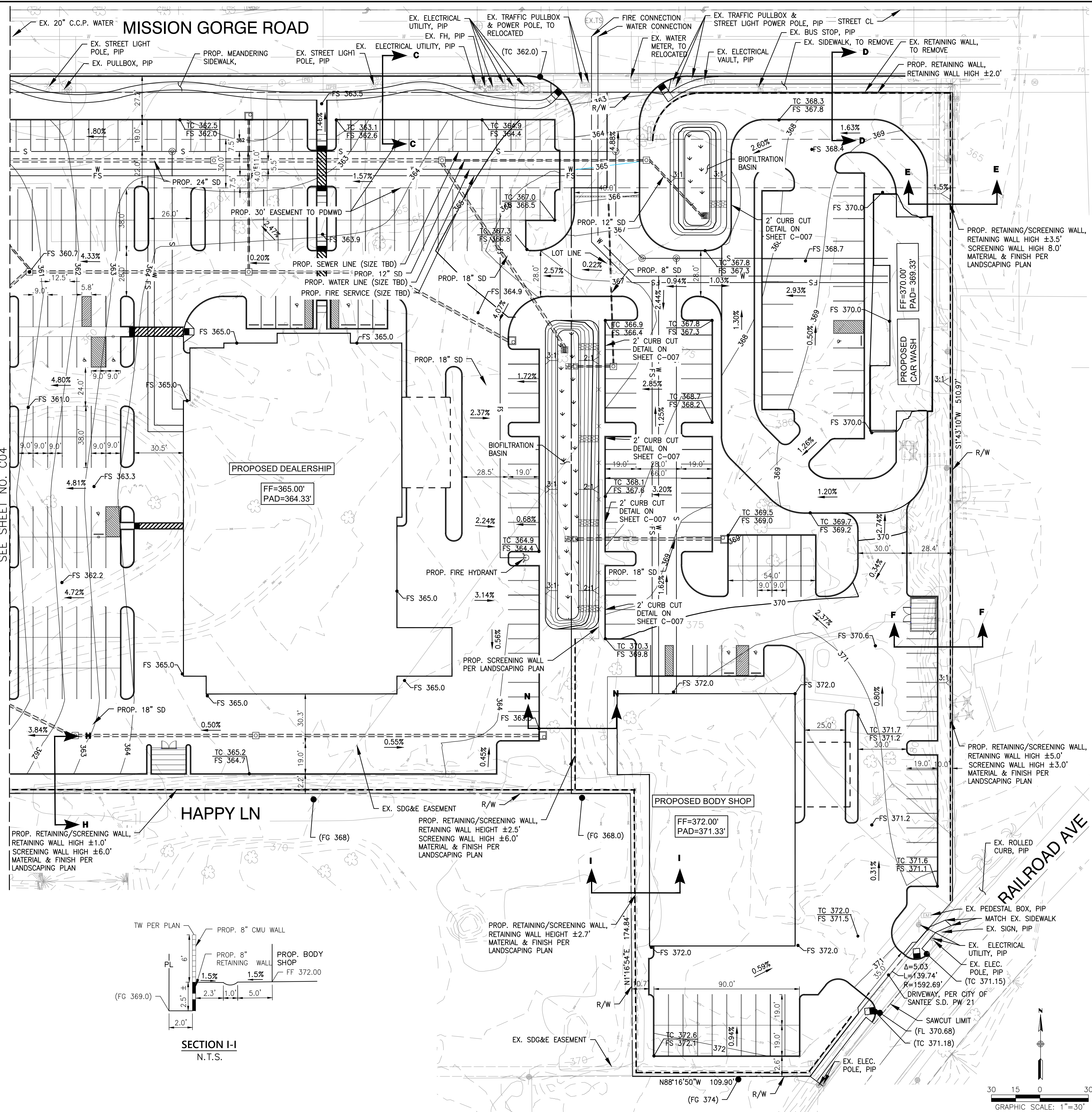


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**Date Issued For**  
12/16/2022 CUP Submittal

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**SITE GRADING PLAN**

**C-005**

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